

Oracle® Advanced Inbound Telephony
Implementation Guide
Release 12.1
Part No. E13395-02

April 2009

Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this software or related documentation is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, the following notice is applicable:

U.S. GOVERNMENT RIGHTS

Programs, software, databases, and related documentation and technical data delivered to U.S. Government customers are "commercial computer software" or "commercial technical data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, duplication, disclosure, modification, and adaptation shall be subject to the restrictions and license terms set forth in the applicable Government contract, and, to the extent applicable by the terms of the Government contract, the additional rights set forth in FAR 52.227-19, Commercial Computer Software License (December 2007). Oracle USA, Inc., 500 Oracle Parkway, Redwood City, CA 94065.

This software is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications which may create a risk of personal injury. If you use this software in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy and other measures to ensure the safe use of this software. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software in dangerous applications.

This software and documentation may provide access to or information on content, products and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third party content, products and services. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third party content, products or services.

Contents

Send Us Your Comments

Preface

1 Introduction to Oracle Advanced Inbound Telephony

Overview of Oracle Advanced Inbound Telephony.....	1-2
Overview of Integration Types.....	1-2
Oracle Advanced Inbound Telephony Integration.....	1-3
Supported Modes.....	1-4
Supported Modes and Certified Switch and Middleware Combinations.....	1-5
Features	1-6
Architecture	1-8
Oracle Telephony Adapter Server.....	1-12
Responsibilities	1-12
Active Mode Priority Queueing for Web Callbacks.....	1-13
Active-Standby Mode Configuration.....	1-17
Load Balancing.....	1-17
Interaction Keys.....	1-18
Customer Data Lookup.....	1-21
Web Callback Routing and Classifications.....	1-24
Classifications.....	1-24
Web Callbacks.....	1-27
Web Callback Routes.....	1-29
Rerouting.....	1-31
Call Scenarios.....	1-32
Screen Pops.....	1-34
Out-of-the-Box Screen Pops.....	1-35

IVR Integration.....	1-37
Access to Oracle Advanced Inbound Telephony.....	1-41
2 Dependencies and Integration Points	
Installing Oracle Advanced Inbound Telephony.....	2-1
Upgrading Oracle Advanced Inbound Telephony Configurations.....	2-1
Conditional Dependencies.....	2-2
Required CTI Middleware Client API Software.....	2-2
Installation and Dependency Verification	2-3
3 Implementation Overview	
Implementation Task Sequence.....	3-1
4 Implementation and Administration Tasks	
Configuring Middleware	4-1
Configuring Route Points.....	4-16
Configuring Teleset Lines.....	4-18
Mapping IVR Fields.....	4-25
Configuring Multi-Sites	4-27
Creating and Updating Interaction Keys.....	4-29
Configuring Softphone.....	4-31
Configuring Classifications.....	4-39
Configuring Routes	4-46
Configuring Agent Telephony Parameters.....	4-52
Managing Media Item Processes.....	4-61
Setting Up Workflow Item Type.....	4-63
5 Diagnostics and Troubleshooting	
Error Messages.....	5-1
Softphone Performance Issues and Solutions.....	5-2
A Middleware Parameter Equivalents Across Releases	
Envox CT Connect / Intel NetMerge Call Processing Software Parameter Equivalents.....	A-1
Cisco Intelligent Contact Management Parameter Equivalents.....	A-4
B Data Type Operators and Media Type Values for Rules	
Introduction.....	B-1
Operators for Data Type: String.....	B-1
Operators for Data Type: Number.....	B-2

Operators for Data Type: Date.....	B-3
Supported Media Type Values for Rules.....	B-4

C Multi-Site Implementation Worksheet

Telesets.....	C-1
Agents.....	C-2
Route Points.....	C-2
Middleware Config Active Routing Target Type.....	C-3

Glossary

Index

Send Us Your Comments

Oracle Advanced Inbound Telephony Implementation Guide, Release 12.1

Part No. E13395-02

Oracle welcomes customers' comments and suggestions on the quality and usefulness of this document. Your feedback is important, and helps us to best meet your needs as a user of our products. For example:

- 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?
- Do you need different information or graphics? If so, where, and in what format?
- Are the examples correct? Do you need more examples?

If you find any errors or have any other suggestions for improvement, then please tell us your name, the name of the company who has licensed our products, the title and part number of the documentation and the chapter, section, and page number (if available).

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 Applications Release Online Documentation CD available on My Oracle Support and www.oracle.com. It contains the most current Documentation Library plus all documents revised or released recently.

Send your comments to us using the electronic mail address: appsdoc_us@oracle.com

Please give your name, address, electronic mail address, and telephone number (optional).

If you need assistance with Oracle software, then please contact your support representative or Oracle Support Services.

If you require training or instruction in using Oracle software, then please contact your Oracle local office and inquire about our Oracle University offerings. A list of Oracle offices is available on our Web site at www.oracle.com.

Preface

Intended Audience

Welcome to Release 12.1 of the *Oracle Advanced Inbound Telephony Implementation Guide*.

See Related Information Sources on page x for more Oracle Applications product information.

TTY Relay Access to Oracle Support Services

To reach AT&T Customer Assistants, dial 711 or 1.800.855.2880. An AT&T Customer Assistant will relay information between the customer and Oracle Support Services at 1.800.223.1711. Complete instructions for using the AT&T relay services are available at <http://www.consumer.att.com/relay/tty/standard2.html>. After the AT&T Customer Assistant contacts Oracle Support Services, an Oracle Support Services engineer will handle technical issues and provide customer support according to the Oracle service request process.

Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible to all users, including users that are disabled. To that end, our documentation includes features that make information available to users of assistive technology. This documentation is available in HTML format, and contains markup to facilitate access by the disabled community. Accessibility standards will continue to evolve over time, and Oracle is actively engaged with other market-leading technology vendors to address technical obstacles so that our documentation can be accessible to all of our customers. For more information, visit the Oracle Accessibility Program Web site at <http://www.oracle.com/accessibility/>.

Accessibility of Code Examples in Documentation

Screen readers may not always correctly read the code examples in this document. The conventions for writing code require that closing braces should appear on an otherwise empty line; however, some screen readers may not always read a line of text that consists solely of a bracket or brace.

Accessibility of Links to External Web Sites in Documentation

This documentation may contain links to Web sites of other companies or organizations that Oracle does not own or control. Oracle neither evaluates nor makes any representations regarding the accessibility of these Web sites.

Structure

- 1 Introduction to Oracle Advanced Inbound Telephony**
- 2 Dependencies and Integration Points**
- 3 Implementation Overview**
- 4 Implementation and Administration Tasks**
- 5 Diagnostics and Troubleshooting**
- A Middleware Parameter Equivalents Across Releases**
- B Data Type Operators and Media Type Values for Rules**
- C Multi-Site Implementation Worksheet**
- Glossary**

Related Information Sources

This document is intended for use by developers who implement Oracle Advanced Inbound Telephony.

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

- The principles and customary practices of your business area
- Oracle Advanced Inbound Telephony

If you have never used Oracle Advanced Inbound Telephony, we suggest that you attend one or more of the Oracle Advanced Inbound Telephony training classes available through Oracle University.

- Oracle Applications
- The Oracle Applications graphical user interface

To learn more about the Oracle Applications graphical user interface, read the *Oracle Applications User's Guide*. See Other Information Sources for more information about Oracle Applications product information.

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.

Online Documentation

All Oracle Applications documentation is available online (HTML or PDF).

- **PDF** - PDF documentation is available for download from the Oracle Technology Network at <http://otn.oracle.com/documentation>.
- **Online Help** - Online help patches (HTML) are available on My Oracle Support.
- **About Documents and Release Notes** - Refer to the About Document or Release Notes for the mini-pack or family pack that you have installed to learn about new documentation or documentation patches that you can download. About Documents and Release Notes are available on My Oracle Support.
- **My Oracle Support Knowledge tab** - The My Oracle Support Knowledge tab lets you browse the knowledge base by technology, industry, integration, application, documentation, training, and services, to find all documents for a product area. Use the Knowledge Home to search for release-specific information, such as FAQs, recent patches, alerts, white papers, troubleshooting tips, and other archived documents.
- **Oracle eBusiness Suite Electronic Technical Reference Manuals** - Each Electronic Technical Reference Manual (eTRM) contains database diagrams and a detailed description of database tables, forms, reports, and programs for a specific Oracle Applications product. This information helps you convert data from your existing applications and integrate Oracle Applications data with non-Oracle applications, and write custom reports for Oracle Applications products. Oracle eTRM is available on My Oracle Support as part of Online Documentation.

Guides Related to All Products

Oracle Applications User's Guide

This guide explains how to enter data, query, run reports, and navigate using the

graphical user interface (GUI) of an Oracle Applications product. This guide also includes information on setting user profiles, as well as running and reviewing reports and concurrent programs.

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

Guides Related to This Product

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 Center Server Manager Implementation Guide

Oracle Interaction Center Server Manager is the Java server process that runs on every Oracle Interaction Center machine. It enables you to balance load by creating server groups and configuring multiple server processes for them or assign servers to a standby system of nodes that you create by installing and running Oracle Interaction Center Server Manager on computers. You can add IP addresses to a node, refresh parameters of servers and server groups while the server is working, and use the Unit Test Server utility to test the validity of the CTI and switch integration. This guide also describes how to diagnose and troubleshoot operational issues.

Installation and System Administration

Oracle Applications Concepts

This book is intended for all those planning to deploy Oracle E-Business Suite Release 12, or contemplating significant changes to a configuration. After describing the Oracle Applications 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 Applications Installation Guide: Using Rapid Install

This book is intended for use by anyone who is responsible for installing or upgrading Oracle Applications. It provides instructions for running Rapid Install either to carry out a fresh installation of Oracle Applications Release 12, or as part of an upgrade from Release 11*i* to Release 12. The book also describes the steps needed to install the technology stack components only, for the special situations where this is applicable.

Oracle Applications Maintenance Utilities

Use this guide to help you run the various Applications DBA (AD) utilities, such as AutoUpgrade, AutoPatch, AD Administration, AD Controller, AD Relink, License Manager, and others. It contains how-to steps, screenshots, and other information that you need to run the AD utilities. This guide also provides information on maintaining the Oracle Applications file system and database.

Oracle Alert User's Guide

This guide explains how to define periodic and event alerts to monitor the status of your Oracle Applications data.

Oracle Applications Developer's Guide

This guide contains the coding standards followed by the Oracle Applications development staff. It describes the Oracle Application Object Library components needed to implement the Oracle Applications user interface described in the *Oracle Applications 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 Applications. In addition, this guide has information for customizations in features such as concurrent programs, flexfields, messages, and logging.

Oracle Applications User Interface Standards for Forms-Based Products

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

Other Implementation Documentation

Oracle Applications Multiple Organizations Implementation Guide

This guide describes how to set up and use Oracle Projects with the Multiple Organization feature for Oracle applications, so you can define and support different organization structures when running a single installation of Oracle Projects.

Oracle Workflow Administrator's Guide

This guide explains how to complete the setup steps necessary for any Oracle Applications product that includes workflow-enabled processes, as well as how to monitor the progress of runtime workflow processes.

Oracle Workflow Developer's Guide

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

Oracle Workflow User's Guide

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

Oracle Applications Flexfields Guide

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

Oracle Applications User Interface Standards for Forms-Based Products

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

Oracle iSetup User 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 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 Applications 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.

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.

Oracle E-Business Suite Diagnostics User's Guide

This guide contains information on implementing, administering, and developing diagnostics tests in the Oracle E-Business Diagnostics framework.

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 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.

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 Applications Data

Oracle STRONGLY RECOMMENDS that you never use SQL*Plus, Oracle Data Browser, database triggers, or any other tool to modify Oracle Applications 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 Applications data, you risk destroying the integrity of your data and you lose the ability to audit changes to your data.

Because Oracle Applications tables are interrelated, any change you make using an Oracle Applications form can update many tables at once. But when you modify Oracle Applications data using anything other than Oracle Applications, 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 Applications.

When you use Oracle Applications to modify your data, Oracle Applications automatically checks that your changes are valid. Oracle Applications 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.

Introduction to Oracle Advanced Inbound Telephony

This chapter covers the following topics:

- Overview of Oracle Advanced Inbound Telephony
- Overview of Integration Types
- Oracle Advanced Inbound Telephony Integration
- Supported Modes
- Supported Modes and Certified Switch and Middleware Combinations
- Features
- Architecture
- Oracle Telephony Adapter Server
- Responsibilities
- Active Mode Priority Queueing for Web Callbacks
- Active-Standby Mode Configuration
- Load Balancing
- Interaction Keys
- Customer Data Lookup
- Web Callback Routing and Classifications
- Classifications
- Web Callbacks
- Web Callback Routes
- Rerouting
- Call Scenarios

- Screen Pops
- IVR Integration
- Access to Oracle Advanced Inbound Telephony

Overview of Oracle Advanced Inbound Telephony

Oracle Advanced Inbound Telephony is fully integrated with Oracle TeleSales, Oracle TeleService, and Oracle Advanced Collections, thereby minimizing integration time and deployment costs. Oracle Advanced Inbound Telephony also provides the Oracle Telephony Adapter SDK, which can be used to integrate other automatic call distribution/private branch exchange (ACD/PBX) and computer-telephone integration (CTI) middleware combinations that are not supported by an Oracle telephony adapter.

Overview of Integration Types

This section describes three primary integration types.

Prebuilt Server-Side Adapters

The prebuilt adapters made available to customers are also referred to as server-side adapters. Server-side adapter integration utilizes a collection of servers that facilitate the communication between the Oracle E-Business Suite forms—Service Request, Contact Center, and eBusiness Center—and the telephone system. The adapters are available for specific switch middleware combinations, and they have been tested with middleware from Genesys, Envox's CT Connect, and Cisco ICM. With this integration, agents use the Oracle softphone.

The call data is passed from the switch to the middleware and then to the Oracle Telephony adapter server, which acts as a translator between Oracle E-Business Suite and the middleware. The call information then passes through a series of servers and finally reaches icworkcontroller, which is the softphone for the Oracle E-Business Suite. Based on the setup and the call parameters, the appropriate form—Service Request, Contact Center, or eBusiness Center—is launched for the agent who is assigned to the call. In addition to the Contact Center form being refreshed with the correct record, the softphone also displays information about the customer and the call parameters.

Each of the adapters supports certain preconfigured modes of call routing. Depending on the specific adapter, one, the other, or both of these two modes can be supported for the switch and middleware combination that a customer uses.

Software Development Kit (SDK) to Universal Work Queue (UWQ)

This integration is also referred to as Basic integration because it integrates the Oracle Universal Work Queue (UWQ) client to the third-party switch or middleware softphone that uses the Basic Telephony Adapter SDK.

In addition to the server-side adapters, organizations can leverage the Telephony Adapter SDK to integrate the UWQ client with the third-party softphone, thereby bypassing all the servers used in server-side adapters. This integration type is referred to as client-side integration because it involves direct communication between two client applications: the third-party softphone and the UWQ client.

This integration option is less complex than the server-side adapter integration described in the previous section. Because fewer servers are involved in the integration, it scales better and has fewer performance degradation issues.

In cases where a preconfigured adapter is not available for the particular version of switch or middleware with which a customer desires an integration, the Oracle Telephony Adapter SDK can be utilized to build a client-side integration. Because this is a custom solution, it requires additional effort to build the adapter to establish the integration between the UWQ client and the third-party softphone.

As part of this integration, the third-party softphone passes the data related to the incoming call to the UWQ client. The UWQ client uses this information to launch the context sensitive screen pop for the agent. The Oracle E-Business Suite softphone, icworkcontroller, can be suppressed, and the agents can use the third-party softphone as their primary softphone.

For details on how to build this integration, see *Oracle Telephony Adapter SDK Developers Reference Guide*.

Direct Client-Side Integration with Oracle E-Business Suite Forms

Direct integration allows a third-party CTI client or softphone to trigger a screen pop in Oracle E-Business Suite forms: Contact Center, Service Request, and eBusiness Center. To support this integration method, additional code in the form of a Java bean is included as part of the respective form for it to establish communication with the third-party softphone. This enables the form to accept data from the softphone. With this approach, customers can build the integration directly into the form from the (middleware) softphone without having to go through the UWQ client.

This integration approach establishes communication between the third party and the form. This solution requires an adapter, whose purpose is to facilitate communication between the form and the third-party softphone. This integration has neither the overhead of the additional servers in the server-side integration nor the need to pass through the UWQ client as in the Basic integration. For these reasons, this integration approach scales better than they do and has fewer performance issues.

For details on how to build this integration, see *Oracle Telephony Adapter SDK Developers Reference Guide*.

Oracle Advanced Inbound Telephony Integration

Oracle Advanced Inbound Telephony is designed to consistently and effectively handle customer interactions by intelligently routing, queuing, and distributing media items.

Oracle Advanced Inbound Telephony offers CTI support for market-leading traditional ACD/PBX and Internet protocol (IP) telephony platforms. The application also provides enhanced screen pops on customer data into the Oracle E-Business Suite application.

Oracle Advanced Inbound Telephony is required to telephony enable business applications in the Oracle E-Business Suite. "Telephony-enabled" means that the application can communicate with a telephone system for inbound calls, outbound calls, or both by way of the CTI middleware that handles the messaging between a customer's ACD/PBX and the business application.

The Oracle Advanced Inbound Telephony bundle consists of the following products and services: Oracle Interaction Center Server Manager, Oracle Universal Work Queue (UWQ), Oracle Telephony Manager, Oracle Interaction Center Intelligence, and Oracle Interaction Blending.

Supported Modes

Depending upon the supported switch and middleware combination in use, Oracle Advanced Inbound Telephony can run in enhanced passive mode or passive mode, and in active mode for Web callbacks.

Enhanced Passive Mode

In enhanced passive mode, Oracle Advanced Inbound Telephony not only uses standard ACD/PBX routing and distribution of calls to interaction center agents, but also monitors ACD/PBX route points. The monitoring checks for inbound telephony queue counts, classification of calls for targeted screen pops, and tracking and reporting by Oracle Interaction Center Intelligence of calls that are abandoned at the route point. Enhanced passive mode requires specific ACD/PBX configurations to ensure that inbound calls pass through a ACD/PBX route point monitored by Oracle Advanced Inbound Telephony.

Passive Mode

In passive mode, Oracle Advanced Inbound Telephony uses standard ACD/PBX routing and distribution of calls to interaction center agents. Oracle Advanced Inbound Telephony becomes aware of the call through CTI when the call rings at the agent's teleset. In passive mode, Oracle Advanced Inbound Telephony does not monitor or control any ACD/PBX route points.

Active Mode for Web Callbacks

In active mode, Oracle Advanced Inbound Telephony controls the routing and distribution of incoming Web callbacks to interaction center agents by using business data and rules that are configured in Oracle Advanced Inbound Telephony. Active mode requires specific ACD/PBX configurations to grant Oracle Advanced Inbound Telephony full control of an inbound Web callback when it reaches a ACD/PBX route

point that Oracle Advanced Inbound Telephony monitors.

