

**Oracle® Interaction Center Server Manager**

Implementation Guide

Release 12.2

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Oracle Interaction Center Server Manager Implementation Guide, Release 12.2

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# Send Us Your Comments

## Oracle Interaction Center Server Manager Implementation Guide, Release 12.2

### Part No. E49100-01

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- Are the implementation steps correct and complete?
- Did you understand the context of the procedures?
- Did you find any errors in the information?
- Does the structure of the information help you with your tasks?
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Note: Before sending us your comments, you might like to check that you have the latest version of the document and if any concerns are already addressed. To do this, access the new Oracle E-Business Suite Release Online Documentation CD available on My Oracle Support and [www.oracle.com](http://www.oracle.com). It contains the most current Documentation Library plus all documents revised or released recently.

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# Preface

## Intended Audience

Welcome to Release 12.2 of the *Oracle Interaction Center Server Manager Implementation Guide*.

This guide assumes you have a working knowledge of the following:

- The principles and customary practices of your business area
- Oracle Interaction Center Server Manager
- Oracle Applications
- The Oracle Applications graphical user interface

To learn more about the Oracle Applications graphical user interface, read the *Oracle E-Business Suite User's Guide*.

See Related Information Sources on page x for more Oracle E-Business Suite product information.

## Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

## Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

## Structure

- 1 Introduction to Oracle Interaction Center Server Manager
- 2 Installation Procedures
- 3 Implementation Tasks
- 4 Implementation Verification Tasks
- 5 Administration Tasks
- 6 Diagnostics and Troubleshooting
- A Implementation Worksheets
- B Server Parameters and Command Line Parameters
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## Related Information Sources

### Integration Repository

The Oracle Integration Repository is a compilation of information about the service endpoints exposed by the Oracle E-Business Suite of applications. It provides a complete catalog of Oracle E-Business Suite's business service interfaces. The tool lets users easily discover and deploy the appropriate business service interface for integration with any system, application, or business partner.

The Oracle Integration Repository is shipped as part of the E-Business Suite. As your instance is patched, the repository is automatically updated with content appropriate for the precise revisions of interfaces in your environment.

You can navigate to the Oracle Integration Repository through Oracle E-Business Suite Integrated SOA Gateway.

### Online Documentation

All Oracle E-Business Suite documentation is available online (HTML or PDF).

- **PDF** - See the Oracle E-Business Suite Documentation Library for current PDF documentation for your product with each release. The Oracle E-Business Suite Documentation Library is also available on My Oracle Support and is updated frequently.
- **Online Help** - Online help patches (HTML) are available on My Oracle Support.
- **Release Notes** - For information about changes in this release, including new features, known issues, and other details, see the release notes for the relevant product, available on My Oracle Support.
- **Oracle Electronic Technical Reference Manual** - The Oracle Electronic Technical Reference Manual (eTRM) contains database diagrams and a detailed description of database tables, forms, reports, and programs for each Oracle E-Business Suite

product. This information helps you convert data from your existing applications and integrate Oracle E-Business Suite data with non-Oracle applications, and write custom reports for Oracle E-Business Suite products. The Oracle eTRM is available on My Oracle Support.

## **Guides Related to All Products**

### **Oracle E-Business Suite User's Guide**

This guide explains how to enter data, query, run reports, and navigate using the graphical user interface (GUI) available with this release of Oracle Projects (and any other Oracle E-Business Suite products). This guide also includes information on setting user profiles, as well as running and reviewing reports and concurrent programs.

You can access this user's guide online by choosing "Getting Started with Oracle Applications" from any Oracle Applications help file.

## **Guides Related to This Product**

### **Oracle Advanced Inbound Telephony Implementation Guide**

Oracle Advanced Inbound Telephony enables telesales and teleservice agents and collectors to route, queue, and distribute callbacks for customer calls received over the phone and the web. It enables computer telephony integration to third-party telephony platforms. You can also transfer or conference a call and its application data from one agent to another.

### **Oracle Advanced Outbound Telephony Implementation Guide**

Oracle Advanced Outbound Telephony provides multiple automated dialing methods and extensive list management controls that improve the penetration and efficiency of outbound calling campaigns and maximize the productivity of interaction center agents. It integrates with Oracle Customer Interaction History to provide feedback that marketing professionals can use to analyze and measure the success of the marketing campaign.

### **Oracle Interaction Blending Implementation Guide**

Oracle Interaction Blending is a server that enables you to receive and make calls over the web and telephone according to your service plan. A service plan specifies inbound and outbound service levels and minimum agent availability for the service level. Inbound service levels specify the percentage of inbound calls that will be answered within a time threshold whereas outbound service levels specify the number of transactions that you can make within a time period.

## **Oracle Universal Work Queue Implementation Guide**

Oracle Universal Work Queue supports queued, prioritized distribution and delivery of work, and work methods. It enables agents to access application work from a queue, initiate their real-time session and connect with their assigned media providers. It supplements Oracle Interaction History information to create a complete picture of agents' sessions. This guide describes how to implement Oracle Universal Work Queue and integrate with Oracle E-Business Suite applications.

## **Installation and System Administration**

### **Oracle Alert User's Guide**

This guide explains how to define periodic and event alerts to monitor the status of your Oracle E-Business Suite data.

### **Oracle E-Business Suite Concepts**

This book is intended for all those planning to deploy Oracle E-Business Suite Release 12.2, or contemplating significant changes to a configuration. After describing the Oracle E-Business Suite architecture and technology stack, it focuses on strategic topics, giving a broad outline of the actions needed to achieve a particular goal, plus the installation and configuration choices that may be available.

### **Oracle E-Business Suite Developer's Guide**

This guide contains the coding standards followed by the Oracle E-Business Suite development staff. It describes the Oracle Application Object Library components needed to implement the Oracle E-Business Suite user interface described in the *Oracle E-Business Suite User Interface Standards for Forms-Based Products*. It also provides information to help you build your custom Oracle Forms Developer forms so that they integrate with Oracle E-Business Suite. In addition, this guide has information for customizations in features such as concurrent programs, flexfields, messages, and logging.

### **Oracle E-Business Suite Installation Guide: Using Rapid Install**

This book is intended for use by anyone who is responsible for installing or upgrading Oracle E-Business Suite. It provides instructions for running Rapid Install either to carry out a fresh installation of Oracle E-Business Suite Release 12.2, or as part of an upgrade to Release 12.2.

### **Oracle E-Business Suite Maintenance Guide**

This guide contains information about the strategies, tasks, and troubleshooting activities that can be used to help ensure an Oracle E-Business Suite system keeps running smoothly, together with a comprehensive description of the relevant tools and

utilities. It also describes how to patch a system, with recommendations for optimizing typical patching operations and reducing downtime.

### **Oracle E-Business Suite Security Guide**

This guide contains information on a comprehensive range of security-related topics, including access control, user management, function security, data security, and auditing. It also describes how Oracle E-Business Suite can be integrated into a single sign-on environment.

### **Oracle E-Business Suite Setup Guide**

This guide contains information on system configuration tasks that are carried out either after installation or whenever there is a significant change to the system. The activities described include defining concurrent programs and managers, enabling Oracle Applications Manager features, and setting up printers and online help.

### **Oracle E-Business Suite User Interface Standards for Forms-Based Products**

This guide contains the user interface (UI) standards followed by the Oracle E-Business Suite development staff. It describes the UI for the Oracle E-Business Suite products and tells you how to apply this UI to the design of an application built by using Oracle Forms.

## **Other Implementation Documentation**

### **Oracle Approvals Management Implementation Guide**

This guide describes transaction attributes, conditions, actions, and approver groups that you can use to define approval rules for your business. These rules govern the process for approving transactions in an integrated Oracle application. You can define approvals by job, supervisor hierarchy, positions, or by lists of individuals created either at the time you set up the approval rule or generated dynamically when the rule is invoked. You can learn how to link different approval methods together and how to run approval processes in parallel to shorten transaction approval process time.

### **Oracle Diagnostics Framework User's Guide**

This guide contains information on implementing, administering, and developing diagnostics tests for Oracle E-Business Suite using the Oracle Diagnostics Framework.

### **Oracle E-Business Suite Flexfields Guide**

This guide provides flexfields planning, setup and reference information for the Oracle E-Business Suite implementation team, as well as for users responsible for the ongoing maintenance of Oracle E-Business Suite product data. This guide also provides information on creating custom reports on flexfields data.

## **Oracle E-Business Suite Integrated SOA Gateway Implementation Guide**

This guide explains the details of how integration repository administrators can manage and administer the entire service enablement process based on the service-oriented architecture (SOA) for both native packaged public integration interfaces and composite services - BPEL type. It also describes how to invoke Web services from Oracle E-Business Suite by working with Oracle Workflow Business Event System, manage Web service security, and monitor SOAP messages.

## **Oracle E-Business Suite Integrated SOA Gateway User's Guide**

This guide describes how users can browse and view the integration interface definitions and services that reside in Oracle Integration Repository.

## **Oracle E-Business Suite Multiple Organizations Implementation Guide**

This guide describes how to set up multiple organizations and the relationships among them in a single installation of an Oracle E-Business Suite product such that transactions flow smoothly through and among organizations that can be ledgers, business groups, legal entities, operating units, or inventory organizations. You can use this guide to assign operating units to a security profile and assign this profile to responsibilities such that a user can access data for multiple operating units from a single responsibility. In addition, this guide describes how to set up reporting to generate reports at different levels and for different contexts. Reporting levels can be ledger or operating unit while reporting context is a named entity in the selected reporting level.

## **Oracle e-Commerce Gateway Implementation Guide**

This guide describes implementation details, highlighting additional setup steps needed for trading partners, code conversion, and Oracle E-Business Suite. It also provides architecture guidelines for transaction interface files, troubleshooting information, and a description of how to customize EDI transactions.

## **Oracle e-Commerce Gateway User's Guide**

This guide describes the functionality of Oracle e-Commerce Gateway and the necessary setup steps in order for Oracle E-Business Suite to conduct business with trading partners through Electronic Data Interchange (EDI). It also describes how to run extract programs for outbound transactions, import programs for inbound transactions, and the relevant reports.

## **Oracle iSetup User's Guide**

This guide describes how to use Oracle iSetup to migrate data between different instances of the Oracle E-Business Suite and generate reports. It also includes configuration information, instance mapping, and seeded templates used for data migration.

## **Oracle Product Hub Implementation Guide**

This guide explains how to set up hierarchies of items using catalogs and catalog categories and then to create user-defined attributes to capture all of the detailed information (such as cost information) about an object (such as an item or change order). It also explains how to set up optional features used in specific business cases; choose which features meet your business' needs. Finally, the guide explains the set up steps required to link to third party and legacy applications, then synchronize and enrich the data in a master product information repository.

## **Oracle Product Hub User's Guide**

This guide explains how to centrally manage item information across an enterprise, focusing on product data consolidation and quality. The item information managed includes item attributes, categorization, organizations, suppliers, multilevel structures/bills of material, packaging, changes, attachments, and reporting.

## **Oracle Web Applications Desktop Integrator Implementation and Administration Guide**

Oracle Web Applications Desktop Integrator brings Oracle E-Business Suite functionality to a spreadsheet, where familiar data entry and modeling techniques can be used to complete Oracle E-Business Suite tasks. You can create formatted spreadsheets on your desktop that allow you to download, view, edit, and create Oracle E-Business Suite data, which you can then upload. This guide describes how to implement Oracle Web Applications Desktop Integrator and how to define mappings, layouts, style sheets, and other setup options.

## **Oracle Workflow Administrator's Guide**

This guide explains how to complete the setup steps necessary for any Oracle E-Business Suite product that includes workflow-enabled processes. It also describes how to manage workflow processes and business events using Oracle Applications Manager, how to monitor the progress of runtime workflow processes, and how to administer notifications sent to workflow users.

## **Oracle Workflow Developer's Guide**

This guide explains how to define new workflow business processes and customize existing workflow processes embedded in Oracle E-Business Suite. It also describes how to define and customize business events and event subscriptions.

## **Oracle Workflow User's Guide**

This guide describes how Oracle E-Business Suite users can view and respond to workflow notifications and monitor the progress of their workflow processes.

## **Oracle XML Gateway User's Guide**

This guide describes Oracle XML Gateway functionality and each component of the Oracle XML Gateway architecture, including Message Designer, Oracle XML Gateway Setup, Execution Engine, Message Queues, and Oracle Transport Agent. It also explains how to use Collaboration History that records all business transactions and messages exchanged with trading partners.