Supported Modes and Certified Switch and Middleware Combinations

In the current release, Oracle certifies the following switch and CTI middleware combinations and the Oracle Advanced Inbound Telephony modes that they support.

Switch/ACD	CTI Middleware	Supported Modes and Features
Alcatel 4400 r5.0 w/ CCS r5.0	Envox CT Connect	Passive
Aspect Call Center v.9.0	Aspect Contact Server v5.2 w/ CMI Server Client API v705.01	<ul style="list-style-type: none">Enhanced passivePassive
Avaya MultiVantage v1.1.1 (w/ EAS)	Envox CT Connect	<ul style="list-style-type: none">Enhanced PassivePassive IVR IntegrationMultisite
Cisco CallManager v3.3. (3) w/IP-IVR 3.1	Cisco ICM v6.0	Passive
Ericsson MD110 BC12 w/ App. Link v4.0 +	Envox CT Connect	<ul style="list-style-type: none">PassiveEnhanced PassivePassive IVR Integration
Genesys	Genesys Interaction Connector v6.5.602.11	<ul style="list-style-type: none">Enhanced passivePassive
Nortel Meridian Succession 3 w/ Meridian Link Services v5	Envox CT Connect	<ul style="list-style-type: none">Enhanced passivePassiveIVR Integration

Switch/ACD	CTI Middleware	Supported Modes and Features
Nortel Meridian 1, r25 with Meridian Link Services v4.2	Envox CT Connect	<ul style="list-style-type: none"> Enhanced passive Passive IVR Integration
Nortel Meridian Succession 3 with Symposium Call Center Server v5	Envox CT Connect	<ul style="list-style-type: none"> Enhanced Passive Passive IVR Integration
Nortel Meridian Succession 3 with Symposium Call Center Server v4.2	Envox CT Connect	<ul style="list-style-type: none"> Enhanced Passive Passive IVR Integration
All PBXs supported by the Genesys Interaction Connector interface. Genesys defines PBXs, PBX releases and all CTI prerequisites, which may include PBX platforms from Alcatel, Aspect, Avaya, Cisco, Ericsson, NEC, Nortel, Siemens and others. For a current list see the Genesys Support Web site in the Genesys Supported Media Interfaces document.	Genesys Interaction Connector v7.0	<ul style="list-style-type: none"> Enhanced Passive Passive

Features

Oracle Advanced Inbound Telephony has the following features.

CTI

Preconfigured computer telephony integration to third-party telephony platforms.

IVR Integration

Collect data from interactive voice response (IVR) units for call classification, routing, and screen pops.

Interaction queuing and distribution

Queue and route web callbacks for distribution to appropriate agents.

Screen Pops

Collect and send customer data for pop-up windows called screen pops into Oracle E-Business Suite applications.

Warm Transfer

Transfer or conference a call and its application data from one agent to another agent.

Web Callbacks

Integrate Oracle Advanced Inbound Telephony with Oracle *iStore* and Oracle *iSupport* to support Web callbacks.

Oracle Enterprise Routing

Route and queue web callbacks arriving at any site to agents at any site in a multi-site configuration. This feature is available only in active mode for Web callbacks.

Enterprise Call and Data Transfer

Transfer or conference a call and its application data to an agent who is at another site in a multi-site configuration. Transferred internal calls do not generate a screen pop at the target agent.

Server Load Balancing

The distribution of teleset and route point loads spreads tasks among servers to avoid some servers being idle while others have tasks queueing to run.

Middleware-Based Multi-Site Functionality

CTI middleware such as Aspect Enterprise Contact Server and Cisco ICM may provide multi-site functionality through their software suite. In these cases, the CTI middleware vendor directly provides enterprise routing and call and data transfer functionality. Oracle Advanced Inbound Telephony is typically only available in passive or enhanced

passive modes, due to middleware vendor limitations and middleware controlled routing. For Oracle Advanced Inbound Telephony integrations to these CTI middlewares (Aspect, Cisco), customers should directly contact their CTI middleware vendor for ACD/PBX-specific configurations and requirements for supporting multi-site. Oracle Advanced Inbound Telephony requires the use of an Oracle certified or supported switch that interfaces to an Oracle certified or supported CTI middleware.

Click-to-Dial

Click-to-dial is a feature that automatically dials a telephone number when an application user clicks a hyperlink. Call center administrators can use click-to-dial to update an existing click-to-dial-enabled user by adding devices for the user. Administrators can set up multiple devices for users and mark one of the devices as a default device for initiating a click-to-dial call.

Architecture

The server architecture of Oracle Advanced Inbound Telephony is scalable to run interaction centers with a single physical site or multiple sites. It can also be configured to integrate IVR data.

Three-Layer Server Architecture

The Oracle Advanced Inbound Telephony solution consists of a three-layer server architecture outlined below.

- Telephony platform layer consisting of ACD/PBX switches and CTI middlewares provided by third-party vendors
- Oracle Advanced Inbound Telephony server processes:
 - Oracle Telephony Adapter Server normalizes telephony platform-specific messages and events.
 - Inbound Telephony Server monitors inbound calls arriving at ACD queues and route points.
 - Oracle Telephony Manager manages agent state information.
 - Interaction Queuing and Distribution queues and distributes web callbacks.
 - Oracle Routing Server classifies and routes inbound calls and web callbacks to an agent group based on user-defined rules.
 - Universal Work Queue displays call queues to the agent and launches business applications when a call is delivered to an agent.

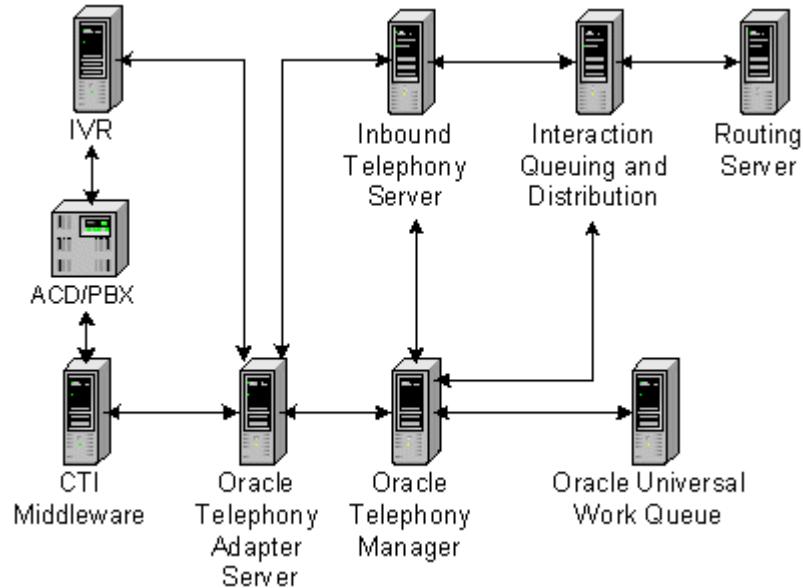
- Interaction Blending provides service-level management of calls and can blend inbound and outbound calls.
- Switch Simulator simulates a switch for verification of an Oracle Advanced Inbound implementation.
- Business and agent desktop applications
 - Oracle Universal Work Queue desktop (agent desktop work queue)
 - Oracle TeleService, Oracle TeleSales and Oracle Advanced Collections
 - Media Desktop (softphone)

Single-Site Architecture

A typical Oracle Advanced Inbound Telephony server architecture for a single interaction center site consists of the following components:

- One PBX and CTI middleware combination
- One Oracle Telephony Adapter Server
- One Oracle Inbound Telephony Server
- One Oracle Interaction Queuing and Distribution server
- One or more Oracle Routing Servers for scalability
- One or more Oracle Telephony Managers for scalability
- One or more Oracle Universal Work Queues for scalability

Server Architecture for a Single Interaction Center Site with All Functionality Available for Oracle Telephony Manager



As the previous figure illustrates, when all of Oracle Advanced Inbound Telephony's functions, such as active mode, Web callbacks and scalability, are available in a single site, mutual interaction occurs between the following processes:

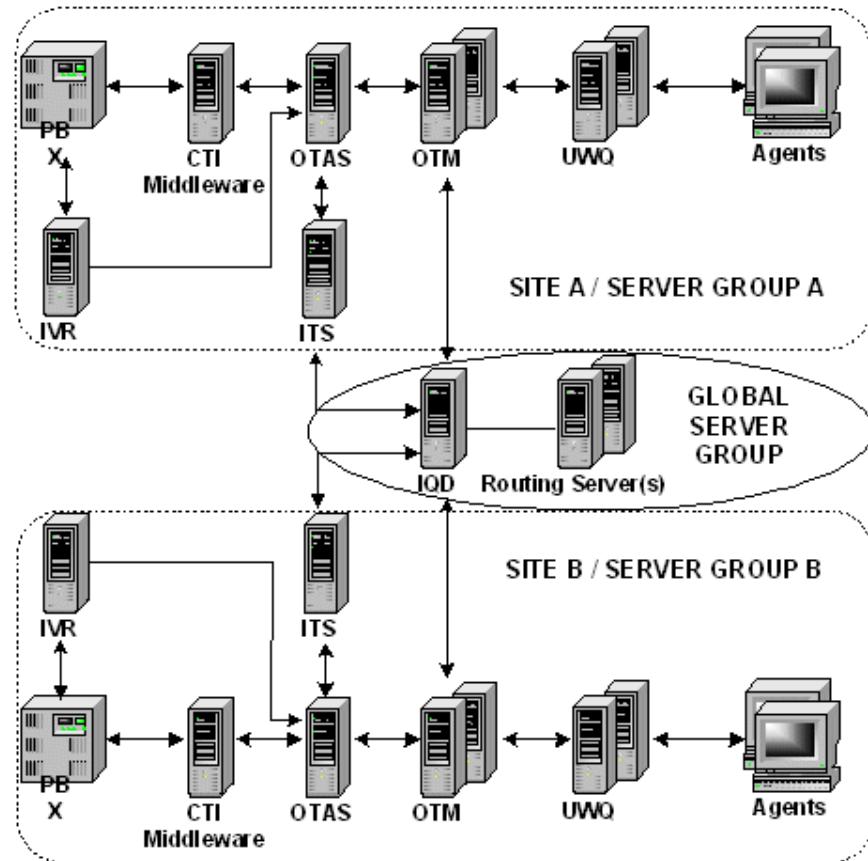
- Third-party IVR to Oracle Telephony Adapter Server with IVR integration
- Third-party CTI middleware and Oracle Telephony Adapter Server
- Oracle Telephony Adapter Server and Oracle Inbound Telephony Server
- Oracle Telephony Adapter Server and Oracle Telephony Manager Server
- Oracle Inbound Telephony Server to Interaction Queuing and Distribution
- Oracle Interaction Queuing and Distribution and Oracle Routing Server
- Oracle Interaction Queuing and Distribution and Oracle Telephony Manager
- Oracle Telephony Manager to Oracle Inbound Telephony Server
- Oracle Telephony Manager and Oracle Universal Work Queue

Multi-Site Architecture

The Oracle Advanced Inbound multi-site server architecture is required to support multiple ACD/PBXs that could be geographically dispersed.

The following figure illustrates the multiple PBX, multi-site architecture.

Oracle Advanced Inbound Telephony Multi-Site Server Logical Architecture



OTAS = Oracle Telephony Adapter Server **ITS** = Oracle Inbound Telephony Server
IOD = Oracle Interaction Queuing & Distribution **UWQ** = Oracle Universal Work Queue
OTM = Oracle Telephony Manager

As the previous figure illustrates, in the multi-site Oracle Advanced Inbound Telephony server architecture each site is configured as a server group that includes the following components:

- One certified PBX and CTI middleware combination
- One Oracle Telephony Adapter Server
- One Oracle Inbound Telephony Server
- One or more Oracle Telephony Managers for scalability
- One or more Oracle Universal Work Queues for scalability

The global server group includes the following servers:

- One Oracle Interaction Queuing and Distribution server
- One or more Oracle Routing Servers for scalability

Each site-specific server group associates with a global server group using the super group relationship that is defined in the Interaction Center Server Manager HTML Administration.

IVR Integration Architecture

Oracle Telephony Adapter Server has IVR integration in enhanced passive mode, which makes IVR-collected data available as screen pops. The single-site architecture diagram illustrates the Oracle Advanced Inbound Telephony server architecture that includes IVR integration.

Oracle Telephony Adapter Server

Oracle Telephony Adapter Server is installed as part of the standard Oracle Advanced Inbound Telephony installation. Oracle Telephony Adapter Server is part of the Interaction Center Server Group, which you can administer and launch in the Interaction Center HTML Administration, ICSM page.

If a C-based adapter is in use, such as Adapter for Cisco ICM or Custom C Adapter Server, then Oracle Telephony Adapter Server can run only on the Microsoft Windows NT platform. If a Java-based adapter is in use, such as Adapter for NetMerge Call Processing Software or Adapter for Aspect Contact Server, then Oracle Telephony Adapter Server can run on any operating system that Oracle Applications support, such as Hewlett-Packard UX11, IBM AIX, Linux, Microsoft Windows NT and Sun Solaris.

Responsibilities

The necessary Oracle Application Responsibility for the Oracle Advanced Inbound Telephony 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.

Agent Responsibilities

Agents have the following responsibilities:

- Customer Support, Vision Enterprises (for customer care) Telesales (for telesales)
- Telesales (for telesales)

Set up the following roles in the Resource tab, Roles page.

- Callcenter, Call Center Agent
- Telesales, Telesales Agent

Agent is part of the group Sales and Marketing, Telesales Agent in the Resource tab, Groups page.

Administrator Responsibilities

The following pages are only available to users who have the "Resource Self Service Administrator" responsibility.

- Resource, Employee, Summary
- Resource, Employee, Details
- Resource, Groups, Static Group Summary
- Resource, Groups, Static Group Details
- Resource, Groups, Static Group Hierarchy

Active Mode Priority Queueing for Web Callbacks

In active mode for Web callbacks, Oracle Telephony manager does three media functions:

- Maintains a queue of incoming media
- Routes the media using defined route rules
- Assigns the media to an agent who is a part of the route result

Prior to Release 11.5.8.3.7, Oracle Telephony Manager assigned media items in first-in first-out order (FIFO). Release 11.5.8.3.7 and onward has the capability to prioritize rerouted media items. The agents who are included in the first route result have a higher priority than the agents in the subsequent reroute result. In each successive reroute result, the set of agents is at a lower priority than the agents in the previous

route result.

When an agent attempts to get work, a media item that has the agent as a part of the higher priority route result will be serviced before a media item that has the agent as a part of the lower priority route result. This arrangement allows a media item to first be available to agents with a better fit or skill level for handling the item, before being offered to agents who have a lesser fit or skill level.

By default, the priority queuing feature is turned off, and first-in first-out order is implemented.

The following scenario describes priority queuing.

1. Media item M1 arrives.

2. M1 is routed to two agents - A1 and A2. Queue State is:

$M1=\{Route1=A1,A2\}$

3. Route timeout occurs. M1 is rerouted to agents A3 and A4. Queue State is:

$M1=\{Route1=A1,A2:Route2=A3,A4\}$

4. A1, A2, A3, A4 are still unavailable. M1 is rerouted again. This time M1 is rerouted to agents A5 and A6. Queue State is:

$M1=\{Route1=A1,A2: Route2=A3,A4: Route3=A5,A6\}.$

5. Another media item M2 arrives.

6. M2 is routed to two agents - A3 and A5. Queue State is:

$M1=\{Route1=A1,A2: Route2=A3,A4: Route3=A5,A6\};$

$M2=\{Route1=A3,A5\}.$

7. Route timeout occurs. M2 is rerouted to agents A2 and A4. Queue State is:

$M1=\{Route1=A1,A2: Route2=A3,A4: Route3=A5,A6\}; M2=\{Route1=A3,A5: Route2=A2,A4\}$

8. Note that for agents A3, A5, media item M2 is at higher priority than M1. For agent A2, media item M1 is at a higher priority than M2. For agent A4, media item M1 and M2 are both at the same priority level. For agents A1, A6 media item M1 is the only available media item.

9. For the given state of the queue indicated in step 7, suppose the following conditions.

1. A1 becomes available, A1 will be assigned M1, because M1 is the only media item eligible for A1.

2. A2 becomes available, A2 will be assigned M1, because M1 is at higher priority

than M2.

3. A3 becomes available, A3 will be assigned M2, because M2 is at higher priority than M1.
4. A4 becomes available, A4 will be assigned M1, because M1 and M2 have equal priority but M1 arrived before M2.
5. A5 becomes available, A5 will be assigned M2, because M2 is at higher priority than M1.
6. A6 becomes available, A6 will be assigned M1, because M1 is the only media item eligible for A6.
7. A7 becomes available, A7 will be put in the wait queue, because neither M1 nor M2 are eligible for A7.

Priority Queuing Modes

The following modes are available with priority queueing:

Priority Queueing with a Default Priority Timeout for All Media Items

In this mode, a Default Priority Timeout is associated with all media items. It specifies the amount of time that an item is in queue ready for an agent who is a part of a higher priority route result to get the media item. After the Default Priority Timeout occurs, any agent who is a part of any route result for the media item will be able to get the media item. Use this mode when you want to define a uniform time period before route priorities expire for all media items.

To set up Priority Queueing with Default Timeout, define the following parameters in the Interaction Queueing and Distribution server.

- Priority Queueing default = false. When set to true, priority queueing is enabled.
- Default Priority Timeout default = 300 seconds. Any specified value (in seconds) will override the default.

The following example explains how Default Priority Timeout affects priority queueing. In this scenario, consider the state of the queue from step 7 in Example 1.

1. Queue State is:

M1={Route1=A1,A2: Route2=A3,A4: Route3=A5,A6};

M2={Route1=A3,A5: Route2=A2,A4}

2. Default Priority Timeout occurs for M1. Queue State is:

M1={Route1=A1,A2,A3,A4,A5,A6};

M2={Route1=A3,A5: Route2=A2,A4}

All route results have been merged into a single route result for M1.

3. Route Timeout occurs again for M1, and M1 is re-routed to A7 and A8. Queue State is:

M1={Route1=A1,A2,A3,A4,A5,A6,A7,A8};

M2={Route1=A3,A5: Route2=A2,A4}

Any subsequent re-route results are merged into a single route result for M1 because Default Priority Timeout has occurred for M1.

4. For the state of the queue in step 9 suppose:

1. A1, A2, A3, A4, A5, A6, A7 or A8 become available. They will be assigned M1 because M1 has all agents in Route1, which is the highest priority route, and M1 arrived before M2.
2. A10 becomes available. A10 will be put in the wait queue because neither M1 nor M2 are eligible for A10.