The integrations with Oracle Workflow Business Event System, and the Business-to-Business transactions are also addressed in this guide.

## **Oracle XML Publisher Administration and Developer's Guide**

Oracle XML Publisher is a template-based reporting solution that merges XML data with templates in RTF or PDF format to produce outputs to meet a variety of business needs. Outputs include: PDF, HTML, Excel, RTF, and eText (for EDI and EFT transactions). Oracle XML Publisher can be used to generate reports based on existing Oracle E-Business Suite report data, or you can use Oracle XML Publisher's data extraction engine to build your own queries. Oracle XML Publisher also provides a robust set of APIs to manage delivery of your reports via e-mail, fax, secure FTP, printer, WebDav, and more. This guide describes how to set up and administer Oracle XML Publisher as well as how to use the Application Programming Interface to build custom solutions. This guide is available through the Oracle E-Business Suite online help.

## **Oracle XML Publisher Report Designer's Guide**

Oracle XML Publisher is a template-based reporting solution that merges XML data with templates in RTF or PDF format to produce a variety of outputs to meet a variety of business needs. Using Microsoft Word or Adobe Acrobat as the design tool, you can create pixel-perfect reports from the Oracle E-Business Suite. Use this guide to design your report layouts. This guide is available through the Oracle E-Business Suite online help.

## **Training and Support**

### **Training**

Oracle offers a complete set of training courses to help you master your product and reach full productivity quickly. These courses are organized into functional learning paths, so you take only those courses appropriate to your job or area of responsibility.

You have a choice of educational environments. You can attend courses offered by Oracle University at any of our many Education Centers, you can arrange for our trainers to teach at your facility, or you can use Oracle Learning Network (OLN), Oracle University's online education utility. In addition, Oracle training professionals can tailor standard courses or develop custom courses to meet your needs. For example, you may



want to use your organization structure, terminology, and data as examples in a customized training session delivered at your own facility.

## **Support**

From on-site support to central support, our team of experienced professionals provides the help and information you need to keep your product working for you. This team includes your Technical Representative, Account Manager, and Oracle's large staff of consultants and support specialists with expertise in your business area, managing an Oracle server, and your hardware and software environment.

## **Do Not Use Database Tools to Modify Oracle E-Business Suite Data**

Oracle **STRONGLY RECOMMENDS** that you never use SQL\*Plus, Oracle Data Browser, database triggers, or any other tool to modify Oracle E-Business Suite data unless otherwise instructed.

Oracle provides powerful tools you can use to create, store, change, retrieve, and maintain information in an Oracle database. But if you use Oracle tools such as SQL\*Plus to modify Oracle E-Business Suite data, you risk destroying the integrity of your data and you lose the ability to audit changes to your data.

Because Oracle E-Business Suite tables are interrelated, any change you make using an Oracle E-Business Suite form can update many tables at once. But when you modify Oracle E-Business Suite data using anything other than Oracle E-Business Suite, you may change a row in one table without making corresponding changes in related tables. If your tables get out of synchronization with each other, you risk retrieving erroneous information and you risk unpredictable results throughout Oracle E-Business Suite.

When you use Oracle E-Business Suite to modify your data, Oracle E-Business Suite automatically checks that your changes are valid. Oracle E-Business Suite also keeps track of who changes information. If you enter information into database tables using database tools, you may store invalid information. You also lose the ability to track who has changed your information because SQL\*Plus and other database tools do not keep a record of changes.



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# Introduction to Oracle Interaction Center Server Manager

This chapter covers the following topics:

- Responsibilities
- Concepts

## Responsibilities

Oracle Interaction Center Server Manager is the Java server process that is necessary to run on every target machine of Oracle Interaction Center.

The necessary Oracle Applications Responsibility for the Oracle Interaction Center Server Manager HTML Administration is "Call Center HTML Administration".

**Note:** Assign administrative responsibilities to trusted users only. The Call Center HTML Administration responsibility is required to implement and administer Oracle Interaction Center for use at an enterprise. This responsibility gives administrators the ability to modify routing and classification rules. Dynamic routes with PL/SQL code and dynamic groups with SQL code can access sensitive database tables. The resulting information, if misused, can introduce liability issues for the enterprise. For these reasons, Oracle strongly recommends that only trusted users be provided with the Call Center HTML Administration responsibility.

## Concepts

Major concepts of Oracle Interaction Center Server Manager include the following topics.

## Active-Standby Mode Configuration

Administrators can assign servers to more than one node by selecting from a list of nodes in the Call Center HTML Administration. Administrators can prioritize the nodes, so that if the first node is not available, then the server starts on the next available node. If the server goes down, the active-standby mode configuration feature restarts the server on the next available node according to the prioritized order.

In active-standby mode configuration, one ICSM node is used while the other nodes act as standby. A standby node is a duplicate of, or has same load capacity as, the primary node. In the event a failure occurs, the standby node takes over the role of the primary node. You can pre-configure a primary node and up to three backup nodes. At any given time, a particular server process is running on only one of the nodes.

Oracle recommends that you use active-standby for Interaction Queuing and Distribution and Inbound Telephony Server server types.

## Load Balancing

Multiple server processes of the same server type can be configured in the same server group. These server processes can all run simultaneously on the same ICSM node or on different ICSM nodes, which allows the load to be shared by all running server processes of the same server type.

Interaction Queuing and Distribution cannot be load balanced because only one Interaction Queuing and Distribution server process can be in a server group. Use active-standby for Interaction Queuing and Distribution.

Load balancing for the Inbound Telephony Server requires configuring different, non-overlapping sets of route points for each Inbound Telephony Server server process.

Oracle recommends that you use load balancing for the following server types: Universal Work Queue, Oracle Telephony Manager, Oracle Telephony Adapter Server, Oracle Routing Server, and Inbound Telephony Server.

## Database Log Viewer

By default, database logging is set to "False". To view logs created using AppsLog API that are stored in the database, enable database logging by setting the Database Logging Parameter Value to "True". You can find the Database Logging field by following the path: Server Groups, Server Group Name, Server Group Name, Parameters.

## Refresh of Server Groups and Interaction Center Servers

Oracle Interaction Center Server Manager administrators can refresh server parameters of server groups and individual servers without needing to Stop and Start a server group or an individual server. If an administrator changes settings, such as to create or modify telesets, then the administrator can click Refresh, at either the server group level

or for a specific server, to reinitialize the configuration from the database.

## **Server Parameter Values Options**

Lists of options are available in the Server Parameters page, so that users can select values appropriate to the selected server. Additionally, the values are verified automatically to prevent errors that would be caused by conflicting parameter values. If conflicting values are selected, then an error message appears.

## **Trace File Search Filter**

When viewing trace files, administrators can use the advanced filters that have been provided to improve efficiency in locating specific ICSM logs or IC Server log entries on the specific Server or ICSM node page. On the Advanced link page, users can click the icon next to a trace file name to use filters for searching.

Users can search for and view only file entries that match specified search criteria, instead of looking through an entire trace file to find specific information. Users can search for trace file entries based on module, trace level, and other specific parameters, such as agent resource ID.



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## Installation Procedures

This chapter covers the following topics:

- Using Web Tier Rapid Installer

### Using Web Tier Rapid Installer

Web tier installation of Oracle Applications installs the Oracle Interaction Center Server Manager files, the Java Runtime Environment (JRE), and the Oracle Applications Java files (JDBC111.ZIP, JDBC12.ZIP and directory ORACLE/ containing Oracle Applications Java classes).

Web tier installation installs Oracle Interaction Center Server Manager files to the following paths,

- Windows NT: <APPL\_TOP>\IEO\11.5.0\ADMIN\SCRIPTS\<CONTEXT\_NAME>
- UNIX: <appl\_top>/ieo/11.5.0/admin/scripts/<context\_name>

where <appl\_top> is the directory where Oracle Application is installed, and <context\_name> is the name of the Oracle Application Installation.

A service named "Oracle ICSM <hostname> <dbname>" is registered on Windows NT. This type of installation does not require manual steps, but it does require more disk space. A Rapid Install installation of any Oracle Applications tier, even the Web tier, installs the Oracle Application file system components. The Web server code is not required to run Oracle Interaction Center Server Manager. For multiple target machines, installers must apply any patches to the Oracle Applications Java files to every target machine that uses local copies of those files.





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## Implementation Tasks

This chapter covers the following topics:

- Defining an Administrator for Oracle Interaction Center Server Manager
- Implementing an Oracle Interaction Center Server Manager Node
- Implementing a Single-Site Interaction Center
- Implementing a Multi-Site Interaction Center

### Defining an Administrator for Oracle Interaction Center Server Manager

Use the following procedure to define an administrator for an Oracle interaction center.

#### Login

Self-Service Login URL

#### Responsibility

System Administrator

#### Prerequisites

Review *Oracle E-Business Suite Security Guide*.

#### Steps:

1. In the Navigator window, on the Functions tab, choose **Security >User >Define**.  
The Users window appears.
2. In the User Name field, enter the name of the user. Use the following guidelines to define Oracle Applications usernames:

- Use only one word.
  1. Use only alphanumeric characters ('A' through 'Z', and '0' through '9') and underscore.
  2. Use only the set of characters that your operating system supports for filenames.
- 3. In the Password field, enter the password for the user account. Use the following guidelines to define Oracle Applications passwords:
  - Use at least five characters and no more than 100 characters.
  - Use only alphanumeric characters ('A' through 'Z', and '0' through '9') and underscore.
- 4. Press **Tab**.

The cursor remains in the Password field. The password is temporary. When the user signs on to Oracle Applications for the first time, the message "Your password has expired" appears and the user is prompted to set a new password.
- 5. Enter the password again to verify it, and then press Tab.

The cursor moves to the Password Expiration option None.
- 6. Optionally, enter the number of days or accesses to limit the validity of the password, and press Tab.

The cursor jumps to the Person field.
- 7. Click the field search.

The Person Names window opens.
- 8. In the Find field, enter the first or last name of the employee who will have the user name entered in Step 2.
- 9. Click **Find**.

The Person Names window displays a list of names that match the search criteria.
- 10. Select the appropriate name and click **OK**.

The Person field is populated with the name, and the Person Names window closes. The cursor jumps to Customer field.
- 11. Move the cursor to the Effective Dates group.
- 12. In the From and To fields, enter a range of dates for the User Name to be effective.

13. In the Responsibilities field, click the drop-down list.  
The Responsibilities search window appears.
14. In the Find field, enter one of the following responsibilities and click Find.
15. Select the appropriate responsibility and then click **OK**.  
You return to the Users window.
16. Repeat steps 14 and 15 for each of the following responsibilities.

**Note:** Assign administrative responsibilities to trusted users only. The Call Center HTML Administration responsibility is required to implement and administer Oracle Interaction Center for use at an enterprise. This responsibility gives administrators the ability to modify routing and classification rules. Dynamic routes with PL/SQL code and dynamic groups with SQL code can access sensitive database tables. The resulting information, if misused, can introduce liability issues for the enterprise. For these reasons, Oracle strongly recommends that only trusted users be provided with the Call Center HTML Administration responsibility.

***Administrator Responsibilities***

<b>Responsibility</b>	<b>Function</b>	<b>Type</b>
System Administrator	Create user accounts.	Self-Service
HRMS Manager, for example US HRMS Manager (if Oracle Human Resource Management System is installed)	Create an employee.	Self-Service
CRM Resource Manager	Create a CRM resource.	Self-Service
Call Center HTML Administration	Administer an interaction center.	HTML

After you save the user record, you cannot delete an assigned responsibility. Oracle Applications maintains audit data for assigned responsibilities.

To deactivate an assigned responsibility, set the effective end date (in the Effective Dates - To field) of the assigned responsibility to the current date. To activate an

assigned responsibility, clear or reset the effective end date.

17. From the **File** menu, choose **Save**.

You may close the Users window.

## Implementing an Oracle Interaction Center Server Manager Node

Do the steps in the following table to implement an Oracle Interaction Center Server Manager node. The Number column indicates the step order. The Required column indicates whether a step is required. The Description column describes a high-level step and, where applicable, provides a reference to a more detailed topic in this document. The Responsibility column indicates the Oracle Applications user account responsibility required to complete the step.

If you have defined an administrator for Oracle Interaction Center servers, then that user has all of the responsibilities necessary to implement an Oracle Interaction Center Server Manager node.

**Note:** Oracle does not support Oracle Interaction Center Server Manager (ICSM) and Interaction Center servers running in a cluster environment. Each ICSM node must be on a unique computer server.

### *Node Implementation Procedures and Responsibilities*

<b>Number</b>	<b>Required?</b>	<b>Description</b>	<b>Responsibility</b>
Step 1	Required	Install JDK or JRE.  See Java Development Kit (JDK) or Java Runtime Environment (JRE).	Not applicable
Step 2	Required	Download and install Oracle Interaction Center Server Manager to the target machine.  See Installing Manually.	Call Center HTML Administration

<b>Number</b>	<b>Required?</b>	<b>Description</b>	<b>Responsibility</b>
Step 3	Optional	Modify the environment file for Oracle Interaction Center Server Manager based on the JDK version.  See Modifying an Environment File for a Node.	Not applicable
Step 4	Required for NT only	Register Oracle Interaction Center Server Manager as a Windows NT Service.  See Registering Oracle Interaction Center Server Manager as a Windows NT Service.	Not Applicable
Step 5	Required	Start the Oracle Interaction Center Server Manager node.  See Starting a Node.	Not Applicable
Step 6	Required	Verify the Oracle Interaction Center Server Manager node in Oracle Applications.  See Viewing the Status of a Node.	Call Center HTML Administration

## Implementing a Single-Site Interaction Center

Perform the steps in the following table to implement a single-site interaction center. The Number column indicates the step order. The Required column indicates whether a step is required. The Description column describes a high-level step and, where applicable, provides a reference to a more detailed topic in this document. The Responsibility column indicates the Oracle Applications user account responsibility required to complete the step.

If you have defined an administrator for an Oracle interaction center, then that user has all of the responsibilities necessary to implement a multi-site interaction center. See *Defining an Administrator for Oracle Interaction Center Server Manager*.

***Single Site Implementation Procedures and Responsibilities***

<b>Number</b>	<b>Required?</b>	<b>Description</b>	<b>Responsibility</b>
Step 1	Required	Create a single-site server group.  See <i>Creating a Server Group for a Single-Site Interaction Center</i>	Call Center HTML Administration
Step 2	Required	Configure the parameters of the Interaction Center servers.  See <i>Configuring Server Group Server Parameters</i>	Call Center HTML Administration
Step 3	Required	Implement Advanced Inbound Telephony.  See <i>Oracle Advanced Inbound Telephony Implementation Guide</i>	Call Center HTML Administration
Step 4	Optional	Implement Advanced Outbound Telephony.  See <i>Oracle Advanced Outbound Telephony Implementation Guide</i>	Advanced Outbound Administrator
Step 5	Optional	Implement Oracle Interaction Blending.  See <i>Oracle Interaction Blending Implementation Guide</i>	Interaction Blending Administrator

<b>Number</b>	<b>Required?</b>	<b>Description</b>	<b>Responsibility</b>
Step 6	Required	Implement Universal Work Queue.  <i>See Oracle Universal Work Queue Implementation Guide</i>	Call Center HTML Administration

## Implementing a Multi-Site Interaction Center

Perform the steps in the following table to implement a multi-site interaction center. The Number column indicates the step order. The Required column indicates whether a step is required. The Description column describes a high-level step and, where applicable, provides a reference to a more detailed topic in this document. The Responsibility column indicates the Oracle Applications user account responsibility required to complete the step.

If you have defined an administrator for an Oracle interaction center, then that user has all of the responsibilities necessary to implement a multi-site interaction center. See *Defining an Administrator for Interaction Center Server Manager*.

### ***Multi-Site Implementation Procedures and Responsibilities***

<b>Number</b>	<b>Required?</b>	<b>Description</b>	<b>Responsibility</b>
Step 1	Required	Create a global server group for the enterprise.  <i>See Creating Server Groups for a Global, Multi-Site Interaction Center</i>	Call Center HTML Administration
Step 2	Required	Create a local server group for each interaction center.  <i>See Creating a Local Site for a Multi-Site Interaction Center</i>	Call Center HTML Administration

<b>Number</b>	<b>Required?</b>	<b>Description</b>	<b>Responsibility</b>
Step 3	Required	Configure the parameters of the Interaction Center servers.  See <i>Configuring Server Group Server Parameters</i>	Call Center HTML Administration
Step 4	Required	Configure multi-site parameters.	Call Center HTML Administration
Step 5	Required	Implement Oracle Advanced Inbound Telephony.  See <i>Oracle Advanced Inbound Telephony Implementation Guide</i>	Call Center HTML Administration
Step 6	Optional	Implement Advanced Outbound Telephony.  See <i>Oracle Advanced Outbound Telephony Implementation Guide</i>	Advanced Outbound Administrator
Step 7	Optional	Implement Oracle Interaction Blending.  See: <i>Oracle Interaction Blending Implementation Guide</i>	Interaction Blending Administrator
Step 8	Required	Implement Oracle Universal Work Queue.  See: <i>Oracle Universal Work Queue Implementation Guide</i>	Call Center HTML Administration



---

## Implementation Verification Tasks

This chapter covers the following topics:

- Verifying the Implementation
- Testing the Implementation

### Verifying the Implementation

Perform the steps outlined in the following table to verify the implementation of Oracle Interaction Center Server Manager. The Number column indicates the step sequence. The Required column indicates whether or not a step is required. The Description column describes high-level steps and, where applicable, provides a reference to a more detailed topic in this document. The Responsibility column indicates the Oracle Applications user account responsibility that is required to complete the step.

If you have defined an administrator for Oracle Interaction Center Server Manager, then that user has all of the responsibilities necessary to implement Oracle Interaction Center Server Manager.

The following table lists implementation verification procedures.

Number	Required?	Description	Responsibility
Step 1	Required	Create an Oracle Interaction Center Server Manager Administrator User Account.  See Defining an Administrator for Interaction Center Server Manager.	System Administrator

<b>Number</b>	<b>Required?</b>	<b>Description</b>	<b>Responsibility</b>
Step 2	Required	Install Oracle Interaction Center Server Manager.  See Installation Procedures.	Call Center HTML Administration
Step 3	Required	Start Oracle Interaction Center Server Manager.  See Starting a Node.	Not Applicable
Step 4	Required	Log in to the Oracle Interaction Center Server Manager HTML Administration.  See <i>Oracle E-Business Suite Security Guide</i> .	Call Center HTML Administration
Step 5	Required	In the Node page, verify that Oracle Interaction Center Server Manager is running.  See Viewing the Status of a Node.	Call Center HTML Administration
Step 6	Required	Stop Oracle Interaction Center Server Manager.  See Stopping a Node.	Call Center HTML Administration
Step 7	Required	In the Node page, verify that Oracle Interaction Center Server Manager is stopped.  See Viewing the Status of a Node.	Call Center HTML Administration

## Testing the Implementation

After you implement Oracle Interaction Center Server Manager and start the servers, you can test the validity of the CTI and switch integration by using the Unit Test Server test utility. An adapter included in Oracle Interaction Center Server Manager automates testing the integration. If integration fails, then the test tool provides information on the failure that the support and the implementation team can use to identify the problem.

At any time after you complete the integration, you can identify at least five telesets and agents (by agent login ID) that you can use to test the implementation. You can state the location from which to start the test without running previous test cases. You can also run a specific test case identified by a case number.

The Unit Test Server uses a test script file that lists a series of test cases to test one at a time. The Unit Test Server also uses a solution file that contains the expected behavior for each test case. At the end of each test case the Unit Test Server compares the observed behavior of the test with the expected behavior of the test read from the solution file. If a test case fails, then Unit Test Server terminates and generates a failure report which contains details about the test case that failed, the reason for its failure, the current observed behavior for the test, and the behavior that was expected.

## Configuring the Unit Test Server

Use the following procedure to configure the Unit Test Server test utility.

### Prerequisites

- Install the latest release of the Oracle Advanced Inbound Telephony.
- Create and configure the following Interaction Center servers:
  - Oracle Telephony Manager
  - Interaction Queuing and Distribution
  - Oracle Telephony Adapter Server
  - Inbound Telephony Server
- Create an additional server of the type Unit Test Server.
- Have the following resources available, 5 Telesets 2) 5 Agents (Oracle CRM Resources configured in Database) 3) 5 Oracle Apps users names (Oracle Apps System User-logins configured in Database) 4) 2 DID numbers pointing to 2 of the above telesets.
  - Five telesets

- Five agents listed as resources configured in the database
- Five Oracle Applications user login names configured in the database
- Two Direct Inward Dialing (DID) numbers that point to two of the five telesets

## Steps

1. Select the ICSM tab and then the Server Group subtab.  
The Server Group List page appears.
2. Click a Server Group Name.  
The Server Group Details page appears.
3. Click **Create**.  
The Server Details page appears.
4. Enter a unique name in the Server Name field.
5. From the Server Type list select **Unit Test Server**.
6. Select a server group from the Member Server Group list.
7. Optionally, select or enter values in the fields for Location, Description, Using Server Group, and Primary Node.
8. Click **Save**.  
The Server Details page appears.
9. Click **Parameters**.  
The Unit Test Server parameter fields appear.
10. In the Parameter Name fields for Agents 1 through 5, enter values for the following parameters:
  - Canonical Phone Number: A standardized telephone number of the format: <country code> (<area code>) <local exchange>-<subscriber number> For example, "+1 (555) 123-4567" is a United States (+1) telephone number within the 555 area code. This corresponds to the Direct inward dialing (DID) number to reach the agent's teleset.
  - Oracle Applications Login: The user names the agent uses to log in to Oracle Applications, for example UTAGENT1.

- Teleset Hardware ID: The hardware number of the teleset the agent uses to log in to Oracle Advanced Inbound Telephony, for example T4881.
  - Teleset Internal Number: The number to dial to reach the agent's teleset internally from other agents, for example 4881.
11. Enter values in the following fields:
- Genesys Application Name: The application name that the Unit Test Server uses to connect to the Genesys middleware server, for example AILSERVER. The application name used for the Unit Test Server should be different from the application name that is configured for the Oracle Telephony Adapter Server because one application name in Genesys middleware supports only one client.
  - Invalid Number to Dial: A number to dial to test the dialing to the invalid number test cases, for example 5555.
  - Maximum Wait Time for Event Response (seconds): The number of seconds the Unit Test Server needs to wait between two test cases to allow the Unit Test Server to collect the events fired from the middleware and Interaction Center servers even if there is some latency between telephony commands and event responses.
  - Route Point Number: The route point hardware number that the Inbound Telephony Server is configured to monitor.
  - Test Case Number: The test case number the Unit Test Server uses when it runs in the Single Test mode, for example B1.
  - Trace Level: The amount of detail to log. The levels rank from most information (Debug) to least information (Fatal).
  - Type of Testing: The testing mode the Unit Test Server will run in the next test. The Unit Test Server can run in three modes:
    - In All Tests from Beginning mode, the Unit Test Server starts testing all the cases in the TestCases file.
    - All Tests from Test Number mode, the Unit Test Server starts testing all the cases from a given TestCase Number. The Test Case Number can be given in the separate Parameter Field called Test Case Number.
    - Remaining Feasible Tests mode, the Unit Test Server first detects the Test Case where the Unit Test Server failed in the last run. It then masks out all cases that are dependent on or similar to the failed one and makes a list of the remainder and runs them.

- Single Test mode, the Unit Test Server only runs the one test given in the Test Case Number field.

12. Click **Update**.

The page refreshes.

13. Optionally, to enter Java options and server arguments, click **Advanced**.

## Running the Unit Test Server

Start and stop the Unit Test Server as you do any Interaction Center server. Use the procedures starting and stopping servers described in Administration Tasks.

When running the Unit Test Server, observe the following considerations.

When you start the Unit Test Server it internally starts the other Interaction Center servers with which it interacts. Do not use the Group start button to start all the servers together. Instead, use the Unit Test Server start button only. The Unit Test Server restarts all the servers automatically to bring all servers to a fresh state without residual data. Because the Unit Test Server take time to restart the servers, it can take some additional time before the testing begins.

To terminate unit testing click the stop button available for the Unit Test Server. The Unit Test Server shuts down automatically after running all the test cases that it has been configured to test. Before it shuts down, the Unit Test Server shuts down all the other Interaction Center servers that it started.

**Note:** Note: An absolute requirement before running the Unit Test Server is to make sure that you reset to the idle state all the hardware devices that are configured to be used by the Unit Test Server. If the telesets are not reset, the Unit Test Server will fail to start or will give wrong results.

## Prerequisites

Configure all the parameters for the Unit Test Server in the Server Group Details page.