Priority Queueing with a Timeout based on Media item Classification

The advantage of this mode is that you can associate a different value for priority timeout with each classification value. The time that an item waits in queue for an agent who is a part of a higher priority route result that gets the media item is different for media items that have different classifications. After the timeout occurs, any agent that is a part of any route result for the media item will be able to get the media item. Use this mode when you want to define different time outs for media items, based on the classification of the media item.

To set up Priority Queueing with Classification Timeout, define the following parameters.

- Interaction Queuing and Distribution Server
 - Priority Queueing. Default = false. When set to true, priority queueing is enabled.
 - Default Priority Timeout. Default = 300 seconds. If a value (in seconds) is specified, it will override the default.
- Routing Server

On the Classification Detail page, ReRoute/Priority Time Out. Use this parameter to override the Default Priority Timeout and set different priority timeout values for

different classification values.

Reroute Priority Timeout

If, ReRoute/Priority Time out = 60 seconds for Gold Classification.

ReRoute/Priority Time out = 180 seconds for Silver Classification.

Then, all media items that are classified Gold will wait sixty seconds before giving up priority-based queueing. All media items that are classified Silver will wait 180 seconds before giving up priority-based queueing.

The Priority Time out based on classification overrides the Default Priority Timeout for the media item.

Routing Server Enhancement for Active Mode Priority Queueing for Web Callbacks

The value of the ReRoute/Priority Time Out (Seconds) field represents the Routing Server ReRoute Time Out and the Priority Queue Time Out of the Interaction and Queuing Distribution Server.

Active-Standby Mode Configuration

You 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

An interaction center server group can have multiple Inbound Telephony Servers and Oracle Telephony Adapter Server processes of the same type within the same server group. In this way, the load is shared between two or more physical servers. When Load Balancing is configured, if a particular Service is lost, then the load shifts to the remaining Services.

Multiple Oracle Telephony Adapter Servers

If more than one Oracle Telephony Adapter Server is configured, the Oracle Telephony Manager server determines which Oracle Telephony Adapter Server has the smallest load, and then balances the load.

Multiple Inbound Telephony Servers

If you configure more than one Inbound Telephony Server to support load balancing, then ensure that available Route Points are assigned exclusively to one or the other Inbound Telephony Server process, but not to both.

When assigning a route point to an Inbound Telephony Server, the validity of the assignment is verified to ensure that the route point is not already assigned to be monitored by another Inbound Telephony Server of the same server group. If the verification fails, then the following error message appears: "If using one Inbound Telephony Server, and therefore no load balancing, you do not need to manually select route points for the Inbound Telephony Server."

Interaction Keys

An interaction key is a flexible, multipurpose facility used to maintain information about a call and caller during a customer transaction. You can use this information for the following purposes:

- Customer lookup
- Call classification
- Intelligent routing
- Customized softphone display
- Screen pops

Caller information can come from various sources:

- IVRs
- Telephony networks
- CTI middleware
- Voice portals

Interaction keys have two sources:

- Out-of-the-box, as part of the Oracle Advanced Inbound installation

- Custom-made, created by interaction center administrators as needed

An interaction key must be one of three data types:

- String
- Integer
- Date

The data type is specified in the Create/Update Interaction Keys page.

Using Interaction Keys

The following example demonstrates how to use interaction keys. In this scenario, an interaction center administrator wants to collect Account Balance from customers through an IVR system and use Account Balance for the following purposes:

- Classification of Customers as Gold, Silver or Bronze based on Account Balance
- Routing of calls to Gold Service Agent Group, Silver Service Agent Group or Bronze Service Agent Group based on Account Balance.
- Display of Account Balance in the agent softphone

Because Account Balance is not available as an out-of-the-box Interaction Key, the interaction center administrator can create a new Interaction Key for Account Balance.

Creating a New Interaction Key for Account Balance

Create a new Interaction Key for Account Balance using the Call Center Interaction Keys Page.

- Code = Account_Balance
- Meaning = Account Balance
- Description = Account Balance for the Customer
- Data Type = Integer
- Add to IVR Oracle Field List = Yes
- Add to Routing/Classification Rule Key List = Yes
- Add to Softphone Display Available Keys List = Yes

Mapping an IVR Field to Account Balance (Oracle Field)

If the interaction center administrator uses the IVR field "acctBalance" to collect the

"Account Balance" from the Customer in IVR, map the acctBalance field to the newly-added Oracle Field "Account Balance" in the Call Center IVR page so that when a customer enters a value for Account Balance in IVR, Oracle Telephony Manager passes the value of acctBalance to the Oracle Field "Account Balance."

Defining Classification Rules Using Account Balance as a Rule Key

In the Classification Rules page, assuming that the Classification Values (Gold Service, Silver Service, Bronze Service) are defined, administrators can set up the following rules for Classification.

- Gold Service Rule: If DNIS=8008881111 and Account Balance \geq 100000, then classify the interaction as Gold Service
- Silver Service Rule: If DNIS=8008881111 and Account Balance $<$ 100000 and Account Balance \geq 50000, then classify the interaction as Silver Service
- Bronze Service Rule: If DNIS=8008881111 and Account Balance $<$ 50000, then classify the interaction as Bronze Service

Defining Routing Rules Using Account Balance as a Rule Key

In the Routing Rules Page, assuming that the Agent Groups (Gold Service Agent Group, Silver Service Agent Group, Bronze Service Agent Group) have been defined, administrators can set up the following rules for Routing.

- Gold Service Route: If Classification equals Gold Service, then route the call to Gold Service Agent Group.
- Silver Service Route: If Classification equals Silver Service, then route the call to Silver Service Agent Group.
- Bronze Service Route: If Classification equals Bronze Service, then route the call to Bronze Service Agent Group.

Displaying Account Balance in Softphone

In the Call Center Softphone Display Configuration Detail page, from the list of Available Keys select Account Balance and add it as Displayed Key Without Prompt.

Service Applications Interaction Keys

Contact Center generates screen pops by the interaction keys: AccountNum, ContractNum, ServiceRequestNum, InvoiceNum, PhoneNumber (IVR-entered digits, rather than ANI), SerialNum and TagNumber, Party (Customer) ID, AccountCode.

Oracle TeleService generates screen pops by the interaction keys: SerialNum, TagNumber, RMANum, AccountNum, PhoneNumber, ANI and ContactNum, Service Request Number.

Customer Data Lookup

Customer Data Lookup is a process in which the Routing Server gathers Customer Details, such as Customer/Party ID or Customer Name, from the Oracle E-business Suite Database based on inbound call information, such as ANI, IVR data, and so on. The collected customer data can be used in classifications, routing, screen pops, and soft phone display.

For web callbacks, an incoming request is passed through the Routing Server in turn to the Customer Data Lookup process, the Classification process, and then the Routing Process, to be routed accordingly.

The Customer Data Lookup process derives additional data to be passed to the business application, such as Contact Center or eBusiness Center, but does not determine how the business application uses the data to screen pop a record. Additional customizing may be necessary in the business application to use the data that is passed to it.

Telephony-enabled Oracle e-Business Suite applications can use collected customer data for the following purposes:

- Set up classification rules and routing rules: Customer Data gathered from the Customer Data Lookup process can be used to set up Classification and Routing Rules. Because classification and routing occur after Customer Data Lookup, data gathered from the Customer Data Lookup can be used to set up rules in Classification and Routing. A sample Classification Rule is: If Customer Name is like 'OracleCustomer', then set the Classification value to Gold Service.
- Enable faster screen pops: The Customer Data Lookup process in Oracle Routing Server derives Customer/PartyID from ANI or other call data as a server side process (even before the call reaches the agent desktop) and allows the business application form to proceed directly to screen pop the customer information based on Customer/Party ID. This process results in considerably faster screen pops arriving at the agent desktop.
- Display customer name and information in the agent softphone. If a phone number matches more than one customer or contact, for example, if two contacts for a customer use the same telephone number, then the Routing server will not be able to derive a unique Customer Name.

Customer Data Lookup has the following functional options:

- Default Customer Data Lookup
- Custom Customer Data Lookup
- No Customer Data Lookup

Default Customer Data Lookup

Use the default customer data lookup option when information that is used for customer lookup is available with the call, such as account number and ANI. The default mode for Customer Data Lookup does not require setting up in the Call Center HTML Administration page. It is implemented as a PL/SQL package (CCT_Default_Lookup_Pub) in the database.

Note: Do not attempt to customize the default Customer Data Lookup at a customer site. To implement a customized Customer Data Lookup, use the Custom Customer Data Lookup package.

Default Customer Data Lookup mode derives the following customer data:

- Party (Customer) ID
- Customer Name

The following list shows the order in which various keys are used to derive Party(Customer) ID and Customer Name.

- Service Request Number
- Party Number
- Quote Number
- Order Number
- Collateral Request Number
- Account Number
- Event Registration Code
- Marketing PIN
- Service Key
- ANI (Caller Phone Number)

For example, if Service Request Number is available, then it is used to derive the Party(Customer) ID. If Party Number is available, then Party(Customer) ID is derived from Party Number, and so on.

Custom Customer Data Lookup

Use the custom customer data lookup when some information that is used to identify

customers is not a part of the standard lookup procedure. In this case, it is necessary to implement a SQL function. Administrators can use the Custom Customer Data Lookup mode to customize the data that the Customer Data Lookup process gathers.

Programmers who use this mode must meet the following requirements:

- Working knowledge of PL/SQL programming
- Knowledge of Oracle Applications Schema and APIs
- Access to a SQLPLUS session of Oracle Applications Database with PL/SQL compiling permissions

To use this mode, select Custom as the type of Customer Lookup in the Classification Rules Details page.

Function CCT_CUSTOM_LOOKUP_PUB.GetData(x_key_value_varr IN OUT NOCOPY cct_keyvalue_varr) must be implemented to return the desired Customer Data.

If Custom is the selected option in the Call Center HTML Administration, then when an inbound Web collaboration request is received, the routing server calls CCT_Custom_Lookup_Pub.GetData() with all the available call and interaction data, including IVR and other customer interaction-specific data.

The collected customer data may also be used for classification and routing, as demonstrated in the following sequence:

- Custom is selected as the type of Customer Lookup in the HTML Administration page
- Routing Server starts
- Routing Server receives a route request for an inbound phone call (for example)
- Routing Server executes CCT_Custom_Lookup_Pub.GetData() with the inbound phone call data (including IVR data)
- Routing Server collects the data from the above function and may use it for classification and routing
- When an agent is identified for the inbound call, the collected customer data is sent to Agent Desktop for faster screen pop and display in softphone (if configured in the Softphone Configuration Administrator)

No Customer Data Lookup

Use no customer lookup when the implementation has no data to identify the customer.

Web Callback Routing and Classifications

The routing engine classifies calls and routes Web callbacks. Classifications allow different media actions for an inbound call, and occur before routing. Routing determines which agent receives an inbound call. You can use the determined classification name in a route rule.

Classifications

Classifications assign a specific string value to incoming calls for identification. The specific string value is called a classification value. Classification values specify how incoming calls are identified and which business applications should be used to screen pop caller data. Oracle Universal Work Queue uses classification values to identify the telephony call queues. Classification values are also used in reporting and blending.

Choose from the following topics:

- Classification Values, page 1-24
- PL/SQL Functions, page 1-24
- Classification Rules, page 1-25
- Example Scenario, page 1-25

Classification Values

A classification value is a string value that is the end point of classifying a call. Interactions can be classified as one of the classification values defined in the Classification Values page. A classification value determines which screen to pop in an Oracle Universal Work Queue media action. It is used to display the queue count (active mode for Web callbacks only) in Oracle Universal Work Queue and is used in Oracle Interaction Center Intelligence to report data such as the number and type of calls.

PL/SQL Functions

A classification value may also be derived dynamically from a PL/SQL function by using the interaction and call data during the classification process. Such PL/SQL functions are defined in the Call Center > PLSQL Functions page and must return any one of the classification values that are defined in the Classification Values page. If the PL/SQL function returns a value that is not in the Classification Values page, then the call is identified as "unClassified." The PL/SQL function may return the classification value in one of the following ways.

- Return value for the PL/SQL function.

- OUT parameter for the PL/SQL function. The OUT parameter takes precedence over the return value, as specified by the user in the Oracle Call Center HTML Administration.

Classification Rules

Classification rules determine how a call gets classified and determine the Classification value to be assigned to a call. A classification rule consists of the following:

- ReRoute Time Out value in seconds which specifies the time after which the call will be rerouted if it has not been serviced by an agent (The ReRoute Time Out value overwrites the Default Route Time Out routing server parameter.)
- Set of conditions under which the classification rule is satisfied
- Condition of whether the user needs *all* conditions to be satisfied or any *one* condition to be satisfied
- Classification value to be assigned to the call if the set of conditions is satisfied
OR
- PL/SQL function from which the classification value must be derived if the set of conditions is satisfied
- Ability to add additional key-value pairs to the incoming call if the set of conditions is satisfied
- Ability to assign the classification rule to specific media types
- Ability to assign the classification rule to specific server groups

Example Scenario

In a hypothetical scenario, a business corporation provides its interaction center customers with three levels of service: Gold Service, Silver Service, and Bronze Service. To access the appropriate level of service, customers dial one of the following numbers:

- Gold Service customers call 123-456-7890.
- Silver Service customers call 123-456-7891.
- Bronze Service customers call 123-456-7892.
- General enquiry customers call number (800 800 8000), which any customer may call. When customers call this number, they are prompted by the IVR to enter their account number, which is then used to determine the service level for the customer.

To provide the best possible service to customers and to utilize interaction center resources most efficiently, the business corporation's interaction center administrator

uses the Call Center HTML Administration Classification page to set up the classification process described in the following paragraphs.

Classification Values

In the Classification Values page, define the following classification values: Gold Service, Silver Service and Bronze Service.

Because unClassified is a seeded value, the administrator does not need to define it again.

PL/SQL Functions

A PL/SQL function that accepts Account Number as the parameter and returns the classification value based on average account balance is created in the database. The administrator defines the function in the PLSQL Functions page as follows:

```
FUNCTION Get_Classification_Value_From_Account_Number(AccountNumber IN
VARCHAR2) returns VARCHAR2
```

The above function returns a classification value according to the following business logic.

```
If account number is not provided then return unClassified
Else if average account balance for the account number is >=100000 then
return Gold Service
Else if average account balance for the account number is >=50000 and
<100000 then return Silver Service
Else if average account balance for the account number is <50000 then
return Bronze Service
```

Classification Rules

Define the following classification rules in the Classification Rules page. They are assigned to all media types and all available server groups.

Gold Service Rule

Time Out: 30 seconds
If DNIS=8008008001
Classify the call as Gold Service.

Silver Service Rule

Time Out: 60 seconds
If DNIS=8008008002
Classify the call as Silver Service.

Bronze Service Rule

Time Out: 120 seconds

If DNIS=8008008003

Classify the call as Bronze Service.

Other Calls Service Rule

Time Out: 120 seconds

If DNIS=8008008000

Derive the classification Value from Get_Classification_Value_From_Account_Number.

Web Callbacks

Oracle Routing Server supports Web callbacks, which are customer requests that originate from Oracle eCommerce products, such as Oracle iStore or Oracle iSupport. These applications provide a method for customers to request a telephone call from an interaction center agent.

Basic WebCallback

Customers who have integration with Basic Telephony should consider extending support for Basic Web Callback. Integration with Basic Web Callback enables Call Center agents to service Web callback requests made through either Oracle iStore or Oracle iSupport. Web Callback requests are queued in first-in, first-out (FIFO) order and are routed to all available agents. When an agent does Get Work for Basic WebCallback, the agent is assigned a Web callback request from the FIFO queue and receives a screen pop. In Basic WebCallback, all requests are routed to all agents, Oracle Routing server is not used, and you cannot set up route rules for actively routing Basic WebCallback requests.

To support Basic WebCallback integration, the new media type Basic Web Callback has been added.

Display of Basic WebCallback media type on the agents' desktops is controlled by the profile options:

- IEU: Queue: Basic WebCallback. When set to Yes, an agent can get work for Web callback media items.
- IEU: Queue Order: Basic WebCallback. Used to determine the order of display for Basic WebCallback media type.

Call Center Administrators should note that if your system supports Basic integration, only the media types Basic Telephony and Basic WebCallback are supported. Therefore, enable only those profile options for media.

Additionally, the following profile options may be defined for the Web. Basic Telephony Integration must be extended to support Basic WebCallback by implementing the dialCanonical method.

The following modes are supported with Basic WebCallback.

Basic WebCallback Mode

This is the default mode. In this mode, when agents have selected GetWork for Basic WebCallback, the system successively assigns Web callback requests to the agents. If no Web callback request is currently available, the system poll until a Web callback request becomes available. The polling interval can be set as the profile value: CCT: Basic WebCallback: Polling Interval (in seconds). The default polling interval is 30 seconds. When a Web callback request is assigned to an agent, a screen pop occurs at the agent's desktop and the callback phone call is automatically dialed out immediately.

Basic WebCallback with Preview Dialing Mode

In this mode, when a Web callback request is assigned to the agent, a screen pop will occur, but the callback phone call is not dialed out. Instead, the callback phone number is displayed and the agent is required to click Dial on the soft phone for the dial out to occur. Use this mode when the agents require time to read the customer information in the screen pop before they dial out. To set up preview dialing, set the profile option CCT: Basic WebCallback: Enable Preview to Yes.

Basic WebCallback with Timed Preview Dialing Mode

In this mode, when a Web callback request is assigned to an agent, a screen pop occurs for the agent to preview. When the specified preview time interval expires, the callback phone call is dialed out automatically.

Use this mode when it is necessary to limit the amount of time an agent can preview customer information. To set up Timed Preview Dialing, first enable Preview Dialing, and then specify the preview time interval in the profile option CCT: Basic WebCallback: Maximum Preview Interval.

Preview Mode and Timed Preview Mode for Web Callback

Oracle Advanced Inbound Telephony supports the following modes for WebCallback.

WebCallback with Preview Dialing Mode

In this mode, when a Web callback request is assigned to an agent, a screen pop occurs, but the callback phone call is not dialed out. Instead, the callback phone number is displayed and the agent is required to click Dial on the soft phone for the dial out to occur. Use this mode when the agents require time to read the customer information in the screen pop before they dial out.

Preview mode is a site level parameter. To enable preview mode, set the Oracle Telephony Manager server parameter Preview Web Callback = true. By default, the preview mode is disabled.

WebCallback with Timed Preview Dialing Mode

In this mode, when a Web callback request is assigned to an agent, a screen pop occurs for the agent to preview. When the specified preview time interval expires, the callback phone call is dialed out automatically.

Use this mode when it is necessary to limit the time an agent can preview customer information. To set up Timed Preview Dialing, first enable Preview Dialing, and then specify the preview time interval in the Oracle Telephony Manager server parameter Maximum Web Callback Preview Time (seconds).