---

## Administration Tasks

This chapter covers the following topics:

- Configuring a Node
- Modifying an Environment File for a Node
- Registering Oracle Interaction Center Server Manager as a Windows NT Service
- Starting a Node
- Stopping a Node
- Administering Nodes
- Managing IP Addresses
- Administering Server Groups
- Running Automatic Failover Monitoring
- Starting Automatic Failover Monitoring
- Stopping Active-Standby Mode Configuration Monitoring

### Configuring a Node

Follow the directions in the Setup sub tab to configure an Oracle Interaction Center Server Manager node. A "node" is a computer that has Oracle Interaction Center Server Manager installed and running.

### Modifying an Environment File for a Node

For manual installation of Oracle Interaction Center Server Manager, you can directly edit the environment file (ieoenv.cmd for Windows NT or ieoenv.sh for UNIX) after it has been installed.

For installation using Rapid Installer, for Windows NT edit the file ieoicsm.cmd, and for UNIX edit the file ieoicsm.sh.

Use this procedure to modify the environment variables for an a manual installation on an Oracle Interaction Center Server Manager node.

## Login

Not Applicable

## Responsibility

Not Applicable

## Prerequisites

Install Oracle Interaction Center Server Manager on the target computer. See Installation Procedures.

## Steps

1. If Oracle Interaction Center Server Manager is registered as a Windows NT Service, unregister the service by using the command **ieonticsm unregister**.
2. Edit the environment file `ieoenv.cmd` or `ieoenv.sh`. The following table describes the environment file variables.

### *Environment Variables*

<b>Variable</b>	<b>Description</b>
IEO_COMM_TOP	The directory to which Oracle Interaction Center Server Manager was installed.
IEO_DBC_FILE	The absolute path to the database connectivity file.
IEO_JRE	The absolute path to the Java Development Kit executable ( <code>java.exe</code> ) file or Java Runtime Environment executable ( <code>jre.exe</code> ) file. For Windows NT, this is <code>jre.exe</code> or <code>java.exe</code> . For UNIX, this is <code>java</code> or <code>jre</code> .
IEO_JAVA_TOP	The Oracle Application Java directory contains both <code>jdbc11.zip/jdbc12.zip</code> and the <code>oracle/</code> directory where all Oracle Applications Java class files are located.



Variable	Description
IEO_IP	The IP address of the computer that will run Oracle Interaction Center Server Manager.
IEO_HOST	The name of the computer that will run Oracle Interaction Center Server Manager. This variable is used to create the name for the Windows NT Service (Oracle ICSM <IEO_HOST> <IEO_DB_TWO_TASK>).
IEO_DB_TWO_TASK	The name of the database.

- For Windows NT, register the Windows NT Service by using the command `ieonticsm register`.

## Guidelines

You must modify the Interaction Center Server Manager environment file according to the version of the Java Virtual Machine and the language used in the Oracle Applications instance.

### JDK/JRE 1.1.8

If you are using Java Development Kit or Java Runtime Environment 1.1.8, then you must have the following line in the environment file:

```
set CLASSPATH=%CLASSPATH%;%IEO_JAVA_TOP%\jdbc111.zip
```

If the following line exists,

```
set CLASSPATH=%CLASSPATH%;%IEO_JAVA_TOP%\jdbc12.zip
```

then you must make it inactive by typing REM at the beginning of the line:

```
REM set CLASSPATH=%CLASSPATH%;%IEO_JAVA_TOP%\jdbc12.zip
```

### JDK/JRE 1.2 or Higher

If you are using Java Development Kit or Java Runtime Environment 1.2 or higher, then you must have the following line in the environment file:

```
set CLASSPATH=%CLASSPATH%;%IEO_JAVA_TOP%\jdbc12.zip
```

If the following line exists,

```
set CLASSPATH=%CLASSPATH%;%IEO_JAVA_TOP%\jdbc111.zip
```

then make it inactive by typing REM at the beginning of the line:

```
REM set CLASSPATH=%CLASSPATH%;%IEO_JAVA_TOP%\jdbc111.zip
```

## Non-English Instance

If the language for the Oracle Applications instance is not English, insert the following line:

```
set CLASSPATH=%CLASSPATH%;%IEO_JAVA_TOP%\nls_charset12.zip
```

before this line:

```
set CLASSPATH=%CLASSPATH%;%IEO_JAVA_TOP%\xmlparserv2.zip
```

The `nls_charset12.zip` file contains the language-specific Java class files. If you are using Java Development Kit or Java Runtime Environment 1.1.8, then you must use `nls_charset11.zip`. The following code is an example of an Oracle Interaction Center Server Manager environment file for Windows NT.

```
set IEO_JRE_HOME=d:\java\jdk1.3.1_04\jre
set IEO_DBC_FILE=D:\test\newtop\secure\ap6063rt_v1159fpr.dbc
set IEO_JAVA_TOP=D:\test\newtop\java
set IEO_JRE=d:\java\jdk1.3.1_04\jre\bin\java.exe
set IEO_IP=130.35.16.151
set IEO_HOST=edwang-pc
set IEO_COMM_TOP=D:\test\newtop
set IEO_DB_TWO_TASK=v1159fpr

set
PATH=%PATH%;%IEO_COMM_TOP%\admin\scripts\lib;%IEO_COMM_TOP%\admin\scripts\3rdParty

set CLASSPATH=.
REM NOTE : if you are using JDK 1.1.8 , please remove
REM       the following line with jdbc12.zip.
set CLASSPATH=%CLASSPATH%;%IEO_JAVA_TOP%\jdbc12.zip
REM set CLASSPATH=%CLASSPATH%;%IEO_JAVA_TOP%\jdbc111.zip
set CLASSPATH=%CLASSPATH%;%IEO_JAVA_TOP%\xmlparserv2.zip
set CLASSPATH=%CLASSPATH%;%IEO_JAVA_TOP%\
set CLASSPATH=%CLASSPATH%;%IEO_JAVA_TOP%\ieoservers.zip
set CLASSPATH=%CLASSPATH%;%IEO_JRE_HOME%\classes
set CLASSPATH=%CLASSPATH%;%IEO_JRE_HOME%\lib
set CLASSPATH=%CLASSPATH%;%IEO_JRE_HOME%\lib\classes.zip
set CLASSPATH=%CLASSPATH%;%IEO_JRE_HOME%\lib\classes.jar
set CLASSPATH=%CLASSPATH%;%IEO_JRE_HOME%\lib\rt.jar
set CLASSPATH=%CLASSPATH%;%IEO_JRE_HOME%\lib\i18n.jar
```

## Registering Oracle Interaction Center Server Manager as a Windows NT Service

Use the following procedure to register Oracle Interaction Center Server Manager as a Windows NT Service.

### Login

Not Applicable

## Responsibility

Not Applicable

## Prerequisites

None

## Steps

1. Open a command prompt window.

For example, in Windows NT:

1. Choose **Start** and then **Run**.
  2. Enter **cmd**.
  3. Click **OK**.
2. Change to the scripts directory.
  3. Enter the command: `ieonticsm register`

**Note:** Configure the service to log on to a Windows NT user account that has access to the network path (IEO\_JAVA\_TOP) that points to the Oracle Applications Java directory.

## Guidelines

The following code is an example of the output from the Windows NT command prompt.

```
C:> cd D:\icsm\admin\scripts

D:\icsm\admin\scripts> ieonticsm.cmd register

D:\icsm\admin\scripts>echo off

ieo_home = ..\..

CLASSPATH =
.;D:\oa1156\java\jdbc12.zip;D:\oa1156\java\jdbc111.zip;D:\oa1156\java\xmlparserv2.zip;D:\oa1156\java\apps.zip;C:\jdk1.1.8\classes;C:\jdk1.1.8\lib;C:
```

```

\jdk1.1.8\lib\classes.zip;C:\jdk1.1.8\lib\classes.jar;C:\jdk1.1.8\lib\rt
.jar;C:\

jdk1.1.8\lib\i18n.jar

Runnng command ..\..\util\OamkSvc.exe -si "Oracle ICSM
stcsmith.us.oracle.com" -

e -a -c "C:\jdk1.1.8\bin\java.exe -ms8M -mx16M
oracle.apps.iew.icsm.server.Main

-dbc D:\icsm\icsm.dbc -home D:\icsm\admin\scripts      "

Capture Environment - TRUE

Automatic Startup - TRUE

Set dependency on - None

Startup username - None

Program launched - C:\jdk1.1.8\bin\java.exe -ms8M -mx16M
oracle.apps.iew.icsm

.server.Main -dbc D:\icsm\icsm.dbc -home D:\icsm\admin\scripts

Program to kill - None

Terminate All - FALSE

Service "Oracle ICSM stcsmith.us.oracle.com" successfully created.
Environment recorded in oaMkSvc.log.

Change service parameters from ControlPanel.

ieonticsm.cmd exiting with status 1

```

## Starting a Node

Start an Oracle Interaction Center Server Manager node at the command line or, if registered as a Windows NT Service, as a service.

Use the following procedure to start an Oracle Interaction Center Server Manager node.

### Login

Not Applicable

## Responsibility

Not Applicable

## Prerequisites

None

## Steps

1. Open a command prompt window.  
For example, in Windows NT:
  1. Choose **Start** and then **Run**.
  2. Enter **cmd**.
  3. Click **OK**.
2. Change to the scripts directory.
3. Start Oracle Interaction Center Server Manager.
  1. To start Interaction Center Server Manager at the command line, enter:  
`ieoicsm start`
  2. To start the Oracle Interaction Center Server Manager process in console mode (Windows NT only) at the command line, enter:  
`ieoicsm console_start`
  3. To start Interaction Center Server Manger in the Windows NT Services window:
  4. Choose **Start, Settings** and then **Control Panel**.
  5. Double-click **Services**.  
The Services window appears.
  6. Click **Oracle ICSM <machinename> <dbname>**.
  7. Click **Start**.  
Windows NT attempts to start the service.
  8. Click **Close**.

## Guidelines

The following code is an example of the output from the command prompt in Windows NT:

```
C:> cd D:\icsm\admin\scripts

D:\icsm\admin\scripts> ieoicsm.cmd start

D:\icsm\admin\scripts>echo off

*****

You are running ieoicsm.cmd

*****

Tue 10/23/2001

10:03p

ieo_home = ..\..

"Starting Oracle ICSM"

The Oracle ICSM stcsmith.us.oracle.com service is starting.

The Oracle ICSM stcsmith.us.oracle.com service was started successfully.

ieoicsm.cmd exiting with status 0
```

## Stopping a Node

Use the following procedure to stop a node.

### Login

Not Applicable

### Responsibility

Not Applicable

### Prerequisites

None

## Steps

1. Open a command prompt window.  
For example, in Windows NT:
  1. Choose **Start** and then **Run**.
  2. Enter **cmd**.
  3. Click **OK**.
2. Change to the scripts directory.
3. Do one of the following:
  1. To stop the Interaction Center Server Manager process at the command line, enter:  

```
ieoicsm stop
```
  2. To stop the Interaction Center Server Manager process in console mode (Windows NT only) at the command line, enter:  

```
ieoicsm console_stop
```
  3. To stop Interaction Center Server Manger in the Windows NT Services window:
  4. Choose **Start, Settings** and then **Control Panel**.
  5. Double-click **Services**.  
The Services window appears.
  6. Click **Oracle ICSM <machinename> <dbname>**.
  7. Click **Stop**.  
Windows NT attempts to stop the service.
  8. Click **Close**.

## Guidelines

The following code is an example of the output from the command prompt in Windows NT:

```
C:> D:
```

```
D:> cd \icsm\admin\scripts
```

```
D:\icsm\admin\scripts> ieoicsm.cmd stop

D:\icsm\admin\scripts>echo off

*****

You are running ieoicsm.cmd

*****

Tue 10/23/2001

10:01p

ieo_home = ..\..

"Stopping Oracle ICSM"

The Oracle ICSM stcsmith.us.oracle.com service is stopping.

The Oracle ICSM stcsmith.us.oracle.com service was stopped successfully.

ieoicsm.cmd exiting with status 0
```

## Administering Nodes

Use the Nodes sub tab to view the status of a node and to manage the servers on a node.

You can do the following node tasks:

- Viewing the Status of a Node, page 5-11
- Viewing a Node Trace File, page 5-11
- Searching for Selective Trace File Details, page 5-12
- Viewing a Server Log, page 5-12
- Stopping a Server Running on a Node, page 5-14
- Removing a Server from a Node, page 5-15
- Viewing Node Log Reports, page 5-15
- Changing the Trace Level of a Node, page 5-16



- Login: HTML Login URL
- Responsibility: Call Center HTML
- Prerequisites: Install and configure Oracle Interaction Center Server Manager.