When Preview Dialing or Timed Preview Dialing is not set up, and a Web callback request is assigned to the agent, a screen pop occurs and the Oracle Telephony Manager server automatically dials the callback phone call.

Web Callback Routes

Administrators can control routing for Web callbacks by using simple, optimized rules or by a comprehensive workflow that combines data from the eBusiness Application suite. Routing for Web callbacks is business-driven, thereby enabling interactions of high quality and saving money by handling customers correctly. You can also use Oracle Workflow to create sophisticated routing flows.

Oracle Advanced Inbound Telephony routes incoming Web callbacks according to whether the route is dynamic or static, which are explained in the following topics.

Static Routes

A static route is based on agents derived from Resource groups configured in the Call Center HTML Administration Resource tab and cached by the Routing Server.

Dynamic Routes

A dynamic route is a route that is based on a PL/SQL function or workflow function. Dynamic routes return a list of agents that is derived from a seeded routing workflow or custom PL/SQL function or procedure.

For dynamic routes, Database Function could return a list of AgentIDs separated by the ";;;" delimiter as the function return value. If you use the AgentID interaction key as one of the function Out parameters, the AgentID interaction key takes precedence over AgentIDs that are returned by Function as a return value. For procedures, the AgentID interaction key is used as one of the procedure Out parameters to return the list of agents.

Parameters for Dynamic Routes

The Procedure and Function Parameters fields are visible *only* if the selected Route Type is Dynamic. In the following example,

```

GET_AGENTS_FROM_CUSTOMER_PRODUCT(p_customer_id IN
VARCHAR2,p_product_id IN NUMBER) returns VARCHAR2

the PL/SQL function GET_AGENTS _FROM_CUSTOMER_PRODUCT returns a list of
agents as a VARCHAR2 from P_Customer_ID.

In the HTML Routing Administration, the above PL/SQL function can be defined as a
target as stated below.

Function Name: GET_AGENTS_FROM_CUSTOMER_PRODUCT

Description: a function which returns agents from customer_id
and product_id

Parameter: p_customer_ID

Value: can either be a string value or a value from the list of
values

Direction: IN

Data Type: VARCHAR2

Sequence: generated by the Admin=1

Parameter: p_product_ID

Value: can either be a numerical value or a value from the list
of values

Direction: IN

Data Type: INTEGER

Sequence: generated by the Admin=2

```

Route Rules

Oracle Routing Server determines which agents or agent groups receive a new interaction based on route rules that use the following types of routing.

- Customer Information-Based Routing
- Rule-Based Routing
- Skill-Based Routing

Customer Information-Based Routing

In customer information-based routing, Oracle Routing Server routes calls based on data that is supplied by the database instead of by the PBX. For example, if a customer places a call for computer technical support, the ACD receives the call and the customer enters an account number that is captured by the IVR and sent to Oracle Routing Server. A dynamic route in Oracle Routing Server could search the eBusiness database to check the number of open service requests for this customer. If the acceptable threshold for open service requests has been exceeded, then the account can be placed in the front of the call queue and handled by the most experienced customer service representative.

Rule-Based Routing

Rule-based routing uses variables such as time of day, IVR data, ANI or DNIS to associate user-defined rules with agent groups. For example, a rule could specify to route calls from a particular telephone area code to a designated agent group.

Skill-Based Routing

Skill-based routing is a dynamic call routing intelligence that delivers inbound calls to an agent who is appropriately skilled to meet the needs of the caller. Skill-based routing can be set up by using the seeded routing workflow, dynamic groups or dynamic routes.

Skill-based routing leverages data derived from Oracle Human Resources Management System. Agent skill information can be used as a routing variable to send a call to the most appropriate agent. A skill can be a singular ability, such as language fluency, or multiple abilities, such as product competency, license level, or certification status. Any skill that can be tracked in the human resources database can be used as search and routing criteria to route the call.

For example, in routing based on language skill, when a caller presses the prompt indicating a preference to speak French, the routing server queries the human resources database to find all agents who speak French, compares agents who are logged in and available to take calls, and then routes the call to an available French-speaking agent. The administrator does not need to assign the agent to a specific telephone. Oracle Advanced Inbound Telephony knows both the agent's location (because the agent has logged on to the system) and the agent's skills (by accessing the human resources database).

Rerouting

Rerouting is based on the priority and reroute time out value of routes. When an incoming media item reaches the reroute time out value, the call is rerouted and the Interaction Queuing and Distribution server sends another route request to the Routing Server. When the Routing Server receives the media item for a second routing, the routing server tries to find two matching route rules and then selects a route that is of lower priority, because the route with the higher priority was already selected during the first route request.

For example, suppose the route "Get Agent from Party(Customer) ID" has a priority of 3, and "Get Route Point from Party(Customer) ID" has a priority of 4, and both routes have the same rule "ANI = 6506070195." During the first route request from a caller whose ANI = 6506070195, "Get Agent from Party(Customer) ID" will be selected and the call will be queued to the agents who are returned by that route. If agents do not answer this call within the reroute time out period, then a reroute request for the same call is sent. The routing server will select the route with the next highest priority, which in this case is "Get Route Point from Party(Customer) ID."

Reroute Time Out works according to the following hierarchy:

1. Set a value for the Default ReRoute Time Out in the Routing Server Parameter page. If a value is not set, then 300 seconds is used as the default value. If classification or route time outs are not set, then the Default ReRoute Time Out is effective.
2. The Classification ReRoute Time Out value overrides the Default ReRoute Time Out. If necessary, administrators can set this parameter for each classification rule by selecting Classification Rule Details and entering the time out value in the ReRoute Time Out field. If an incoming media item is classified with a given classification rule that has a positive time out value, the media item is assigned the classification rule time out value.
3. The Route Details page ReRoute Time Out value overrides the Create Classification Rule page ReRoute Time Out value. If necessary, you can set the route time out for each route rule by selecting the Routes tab > Route Rule Details sub tab and entering a time out value in the ReRoute Time Out field. For an incoming media item that is sent as a route request to the routing server, route rules are evaluated in accordance to their priority to find a matching route rule. The time out of the selected route rule is the effective route time out for a given media item.

Note: To prevent a media item from being rerouted, enter a negative value in the ReRoute Time Out field. After receiving the agent list for this route, the Oracle Interaction Queuing and Distribution server will not send a reroute request for the call.

Call Scenarios

The following use cases describe typical call scenarios in interaction center environments.

- Call and Data Transfer Scenarios, page 1-32
- Enterprise Routing Scenarios, page 1-33

Call and Data Transfer Scenarios

The following table lists and describes call and data transfer scenarios.

Call and Data Transfer Scenarios

Scenario	Definition
Single-Site Transfer to Agent	Agent A transfers a call to Agent B. Agent A and Agent B are both logged into the same PBX.
Multi-Site Transfer to Agent	Agent A is logged into PBX 1 and transfers a call to Agent B who is logged into PBX 2. The call from A to B can be through a tie-line or the PSTN.
Single-Site Transfer to Route Point	Agent A is logged into PBX 1 and transfers a call to a route point that is also on PBX 1. The call is then routed to an available agent on PBX 1.
Multi-Site Transfer to Route Point	Agent A is logged into PBX 1 and transfers a call to a route point on PBX 2. The call is then routed to an available agent on PBX 2.
Warm Transfer	Agent A is logged into PBX 1 and transfers or conferences a call and its application data, usually customer data, to Agent B, who is logged in to PBX 1 or PBX 2, or another PBX.

Enterprise Routing Scenarios

The following table lists and defines interaction center enterprise routing scenarios.

Enterprise Routing Scenarios

Scenario	Definition
Single-Site Routing	A call is at a route point on PBX 1. Oracle Routing Server returns a list of agents on PBX 1. The call is routed to first available agent in the list.

Scenario	Definition
Multi-Site Routing with Direct Inward Dialing (DID) Numbers	A call is at a route point on PBX 1. Oracle Routing Server returns a list of agents on PBX 2 and any other PBXs. The call is routed directly to the first available agent on the list.
Multi-Site Routing without Direct Inward Dialing (DID) Numbers	A call is at a route point on PBX 1. Oracle Routing Server returns a list of agents on PBX 2 and any other PBXs. The first available agent (on PBX 2) does not have a DID number. The call is routed to a route point on PBX 2. The route point on PBX 2 immediately routes the call to the destination agent.
Multi-Site Routing to a Label	In the first three scenarios, Oracle Routing Server can return a label in the same or a different interaction center, and the call is routed to the label as if it were an agent extension.

Screen Pops

Telephony-enabled business applications, such as Oracle Customer Care and Oracle TeleSales, can visually display customer, service and sales records, called "screen pops," when a phone call is delivered to an agent's desktop. Oracle Telephony Manager delivers to the business applications the data that is associated with a call that queries the applications database for the screen pop. The call data can be collected from the IVR or from a Web site in Web callbacks.

- IVR Mapping in the HTML Administration, page 1-34
- Out-of-the-Box Screen Pops, page 1-35

IVR Mapping in the HTML Administration

Use the IVR Mapping page of the Call Center HTML Administration to map the IVR keys to Oracle Fields, which the business applications use to generate screen pops. For example, if an interaction center administrator uses the value "custno" to collect Customer Number in the IVR, then that value must be mapped to the Oracle Field "Customer Number" in the IVR Mapping page. After you map the value to the corresponding Oracle Field, then the business application can generate a screen pop that is based on Customer Number.

Customers can customize the business application form to generate screen pops that are

based on keys other than those in the preceding tables.

Note: Customers who customize business application forms do so at their own risk. To do so, consultants should have a thorough understanding of the Oracle Application schema.

You can map IVR Keys to any of the Oracle fields that can be used for customizing screen pops. The interaction keys, which are supported by Interaction Center IVR Mapping, are used to send the call data. Depending on IVR Mapping, a media item delivery to the business application might consist of the following key-value pairs:

```
{occtANI=373333,occtDNIS=8008822222,CustomerID=3888,ContractNum=1001,AccountCode=2999}.
```

Out-of-the-Box Screen Pops

The following keys in the order of precedence are used for out-of-the-box screen pops by Oracle Customer Care and Oracle TeleSales.

- Oracle Customer Care Screen Pop Precedence, page 1-35
- Oracle TeleSales Screen Pop Precedence, page 1-36

Oracle Customer Care Screen Pop Precedence

The following table lists Oracle Customer IVR fields and their mappings.

Oracle Customer Care Screen Pop Precedence

IVR Oracle Field	Description	Column (Table) Mapping
Party(Customer) ID	Party ID of the customer party	PARTY_ID (HZ_PARTIES)
Customer Number	Party number of the customer party	CUSTOMER_NUMBER (HZ_PARTIES.PARTY_NUMBER)
Account Code	Account number of the customer party	ACCOUNT_NUMBER (HZ_CUST_ACCOUNTS)
Contact Number	Party number of the contact party	PARTY_NUMBER in HZ_PARTIES, Contacts (HZ_PARTIES.PARTY_NUMBER)

IVR Oracle Field	Description	Column (Table) Mapping
ANI	If none of the above parameters are available, then the ANI of the contact party is used.	ANI (Telephone number) (HZ_CONTACT_POINTS)

Oracle TeleSales Screen Pop Precedence

The following table lists and describes Oracle TeleSales IVR fields and their database mappings.

Oracle TeleSales Screen Pop Precedence

IVR Oracle Field	Description	Mapping to Database
Party(Customer) ID	Party ID of the contact party	PARTY_ID (HZ_PARTIES)
ANI	Customer phone number	ANI (Telephone number) (HZ_CONTACT_POINTS)
Account Code	Account number of the customer party	ACCOUNT_NUMBER (HZ_CUST_ACCOUNTS)
Event Code	Event registration confirmation code	CONFIRMATION_CODE (AMS_EVENT_REGISTRATIONS_V)
Collateral Request Number	Collateral request number / quote number	QUOTE_NUMBER(ASO_QUOTE_HEADERS_ALL)
Customer Number	Number of the customer party	CUSTOMER_NUMBER (HZ_PARTIES.PARTY_NUMBER)
Contact Number	Party number of the contact party	PARTY_NUMBER in HZ_PARTIES, Contacts (HZ_PARTIES.PARTY_NUMBER)

IVR Integration

Oracle Advanced Inbound Telephony provides the IVR Integration functionality to integrate IVR data for routing and screen pops when Oracle Advanced Inbound Telephony is configured in either active or enhanced passive modes. IVR Integration is available for specific PBX and ACD CTI middleware combinations.

IVR Integration enables Oracle Advanced Inbound Telephony to use IVR-collected data, such as account number and order number, for sophisticated call routing, call classification, and customer or transaction-specific screen pops in Oracle TeleSales or Oracle TeleService business applications. IVR Integration also reports customers' interactions with the IVR to the database as part of Oracle Customer Interaction History. IVR Integration records the calls' start time, end time, the duration in the IVR and calls abandoned while in the IVR.

IVR Integration was introduced in Release 11.5.6 as a replacement for the Windows NT-based IVR Integrator product. IVR Integration is a built-in feature of Oracle Advanced Inbound Telephony, which administrators can enable or disable by configuring the appropriate middleware parameters in the Call Center HTML Administration Call Center tab > Middleware sub tab.

Oracle no longer supports Microsoft Windows NT-based Oracle IVR Integrator.

IVR Integration Call Flows

The following scenario describes the progress of a call from the time it arrives at the PBX until it reaches an interaction center agent.

1. The PBX receives an incoming call and sends the call to the IVR system.
2. When the call reaches an IVR port or extension, the IVR immediately sends a START packet to Oracle Telephony Adapter Server. The START packet contains the IVR extension, time, date, ANI and DNIS.
3. The IVR plays recorded messages and prompts the caller to enter additional digits, such as an account number, as defined by an IVR script that is programmed in the IVR.
4. The caller enters digits as prompted by the IVR recording. The IVR needs to send an END packet to Oracle Telephony Adapter Server before sending the call back to the PBX. If the caller hangs up before the IVR sends the call back to the PBX, the IVR should still send an END packet if possible. The END packet contains the IVR extension, time, date, ANI and DNIS, plus any additional data that is collected by the IVR.
5. The IVR sends the call to a route point of the PBX.

6. The call is routed from the route point to an agent's extension.
7. A screen pop appears on the agent's desktop.

IVR Data Packets

Data packets are ASCII text streams and can be written in any software language. The IVR data packets are in the following key/value pair format,

KEY1:VALUE1;KEY2:VALUE2;KEY3:VALUE3;\n

where the key/value separator is ":"; the field delimiter is ";" and the packet delimiter is "\n."

IVR sends data packets to the IVR Integration as key/value pairs in the format described in the following table.

Data Packet Format

PBXEXTN	TYPE	TIME	DATE	ANI	DNIS	IVR Data
The PBX extension for the IVR port	S=Start E=End	In seconds since January 1, 1970	Format: yyyymmdd			IVRINFO1 through IVRINFO4 for user-defined values, for example: Cust ID, Name, Account (The number of fields is variable.)

The following examples demonstrate the IVR start and end data packets.

IVR Start Data Packet

```
PBXEXTN:7203;TYPE:S;TIME:988239405;DATE:20020425;ANI:1234567890;  
DNIS:Unknown;
```

IVR End Data Packet

```
PBXEXTN:7203;TYPE:E;TIME:988239411;DATE:20020725;IVRINFO1:1111;IVRINFO2:1234567;IVRINFO3:Unknown;IVRINFO4:Unknown;
```

Timing of Start and End Data Packets

If the IVR dialog of a customer is less than the number of seconds specified in the IVR Abandon Threshold parameter, it is possible that the call will pick up a previously sent START/END combined packet that had no call associated with it, but which is still valid because the IVR Abandon Threshold for it has not yet elapsed for it.

Oracle recommends that the IVR script should issue a pause command before sending the END packet, to make sure that the current IVR dialog lasts at least as long as the value for the parameter IVR Abandon Threshold. You can also achieve the same result by playing a message that lasts at least as long as the value for the parameter IVR Abandon Threshold. Ensure that the customer cannot skip this message. By doing this, the script ensures that any previous packets from the same IVR port time out in the Oracle Telephony Adapter and are discarded before the current call arrives at the Route Point.

See the following packet discarding rules.

Scenario 1

1. Start Packet (SP1) arrives for IVR Port 1000.
2. Start Packet (SP2) arrives from IVR Port 1000.
3. SP1 is discarded

Scenario 2

1. Start Packet (SP1) arrives for IVR port 1000
2. End packet (EP1) arrives for IVR port 1000
3. 3. IVR abandon threshold is set to 'x' seconds

If no call arrives on a monitored route point from IVR port 1000 after 'x' seconds, then SP1 and EP1 are discarded.

Scenario 3

1. Start Packet (SP1) arrives for IVR port 1000.
2. End packet (EP1) arrives for IVR port 1000.
3. IVR abandon threshold is set to 'x' seconds.
4. Start Packet (SP2) arrives for IVR port 1000 before 'x' seconds.
5. End packet (EP2) arrives for IVR port 1000 before 'x' seconds.
6. Call C2 (that sent SP2 and EP2) is routed from IVR port 1000 before 'x' seconds.

Required Data Packet Fields

The following four fields are required in data packets.

- PBXEXTN
- TYPE
- TIME
- DATE

Optional Data Packet Fields

The following six fields are optional in data packets.

- ANI
- DNIS
- IVRINFO1
- IVRINFO2
- IVRINFO3
- IVRINFO4

In Steps 2 and 4 above, if two or more Oracle Telephony Adapter Servers are running concurrently in load balancing mode, then the IVR must send the same START/END packet to all Oracle Telephony Adapter Servers.

External Data Variable Processing

A simpler alternative to the IVR Integration feature is external data variable processing. You can use external data variable processing for capturing data that is collected in an IVR or ACD/PBX built-in call processing system (such as the call vectoring capability of Avaya Call Center) and passing that data to Oracle Advanced Inbound for call classification, routing and screen pops. Oracle Advanced Inbound Telephony supports external data variable processing for the following switch and CTI middleware combinations:

Avaya MultiVantage and Nortel Meridian with Envox CT Connect

An inbound media item may contain one or more key-value pairs passed to Oracle by way of the Intel Application Data field of the Call Event Information. Make sure that this Application Data is present in the InboundCall event when the call arrives at a monitored route point or agent extension. Store the key-value pairs in the following format:

```
KEY1:VALUE1;KEY2:VALUE2;KEY3:VALUE3;
```

Aspect Call Center with Aspect Contact Center

An inbound media item contains five additional call data keys that correspond to the Aspect variables A through E.

CallManager with Cisco ICM

An inbound media item may contain up to ten additional call data keys that correspond to the Cisco ICM Peripheral/Call Variables. Any Cisco ICM Extended Call Context (ECC) variables are also passed to the media item with the same names that are defined in the Cisco ICM administration.

Access to Oracle Advanced Inbound Telephony

Log in to Oracle Advanced Inbound Telephony at the Oracle Interaction Center HTML Administration. Use the responsibility "Call Center HTML Administration". Configure and administer by way of the following tabs: Call Center, Route, and Classification.

Dependencies and Integration Points

This chapter covers the following topics:

- Installing Oracle Advanced Inbound Telephony
- Upgrading Oracle Advanced Inbound Telephony Configurations
- Conditional Dependencies
- Required CTI Middleware Client API Software
- Installation and Dependency Verification

Installing Oracle Advanced Inbound Telephony

Oracle Advanced Inbound Telephony is included in the Oracle Applications Rapid Install.

The Rapid Install is provided on CD-ROMs and is available from Oracle Store at <http://oraclestore.oracle.com>. For information about installing Oracle Applications using Rapid Install, see *Oracle Applications Installation Guide: Using Rapid Install*.

Upgrading Oracle Advanced Inbound Telephony Configurations

To upgrade an existing installation of Oracle Advanced Inbound Telephony from a previous Release, verify the following:

- An Oracle Telephony Adapter Server is defined in your server group
- The Middleware Configuration server parameter is correct for Oracle Telephony Adapter Server
- The correct client files are installed for the following CTI middleware:
 - Envox CT Connect: Check that the Java client file cctapi.jar is copied into the directory admin/scripts/3rdparty of the ICSM node that hosts Oracle Telephony

Adapter Server.

- Aspect Contact Server/CMI Server: Check that the Aspect CMI Server client file ABObject.jar is copied into the directory admin/scripts/3rdparty of the ICSM node that hosts Oracle Telephony Adapter Server.
- Intel CT Connect: Check that the CT Connect Java client file ctcapi.jar is copied into the directory admin/scripts/3rdparty of the ICSM node that hosts Oracle Telephony Adapter Server.

Conditional Dependencies

The following functions are dependent upon the installation of the respective product applications.

Functions and Conditional Dependencies

Functionality	Dependency
TeleService screen pop	Oracle TeleService (Customer Care)
TeleSales screen pop	Oracle TeleSales
Web Callback	Oracle iSupport or Oracle iStore
Service request screen pop	Oracle Service
Collections screen pop	Oracle Advanced Collections, Oracle TeleSales

Required CTI Middleware Client API Software

The following CTI middlewares require installing client API software. Use the installation guidelines that apply to the middleware in use.

Envox CT Connect

Copy the Envox CT Connect Java client file ctcapi.jar into the directory admin/scripts/3rdparty of the Interaction Center Server Manager node that hosts Oracle Telephony Adapter Server.

Aspect Contact Server

Copy the file ABObject.jar into the directory admin/scripts/3rdparty of the Interaction Center Server Manager node that hosts Oracle Telephony Adapter Server.

Genesys Interaction Connector

Install the Genesys Interaction Connector on the Oracle Telephony Adapter Server machine by running the appropriate setup program on the Genesys Interaction SDK CD-ROM. Then navigate to the directory GCTI\AIL\lib and copy all .jar files to the directory icsm\admin\scripts\3rdparty.

Installation and Dependency Verification

Installation and Dependency Verification is a functional checklist that indicates tasks to perform to ensure that mandatory dependencies are installed, implemented and set up correctly.

Because the proper implementation of Oracle Telephony Manager is dependent on the proper versions and installation of third-party customer-provided equipment for requisite CTI functionality, check the following considerations prior to beginning the implementation:

- Does the Customer have a ACD/PBX switch that has been certified by Oracle?
 - Is the ACD/PBX a model and software release that has been certified and does it have the proper PBX-based CTI interfaces or links?
 - Has the customer purchased, installed and implemented an approved third-party CTI middleware?
 - Has the PBX and CTI middleware been fully tested and is it operational on the customer's ethernet LAN?

If the PBX and CTI middleware combination in use is not certified by Oracle, then you may be able to integrate the combination by using the Oracle Telephony Adapter SDK. The SDK requires building a custom adapter. See *Oracle Telephony Adapter SDK Developer's Reference Guide*.

Implementation Overview

This chapter covers the following topics:

- Implementation Task Sequence

Implementation Task Sequence

This section provides a general description of the implementation process. The following table is an overview of implementing Oracle Advanced Inbound Telephony. The HTML Location column shows you in which Call Center HTML Administration tabs to perform the procedure.

Prerequisites for implementing Oracle Advanced Inbound Telephony include installing and implementing the Oracle Interaction Center servers and server groups.

Implementation of Oracle Advanced Inbound Telephony involves creating agent resources and configuring CTI middleware, telesets, route points, routing and classifications.

Step Number	Required or Optional	Description	HTML Tab
1	Required	Install Interaction Center Server Manager (ICSM) on each target machine. See <i>Oracle Interaction Center Server Manager Implementation Guide</i>	ICSM > Setup

Step Number	Required or Optional	Description	HTML Tab
2	Required	Define the Oracle interaction center server group. See <i>Oracle Interaction Center Server Manager Implementation Guide</i>	ICSM > Server Group
3	Required	Define and configure the Oracle interaction center server processes. See <i>Oracle Interaction Center Server Manager Implementation Guide</i>	ICSM > Server Group
4	Optional	Configuration for verification of steps 1 through 3, using switch simulator:	Call Center
		<ul style="list-style-type: none"> • Define and configure the CTI middleware. See Configuring Middleware. • Define the interaction center route points. See Configuring Route Points. • Define the interaction center telesets. See Configuring Teleset Lines. 	
5	Optional	Run verification using Switch Simulator. See <i>Oracle Interaction Center Server Manager Implementation Guide</i>	Call Center

Step Number	Required or Optional	Description	HTML Tab
6	Required	Define and configure the CTI middleware. See Configuring Middleware.	Call Center > Middleware
7	Required for active and enhanced passive modes only	Define the interaction center route points. See Configuring Route Points.	Call Center > Route Point
8	Required	Define the interaction center telesets. See Configuring Teleset Lines.	Call Center > Teleset
9	Optional	Map the inbound call / IVR data to fields in Oracle Applications. See Mapping IVR Fields to Application Fields.	Call Center > IVR
10	Required for multi-site call centers connected via tie lines	Define and configure multi-site configuration. Both interaction centers that are connected by the tie line must already have defined middleware configurations in the Call Center tab > Middleware sub tab. See Configuring Multi-Sites.	Call Center > Multisite
11	Optional	Configure softphone display. See Configuring Softphone.	Call Center > Softphone > Display Configuration

Step Number	Required or Optional	Description	HTML Tab
12	Optional	Configure softphone speed dial. Configuring Softphone.	Center > Softphone > Speed Dial
13	Optional	<ul style="list-style-type: none"> Configure additional Interaction Keys for use in IVR Mapping. See Mapping IVR Fields to Application Fields. Configure additional Interaction Keys to set up Classification Rules and Routing Rules. See Configuring Classifications and Configuring Routes. Configure additional Interaction Keys to set up softphone display available keys. See Configuring Softphone Display. 	<ul style="list-style-type: none"> Call Center > Interaction Keys Route > Interaction Keys Classification > Interaction Keys
14	Required for active mode	Set up routing for inbound calls from web callbacks. See "Configuring Routes".	Route tab required, Oracle Workflow Builder optional. See <i>Oracle Workflow Administrators Guide</i> .

Step Number	Required or Optional	Description	HTML Tab
15	Required	Set up classifications. See Configuring Classifications.	Classification
16	Optional	Select a Media Action with each associated Media Type and Classification. See <i>Oracle Universal Work Queue Implementation Guide</i> .	UWQ Media Action
17	Required	Configure Interaction Center parameter value. See Configuring Agent Telephony Parameters.	Resource

Implementation and Administration Tasks

This chapter covers the following topics:

- Configuring Middleware
- Configuring Route Points
- Configuring Teleset Lines
- Mapping IVR Fields
- Configuring Multi-Sites
- Creating and Updating Interaction Keys
- Configuring Softphone
- Configuring Classifications
- Configuring Routes
- Configuring Agent Telephony Parameters
- Managing Media Item Processes
- Setting Up Workflow Item Type

Configuring Middleware

The CTI middleware definition contains the information required for Oracle Advanced Inbound Telephony to communicate with a switch (such as Nortel Meridian or Avaya MultiVantage) by way of CTI middleware (such as Envox CT Connect or Cisco ICM). A CTI middleware definition is associated with a server group.

You can define multiple middleware definitions (for example, a middleware definition for use with a switch and a middleware definition for use with the switch simulator server). To use a specific middleware definition in operating the interaction center, specify the name of the middleware definition in the Middleware Configuration Name parameter for the Oracle Telephony Adapter Server and Inbound Telephony Server in the server group.

Use the following procedure to configure middleware parameters for the installed adapter.

Prerequisites

- Configure at least one server group.
- For Aspect Contact Server, install Aspect CMI Server client file on the machine that runs Oracle Telephony Adapter Server by copying the file ABOObject.jar from the CMI Server Installation software CD-ROM to the directory `icsm/admin/scripts/3rdparty` of the Oracle Telephony Adapter machine.
- For Envox CT Connect, install the CPS client file API on the machine that runs Oracle Telephony Adapter Server by copying the file `ctcapi.jar` from the CPS server machine to the directory `icsm/admin/scripts/3rdparty` on the Oracle Telephony Adapter Server machine. Oracle Telephony Adapter Server must run in Java Runtime Environment (JRE) v1.4 or higher. Edit the file `java.policy` in the directory `jre\lib\security` of the JRE to include the following two lines:

```
permission java.util.PropertyPermission "user.name", "read";  
permission java.net.SocketPermission "*:1024-", "connect, listen,  
accept, resolve";
```
- See the Intel CPS v6 product release notes for more details.
- Install the Genesys Interaction Connector on the machine that runs the Oracle Telephony Adapter Server by running the appropriate Setup program on the Genesys Interaction SDK CD-ROM. Then navigate to the directory `GCTI\AIL\lib` and copy all Java .jar files to the directory `icsm\admin\scripts\3rdparty` on the Oracle Telephony Adapter Server machine. For Genesys Interaction Connector, Oracle Telephony Adapter Server must run in Java Runtime Environment (JRE) v1.3 or higher.

Steps to Configure Middleware:

1. Use the Call Center HTML Administration responsibility to log in to the HTML Login URL.
2. Click the Call Center tab, Middleware subtab.
The CTI Middlewares page appears.
3. From the Choose Server Group list, select the appropriate server group.
4. Do one of the following:
 - To configure a new CTI middleware, click **Create**.

- To reconfigure an existing CTI middleware, click the appropriate Configuration Name and proceed to step 7.

5. In the Middleware Name field, enter a unique name for this middleware definition.
6. From the Middleware Type list, select the adapter for the switch that is installed in your interaction center.
7. Click **Update** to save.

The Middleware Details page refreshes. The Middleware Parameters fields and the Teleset Details and Route Point Details links appear.

8. In the Valuefields, enter the Middleware Parameter values. For most fields, if you enter invalid values, an error message advises you on entering a correct value. For example, check that you enter the correct IP address format and port number.

Refer to the following topic that corresponds to the adapter that you selected.

- Parameters Specific to Adapter for Aspect Contact Server, page 4-3
- Parameters Specific to Adapter for Cisco ICM, page 4-4
- Parameters Specific to Adapter for Genesys AIL and Adapter for Genesys Interaction SDK, page 4-5
- Parameters Specific to Adapter for CT Connect, page 4-6
- Parameters Specific to Adapter for Switch Simulator, page 4-9
- Parameters Specific to Custom C Adapter Server, page 4-9
- Parameters Specific to Custom C Adapter Server, page 4-9
- Middleware Parameters Specific to Custom Java Adapter Server, page 4-10
- Middleware Parameters Common to All Supported Adapters, page 4-11

Parameters Specific to Adapter for Aspect Contact Server

Parameter	Required	Description	Sample Value
Aspect Contact Server IP Address	Required	IP address of the Aspect CMI Server.	123.45.67.89

Parameter	Required	Description	Sample Value
Aspect Contact Server Port	Required	TCP/IP port of the Aspect CMI Server that listens for a connection from Oracle Telephony Adapter Server.	9001
Blind Transfer Prefix	Required	Choose a one-digit prefix that will be used to place a blind transfer to a Call Control Table (CCT). All calls beginning with this number will be seen as a blind transfer by the Oracle Telephony Adapter Server. This number is not passed to the Aspect switch.	7
Outgoing CCT	Required	The CCT used for making outside calls. It is passed automatically to the Aspect switch when an agent makes an outbound call.	20

Parameters Specific to Adapter for Cisco ICM

Parameter	Required	Description	Sample Value
Site A Host IP Address	Required	IP Address of Cisco ICM Peripheral Gateway (Side A).	123.45.67.89
Site A Host IP Port	Required	TCP/IP port of Cisco ICM Peripheral Gateway (Side A).	42027
Site B Host IP Address	Optional. For duplex configuration of ICM only.	IP Address of Cisco ICM Peripheral Gateway (Side B).	123.45.67.90

Parameter	Required	Description	Sample Value
Site B Host IP Port	Optional. For duplex configuration of ICM only.	TCP/IP port of Cisco ICM Peripheral Gateway (Side B).	43027
Peripheral Identifier	Required	ICM Peripheral ID for the interaction center switch.	5001
Media Item Call Variable	Required	ICM Call Variable that Oracle Interaction Center uses to track calls. Enter a number between 1 and 9. (CallVariable10 is reserved for Oracle).	5

Parameters Specific to Adapter for Genesys AIL and Adapter for Genesys Interaction SDK

Parameter	Required	Description	Sample Value
Genesys Configuration Server Host	Required	Host name or IP address of the (primary) Genesys Configuration Server	135.24.68.1
Genesys Configuration Server Port	Required	TCP/IP port of the (primary) Genesys Configuration Server	2020
Backup Genesys Configuration Server Host	(Optional) For duplex configuration of Genesys only	Host name or IP address of the backup Genesys Configuration Server. Leave blank if not applicable.	135.24.68.2
Backup Genesys Configuration Server Port	(Optional) For duplex configuration of Genesys only	TCP/IP port of the backup Genesys Configuration Server. Leave blank if not applicable.	2020

Parameter	Required	Description	Sample Value
Genesys Application Name	Required	Interaction SDK Server Application name as configured in Genesys Configuration Manager (CME)	Interaction_SDK_Server_1
Genesys Switch Name	(Optional)	Switch name as defined in Genesys Configuration Manager (CME)	AvayaG3
Genesys Configuration Server Login	Required	Login ID for Genesys Configuration Server	default
Genesys Configuration Server Password	Required	Password for Genesys Configuration Server	password
Genesys AIL Logging Level	Optional	Genesys logging level	Debug Logging

Parameters Specific to Adapter for CT Connect

Parameter	Required	Description	Sample Value
CPS Server IP Address 1	Required	IP address of the Intel NetMerge CPS server.	123.45.67.89
CPS Link Logical Identifier 1	Required	The logical identifier of the link that is defined in the Intel NetMerge CPS configuration.	nortel
CPS Server IP Address 2	(Optional) For dual CPS server configuration only	IP address of the backup Intel NetMerge CPS server.	123.45.67.90
CPS Link Logical Identifier 2	(Optional) For dual CPS server configuration only	The logical identifier of the link that is defined in the backup Intel NetMerge CPS configuration.	nortel

Parameter	Required	Description	Sample Value
PBX Type	Required	Type of switch used at the interaction center.	Nortel Meridian
IVR Host	Required only for the IVR Integration feature.	IP address of the IVR. The IVRI feature will not work if this field is blank. If IVRI mode = server, you may enter any value in the IVR Host field to turn on the IVR Integration feature.	123.45.67.80
IVR Port	Required only for the IVR Integration feature.	Do one of the following: If IVRI Mode = client, then enter the TCP/IP port on the IVR machine that listens for a connection from the IVRI module of OTAS. • If IVRI Mode = server, then enter the TCP/IP port on the OTAS machine that listens for a connection from the IVR.	4000

Parameter	Required	Description	Sample Value
IVRI Mode	Required only for the IVR Integration feature.	<p>Options are client or server. IVRI mode determines whether Oracle Telephony Adapter Server (OTAS) initiates a socket connection to the IVR, or the IVR initiates a socket connection to OTAS. Do one of the following:</p> <ul style="list-style-type: none"> • If the IVRI module of OTAS connects to the IVR machine, choose client and in the IVR Host field enter the IP address of the machine that sends the packets to OTAS. • If the IVR connects to the IVRI module of the OTAS machine, choose server. <p>If this field is blank, then the default is client.</p>	client
IVRI Abandon Threshold	Optional	If the call does not reach a monitored route point within this defined time, then any data collected from the IVR for this call is purged. The default is 15 seconds.	No

Parameters Specific to Adapter for Switch Simulator

Parameter	Required	Description	Sample Value
Passive Mode	Required	Select False for Oracle Advanced Inbound Telephony to route calls in active mode. Select True if the third-party switch or middleware routes calls (passive mode or enhanced passive mode).	False

Parameters Specific to Custom C Adapter Server

Parameter	Required	Description	Sample Value
Library Name	Required	Dynamic Link Library name for the custom C adapter.	ctcnortel.dll
CTI Server IP Address 1	Optional	Switch or CTI middleware TCP/IP address.	123.45.67.89
CTI Server Port 1	Optional	Switch or CTI middleware TCP/IP port.	3000
CTI Server IP Address 2	Optional	Second switch or CTI middleware TCP/IP address.	123.45.67.90
CTI Server Port 2	Optional	Second switch or CTI middleware TCP/IP port.	3000
Adapter Server Info 1	Optional	Custom fields used to configure the Adapter.	As required by the adapter implementation
Adapter Server Info 2	Optional	Custom fields used to configure the Adapter.	As required by the adapter implementation

Parameter	Required	Description	Sample Value
Adapter Server Info 3	Optional	Custom fields used to configure the Adapter.	As required by the adapter implementation
Adapter Server Info 4	Optional	Custom fields used to configure the Adapter.	As required by the adapter implementation
Adapter Server Info 5	Optional	Custom fields used to configure the Adapter.	As required by the adapter implementation
Adapter Server Info 6	Optional	Custom fields used to configure the Adapter.	As required by the adapter implementation

Middleware Parameters Specific to Custom Java Adapter Server

Parameter	Required	Description	Sample Value
TeleDevice Factory ClassName	Required	Java fully-qualified class name of the Custom Java Adapter TeleDeviceFactory object.	com.third-party.TeleDeviceFactory
CTI Server IP Address 1	Optional	Switch or CTI middleware TCP/IP address.	123.45.67.89
CTI Server Port 1	Optional	Switch or CTI middleware TCP/IP port.	3000
CTI Server IP Address 2	Optional	Second switch or CTI middleware TCP/IP address.	123.45.67.90
CTI Server Port 2	Optional	Second switch or CTI middleware TCP/IP port.	3000
Adapter Server Info 1	Optional	Custom fields used to configure the adapter.	As required by the adapter implementation
Adapter Server Info 2	Optional	Custom fields used to configure the adapter.	As required by the adapter implementation

Parameter	Required	Description	Sample Value
Adapter Server Info 3	Optional	Custom fields used to configure the adapter.	As required by the adapter implementation
Adapter Server Info 4	Optional	Custom fields used to configure the adapter.	As required by the adapter implementation
Adapter Server Info 5	Optional	Custom fields used to configure the adapter.	As required by the adapter implementation
Adapter Server Info 6	Optional	Custom fields used to configure the adapter.	As required by the adapter implementation

9. In the remaining middleware parameter fields, enter the middleware parameters that are common to all supported adapters. The following table lists and describes each parameter.