## Viewing the Status of a Node

The Node Details, General page shows which servers are running on which nodes, the node priorities, IP addresses, server status (started or stopped), buttons to start and stop servers, and links to the server details, server group details, and log files.

Use this procedure to view the status of an Oracle Interaction Center Server Manager node.

1. Select the ICSM tab and then Nodes sub tab.

The Node List page appears. The Node Status column displays the status of each node:

1. A red flag indicates that Oracle Interaction Center Server Manager is not running on the target computer.
2. A green flag indicates that Oracle Interaction Center Server Manager is running on the target computer.

**Note:** If, for whatever reason, the status flag colors are not obvious, place the mouse cursor over a flag. A tool tip appears stating "node is up" or "node is down."

2. To view the node details, click the **Node Name**.

The Node Details, General page appears.

## Viewing a Node Trace File

Use this procedure to view a trace file for an Oracle Interaction Center Server Manager node.

1. Select the ICSM tab and then Nodes sub tab.

The Node List page appears.

2. Click a Node Name.

The Node Details page appears.

3. Click **Advanced**.

The Node Details: Advanced page appears.

4. For Files, click a File Name.

The node trace file appears.

## Searching for Selective Trace File Details

A search and filter function makes it possible to view only trace file entries that match specified search criteria, rather than reading through an entire trace file to find specific details. Users can search for trace file entries based on module, trace level, and other specific parameters, such as agent resource ID.

Use the following procedure to search for specific trace file details.

1. Select the ICSM tab and then Nodes sub tab.

The Node List page appears.

2. Click the relevant Node Name.

The Node Details page appears.

3. Click **Advanced**.

The Node Details Advanced page appears.

4. In the Last Modified column, find the relevant date and time.

5. In the corresponding File Name column, click the Search File icon.

The search page appears.

6. Select the Module and Level.

7. Select Attribute Values for the Attribute Keys.

8. Click **Search**.

A page appears, listing the trace file details that meet the search criteria.

## Viewing a Server Log

Use this procedure to view a log for an interaction center server. For additional information, see *Oracle E-Business Suite Security Guide*.

### Login

HTML Login URL

## Responsibility

Call Center HTML Administration

## Prerequisites

- Install and configure Oracle Interaction Center Server Manager
- Set the logging level for the interaction center server.
- Turn on database logging.
- Check that the server is writing to the database.

## Steps

1. Click ICSM and then Nodes.  
The Node List page appears.
2. Click a Node Name.  
The Node Details page appears.
3. For the relevant server, in the View Log column click **Day**, **Week** or **Month**.  
The Debug Log Viewer page appears.
4. In the date editor, select a range of dates for which to get a log report.
5. From the Level list, select the level of detail for the log. To retrieve details for this log level and higher, select **and Higher**.
6. From the Node list, select the computers for which you want a log. To retrieve a log for all computers, select **All**.
7. In the JVM field, enter the name of the Java Virtual Machine. This name is the Server Name in the Node Details page.
8. Optionally, to further refine the search criteria, enter values in one or more of the following fields:
  1. Thread
  2. Module
  3. User
  4. Message

5. Session
9. Optionally, to see a detailed log report, click **Detailed**.
10. Do one or more of the following.
  1. To view the log, click **View Log**.
  2. To download the log to a local drive, click **Download Log**.
  3. To delete the log, click **Purge**.

## Stopping a Server Running on a Node

Use this procedure to stop a server process running on an Oracle Interaction Center Server Manager node.

### Login

HTML Login URL

### Responsibility

Call Center HTML Administration

### Prerequisites

- Install and configure Oracle Interaction Center Server Manager.
- Create an interaction center server group.
- Assign server processes in the server group to Oracle Interaction Center Server Manager nodes.
- Start the Oracle Interaction Center Server Manager nodes to which the server processes are assigned.

### Steps

1. Select the ICSM tab and then Nodes sub tab.  
The Node List page appears.
2. Click a Node Name.  
The Node Details page appears, listing all the servers currently running on this ICSM node.

3. To stop the server, in the Stop/Start column, click **Stop** for the server process that you want to stop.

The server process could take several minutes to stop. Refresh the browser whenever you want to view the current shutdown status.

As the server process shuts down, "Stopping" appears in the Stop/Start column.

## Removing a Server from a Node

Use this procedure to remove an interaction center server that is assigned to a node.

### Login

HTML Login URL

### Responsibility

Call Center HTML Administration

### Prerequisites

Stop the server process if it is running.

### Steps

1. Select the ICSM tab and then Nodes sub tab.  
The Node List page appears.
2. Click a Node Name.  
The Node Details page appears.
3. Click **Assignments**.  
The Node Details - Assignment page appears.
4. Select **Remove** for the server process that you want to remove.
5. Click **Update**.  
The server is removed from the node.

## Viewing Node Log Reports

To view log reports, click on the link of a Node Name or a Server Group Name, then click **Advanced**. For additional information, see *Oracle E-Business Suite Security Guide*.

**Note:** To enable database logging for Interaction Queuing and Distribution, Oracle Telephony Manager, Inbound Telephony Server and Outbound Telephony Server, set the Database Logging server parameter of the specific server to True.

## Changing the Trace Level of a Node

Use this procedure to change the trace level of an Oracle Interaction Center Server Manager node.

### Login

HTML Login URL

### Responsibility

Call Center HTML Administration

### Prerequisites

Implement Oracle Interaction Center Server Manager.

### Steps

1. Select the ICSM tab and then Nodes sub tab.  
The Node List page appears.
2. Click the Node Name.  
The Node Details page appears.
3. Click **Advanced**.
4. From the Trace Level list, select a trace level, ranked from most information to least information:
  1. Debug
  2. Verbose
  3. Informational
  4. Warning
  5. Error
  6. Fatal

5. Click **Update**.

The Node Details page refreshes.

## Managing IP Addresses

This section includes the following topics:

- Viewing the Default IP Address of a Node
- Adding an IP Address to the Node IP Address List
- Specifying an IP Address for an Interaction Center Server

### Viewing the Default IP Address of a Node

Use this procedure to view the IP Address of an Oracle Interaction Center Server Manager node.

1. Select the ICSM tab and then Nodes sub tab.

The Node List page appears.

2. Click a Node Name.

The Node Details page appears, displaying the default IP address.

### Adding an IP Address to the Node IP Address List

A node may have more than one IP address. Interaction Center Server Manager discovers only one of those IP addresses. You need to add any other IP addresses to the IP address list for the node.

Use this procedure to add additional IP addresses to the list of IP addresses for the Interaction Center Server Manager node.

### Login

HTML Login URL

### Responsibility

Call Center HTML Administration

### Prerequisites

Implement Oracle Interaction Center Server Manager.

## Steps

1. Select the ICSM tab and then Nodes sub tab.  
The Node List page appears.
2. Click the Node Name.  
The Node Details page appears.
3. Click **Advanced**.
4. In the Add field, enter an IP address for the node.
5. Click **Update**.  
The Node Details page refreshes. The IP address is added to the list of IP addresses for the node.

## Specifying an IP Address for an Interaction Center Server

An Interaction Center Server Manager node may have more than one IP address.

Use this procedure to select an IP address in the IP address list for a specific server process assigned to an Interaction Center Server Manager node.

## Login

HTML Login URL

## Responsibility

Call Center HTML Administration

## Prerequisites

- Implement Oracle Interaction Center Server Manager.
- Add additional IP addresses to the node IP address list.
- Stop Oracle Interaction Center Server.

## Steps

1. Select the ICSM tab and then Nodes sub tab.  
The Node List page appears.



2. Click a Node Name.  
The Node Details page appears.
3. Click **Assignments**.  
The Node Details - Assignment page appears.
4. In the IP Address column, do one of the following:
  1. Accept the default IP Address.  
Oracle Interaction Center Server Manager uses *all* of the available IP addresses in the list. If there is only one IP address, then Oracle Interaction Center Server Manager uses that IP address.
  2. Select an IP address.  
When the server process is running, Oracle Interaction Center Server Manager communicates using the selected IP address.
5. Click **Update**.  
The Node Details page refreshes.

## Administering Server Groups

Refer to one of the following topics:

- Creating a Server Group for a Single-Site Interaction Center, page 5-20
- Creating Server Groups for a Global, Multi-Site Interaction Center, page 5-23
- Creating a Local Site for a Multi-Site Interaction Center, page 5-25
- Removing a Server Group, page 5-28
- Viewing the Details of a Node Assigned to a Server, page 5-29
- Adding a Server to a Server Group, page 5-29
- Configuring Server Group Server Parameters, page 5-31
- Reassigning Route Points, page 5-32
- Deassigning Route Points, page 5-33
- Starting All Servers in a Server Group, page 5-34
- Starting a Specific Server in a Server Group, page 5-35

- Stopping All Servers in a Server Group, page 5-36
- Stopping a Specific Server in a Server Group, page 5-37
- Refreshing All Server Processes in a Server Group, page 5-38
- Refreshing Server Process Parameters, page 5-38
- Adding Server Node Assignments with Different Priorities, page 5-39
- Removing an Interaction Center Server, page 5-40

### **Creating a Server Group for a Single-Site Interaction Center**

A typical single-site interaction center for Oracle Advanced Inbound Telephony has the following server processes:

- One or more Oracle Telephony Adapter Servers
- One or more Inbound Telephony Servers
- One Interaction Queuing and Distribution server
- One or more Oracle Telephony Manager servers
- One or more Oracle Universal Work Queue servers
- One or more Routing servers
- (Optionally) one Switch Simulator server

Use this procedure to create a server group for single-site interaction center for Oracle Advanced Inbound Telephony.

## **Login**

HTML Login URL

## **Responsibility**

Call Center HTML Administration

## **Prerequisites**

Install and configure Oracle Interaction Center Server Manager

## Steps

1. Select the ICSM tab and then Server Groups sub tab.  
The Server Group List page appears.
2. Click **Create**.  
The Server Group Details page appears.
3. Enter details about the server group.
  1. Enter a unique Server Group Name.
  2. Optionally, in the Location field, enter the location of the server group.  
This field is for informational purposes only.
  3. Optionally, in the Description field, enter a description of the server group.  
This field is for informational purposes only.
  4. Leave the Super Group field blank.  
The super group identifies the global server group for a multi-site interaction center.
5. In the Default Node field, select the Oracle Interaction Center Server Manager node for the interaction center server processes in the server group.  
The default node is used during a typical or custom server group configuration. In these configurations, server processes are created when the server group is created, and then are assigned to the default Oracle Interaction Center Server Manager node. You can modify the node assignment after the server group is created.
6. In the Server Configuration field, select a configuration type from the list. The following table explains the Server Configuration options.

## Server Configuration Type Options

---

Configuration Type	Description
Typical	<p>The server group is created with the default set of server processes necessary to implement a single-site interaction center for Oracle Advanced Inbound:</p> <ul style="list-style-type: none"><li>• Interaction Queuing and Distribution Server (&lt;servergroupname&gt;_IQD)</li><li>• Inbound Telephony Server (&lt;servergroupname&gt;_ITS)</li><li>• Routing Server (&lt;servergroupname&gt;_ORS)</li><li>• Telephony Manager (&lt;servergroupname&gt;_OTM)</li><li>• Switch Simulator (&lt;servergroupname&gt;_SWITCH)</li><li>• Telephony Adapter Server (&lt;servergroupname&gt;_TAS)</li><li>• Universal Work Queue Server (&lt;servergroupname&gt;_UWQ)</li></ul> <p>You will not be able to modify the server process names or types. Add or remove server processes from the Server Group Details page.</p>

---

Configuration Type	Description
Custom	<p>The Server page appears with the default set of server processes necessary to implement a single-site interaction center for Advanced Inbound. (See the above Typical configuration type for a list of server processes.)</p> <p>Use the Server Group page to add or remove server processes and to modify the general details about each server process before it is added to the server group.</p>
None	<p>When the server group is created, no server processes are added to the server group. You must manually add any server process to the server group.</p>

**4. Click **Submit**.**

If the server configuration is None or Typical, then the server group is created and the Server Group Details page refreshes.

If the server configuration is Custom, then the Servers page appears. Enter the general details about the server processes and then click **Submit**. The Server Group Details page refreshes.

## Creating Server Groups for a Global, Multi-Site Interaction Center

A typical multi-site interaction center for Advanced Inbound Telephony has a global site and two or more local sites. A global site in a multi-site interaction center typically has one Interaction Queuing and Distribution server and one or more Routing servers.

Use this procedure to create server groups for a global, multi-site interaction center.

### Login

HTML Login URL

### Responsibility

Call Center HTML Administration

## Prerequisites

Install and configure Oracle Interaction Center Server Manager

## Steps

1. Select the ICSM tab and then Server Groups sub tab.  
The Server Group List page appears.
2. Click **Create**.  
The Server Group Details page appears.
3. Enter the details about the server group.
  1. Enter a unique name for the server group.
  2. Optionally, in the Location field, enter the location of the server group. This field is for informational purposes only.
  3. Optionally, in the Description field, enter a description of the server group. This field is for informational purposes only.
  4. Leave the Super Group field blank. The super group identifies the global server group for a multi-site interaction center.
  5. In the Default Node field, select the Interaction Center Server Manager node for the interaction center server processes in the server group. The default node is used during a typical or custom server group configuration. In a typical or custom server group configuration, server processes are created when the server group is created. They are assigned to the default Interaction Center Server Manager node, with priority given to the primary node. You can modify the node assignment after the server group is created.
  6. In the Server Configuration field, choose **Custom**.
4. The Servers page appears. Define the Interaction Queuing and Distribution and Routing Server server processes.
5. Click **Submit**.  
The Server Group Details page refreshes. In the Server Group Details page, a list of server processes appears under the Servers section.
6. Ensure that you have only one Interaction Queuing and Distribution server.
7. Click **Update** to save.

## Creating a Local Site for a Multi-Site Interaction Center

A typical multi-site interaction center for Oracle Advanced Inbound Telephony includes a global site and two or more local sites.

A local site in a multi-site interaction center typically has the following server processes:

- One or more Oracle Telephony Adapter Servers
- One or more Oracle Advanced Inbound Telephony Servers
- One or more Oracle Telephony Manager servers
- One or more Oracle Universal Work Queue servers

Use this procedure to create a local site for a multi-site interaction center.

### Login

HTML Login URL

### Responsibility

Call Center HTML Administration

### Prerequisites

Install and configure Oracle Interaction Center Server Manager

### Steps

1. Select the ICSM tab.
2. Click **Server Groups**.  
The Server Group List page appears.
3. Click **Create**.  
The Server Group Details page appears.
4. Enter the details about the server group.
  1. Enter a unique name for the server group.
  2. Optionally, in the Location field, enter the location of the server group. This field is for informational purposes only.
  3. Optionally, in the Description field, enter a description of the server group. This field is for informational purposes only.

4. In the Super Group field, select the name of the global server group for the multi-site interaction center.
5. In the Default Node field, select the Interaction Center Server Manager node for the interaction center server processes in the server group. The default node is used during a typical or custom server group configuration. In a typical or custom server group configuration, server processes are created when the server group is created. They are assigned to the default Interaction Center Server Manager node. You can modify the node assignment after the server group is created.
6. In the Server Configuration field, select a configuration type for creation of the server group.

The following table lists the available multi-site configuration options.



## Multi-Site Configuration Options

Configuration Type	Description
Typical	<p>The server group is created with the default set of server processes necessary to implement a single-site interaction center for Oracle Advanced Inbound Telephony:</p> <ul style="list-style-type: none"><li>• Interaction Queuing and Distribution (&lt;servergroupname&gt;_IQD)</li><li>• Inbound Telephony Server (&lt;servergroupname&gt;_ITS)</li><li>• Routing Server (&lt;servergroupname&gt;_ORS)</li><li>• Telephony Manager (&lt;servergroupname&gt;_OTM)</li><li>• Switch Simulator (&lt;servergroupname&gt;_SWITCH)</li><li>• Telephony Adapter Server (&lt;servergroupname&gt;_TAS)</li><li>• Universal Work Queue Server (&lt;servergroupname&gt;_UWQ)</li></ul> <p>You will not be able to modify the server process names or types. Add or remove server processes from the Server Group Details page.</p>
Custom	<p>The Server page appears with the default set of server processes necessary to implement a single-site interaction center for Oracle Advanced Inbound Telephony (see Typical for a list of server processes).</p> <p>Use the Server page to add or remove server processes and to modify the general details about each server process before it is added to the server group.</p>

Configuration Type	Description
None	When the server group is created, no server processes are added to the server group. You must manually add any server process to the server group.

5. Click **Submit**.

6. Do one of the following:

If the server configuration is None or Typical, then the server group is created and the Server Group Details page appears. Proceed to step 7.

If the server configuration is Custom, then the Servers page appears. Enter the general details about the server processes and then click **Submit**. The Server Group Details page appears.

7. In the Server Group Details page, a list of server processes appears under the Servers section. Ensure that this local server group has one Inbound Telephony Server, one or more Telephony Adapter Servers, one or more Telephony Manager servers, and one or more Universal Work Queue servers.

**Note:** A local server group in a multi-site interaction center should not have an Interaction Queuing and Distribution server or any Routing servers.

8. Click **Update** to save.

## Removing a Server Group

Use this procedure to remove an interaction center server group.

### Login

Self-Service Login URL

### Responsibility

Call Center HTML Administration

### Prerequisites

Stop any server processes that are running in the server group.

## Steps

1. Select the ICSM tab and then Server Groups sub tab.  
The Server Group List page appears.
2. Select **Remove** for the server group that you want to remove.
3. Click **Update**.  
The server group is removed and the Server Group List page refreshes.

## Viewing the Details of a Node Assigned to a Server

Use this procedure to view the details of a node that is assigned to a server.

## Login

Self-Service Login URL

## Responsibility

Call Center HTML Administration

## Prerequisites

Install and configure Oracle Interaction Center Server Manager

## Steps

1. Select the ICSM tab and then Server Groups sub tab.  
The Server Group List page appears.
2. Click a server group name.  
The Server Group Details page appears.
3. In the Servers section, locate the Interaction Center Server, and in the corresponding Node column, click **Go**.  
The Node Details page for the selected node appears.

## Adding a Server to a Server Group

Use this procedure to add a server process to a server group.

## Login

Self-Service Login URL

## Responsibility

Call Center HTML Administration

## Prerequisites

- Install and configure Oracle Interaction Center Server Manager
- Create a server group.

## Steps

1. Select the ICSM tab and then Server Groups sub tab.  
The Server Group List page appears.
2. Click a server group name.  
The Server Group Details page appears.
3. In the Servers area, click **Create**.  
The Server Details - General page appears.
4. Enter a unique Server Name.
5. In the Type Name field, select the server type.
6. Optionally, in the Location field, enter the location of the server. This field is for informational purposes only.
7. Optionally, in the Description field, enter a description of the server. This field is for informational purposes only.
8. From the Member Server Group list, select a server group for the server process.
9. Optionally, from the Using Server Group list, select the server group to use.
10. In the Primary Node field, select the Interaction Center Server Manager node to which the server process will be assigned as the primary node.
11. Click **Save**.  
The page refreshes, and the Backup Node fields appear.
12. Optionally, select one, two, or three backup nodes as automatic failover support to use whenever the primary node is unavailable. The backup nodes are used in order of priority, with Backup Node 1 being used first.

13. Click **Update**.

The page refreshes.

## Configuring Server Group Server Parameters

Use this procedure to configure the parameters for a server in a server group.

### Login

HTML Login URL

### Responsibility

Call Center HTML Administration

### Prerequisites

Create a server group.

### Steps

1. Select the ICSM tab and then Server Groups sub tab.  
The Server Group List page appears.
2. Click the server group name.  
The Server Group Details page appears.
3. In the Servers group, click a server name.  
The Server Details - General page appears for the specified server.
4. Click **Parameters**.  
The Server Details - Parameters page appears.
5. In the Parameter Value fields, select or enter values. For more information, see the documentation for the specific server.

**Note:** If you configure more than one Inbound Telephony Server to support load balancing, comply with the following conditions:

1. Ensure that available Route Points are assigned exclusively to one or the other ITS server process, but not to both. If you attempt to assign a route point against a route point that is already assigned to another ITS process, then the following message will appear, "The selected route points are already

monitored by another ITS of the same server group."

2. For the first Inbound Telephony Server that you configure, do not select Route Points. Select CTI middleware, and then the server will select Route Points. If you select Route Points for the first server, then after adding servers, the first Route Points will not be monitored.
3. Uniformly distribute Route Points among all Inbound Telephony Servers.

6. Click **Update**.

## Guidelines

See Server Parameters and Command Line Parameters, page B-1 for details about Interaction Center server parameters.

## Reassigning Route Points

Use the following procedure to reassign route points from one Inbound Telephony Server to another.

Both Inbound Telephony Servers can use same the middleware. However, you cannot select the same route point for both servers due to load balancing. Multiple Inbound Telephony Servers, multiple Oracle Telephony Manager servers, and multiple Oracle Telephony Manager and Universal Work Queue servers balance the workload. The second Inbound Telephony Server must belong to the *same* server group as the first Inbound Telephony Server. Otherwise, Inbound Telephony Servers from different server groups could use same middleware and the same route points.

## Login

HTML Login URL

## Responsibility

Call Center HTML Administration

## Prerequisites

Assign Route Points on at least one Inbound Telephony Server.

## Steps

1. Select the ICSM tab and then Server Groups sub tab.

The Server Group List page appears.

2. Click the server group name.

The Server Group Details page appears.

3. Click the Server Name of an Inbound Telephony Server.

The Server Details - General page appears.

4. Click **Parameters**.

The Server Details - Parameters page appears.

5. In the Middleware Configuration Name list, deselect the middleware by selecting the blank option.

6. Click **Update**.

7. Click **Done**.

You return to the server group main page.

8. Click the name of a different Inbound Telephony Server.

The Server Details - General page appears.

9. Click **Parameters**.

The Server Details - Parameters page appears.

10. From the Route Points list, select the route points.

11. Click **Update**.

12. For each route point that you want to reassign, repeat steps 2 through 9.

## Deassigning Route Points

To deassign route points, deselect the CTI middleware of the Inbound Telephony Server.

### Login

HTML Login URL

### Responsibility

Call Center HTML Administration

## Prerequisites

Assign Route Points on at least one Inbound Telephony Server.

## Steps

1. Select the ICSM tab and then Server Groups sub tab.  
The Server Group List page appears.
2. Click the server group name.  
The Server Group Details page appears.
3. Click the Server Name of an Inbound Telephony Server.  
The Server Details - General page appears.
4. Click **Parameters**.  
The Server Details - Parameters page appears.
5. In the Middleware Configuration Name list, deselect the middleware by selecting the blank option.
6. Click **Update**.

## Starting All Servers in a Server Group

Use this procedure to start all interaction center server processes in a server group. Server processes start automatically in the correct order.

## Login

HTML Login URL

## Responsibility

Call Center HTML Administration

## Prerequisites

- Install and configure Oracle Interaction Center Server Manager.
- Create an interaction center server group.
- Assign server processes in the server group to Oracle Interaction Center Server Manager nodes.



- Start the Oracle Interaction Center Server Manager nodes to which the server processes are assigned.
- Configure Oracle Interaction Center Server parameters. See Oracle Interaction Center Server Parameters.

## Steps

1. Select the ICSM tab and then Server Groups sub tab.

The Server Group List page appears.

2. Click a server group name.

The Server Group Details page appears.

3. From the Update drop-down list, select **Start**.

4. Click **Submit**.

The server process could take several minutes to start. Refresh the browser whenever you want to see the current startup status.

As the server processes starts, "Starting" is displayed in the Stop/Start column. The status of each server process is displayed in the Servers area in the Status column.

## Starting a Specific Server in a Server Group

Use this procedure to start a specific interaction center server process in a server group.

### Login

HTML Login URL

### Responsibility

Call Center HTML Administration

### Prerequisites

- Install and configure Oracle Interaction Center Server Manager.
- Create an interaction center server group.
- Assign server processes in the server group to Interaction Center Server Manager nodes.
- Start the Interaction Center Server Manager nodes to which the server processes are assigned.

- Configure Interaction Center Server parameters.

## Steps

1. Select the ICSM tab and then Server Groups sub tab.  
The Server Group List page appears.
2. Click a server group name.  
The Server Group Details page appears.
3. In the Stop/Start column, click **Start** for the server process that you want to start.  
The server process could take several minutes to start. Refresh the browser whenever you want to see the current startup status.  
  
As the server process starts, "Starting" is displayed in the Stop/Start column. The status of each server process is displayed in the Servers area in the Status column.

## Stopping All Servers in a Server Group

Use this procedure to stop all interaction center server processes in a server group.