Middleware Parameters Common to All Supported Adapters

Parameter	Required	Description	Sample Value
Local Number Access Code	Required	Digits for agents to add at the beginning of a telephone number when making a local call from the ACD/PBX; consists of the local outbound trunk access code.	9
Long Distance Access Code	Required	For outbound dialing. Digits the system adds at the beginning of a telephone number when making a long distance call from within the country or region of the ACD/PBX; consists of the long distance trunk access code plus the National Direct Dialing (NDD) prefix.	91

Parameter	Required	Description	Sample Value
International Access Code	Required	For outbound dialing. Digits the system adds at the beginning of a telephone number when making an international call to another country or region from the ACD/PBX; consists of the international trunk access code plus the International Direct Dialing (IDD) prefix.	9011
Dialing Suffix	Optional	For outbound dialing. Digits the system adds at the end of a telephone number when placing any outside call from the ACD/PBX.	#
Local Area Codes	Optional	Semi-colon-separated list of other area codes that are local numbers for the location of the ACD/PBX. If not applicable, then leave blank.	301; 202; 888
Non-Local Exchanges	Optional	Semi-colon-separated list of exchanges within the Site Area Code that are long distance numbers for the location of the ACD/PBX. If not applicable, then leave blank.	123;234
Site Area Code	Required	Area code of the location of the ACD/PBX.	650
Site Country Code	Required	Country code of the location of the ACD/PBX.	1

Parameter	Required	Description	Sample Value
Site Internal Number Length	Required	Maximum number of digits an agent dials to reach another agent in the same interaction center. This is used to distinguish between internal and external calls.	5
Site Local Number Maximum Length	Required	Maximum number of digits dialed when making an outside local call from the ACD/PBX.	7
Site Overlay	Optional	For North American Numbering Plan only. Select YES if ten-digit dialing is required for placing outside local calls from the ACD/PBX. Otherwise, select NO or leave blank.	Yes

Parameter	Required	Description	Sample Value
Site Canonical Number Prefix	Optional, but recommended for implementing multi-site features for most interaction centers.	<p>A standardized number of the format: +<country code> (<area code>) <local exchange><subscriber number></p> <p>The area code is optional. Local Exchange and Subscriber Number can be combined into one number by omitting the dash (-). If there is no area code, then there must be a space after country code, such as +44 3456-1234 or +6 (8323) 12345, otherwise spaces are ignored. Site Canonical Number Prefix is prefixed to the value of Default Inbound or Outbound Phone Number Suffix Type to generate Canonical Phone Numbers for agent and teleset combinations that do not have a specifically defined Canonical Phone Number.</p>	+1 (123) 456-

Parameter	Required	Description	Sample Value
Default Inbound Phone Number Suffix Type	Optional, but recommended for implementing multi-site features for most interaction centers.	Identifies the type of number that inbound callers need to dial to reach a specific agent or teleset, that is the Direct Inward Dial [DID] number. If this field is blank, then no DID numbers will be derived, however, if specific Canonical Phone Numbers are specified for an agent or teleset, then they will be used for both DID and ANI.	Teleset Line Extensions
Default Outbound Phone Number Suffix Type	Optional, but recommended for implementing multi-site features for most interaction centers.	Identifies the type of number the ACD/PBX on the caller side sends as the Automatic Number Identification [ANI] of the call when transferring a call outside of the switch or when placing an outbound call. If this field is blank, then this parameter defaults to Teleset Line Extensions.	Teleset Line Extensions
Warm Transfer/Conference Initiation Wait Time (seconds)	Optional	Parameter can be used to delay the initiation of (warm) transfer and conference calls so that business applications receive sufficient time to update the call data with customer information.	5

Parameter	Required	Description	Sample Value
Enable Softphone Reset Popup Menu	Optional	When this popup is enabled, if agents' softphones become unsynchronized with the state of the physical teleset, then the agents can manually reset their softphones to a no-calls state.	False

10. Click **Update** to save.
11. Optionally, to associate and configure telesets or route points, click **Associate and Configure Telesets** or **Associate and Configure Route Points**.

Configuring Route Points

Use the Route Point page to define route points. A route point is the first point from which calls are queued and routed. "Route point" refers to Avaya VDN, Nortel CDN/ACDN, Aspect DID DNIS, and so on.

Use the following procedure to configure route points.

Prerequisites

- Create at least one server group.
- Create at least one CTI middleware.

Steps to Configure Route Points:

1. Use the Call Center HTML Administration responsibility to log in to the HTML Login URL.
2. Click the Call Center tab and the Route Point subtab.
The Route Point Summary page appears.
3. From the lists, select the appropriate server group and middleware or verify that they are selected.
4. Optionally, in the Find Route Point with Route Point Number field, enter a route point number or partial number to search for and click **Go**. Only numeric values are

valid.

The page refreshes and the search returns the Route Point Number.

5. Do one of the following:
 - To configure a new route point, click **Create**.
 - To reconfigure an existing route point, click the appropriate Route Point Number.
- The Route Point Details page appears with the Server Group Name and Middleware Name that you selected in the previous page.
6. Enter the Route Point Number.
7. Optionally, enter a Description.
8. Check that the correct Server Group Name and Middleware Name are selected.
9. Optionally, if you want to collect caller-entered digits, set CED to Yes.
10. Optionally, if you do not want this route point to be monitored by the Inbound Telephony Server, click **Not Monitored**. This option can be used with route points that do not need to be monitored by Inbound Telephony Server, such as when implementing passive mode (*not* enhanced passive mode) or configuring voice mail extensions.
11. Click **Update** to save.

The Route Point Details page refreshes and the Parameter Details fields appear.

12. Optionally, for multi-site configurations, enter a Canonical Phone Number for the Route Point's Direct Inward Dial (DID) number. Configure this field only if the canonical phone number of this route point is not the same as the Site Canonical Number Prefix (specified in the middleware configuration) that is concatenated with the Route Point Number.
13. Click **Update** to save.

What's Next

Configure Teleset Lines

Restrictions

No restrictions

Related Topics

Oracle Interaction Center Server Manager Implementation Guide

Configuring Teleset Lines

Use the following procedures to configure teleset lines.

- Steps to Configure Teleset Lines, page 4-18
- Importing and Exporting Telesets, page 4-22
- Doing Mass Updates of Telesets, page 4-24

Prerequisites

- Create at least one server group.
- Create at least one CTI middleware.

Steps to Configure Teleset Lines:

1. Use the Call Center HTML Administration responsibility to log in to the HTML Login URL.
2. Click the Call Center tab and the Teleset subtab.
The Telesets page appears.
3. From the Choose Server Group list, select the appropriate server group or verify that the correct server group is selected.
4. From the Choose Middleware list, select the appropriate CTI middleware or verify that the correct CTI middleware is selected.
The Telesets page refreshes. A list of the telesets assigned to the selected server group and CTI middleware appears.
5. Select the Teleset Type from the list.
6. Optionally, to search for a teleset, from the search criteria list select Hardware Number of Teleset Name. In the search criteria field, enter a value that corresponds to the selected criteria and click **Go**.
7. Do one of the following:
 - To configure a new teleset, click **Create**.

- To reconfigure an existing teleset, click the appropriate Hardware Number. The Teleset Details page appears.

8. If the Teleset Name field is blank, enter a descriptive teleset name.
9. Enter or edit a unique Hardware Number. The Hardware Number is typically the number of the physical teleset and is the same number used when logging into Oracle Universal Work Queue and the softphone.
10. Click **Create**.

The Teleset Details page appears with the Line Details fields. The selected Teleset Type determines the number of available teleset line fields.

11. In the Extension fields, enter the teleset line extension numbers. Use the following table to determine the number of teleset lines required for each teleset type.

Note: Configure the exact number of specified lines.

The following table lists telesets by manufacturer and their required line configurations.

Teleset Line Configurations

Adapter	Teleset	Required Line Configuration
Aspect Contact Center	Aspect	Three lines for each teleset. Enter the same instrument number in the Extension for all line indexes.
Cisco ICM	Cisco CallManager	Three lines for each teleset. Enter the same teleset extension number for all line indexes.
Envox CT Connect	Alcatel	Two lines for each teleset. Enter the same teleset extension number (<i>not</i> the agent login number) in the Extension field for Line Index 1 and Line Index 2.

Adapter	Teleset	Required Line Configuration
Envox CT Connect	Avaya (Lucent)	<p>Two OR three lines for each teleset — as many lines as there are call appearances on the actual teleset. Enter the same teleset extension number (station number, <i>not</i> the agent login ID) in the Extension field for all line indexes.</p>
Envox CT Connect	Ericsson	<p>Three lines for each teleset.</p> <ul style="list-style-type: none"> • For Line Indexes 1 and 2, enter the same ODN (Own Directory Number) in the Extension field. • For Line Index 3, enter the ADN (Additional Directory Number) in the Extension field.

Adapter	Teleset	Required Line Configuration
Envox CT Connect	Nortel	<ul style="list-style-type: none"> For Line Index 1, enter the DN (Directory Number) in the Extension field. This value corresponds to the Single Call Ringing key on the actual teleset. For Line Index 2, enter the ACD DN in the Extension field. This number corresponds to the Automatic Call Distribution key on the actual teleset, also known as the Position ID. For Line Index 3, enter 9999 (or any number). This line is used to display a consultation call placed by the agent.
Genesys Interaction Connector	Avaya	Set Hardware Number to the teleset extension (station number). Three lines for each teleset. Enter the same Place name (as configured in the Genesys CME) in the Extension field for all lines.
Genesys Interaction Connector	Other	Set Hardware Number to the teleset Extension DN (not ACD DN). Three lines for each teleset. Enter the same Place name (as configured in the Genesys CME) in the Extension field for all lines.

12. Optionally, for multi-site configuration, in the Canonical Phone Number fields,

enter the Direct Inward Dial (DID) number for each teleset line. For telesets for which a line index does not correspond with an actual physical teleset line, such as Nortel line index 3, enter 9999999. For switches in which DID numbers are attached to agents rather than to telesets, leave these fields blank and configure specific canonical phone numbers in CRM Resource (see *Oracle Interaction Center Server Manager Implementation Guide*). Configure this field only if the canonical phone numbers for this teleset are not the same as the Site Canonical Phone Number Prefix (specified in the middleware configuration) concatenated with the Extension.

13. Click **Update** to save.

Importing and Exporting Telesets:

You can import and export lists of teleset names and hardware numbers, contained in a spreadsheet or comma-separated-value list, into and from the Teleset page.

Log In

HTML Login URL

Responsibility

Call Center HTML Administration

Prerequisites

- Create at least one server group and middleware.
- The Teleset Type must exist and be valid. The teleset type determines the number of lines that are mandatory for the extension.
- Format the comma-separated-value file to include the following details. Sequence Number and Hardware Number are required. Depending on the teleset type, Line 3 extension may be required.
 - Sequence Number
 - Hardware number
 - Teleset name
 - Server group
 - Middleware
 - Teleset type
 - Line 1 extension
 - Line 1 canonical phone number

- Line 2 extension
- Line 2 canonical phone number
- Line 3 extension
- Line 3 canonical phone number

1. Open the Call Center tab, and then the Teleset tab.
The Telesets page opens.
2. Click **Import**.
The Teleset Import page opens.
3. Click **Browse**.
A file directory opens.
4. Choose the file that you want to import and click **Open**.
The file name appears in the File Name field.
5. In the On Duplicate Record field, choose which action to take when importing telesets that already exist.
6. Click **Start**.
The file downloads. If the file validation fails, then a report window lists the failed telesets and errors.

Exporting Telesets

Use the following procedure to export a list of the existing telesets into a comma-separated-value file.

Steps

1. Open the Call Center tab and then the Teleset tab.
The Telesets page opens.
2. To specify a range of telesets to export, in the "Please enter search criteria fields", choose either Teleset Name or Hardware Number and in the text field enter a corresponding value. Then click **Go**.
The page refreshes and lists the telesets that match the search criteria.
3. Click **Export**.
A window opens listing the exported telesets.

4. Save the file to a directory as HTML or text.

Doing Mass Updates of Telesets:

Mass updates for telesets involve moving more than one teleset from one CTI middleware configuration to another CTI middleware configuration.

Use the following procedure to do mass updates of telesets.

Prerequisites

- Configure at least one server group.
- Configure at least two CTI middlewares for telesets.

1. Use the Call Center Administration responsibility to log in to the HTML Login URL.
2. Click the Call Center tab > Teleset sub tab.
The Telesets page appears.
3. From the Choose Server Group list, select the appropriate server group or verify that the correct server group is selected.
4. From the Choose Middleware list, select the appropriate CTI middleware or verify that the correct CTI middleware is selected.
The Telesets page refreshes. A list of telesets appears.
5. In the Destination Server Group field, select the destination server group.
The Teleset Details page refreshes. A list of CTI middlewares appears.
6. In the Destination Middleware field, select the destination CTI middleware.
7. Do one of the following:
 - To select individual telesets for mass updating, in the Select column click the Teleset Names.
 - To select all telesets, click **Select**.
 - Optionally, to move all the telesets, even those that are not displayed, click **Mass Update All**. To move only the selected telesets, click **Mass Update**. If you click Mass Update, the telesets that are not displayed will not be moved to the destination CTI middleware.

Mapping IVR Fields

IVR mappings associate generic call data keys (IVR fields) to specific Oracle Fields so that the values captured in the generic call data keys are interpreted appropriately for screen pops, classifications, and call routing (in active mode only).

For example, if the IVRINFO1 key stores an account code, you need to map the IVR field IVRINFO1 to the Oracle Field Account Code.

IVR fields can be arbitrary names, with the exception of the following reserved keys:

- IVRINFO1, IVRINFO2, IVRINFO3, IVRINFO4: When the IVR Integration (IVRI) feature is enabled, an inbound media item contains up to four additional call data keys in the data packet sent from the IVR to IVRI.
- CED: For Avaya MultiVantage with Envox CT Connect, an inbound media item may contain an additional call data key named "CED" which captures the caller-entered digits that are collected by a Collect step in a vector.
- dataA, dataB, dataC, dataD, dataE: For Aspect CallCenter, an inbound media item contains five additional call data keys which correspond to the Aspect variables A through E.
- CallVar1, CallVar2,... CallVar10: For Cisco ICM middleware, an inbound media item may contain up to ten additional call data keys which correspond to the Cisco ICM Peripheral/Call Variables. Any Cisco ICM Extended Call Context (ECC) variables are also passed to the media item with the same names as they are defined in the Cisco ICM administration.
- For Genesys Interaction Connector, the attached data variable names are user defined. The variable names are passed to the media item with the same names that are defined in the Genesys CME.

Use the following procedure to map IVR fields to Oracle Applications fields.

Prerequisites

- Define at least one of each of the following:
 - Server group
 - CTI middleware
 - Route point

Steps to Map IVR Fields to Oracle Applications Fields:

1. Log into the Call Center HTML Administration with the responsibility Call Center Admin.
2. Click the Call Center tab > IVR sub tab.
The IVR Mappings page appears.
3. From the lists, select the appropriate Server Group, Middleware and Route Point.
The IVR Mappings page refreshes. A list of the IVR fields for the selected server group appears.
4. In IVR Field, type the *case sensitive* name of an IVR data key name of your IVR system, for example, customer_number.

Note: The IVR Field is case sensitive.

5. In the corresponding Oracle Field, select the value that corresponds to the IVR Field that you entered in step 3, for example, Customer Number.
6. Repeat steps 3 and 4 for each IVR field.
7. Click **Update** to save.

Performing Mass Updates of IVR Mappings:

Mass updates for IVR mappings involve moving more than one IVR mapping from one route point configuration to another route point configuration.

Use the following procedure to perform a mass update of IVR mappings.

Prerequisites

- Configure at least one server group.
- Configure at least two route points for IVR mappings.

1. Use the Call Center HTML Administration responsibility to log in to the HTML Login URL.
2. Click the Call Center tab > IVR sub tab.
The IVR page appears.
3. From the lists for Choose Server Group, Choose Middleware and Choose Route Point, select the appropriate server group, middleware and route point.
The IVR page refreshes. A list of IVR mappings appears.

4. From the Destination Server Group list in the Mass Update area, select the destination server group.

The IVR page refreshes. A list of CTI middlewares appears.
5. From the Destination Middleware list, select the destination CTI middleware.

The IVR page refreshes. A list of route points appears.
6. From the Destination Route Point list, select the destination route point.
7. Do one of the following:
 - In the Select column, click individual IVR mappings for mass updating.
 - If you want to select all IVR mappings, click **Select**.
8. Do one of the following:
 - To move all the IVR mappings, even those that are not displayed, click **Mass Update All**.
 - To move only the selected IVR mappings, click **Mass Update**.

Configuring Multi-Sites

Use the Multi-Site page to set up a tie line multi-site configuration between two CTI middlewares. A multi-site configuration contains all the information necessary to route or transfer a call from one site to another site by way of a tie line. Do not use this if the two sites route and transfer calls by way of the Public Switched Telephone Network (PSTN).

Use the following procedure to configure interaction center multi-sites.

Prerequisites

- Create at least two CTI middlewares.

Steps to Configure Multi-Sites:

1. Use the Call Center HTML Administration responsibility to log in to the HTML Login URL.
2. Click the Call Center tab > Multi-Site sub tab.

The Multi-Site Configuration Summary page appears.
3. From the Choose Server Group and Choose Middleware lists, select the appropriate

server group and CTI middleware.

The Multi-Site Configuration Summary page refreshes. A list of the multi-sites assigned to the selected server group and CTI middleware appears.

4. Do one of the following:

- To configure a new multi-site, click **Create**.
- To reconfigure an existing multi-site, click the appropriate Multi-Site Configuration.

The Multi-Site Details page appears.

5. To create a multi-site configuration from one CTI middleware to another CTI middleware, use the following guidelines:

- All fields are required.
- The From middleware and To middleware must be different.
- The Multi-Site Configuration Name must be unique and is limited to 128 characters.