**Note:** Interaction center servers can be stopped even if Oracle Interaction Center Server Manager is down.

## Login

HTML Login URL

## Responsibility

Call Center HTML Administration

## Prerequisites

- Install and configure Oracle Interaction Center Server Manager
- Create an interaction center server group.
- Assign server processes in the server group to Interaction Center Server Manager nodes.
- Start the Interaction Center Server Manager nodes to which the server processes are assigned.

## Steps

1. Select the ICSM tab and then Server Groups sub tab.

The Server Group List page appears.

2. Click a server group name.

The Server Group Details page appears.

3. From the Update drop-down list, select **Stop**.

4. Click **Submit**.

The server process could take several minutes to shutdown. Refresh the browser whenever you want to see the current shutdown status.

As the server processes shut down, "Stopping" is displayed in the Stop/Start column. The status of each server process is displayed in the Servers area in the Status column.

## Stopping a Specific Server in a Server Group

Use this procedure to stop a single interaction center server process in a server group.

**Note:** You can stop interaction center servers when Oracle Interaction Center Server Manager is down.

## Login

HTML Login URL

## Responsibility

Call Center HTML Administration

## Prerequisites

Start the Oracle Interaction Center Server Manager nodes to which the server process is assigned.

## Steps

1. Select the ICSM tab.

2. Click **Server Groups**.

The Server Group List page appears.

3. Click a server group name.  
The Server Group Details page appears.
4. In the Servers area, in the Stop/Start column, click **Stop** for the server process that you want to stop.  
The server process could take several minutes to stop. To view the current status during shutdown, refresh the browser.  
As the server process shuts down, "Stopping" appears in the Stop/Start column. The status of each server process is displayed in the Servers area in the Status column.

## Refreshing All Server Processes in a Server Group

Use the following procedure to refresh all server processes within a server group without having to stop the server processes.

### Login

HTML Login URL

### Responsibility

Call Center HTML Administration

### Prerequisites

None

### Steps

1. Select the ICSM tab and then Server Groups sub tab.  
The Server Group List page appears.
2. Click a server group name.  
The Server Group Details page appears.
3. From the drop-down list, select **Refresh**.
4. Click **Submit**.  
The screen refreshes.

## Refreshing Server Process Parameters

Use the following procedure to refresh server process parameters without needing to stop and restart the server.

**Login**

HTML Login URL

**Responsibility**

Call Center HTML Administration

**Prerequisites**

None

**Steps**

1. Select the ICSM tab and then Server Groups sub tab.  
The Server Group List page appears.
2. Click a server group name.  
The Server Group Details page appears.
3. Click the Server Name.  
The Server Details page appears.
4. Click **Advanced**.  
The Server Details Advanced page appears.
5. Click **Refresh**.  
The page refreshes.

**Adding Server Node Assignments with Different Priorities**

Interaction center server processes can run on any Oracle Interaction Center Server Manager node. Use this procedure to change the node assignment and priority for server processes in a server group.

**Login**

HTML Login URL

**Responsibility**

Call Center HTML Administration

## Prerequisites

- Install and configure an Oracle Interaction Center Server Manager node.
- Create an interaction center server group.

## Steps

1. Select the ICSM tab and then Server Groups sub tab.  
The Server Group List page appears.
2. Click a server group name.  
The Server Group Details page appears.
3. Click **Advanced**.  
The Server Group page appears.
4. From the Priority list, select the priority level of the node.
5. For the Server Name, select a node from the Assigned Node list.
6. Click **Update**.  
The server is assigned to the new node, with the current priority level.
7. To add additional server node assignments, repeat steps 4 through 6.

## Removing an Interaction Center Server

Use this procedure to remove an interaction center server process from a server group.

## Login

HTML Login URL

## Responsibility

Call Center HTML Administration

## Prerequisites

Stop the server process if it is running.

## Steps

1. Select the ICSM tab and then Server Groups sub tab.

The Server Group List page appears.

2. Click a server group name.

The Server Group Details page appears.

3. In the Servers area, select the Remove checkbox for the server process that you want to remove.

4. Click **Update**.

The server process is removed from the server group and the Server Group Details page refreshes.

## Running Automatic Failover Monitoring

You assign servers to more than one node by selecting from a list of nodes in the Call Center HTML Administration. Administrators can prioritize the nodes, so that if the first node is not available, then the server can be started from the next available node. If the server goes down unexpectedly, the automatic failover feature restarts the server according to the prioritized order. This is a permanent setting that needs to be done only once, but can be changed if necessary.

## Starting Automatic Failover Monitoring

Use the following procedure to set the options to run interaction center server failover monitoring.

### Login

Oracle Applications Forms

### Responsibility

Interaction Center Administrator

### Prerequisites

None

### Steps

1. Log in to Oracle Applications, using the Interaction Center Administrator responsibility.

The Find Requests form appears.

2. Click **Submit a New Request**.

The Submit a New Request form appears.

3. Accept the default option Single Request.

4. Click **OK**.

The Submit Request form appears.

5. In the Name field, click to open the list.

The Name field is populated automatically with "Start Interaction Center Failover Monitoring process," and the Parameters form appears.

6. In the field "Interval to check and restart IC Java Servers in minutes:" enter a value in minutes or accept the default value of 20.

**Note:** The more frequent the check and restart, the more resources are used.

7. Click **OK**.

The Parameters form closes. In the Submit Request form, the Parameters field is populated with the restart value.

8. Click **Submit**.

You may exit Oracle Applications.

## Stopping Active-Standby Mode Configuration Monitoring

Use the following procedure to stop active-standby mode configuration monitoring.

### Login

Oracle Applications Forms

### Responsibility

Interaction Center Administrator

### Prerequisites

Start at least one monitoring request.

### Steps

1. Log in to Oracle Applications, using the Interaction Center Administrator responsibility.



The Find Requests form appears.

2. Select **All My Requests**.

3. Click **Find**.

The Requests form appears.

4. Select the request "Start the Failover monitoring process."

5. Click **Cancel Request**.

A message appears asking if you want to continue.

6. Click **Yes** to cancel the request, or click **No** to stop the cancellation.

The request Phase changes to **Completed**, and the Status changes to **Cancelled**.

You may exit Oracle Applications.



---

## Diagnostics and Troubleshooting

This chapter covers the following topics:

- Testing the CTI and Switch Integration
- Common Implementation Errors
- NT Service: UNC Network Path
- NT Service: Permission
- NT Service: Changing ieoenv.cmd
- NT: Running in Console Mode
- Default Options
- Java Version: Running with JDK/JRE 1.1.8
- UNIX: File Descriptor Limit
- HP-UX: Default Thread Configuration
- Failure and Recovery
- Oracle Interaction Center Server Manager Goes Down
- Database Backup
- Database Goes Down

### Testing the CTI and Switch Integration

After you implement Oracle Interaction Center Server Manager and start the servers, you can test the validity of the CTI and switch integration by using the Unit Test Server test utility. An adapter included in Oracle Interaction Center Server Manager automates testing the integration. If integration fails, then the test tool provides information on the failure that the support and the implementation team can use to identify the problem.

At any time after you complete the integration, you can identify at least five telesets and agents (by agent login ID) that you can use to test the implementation. The results of the

test are logged in a log file. Any test failures are logged in a log file, and the test utility automatically goes on to the next test case.

You can state the location from which to start the test without running previous test cases. You can also run a specific test case identified by a case number.

Use the following procedure to run the Unit Test Server test utility.

**Steps:**

1. Select the ICSM tab and then the Server Group subtab.  
The Server Group List page appears.
2. Click a Server Group Name.  
The Server Group Details page appears.
3. Click **Create**.  
The Server Details page appears.
4. Enter a unique name in the Server Name field.
5. From the Server Type list select **Unit Test Server**.
6. Select a server group from the Member Server Group list.
7. Optionally, select or enter values in the fields for Location, Description, Using Server Group, and Primary Node.
8. Click **Save**.  
The Server Details page appears.
9. Click **Parameters**.  
The Unit Test Server parameter fields appear.
10. In the Parameter Name fields for Agents 1 through 5, enter values for the following parameters:
  - Canonical Phone Number: A standardized telephone number of the format: +<country code> (<area code>) <local exchange>-<subscriber number> For example: "+1 (555) 123-4567" is a United States (+1) telephone number within the 555 area code.
  - Oracle Applications Login
  - Teleset Hardware ID
  - Teleset Internal Number

11. Enter values in the following fields:
  - Genesys Application Name:
  - Invalid Number to Dial
  - Maximum Wait Time for Event Response (seconds)
  - Route Point Number
  - Test Case Number
  - Trace Level: Ranked from most information (Debug) to least information (Fatal).
  - Type of Testing:
12. Click **Update**.

The page refreshes.
13. Optionally, to enter Java options and server arguments, click **Advanced**.

## Common Implementation Errors

This section includes instructions on rectifying common errors incurred during implementation.

### NT Service: UNC Network Path

Oracle Interaction Center Server Manager does not work as an NT Service if the Oracle Applications Java files are located by way of a mapped network drive.

#### Steps

To correctly set up Oracle Interaction Center Server Manager as a Windows NT Service:

1. Use UNC Style network path to point to the location of Oracle Applications Java files (IEO\_JAVA\_TOP): \\host\path. e.g. \\cctre1-nt1\appl\_top.
2. Modify the service to run with an NT User who has access to the network path. This can be done by using NT Service Manager.

Windows NT Services are not associated with the login session, which are tightly coupled to the network drive mapping. Mapped network drives are not accessible from an NT Service, which results in Oracle Interaction Center Server Manager not being able to start. (Some No Class Def Found Errors may be observed).

## NT Service: Permission

Oracle Interaction Center Server Manager NT Service is required to run with System Administrator privileges. Assign the Oracle Interaction Center Server Manager NT Service with the correct user by using the NT Service manager.

## NT Service: Changing ieoenv.cmd

If `ieoenv.cmd` is changed, the Oracle Interaction Center Server Manager NT Service must be unregistered and registered again, otherwise the change in `ieoenv.cmd` will not be effective. The tool `oamksvc.exe` saves a snapshot of the environment variables in the NT registry. When the service is registered, the environment variable values cannot be changed. Unregistering and reregistering the Oracle Interaction Center Server Manager NT Service will take the latest values in `ieoenv.cmd`.

## NT: Running in Console Mode

When Oracle Interaction Center Server Manager is running in console mode (by using `ieoicsm.cmd console_start`), all server processes launched by Oracle Interaction Center Server Manager are terminated when the Oracle Interaction Center Server Manager process is terminated (either by control-C or terminated from Task Manager). This does not happen if Oracle Interaction Center Server Manager is shut down by using the ICSM command line utility.

## Default Options

By default, Oracle Interaction Center Server Manager starts with the log level set to ERROR. To change the log level, see [Changing the Trace Level of a Node](#).

## Java Version: Running with JDK/JRE 1.1.8

If the Java version is 1.1.8, the line with `"jdbc12.zip"` must be commented out or removed from `ieoenv.cmd` or `ieoenv.sh`. Otherwise, the wrong JDBC driver will be used, which is incompatible with Java 1.1.8.

## UNIX: File Descriptor Limit

The default maximum number of file descriptors available to the shell and its child processes on most UNIX systems is 64. Raise this number to 1024 to run all the Java servers for a single site installation, or any subset of the Java servers for a single site installation, on the same node. If Java servers for multiple single site installations will run on the same node, then a higher number is required.

Only a process with appropriate privileges (usually root) can increase the limit. The command required to change the number varies with the type of UNIX in use. Consult your UNIX system administrator.

An example for the Korn shell is shown below:

1. Open a UNIX terminal on the computer where Oracle Interaction Center Server Manager is going to be started.
2. Change user to root.
3. Change shell to be korn shell ksh.
4. Increase the file descriptor limit to 1024 `/usr/bin/ulimit -n 1024`.
5. Start Oracle Interaction Center Server Manager in this terminal to check the current file descriptor limit, type `/usr/bin/ulimit -n`.

## HP-UX: Default Thread Configuration

The default number of threads allowed in the HP-UX platform is 64. This number has to be raised to at least 2048 to be able to support Oracle Interaction Center Server Manager and all interaction center Java processes. Consult the HP-UX tuning documentation for more details.

## Failure and Recovery

If Oracle Interaction Center Server Manager goes down unexpectedly, restart by using the procedures in this section.

## Oracle Interaction Center Server Manager Goes Down

### Failure

1. When Oracle Interaction Center Server Manager is down, you cannot start individual servers.
2. If Oracle Interaction Center Server Manager is started as an NT Service or by means of the ICSM shell script on UNIX, any running servers will not be affected and will continue to operate as usual.