6. Tie Line Access Code - This prefix describes to the source ACD/PBX that the call is going through the tie line. The prefix can be in the formats listed in the following table of two special qualifiers: minus (-) and plus (+):

Tie Line Access Codes

Tie Line Access Code	Sample Value	What an Agent Dials	What the Destination Agent Sees
-TLAC	-8	Target Number (for example 8501)	Source Agent Extension/Acd Agent ID (for example 24181)
TLAC	8	TLAC + Target Number (for example 88501)	TLAC (for the other direction) + Source Agent Ext/Agent ID (for example 224181)
+TLAC	+8	TLAC + Target Number (for example 88501)	Source Agent External ANI (for example 6501824181)

Note: For TLAC, the destination party sees the number that is needed to dial the caller by way of the tie line. A different Tie Line Access Code may go in the other direction.

- -TLAC: Two interaction centers are integrated seamlessly. Agents can dial extensions and never know that the call is going across a tie line to another interaction center. Multiple TLACs are supported in each direction. Create a new multi-site record for each distinct TLAC.
- TLAC: Standard Tie Line Integration. Agents must dial a special prefix, usually the access code to the tie line route, plus the destination (extension) when calling the other interaction center.
- +TLAC: Standard Tie Line Integration with External ANI. Same as above, but the destination sees the caller's External ANI, as though the Tie Line were not present and the caller is dialing by way of the Public Switched Telephone Network (PSTN). Multiple TLACs are supported in each direction, but only for Call and Data Transfer, not for Enterprise Routing. Create a new multi-site record for each distinct TLAC. Only one TLAC is supported in each direction.

7. Click **Update** to save.

The Multi-Site Details page refreshes.

Creating and Updating Interaction Keys

In the Interaction Keys page, you can create new Interaction Keys to use in the Call Center, Route and Classification components of the Interaction Center Suite. Interaction Keys have several purposes:

- Map IVR Fields
- Set up Routing and Classification Rules
- Add additional key value pairs to Interaction in Classification Rules Detail page
- Create displays in the softphone Display Configuration

Steps to Create and Update Interaction Keys:

1. Use the Call Center HTML Administration responsibility to log in to the HTML Login URL.
2. Do one of the following:

- Select the Call Center tab, Interaction Keys sub tab.
- Select the Route tab, Interaction Keys sub tab.
- Select the Classification tab, Interaction Keys sub tab.

The Interaction Keys page opens.

3. Do one of the following:

- To create a new interaction key, click **Create**.

The Create Interaction Keys page opens.

- To update an existing interaction key, from the Interaction Key list select the name of the Interaction Key.

The Update Interaction Keys page opens.

4. In the Code field, enter the identifier for an Interaction Key. An example of a Code for Contract Number is `ContractNum`. If a value is passed along with this identifier as a key-value pair, for example `ContractNum=10000`, then the value is recognized by Oracle Interaction Center Applications as a value for the defined Interaction Key.
5. In the Key Meaning field, for the Interaction Key enter display text that is easily recognized by users. An example of a Key Meaning is `Contract Number`.
6. Optionally, enter a description for the Interaction Key. An example of a key Description is `Customer Contract Number`.
7. From the Data Type list, select whether the interaction key data type is a String, Date or Integer.
8. Select one or all of the following options:
 - To add the Interaction Key to the list of Oracle Fields in the Call Center > IVR page, select Add to IVR.
 - To add the Interaction Key to the list of Route Rule Keys that are available in the Routing and Classification Rule Details page, and to add the Interaction Keys to the list of Classification Rule Keys that are available in the Update Classification Rule Details page, select Add to Routing/Classification.
 - To add the Interaction Key to the list of Available keys in the Softphone Display Configuration Details page, select Add to Softphone.
9. Click **Add** or **Update** to save.

Configuring Softphone

The softphone is a functional GUI representation of a telephone that is displayed on the monitor screens of interaction center agents. You can configure the following softphone functions:

- Softphone Display, page 4-31
- Speed Dial Profile Options, page 4-35
- Softphone Speed Dialing, page 4-36
- Softphone Logging, page 4-37

Note: Oracle does not have public or published APIs for making customized changes to softphone buttons or features. Any modifications to the softphone configuration other than those described in this section are customizations that Oracle Advanced Inbound Telephony base product does not support.

Prerequisites

- Interaction Keys to be displayed must exist in the Call Center, Interaction Keys sub tab and must have been added to the Softphone Available Keys list.
- Create at least one server group

Configuring Softphone Display:

You can use the Display Configuration page to do the following tasks:

- Select which interaction keys to display on the softphone. The Interaction Key value is displayed if the value is available in the interaction. For example, if Account Balance is selected for display, it will be displayed only if there is a valid value for Account Balance in the interaction.
- Arrange the order in which the selected interaction keys are displayed in the softphone display.
- Disable the display of prompts for the selected interaction keys.
- Assign display configurations to server groups.

A seeded, sample display configuration, "Default Configuration," is available for reference. The following table lists the Default Configuration.

Display Order	Interaction Key	Description	Prompt Displayed
1	Customer Name	Name of the Customer in an Advanced Inbound Call	No
2	AO Customer Name	Name of customer in Advanced Outbound call	No
3	AO Customer Phone Number	Telephony number of customer in Advanced Outbound call	No
4	Classification Value	Determines which screens to pop	No
5	Campaign Schedule Name	Name of campaign schedule in Advanced Outbound call	No
6	Campaign Name	Name of the Advanced Outbound Campaign	No
7	Other Party	Phone number of the caller	Yes
8	Dialed Number	DNIS	Yes
9	Wait Time	Difference between the Call Birth Time and the time the call comes to the agent's softphone	Yes
10	Campaign Classification	Advanced Outbound campaign call classification value	No

Display Order	Interaction Key	Description	Prompt Displayed
11	Account Code	Account number of the customer in an Advanced Inbound call	Yes

Keep in mind the following considerations:

- You do not need to assign the Default Configuration to a server group. For example, if a server group "Vision-Group One" is not assigned a softphone display configuration, then the softphone uses the Default Configuration to display Customer Call Data for all agents in "Vision-Group One."
- A server group can be associated with only one display configuration.
- Administrators can assign a display configuration to multiple server groups so that all the assigned server groups have similar softphone displays.

Use the following procedure to configure softphone displays.

Steps to Configure Softphone Display

1. Use the Call Center Administrator responsibility to log in to the Call Center HTML Administration.
2. Select the Call Center tab, the Softphone sub tab, and Display Configuration. The Display Configuration Summary page opens.
3. From the Choose Server Group list, select the server group to which the softphone is assigned.
4. Click **Go**.

The page refreshes and displays the softphone Configuration Names that are associated with the selected server group.

5. Do one of the following:
 - To configure a new softphone display, click **Create**. The Display Configuration Details page appears. Proceed to step 5..
 - To reconfigure an existing softphone display, select the Configuration Name. The Display Configuration Details page appears. Proceed to step 8..
 - To assign a softphone display configuration to a server group, for the softphone display Configuration Name click **Assign Server Groups**. The Server Group

Assignment Details page appears. Proceed to step 14..

6. In the Configuration Name field, enter a unique name for the display configuration.
7. Optionally, enter a description in the Description field.
8. Click **Create**.

The page refreshes and the Softphone Display lists appear.

9. In the Softphone Display group, from the Available Keys list select the keys to display on the softphone and move them to the Displayed Keys list by using the arrow button. To select and move all keys, use the double arrow button. You can change the order of the keys on the softphones by using the arrow buttons in the Displayed Keys list.

Note: If a telephone number matches more than one customer or contact (for example, if two contacts for a customer use the same number), then the Routing server cannot derive a unique Customer Name.

10. Click **Update** to save.
11. Click **Modify Display Prompts**.

The page refreshes with all the Displayed Keys in the Prompt and Value List.

Note: The keys in the Prompt and Value List are displayed with both the Key Name and value in the softphone display. For example, if "Account Balance" is in the Prompt and Value list and if 99999 is the value for Account Balance, then the Softphone Display would show "Account Balance:99999." Keys in the Value List are displayed with values only in the softphone display. For example, if "Customer Name" is in the Value Only list and Vision Customer is the value for Customer Name, the softphone display would show "Vision Customer."

12. From the Prompt and Value list, select any keys whose *values* you want to display only without prompts and move them to the Value Only list.
13. Click **Update** to save.
14. Click **Display Configuration** to return to the Display Configuration Page.
15. Optionally, to assign server groups to an existing softphone display configuration, click **Assign server groups** for the Configuration Name.

The Server Group Assignment Detail page opens.

1. Select server groups from the Available list and move them to the "Assigned to this Configuration" list. To remove server groups from the configuration, select servers from the "Assigned to this Configuration" list and move them to the "Available Servers" list.

The Available list shows only those server groups that currently do not have a display configuration assigned to them. To change the display configuration for a server group, first remove the server group from the "Assigned to this Configuration" list of the old display configuration and then add it to the "Assigned to this configuration" list of the new display configuration.

2. Click **Update** to save.

Configuring Speed Dial Profile Options:

You can use the following profile options to configure the Speed Dial List.

- CCT:Softphone:SpeedDial:Available Agents Display
- CCT:Softphone:SpeedDial:Internal Addresses Display
- CCT:Softphone:SpeedDial:External Addresses Display

You can configure the profiles at the following levels:

- Site (refers to system, not an interaction center site)
- User (agent)

Note: As of the current release, it is not possible to set profiles at the Responsibility level.

Use the following procedure to configure the Speed Dial profile options.

Steps to Configure Speed Dial Profile Options

1. Use the System Administrator responsibility to log in to Oracle Applications.
2. In the Navigator, select **Profile** and then **System**.
The Find System Profile Values form appears.
3. To set up the profile at the system level, select Site or User, or both.
4. To set up a profile at the agent level, in the User field enter a user name.
5. In the Profile field, type CCT:Softphone:SpeedDial%.

6. Click **Find.**

The System Profile Values form appears.

7. From the Site list, for each Profile field select whether or not to display the list in the Speed Dial.

- Yes: Display (default).
- No: Do not display.

8. Save.

Configuring Softphone Speed Dialing:

Administrators can configure frequently-dialed numbers in the softphone, enabling agents to click configured speed dial buttons to dial frequently-called parties automatically. When an agent logs into the softphone, a speed dial list of internal and external numbers for the agent's server group appears in the agent's softphone.

You can use the Speed Dial page to define the following speed dial numbers:

- Internal numbers within a server group or interaction center site
- External numbers shared across many server groups or interaction center sites

On the Speed Dial Numbers page, the Internal Numbers are listed above the External Numbers.

Use the following procedure to configure softphone speed dialing.

Steps to Configure Softphone Speed Dialing:

1. Use the Call Center HTML Administration responsibility to log in to the Call Center URL.

2. Select the Call Center tab > Softphone sub tab > Speed Dial.

The Speed Dial Numbers page opens.

3. From the Choose Server Group list, select the server group whose speed dial list you want to create or modify.

4. Click **Go.**

5. Optionally, to find the number of a specific agent, enter the name of the agent in the Find Number Like field and click **Go.**

The page refreshes and displays lists of configured internal and external speed dial numbers. The displayed numbers are available in the softphones of all agents in the selected server group.

6. Do one of the following:

- To configure a new Internal Number for the speed dial, in the Internal Numbers area click **Create**.

The Internal Number Details page opens. Proceed to step 6.

- To configure a new external number for speed dialing, in the External Numbers area click **Create**. External Numbers are listed below Internal Numbers.

The External Number Details page opens. Proceed to step 10.

- To reconfigure an existing internal or external number for speed dialing, click the First Name, Last Name.

The External Number Details page opens. For internal numbers, proceed to step 6.. For external numbers, proceed to step 10.

7. For internal numbers, enter the Last Name and Internal Number.

8. Optionally, enter the First Name and Description.

9. Select a server group from the Server Group Name list.

10. Click **Add or Update**. Proceed to step .

11. For external numbers, enter the Last Name and Local Number. Do not include dashes or spaces in the Local Number field.

12. Optionally, enter the First Name, Description, Country Code and Area Code.

13. Click **Add or Update**.

The page refreshes.

14. In the Server Group Assignments group, from the Available Server Groups list select the server groups to which this external number should be associated. Move the selected groups to the Selected Server Groups list.

15. Click **Update** to save.

Configuring Softphone Logging:

The softphone supports logging softphone events, commands, and other information at various levels and output formats.

Softphone has the following logging options.

- Agent Desktop Logging
- Java Console Logging

Agent Desktop Logging

The softphone can be configured to log events, commands or information to a file on the agent desktop. To enable agent desktop logging, set the Java Run Time Parameter in the Jinitiator Console to "true," for example:

```
-Dsoftphone.debug.file=true
```

By default, a log file starting with SOFTPHONE<timedate>.log is generated in the directory c:/temp. To specify another directory, use the following Java Run Time Parameter in Jinitiator Console:

```
-Dsoftphone.debug.directory=<fully qualified directory path>
```

For example: -Dsoftphone.debug.directory=e:/softphonelog

Java Console Logging

By default the softphone logs all error events (only) to the java console in the agent desktop. To disable Java Console logging, set the Java Run Time Parameter in the Jinitiator Console to "true," for example:

```
-Dsoftphone.debug.noconsole=true
```

Note: If the Java Run Time parameter is *not* set, and the file parameter *is* set, then both console and file logging are enabled simultaneously.

Logging Softphone Errors, Inbound Events and Commands:

To log all softphone errors, inbound events, and commands, you can set the softphone to support the following logging levels:

- fatal: Only fatal errors
- error (default): All errors
- warning : All inbound events and outbound commands
- info : All important information about the softphone, such as calls by Oracle Universal Work Queue and application plug-ins
- verbose: Almost all log messages

To set the logging level, use the Java Run Time Parameter

`-Dsoftphone.debug.level=soft=<level>` where level can be {fatal,error,warning,info,verbose}.

Setting the Softphone Logging Level

1. Log out of Oracle Universal Work Queue, IcWork Controller and Oracle Applications.

2. Launch Jinitiator. If multiple versions exist on the system, verify that you are launching the correct version.
3. In the Basic tab, set the Network Access to Unrestricted, which is required to generate a file from logging.
4. In the Basic tab, to the Java Run Time Parameters add the following command:

```
-Dsoftphone.debug.file=true -Dsoftphone.debug.directory=c:/softphone
-Dsoftphone.debug.level=soft=info
```
5. Press Apply in Jinitiator.
6. Close Jinitiator.
7. Restart Oracle Applications.
8. Log into Oracle Universal Work Queue and the softphone.
9. Check the directory c:/softphone for the new log file. If the log file has not generated, then check that the directory has the correct permissions. Otherwise, close all open browser sessions, open a new browser and log in to Oracle Universal Work Queue and the softphone.

Configuring Classifications

Classifications specify how calls are identified and which business applications should be used to screen pop caller data. Classifications are determined by the following criteria:

- Classification values, that determine which screens to pop in an Oracle Universal Work Queue media action, and are used in Interaction Center Intelligence reporting, such as the number and type of calls. Classification values set a classification to a specific string value that is defined in the Classification Values page.
- PL/SQL functions, that are optional and needed only for dynamic classifications. The functions are registered to derive a classification value from a PL/SQL function that is defined in the PL/SQL Functions page.
- Classification rules, that determine the classification value for a particular interaction. An example of a classification rule is, "If ANI= 8000 and DNIS=800-ORACLE, then Classification=GoldService."

In the Classification page, do the following tasks in sequence as listed.

1. Configure Classification Values, page 4-40

2. Modify Media Actions Assigned to Classification Values, page 4-41
3. Define Classification Rules, page 4-41
4. View Classification Rules, page 4-44
5. Set Classification Rule Priorities, page 4-44

Prerequisites

- Define at least one classification value.
- Optionally, if a classification value is derived from a PL/SQL function, then the PL/SQL function should be defined in the PL/SQL Function page.
- Create at least one classification rule.

Configuring Classification Values:

Use the following procedure to configure classification values.

1. Use the Call Center HTML Administration to log in to the HTML Login URL
2. Select the Classification tab > Rules sub tab > Setup > Classification Value.

The Classification Values page opens.

Note: Only those classification values that are defined in the Classification Values page will be valid in the interaction center. If a PL/SQL function used in a classification rule returns a classification value that is not defined in this page, then the call will be marked "unClassified."

3. Do one of the following:
 - To create a new classification value, click **Create**.
The Create Classification Value Details page appears.
 - To update an existing value, click the name of the Classification Value.
The Update Classification Value Details page appears.
4. Enter a value in the Classification Value field, for example, Gold Service.
5. Optionally, in the Description field, enter a description of the value, for example, For Account Balance \geq 100000.

6. If you are creating a new classification value, click **Create**.

The Default Screen Pop Action Association fields appear.

7. In the Media Types fields, select screen pops from the Screen Pop Action lists for Oracle Universal Work Queue to associate with the corresponding media types.

8. Click **Create** or **Update** to save.

The page refreshes.

Modifying Media Actions Assigned to Classification Values:

Use the following procedure to modify Oracle Universal Work Queue media actions assigned to existing classification values.

1. Use the Call Center HTML Administration responsibility to log into the HTML Login URL.

2. Select the Classification tab > Rules sub tab > Classification Value.

The Classification Values page appears.

3. Click the Classification Value that you want to modify.

The Update Classification Value Details page appears.

4. From the Screen Pop Action list, choose a screen pop action for the corresponding media types.

5. Click **Update** to save.

Defining Classification Rules:

Classification rules define the conditions for assigning a particular classification value to an interaction. Rules can be assigned to specific server groups and media types.

Classification rules are evaluated only for those interactions that belong to the assigned media types and server groups.

1. Use the Call Center HTML Administration responsibility to log in to the HTML Login URL.

2. Select the Classification tab > Rules sub tab > Rules.

The Classification Rules page opens.

3. From the Choose Server Group list, select the server group.

4. Optionally, from the Choose Mediatype list, select a media type.

5. Click **Go**.

The page refreshes and any rules that are assigned to the selected media type appear.

6. Do one of the following:

- To create a new classification rule, click **Create** and proceed to step 8.

The Create Classification Rule page appears.

- To update an existing classification rule, click the Rule Name.

The Update Classification Rule Details page appears.

7. Optionally, to find a specific rule, do the following:

1. From the "Find Rule with" list, select Name or Rule Key.

2. In the Like field, enter the value for which to search.

3. Click **Go**.

The page refreshes and displays the list of rules based on the search conditions.

8. Optionally, you can do the following:

1. To view rule details, click **Show**.

2. To hide rule details, click **Hide**.

3. To delete a rule, check the Select box for the rule and click **Delete**.

The page refreshes and the rule is not evaluated by the classification engine.

9. In the Rule Name field, enter an arbitrary, unique name for the rule.

10. Optionally, enter a value for Reset To Highest Priority After (Seconds).

11. Click **Add**.

The page refreshes and the conditions fields appear.

12. From the "For Interactions Matching...." list, do one of the following:

- If you want the rule to be evaluated as true when *at least one* condition is met, select **Any**.

- If you want the rule to be evaluated as true when *all* conditions are met, select **All**.