### Recovery

1. Restart Oracle Interaction Center Server Manager.

2. All servers will reconnect to Oracle Interaction Center Server Manager within five minutes.

## Database Backup

Shut down all the Interaction Center Java servers and Oracle Interaction Center Server Manager before performing a database backup.

## Database Goes Down

### Failure

1. When the database is down, you will not be able to start or stop individual servers.
2. All servers will not be able to continue operation as usual, but will go into an intermediate state for one hour waiting for the database to come up. If the database does not come back up within one hour, the servers will shut down.

### Recovery

1. Restart the database.
2. Oracle Interaction Center Server Manager will detect that the database has come up and reconnect to it.
3. Servers will detect that the database has come up and reconnect to it.
4. You can continue the operation as usual five minutes after the database has come up.



---

## Implementation Worksheets

This appendix covers the following topics:

- Introduction
- Server Administrator Worksheet
- Environment File Worksheet
- Single-Site Worksheet
- Multi-Site Worksheets
- Global Server Group Worksheet
- Local Server Group Worksheet

### Introduction

Use the following worksheets when implementing Oracle Interaction Center Server Manager.

### Server Administrator Worksheet

User Name:

Password:

Responsibilities:

- System Administrator
- CRM Resource Manager
- HRMS Manager, for example US HRMS Manager (if Oracle Human Resource Management System is installed)
- Call Center HTML Administrator

## Environment File Worksheet

Body text added for conversion.

---

<b>Parameter</b>	<b>Value</b>
IEO_COMM_TOP	
IEO_DBC_FILE	
IEO_JRE	
IEO_JAVA_TOP	
IEO_IP	
IEO_HOST	

---

## Single-Site Worksheet

Server Group Name:

Location:

Description:

---

<b>Server Type</b>	<b>Server Name</b>	<b>Node Assignment</b>
Interaction Queueing and Distribution		
Inbound Telephony Server		
Routing Server		
Telephony Adapter Server		
Telephony Manager		
Switch Simulator		

---

Server Type	Server Name	Node Assignment
Universal Work Queue		

## Multi-Site Worksheets

This section includes worksheets to guide you when configuring multi-sites.

### Global Server Group Worksheet

Server Group Name:

Location:

Description:

Server Type	Server Name	Node Assignment
Interaction Queueing and Distribution		
Routing Server		

### Local Server Group Worksheet

Server Group Name:

Location:

Description:

Server Type	Server Name	Node Assignment
Inbound Telephony Server		
Telephony Adapter Server		
Telephony Manager		
Switch Simulator		

---

Server Type	Server Name	Node Assignment
Universal Work Queue		

---

---

## Server Parameters and Command Line Parameters

This appendix covers the following topics:

- Introduction
- Oracle Interaction Center Server Parameters
- Oracle Interaction Center Server Manager Command Line Parameters
- Starting Interaction Center Servers
- Stopping Interaction Center Servers
- Interaction Center Server Manager Command Line Utility

### Introduction

This section includes the parameters for command lines and servers.

### Oracle Interaction Center Server Parameters

The following server parameters apply to Oracle Interaction Center servers.

#### Inbound Telephony Server

For information about the server parameters for the Inbound Telephony Server, see *Oracle Advanced Inbound Telephony Implementation Guide*.

#### Routing Server

For information about the server parameters for the Routing Server, see *Oracle Advanced Inbound Telephony Implementation Guide*.

#### Switch Simulator

For information about the server parameters for the Switch Simulator, see *Oracle*

*Advanced Inbound Telephony Implementation Guide.*

#### **Telephony Adapter Server**

For information about the server parameters for the Telephony Adapter Server, see *Oracle Advanced Inbound Telephony Implementation Guide*.

#### **Oracle Telephony Manager**

For information about the server parameters for Oracle Telephony Manager, see *Oracle Advanced Inbound Telephony Implementation Guide*.

#### **Interaction Queuing and Distribution**

For information about the server parameters for Interaction Queuing and Distribution, see *Oracle Advanced Inbound Telephony Implementation Guide*.

#### **Advanced Outbound Central Server**

For information about the server parameters for the Advanced Outbound Central Server, see *Oracle Advanced Outbound Telephony Implementation Guide*.

#### **Advanced Outbound Dial Server**

For information about the server parameters for the Advanced Outbound Dial Server, see *Oracle Advanced Outbound Telephony Implementation Guide*.

#### **Interaction Blending Server**

For information about the server parameters for the Interaction Blending Server, see *Oracle Interaction Blending Implementation Guide*.

#### **Universal Work Queue Server**

For information about the server parameters for the Universal Work Queue Server, see *Oracle Universal Work Queue Implementation Guide*.

## **Oracle Interaction Center Server Manager Command Line Parameters**

This section describes the commands used to operate Oracle Interaction Center Server Manager. Administrators can control Oracle Interaction Center Server Manager by entering commands at the command line for the operating system. They can also control the Interaction Center servers on an Interaction Center Server Manager node by issuing a command to Oracle Interaction Center Server Manager at the command line. Optionally, administrators can control Interaction Center servers by using the Call Center HTML Administration interface in Oracle Applications.

## Starting Interaction Center Servers

### **ieoicsm start**

Start Interaction Center Server Manager.

### **ieoicsm start -start\_all {true|false}**

Start all server processes assigned to the node.

true - Starts all server processes when Interaction Center Server Manager is started.

false - Does not start all server processes when Interaction Center Server Manager is started.

Default: true

### **ieoicsm start -start\_default\_config {true|false}**

Start the default server group configuration, if it exists.

true - Starts the default configuration when Interaction Center Server Manager is started.

false - Does not start the default configuration when Interaction Center Server Manager is started.

Default: false

### **ieoicsm console\_start**

(Windows NT only) Start Interaction Center Server Manager in console mode.

### **ieoicsm console\_start -start\_all {true|false}**

(Windows NT only) Start all server processes assigned to the node.

true - Starts all server processes when Interaction Center Server Manager is started.

false - Does not start all server processes when Interaction Center Server Manager is started.

Default: true

### **ieoicsm console\_start -start\_default\_config {true|false}**

(Windows NT only) Start the default server group configuration, if it exists.

true - Starts the default configuration when Interaction Center Server Manager is started.

false - Does not start the default configuration when Interaction Center Server Manager is started.

Default: false

## Stopping Interaction Center Servers

### **ieoicsm stop**

Stop Interaction Center Server Manager.

### **ieoicsm stop -kill ip\_address**

Stop Interaction Center Server Manager at the specified IP address.

### **ieoicsm stop -stop\_all {true|false}**

Stop all server processes on the node and Interaction Center Server Manager.

true - Stop all server processes when Interaction Center Server Manager is stopped.

false - Does not stop all server processes when Interaction Center Server Manager is stopped.

Default: false

## Interaction Center Server Manager Command Line Utility

Use the Interaction Center Server Manager command line utility to start, stop, and monitor Interaction Center Server from the command line. To start the Interaction Center Server Manager command line utility, run:

```
ieoicsm cmd
```

When the server has started, you can invoke the following commands.

### **start <serverName>**

Description: Start a server.

Parameters: serverName - name of the server

### **stop <serverName>**

Description: Stop a server.

Parameters: serverName - name of the server

### **status <serverName>**

Description: Report whether a server is up or down.

Parameters: serverName - name of the server

### **assign <serverName> <ipAddress>**

Description: Assign a server to a node.

Parameters:



serverName - name of the server

ipAddress - the IP address of the computer that the server is to be run

## **quit**

Description: Quit the command line utility



---

# Glossary

## **Advanced Queue**

A mechanism within the Oracle database that is used by the Fulfillment APIs and Fulfillment Server to queue requests. Fulfillment APIs put requests into the queue. The Fulfillment Server pulls requests out of the queue.

## **bounce back**

The process of returning e-mail to the sending server because of an incorrect address (hard bounce back) or because the recipient's inbox is full (soft bounce back).

## **content item (cover letter)**

An instance of a content type.

## **content type**

The definition of the structure of a cover letter that can be used in e-mail, fax and print.

## **database connectivity file**

A text file that contains the connection parameters for the Oracle Applications database. It is created automatically when Oracle Applications is installed.

## **data source file**

A text file that contains tab-separated merge fields that have been obtained by a query.

## **dequeuing**

A process by which the Fulfillment Server retrieves fulfillment requests from a queue.

## **enqueueing**

A process by which a business application places fulfillment requests into a queue.

## **e-mail channel**

Requests sent by e-mail.

**fax channel**

Requests sent by fax.

**Fulfillment Administration Console**

The HTML interface for administrators to define and maintain the servers and the associated e-mail, fax and print servers. Administrator can define groups of agents and associate them with the defined servers. Oracle One-to-One Fulfillment supports two content repositories, Marketing Encyclopedia System (MES) and Oracle Content Manager (OCM), and provides administration HTML pages to create and upload content into each repository.

**fulfillment**

The process of compiling and distributing information to customers.

**fulfillment request**

The customer request that is processed. The request can be made up of a simple e-mail, merged e-mail, e-mail with attachments, and so on. A request starts when the Fulfillment APIs receive data. The request ends when the Fulfillment Server passes information to the Java mail APIs or to the Print or Fax Enabler.

**Fulfillment Server**

The multi-threaded Java server that processes Fulfillment requests by de-queuing them from an Advanced Queue.

**glue code**

Code that connects two components.

**Java**

A technology that is both a programming language and a platform.

**Java API**

The Java application programming interface. A large collection of ready-made software components that provides many capabilities, such as graphical user interface (GUI) widgets. The Java API is grouped into libraries of related classes and interfaces known as packages.

**javac**

The Java programming language compiler.

**Java language**

An object programming language in which programs are both compiled and interpreted. Using the compiler, a program is translated into an intermediate language

called Java bytecodes, which are platform-independent codes that are interpreted by the interpreter on the Java platform. The interpreter parses and runs each Java bytecode instruction on the computer. Compilation happens only once, but interpretation occurs each time the program runs.

### **Java platform**

A software-only environment that runs on top of other hardware-based platforms. The Java platform has two components: Java Virtual Machine (Java VM) and the Java Application Programming Interface (Java API).

### **Java Virtual Machine**

The base for the Java platform. It is ported onto various hardware-based platforms.

### **malformed e-mail**

E-mail addresses that are incorrectly formed (such as a missing "@"). The resulting e-mail cannot be sent to the customer.

### **mass request type**

Large volume One-to-One requests. For mass requests, the calling application passes a SQL query which when executed derives the list of e-mail addresses and fax numbers.

### **master document**

An HTML file that contains the main content in a fulfillment item.

### **Oracle Marketing Encyclopedia System**

A file repository that stores master documents and queries that are used to specify fulfillment content.

### **multi channel**

Requests sent by more than one channel.

### **OCM**

See Oracle Content Manager.

### **(One-to-One) request**

Requests initiated by a calling application (such as Oracle Advanced Collections) to send one or more master documents or pieces of collateral to a customer.

### **(One-to-One) job**

Requests that are comprised of one or more jobs (sub-requests) which represent the individual e-mail or faxes, and so forth, that are sent to a specific customer.

**opened e-mail**

E-mails sent by Oracle One-to-One Fulfillment that have been opened by the recipient.

**Oracle Content Manager**

A document repository for fulfillment content.

**physical request**

One-to-One physical collateral requests for Collateral kits. These Collateral kits are separated into individual collateral and an order created which has multiple order lines (one for each collateral) and multiple shipment lines if the request has multiple recipients.

**print channel**

Requests sent to a printer and then mailed to a customer.

**query**

A SQL (structured query language) statement that generates selected data from a database. A query determines which records meet the defined criteria, and which fields of those records are returned.

**queue**

A repository for messages. Queues are stored in queue tables. Each queue table is a database table and contains one or more queues.

**sent e-mail**

E-mails sent by Oracle One-to-One Fulfillment.

**single request type**

One-to-One requests sent to a single customer.

**template**

A grouping of material that is useful but not required for distributing master documents and collateral. An Oracle Marketing Encyclopedia System template is a package of content that is compiled by the Fulfillment Server. The fulfillment request identifies the template being used to compile the content.

**unopened e-mail**

E-mails sent by Oracle One-to-One Fulfillment that have not yet been opened by the recipient.

**Unsubscribe option**

An option for e-mail sent by Oracle One-to-One Fulfillment that contain an

"Unsubscribe" link, and in which the recipient (customer) has selected to not be contacted, either by e-mail or not at all.

**versioning**

Updating a content item by modifying an existing version or creating a new one. Each version can have the status of In Progress, Submitted or Approved. In Oracle Content Manager, multiple approved versions can exist, but only one version can be set as the live version.





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