13. Enter the conditions for the rule. From the lists select the Rule Key and Operator and enter a Value. Examples of sets of conditions include:

- DNIS equals 8008008000 and Account Number is greater than 10000
- DNIS equals 8008008001 or Account Number is less than or equal to 10000

Add as many conditions as necessary.

14. In the "Set the Classification to" options, select the Classification Type:

- To set a classification to a specific string value that is defined in the Classification Values page, select **Classification Value**, and then select the value from the list.
- If the classification value should be derived from a PL/SQL function that is defined in the PL/SQL Functions page, select **Derive from PL/SQL Function** and then select the function from the list.

15. Optionally, in the "Add Additional Key Value pairs to Interaction" options, to attach additional key value pairs to the interaction or call, do the following:

- In the Key field, enter a key or click the search icon to find a key.
- In the Value field, enter a value to be associated with this key.

Based on the following values, the application can generate a screen pop with the correct customer and the correct context of the call. The system can, when classifying the call, add a key value pair to the interaction. The key for this intent is `occtScreenPopAction` and the value to be attached could be one listed in the following table.

Value	Defaults to
InquireSR	SR tab in Inquiry mode
CreateSR	SR tab in Create mode
InquireInvoice	Invoices tab in Inquiry mode
InquireOrder	Orders tab in Inquiry mode.
InquireContract	Contracts tab in Inquiry mode
InquireIB	Install Base tab in Inquiry mode
InquireRMA	Orders tab in Inquiry mode

Value	Defaults to
DisconnectService (New for R12)	Install Base tab and "Disconnect Service" is defaulted in the list of actions
ReconfigureService (New for R12)	Install Base tab and "Reconfigure an Instance" is defaulted in the list of actions

16. In the "Rule is assigned to" options, from the Available Media Types and Available Server Groups lists select the media types and server groups to which the rule should apply.
17. Click **Update** to save.

Viewing Classification Rules:

Use the following procedure to view classification rules by server group, media type and all classification rules.

1. Use the Call Center HTML Administration responsibility to log in to the HTML Login URL.
2. Select the Classification tab > Rules sub tab > Rules.
The Classification Rules page appears.
3. To view only the classification rules that are used for the selected media type, select a type of media from the Choose Mediatype list.
4. Click **Go**.
The page refreshes with the prioritized list of classification rules that belong to the selected media type.
5. To view a brief summary of the displayed classification rules, click **Show** beside a Rule Name.
The page refreshes and lists a summary of the classification rules.
6. To view all the defined classification rules in the system, click **View Summary**.
The page refreshes and lists all classification rules.

Setting Classification Rule Priorities:

A classification rule with higher priority is evaluated before another classification rule with a lower priority.

Use the following procedure to set classification rule priorities.

1. Use the Call Center HTML Administration responsibility to log in to the HTML Login URL.
2. Click the Classification tab > Rules sub tab > Rules by Server Group > Priority. The Classification Rule Priorities page appears.
3. From the Choose Server Group list, select the server group to which the Classification Rule applies.
4. Click **Go**.

The page refreshes and the Rule Names appear for the selected server group. The priorities are listed in descending order, so that rules with the highest priority are displayed at the top of the list.

5. To change a rule priority, click the Increase Priority or Decrease Priority arrows. Clicking an arrow with a dash on the top or bottom moves the rule to the top or bottom of the list, respectively.
6. Click **Update** to save.

Setting Options for Customer Lookup:

Administrators can use customer lookup procedures to explicitly distinguish between a Sales call and Service call, based on applied classification rules and populate appropriate Customer Lookup data. Classification rules can use customer data in addition to call data. Call classification follows IVR data collection. Customer Lookup is performed after the call is classified. All classifications have the default value of No Customer Lookup.

Use the following procedure to set options for customer lookup.

Steps to Set Options for Customer Lookup

1. Use the Call Center HTML Administration responsibility to log in to the HTML Login URL.
2. Select the Classification tab
The Classification Rules page appears.
3. From the Choose Server Group list, select the server group to which you want to apply the customer lookup.
4. To create a new classification, click **Create**. To edit an existing classification, click the Rule Name.
The Classification Rules Details page appears.

5. From the Set the Customer Lookup To options, select one option:
 - Custom: Requires that consultants implement Customer Data Lookup at the customer site.
 - Customer Care default: Seeded for customer care
 - E-Business Center: Occurs before the call classification
 - Do not look up customer: The default option, no customer lookup occurs
6. In the Set Responsibility and Application to options, select the Responsibility and the application to which this classification rule applies.
7. Optionally, you can use the Add Additional Key Value pairs to Interaction function.
8. Click **Update** to save.

Configuring Routes

Use the Route page to configure Oracle Telephony Manager for routes, to set route priorities and to route calls to route points that are not monitored. Configuring routes requires understanding rule-based routing concepts and business requirements.

You can configure a route to be one of two types:

- Static routes that are based on agents derived from Resource groups that are cached by the Routing Server.
- Dynamic routes that are based on agents who are derived from a seeded routing workflow or custom PL/SQL function.

You can do the following routing configurations:

- Configure Static Routes, page 4-47
- Configure Dynamic Routes, page 4-48
- Set Route Priorities, page 4-49
- Configure Reroutes, page 4-50
- Limit the Number of Reroutes for an Unanswered Inbound Call, page 4-51

Prerequisites

- Create at least one Resource Group with a usage of Call Center.

Configuring Static Routes:

Use the following procedure to configure static routes.

1. Use the Call Center HTML Administration responsibility to log in to the HTML Login URL.

2. Select the Route tab.

The Routes page appears.

3. Do one of the following:

- To configure a new route, click **Create**.
- To reconfigure an existing route, click the Route Name.

The Route Details page appears.

4. If the Route Name field is blank, enter the Route Name. The Route Name is an arbitrary, descriptive name of the route.

5. In the Route Type list, select **Static**.

6. Optionally, in the ReRoute Time Out field, enter a Value in seconds for the route. This value overrides any classification time out for a route request.

7. In the Default Destination list, select a default route destination. If the routing server cannot determine agents from the defined destinations, then the server defaults to the selected Default Destination.

8. Optionally, enter a Description.

9. Click **Update**.

The Routes page refreshes. The Static Destination, Route Rules and Route Filter Details fields appear.

10. Select one or more destinations from the Static Destination list.

11. In the Route Rules fields, create a route rule by choosing a Key and Operation from the Route Rules lists and enter a Value, for example, "Language Competency Equals French" or "Customer Number Begins With 0." The selected Key determines the available Operations.

12. In the Route Filter Details, move one or more Available Filters (server groups) to the Filtered By column. Adding filters restricts the route results to the agents who are listed in the selected server groups.

13. Click **Update** to save.

Configuring Dynamic Routes:

Use the following procedure to configure dynamic routes.

1. Use the Call Center HTML Administration responsibility to log in to the HTML Login URL.

2. Select the Route tab.

The Routes page appears.

3. Do one of the following:

- To configure a new route, click **Create**.
- To reconfigure an existing route, click the Route Name.

The Route Details page appears.

4. If the Route Name field is blank, enter the Route Name. The Route Name is an arbitrary, descriptive name of the route.

5. In the Route Type list, select **Dynamic**.

6. Optionally, in the ReRoute Time Out field, enter a Value for the route. This value overrides any classification time out for a route request.

7. In the Default Destination list, select a default route destination. If the routing server cannot determine agents from the defined destinations, then the server defaults to the selected Default Destination.

8. Optionally, enter a Description.

9. Click **Update**.

The Routes page refreshes. The Procedure Detail, Route Rules and Route Filter Details boxes appear.

10. Do one of the following:

- In the Procedure Detail box, enter a name for this function in the Procedure Name field. Optionally, enter a description in the Description field.
- Optionally, click Use Default Workflow Procedure. The Default Workflow Procedure is the seeded routing workflow. If you use the Default Workflow Procedure, you do not need to enter any parameters, however, the Default Workflow Procedure is slower than static routes.

Note: Choosing the Default Workflow Procedure will clear the Parameters Detail fields of any data that you enter.

If you chose Use Default Workflow Procedure, proceed to step 13.

11. If you did not select the Default Workflow Procedure, in the Parameters field enter the Parameter and select a Value from the list. You can enter a fixed, hard-coded value in the left Value field or select an Oracle value from the list in the right Value field, for example, CustomerID. Sequence is the sequence of the parameter for a PL/SQL function. See Dynamic Routes.
12. If you did not select the Default Workflow Procedure, select a Data Type: Call Data, Date, Integer, Route Result, and Varchar.
13. If you did not select the Default Workflow Procedure, select a Direction: IN, INOUT, and OUT.
14. In the Route Rules fields, create a route rule by choosing a Key and Operation from the Route Rules lists and enter a Value, for example, "Language Competency Equals French" or "Customer Number Begins With 0." The selected Key determines the available Operators.
15. In the Route Filter Details, move one or more Available Filters (server groups) to the Filtered By column. Adding filters restricts the route results to the agents who are listed in the selected server groups.
16. Click **Update** to save.

Setting Route Priorities:

The Route Identification Algorithm functions according to the priority of individual routes. If more than one route satisfies all the applicable rules, the route with the highest priority is chosen.

Changing the value of a route priority affects the values of other route priorities. If you increase the value of a priority, then the priorities of all the routes with a value equal to or greater than the original value but less than the new value will decrease by one. If you decrease the value of a priority, then the value of all the routes with a value equal to or less than the original value but greater than the new value will increase by one. For example, if you decrease 6 to 3, then 3 increases to 4, 4 increases to 5, and so on. If you increase 3 to 6, then 4 decreases to 3, 3 decreases to 2, and so on.

Prerequisites

Configure at least two routes.

Use the following procedure to set route priorities.

1. Use the Call Center HTML Administration responsibility to log in to the HTML Login URL.

2. Select the Route tab.

The Routes page appears.

3. In the same row as the appropriate Route Name, from the Priority list select a priority.

A message appears: "Do you want to change the Priority of this route and refresh the page? Click OK if you want to update the priority, click CANCEL to abort."

4. Click **OK**.

Configuring Reroutes:

A reroute has the same route rules as the original route, but a different set of agents as the destination than the original route.

Use the following procedure to set up a reroute for a specific route.

Prerequisites

Configure at least one route.

1. Use the Call Center HTML Administration responsibility to log in to the HTML Login URL.

2. Select the Route tab and the Route sub tab.

The Routes page appears.

3. Click **Create**.

The Route Details page appears.

4. Enter a unique Route Name for the reroute. The name cannot be the same name as the original route.

5. In the Route Type field, select a route type. The route type can be different from the route type of the original route.

6. In the Default Destination field, select a default destination. If the agent group destination defined in step 7 is not used, then the default destination is used.

7. Optionally, enter a Description.

8. Define a new agent group destination for the reroute. The destination must be different from the destination that was defined for the original route. Do one of the following:

- For a dynamic route, configure a destination in the Procedure Details group of fields.
- For a static route, select a destination from the Static Destination list.

9. In the Route Rules fields, enter the same values for Key, Operator and Values as the original route.

10. Click **Update** to save.

The page refreshes. The new reroute is listed as a Route Name in the Route page. By default, the newest route is given the lowest priority, so that the reroute automatically has a lower priority than the original route. To change route priorities, see [Setting Route Priorities](#).

Note: By default, a call is routed to all agents who are logged in when a route timeout occurs with either of the following conditions :

- No reroute rule has been specified.
- All the set up reroutes have timed out, and none of the agents who have already received the media item have handled the call.

Limiting the Number of Reroutes for an Unanswered Inbound Call:

Administrators can control the rerouting of inbound calls in one of two ways:

- Set the time out value for a route rule to be -1 in Routing Rules Administration.
- Set a value for the Routing Server Parameter: Maximum number of Reroutes.

An interaction center administrator can control the reroute feature at a global level by setting the value of the above parameters to a non-negative value (≥ 0). For example regardless of the type of inbound call, if an interaction center administrator wants to limit the number of reroutes per call to 2, then the value for Maximum number of Reroute should be set to 2. In that case, all the calls serviced by that routing server will be rerouted only twice and will be in the routed agents' queues until one of the routed agents answers the call or if the customer hangs up.

Prerequisites

Configure at least one route rule.

1. Use the Call Center HTML Administration responsibility to log in to the HTML Login URL.

2. Select the Route tab and the Route sub tab.

The Routes page appears.

3. Click the relevant Route Name.

The Route Details page appears.

4. In the Route Time Out field, enter the value -1.

5. Click **Update** to save.

Configuring Agent Telephony Parameters

Telephony parameters provide the ability to configure each agent resource to a specific telephony middleware and the associated middleware parameters that define agent login and password details.

Alcatel 4400 with Envox CT Connect

For an Alcatel 4400 switch with Envox CT Connect middleware, use the parameters in the following table to set the telephony parameters for the agent.

Parameter	Description	Example
ACD Agent ID	Agent number used to log in to a telephone, as defined in the Alcatel switch administration	3551
ACD Agent Password	Agent password or personal code, as defined in the Alcatel switch administration	0000
ACD Queue	Group (PG) Number (not the Pilot number or the Queue number), as defined in the Alcatel switch administration	3700

Parameter	Description	Example
Canonical Phone Number	<p>A canonical phone number that is associated with the ACD Agent ID. This is typically a Direct Inward Dial (DID) number that an outside caller dials to reach this agent directly. You need to configure this field only if the canonical phone number of this agent is not the same as the Site Canonical Number Prefix (specified in the middleware configuration) concatenated with the ACD Agent ID. If a canonical phone number is associated with the teleset line extension instead of the ACD Agent ID, then configure the canonical phone number in Teleset Line Configuration instead and leave this field blank.</p> <p>Optional, but recommended for implementing multi-site features.</p>	+1 (123) 456-7890

Aspect CallCenter with Aspect Contact Server

If you are using an Aspect CallCenter switch with Aspect Contact Server middleware, then use the following table to set the telephony parameters for the agent.

Parameter	Description	Example
ACD Agent ID	Agent extension number, as defined in the Aspect Agent Administrator	20011
ACD Agent Password	Agent password assigned to the agent extension number	20011

Parameter	Description	Example
Canonical Phone Number	<p>A canonical phone number that is associated with the ACD Agent ID. This is typically a Direct Inward Dial (DID) number that an outside caller dials to reach this agent directly. You need to configure this field only if the canonical phone number of this agent is not the same as the Site Canonical Number Prefix (specified in the middleware configuration) concatenated with the ACD Agent ID. If a canonical phone number is associated with the teleset line extension instead of the ACD Agent ID, then configure the canonical phone number in Teleset Line Configuration instead and leave this field blank.</p> <p>Optional, but recommended for implementing multi-site features.</p>	+1 (123) 456-7890

Avaya MultiVantage with Genesys Interaction Connector

If you are using an Avaya MultiVantage switch with Genesys Interaction Connector middleware, then use the following table to set the telephony parameters for the agent.

Parameter	Description	Example
ACD Agent ID	Agent Login ID defined for this agent in Avaya Communication Manager administration.	34161
ACD Agent Password	Agent password, if any, defined in Avaya Communication Manager administration. Leave blank if no password is administered for this agent.	12345

Parameter	Description	Example
ACD Agent Queue	Agent Hunt Group Extension defined in Avaya Communication Manager administration.	24160

Avaya MultiVantage with Envox CT Connect

If you are using an Avaya MultiVantage switch with Envox CT Connect middleware, then use the following table to set the telephony parameters for the agent.

Parameter	Description	Example
ACD Agent ID	Agent login ID, as defined in the MultiVantage switch administration	34141
ACD Agent Password	Agent password (if a password is configured for the agent login ID), as defined in the MultiVantage switch administration	34141

Parameter	Description	Example
Canonical Phone Number	<p>A canonical phone number that is associated with the ACD Agent ID. This is typically a Direct Inward Dial (DID) number that an outside caller dials to reach this agent directly. You need to configure this field only if the canonical phone number of this agent is not the same as the Site Canonical Number Prefix (specified in the middleware configuration) concatenated with the ACD Agent ID. If a canonical phone number is associated with the teleset line extension instead of the ACD Agent ID, then configure the canonical phone number in Teleset Line Configuration instead and leave this field blank.</p> <p>Optional, but recommended for implementing multi-site features.</p>	+1 (123) 456-7890

Cisco CallManager with Cisco ICM

If you are using a Cisco CallManager switch with Cisco ICM middleware, then use the following table to set the telephony parameters for the agent

Parameter	Description	Example
ACD Agent ID	Agent Peripheral Number, as defined in the Cisco ICM Agent Explorer	7011
ACD Agent Password	Agent Password, as defined in the Cisco ICM Agent Explorer	7011

Parameter	Description	Example
Canonical Phone Number	A canonical phone number that is associated with the ACD Agent ID. This is typically a Direct Inward Dial (DID) number that an outside caller dials to reach this agent directly. Configure this field only if the canonical phone number of this agent is not the same as the Site Canonical Number Prefix (specified in the middleware configuration) concatenated with the ACD Agent ID. If a canonical phone number is associated with the teleset line extension instead of the ACD Agent ID, then configure the canonical phone number in Teleset Line Configuration instead and leave this field blank. This parameter is optional, but is recommended for implementing multi-site features.	+1 (123) 456-7890

Ericsson MD110 with Envox CT Connect

If you are using an Ericsson MD110 switch with Envox CT Connect middleware, then use the following table to set the telephony parameters for the agent.

Parameter	Description	Example
ACD Agent ID	Agent login ID, as defined in the Ericsson switch administration	2706
ACD Agent Password	Agent password, as defined in the Ericsson switch administration	2706

Parameter	Description	Example
Canonical Phone Number	<p>A canonical phone number that is associated with the ACD Agent ID. This is typically a Direct Inward Dial (DID) number that an outside caller dials to reach this agent directly. You need to configure this field only if the canonical phone number of this agent is not the same as the Site Canonical Number Prefix (specified in the middleware configuration) concatenated with the ACD Agent ID. If a canonical phone number is associated with the teleset line extension instead of the ACD Agent ID, then configure the canonical phone number in Teleset Line Configuration instead and leave this field blank.</p> <p>Optional, but recommended for implementing multi-site features.</p>	+1 (123) 456-7890

Nortel Meridian with Genesys Interaction Connector

If you are using a Nortel Meridian switch with Genesys Interaction Connector middleware, then use the following table to set the telephony parameters for the agent.

Parameter	Description	Example
ACD Agent ID	Agent Login ID that is defined for this agent in Symposium Call Center Server administration.	8601
ACD Agent Queue	Agent Skill group, if any, that is defined in Nortel Meridian 1 administration.	7600

Nortel Meridian with Envox CT Connect

If you are using a Nortel Meridian switch with Envox CT Connect middleware, then

use the following table to set the telephony parameters for the agent.

Parameter	Description	Example
ACD Agent ID	Agent ID, typically a unique number between 1000 and 9999	7501
Canonical Phone Number	A canonical phone number that is associated with the ACD Agent ID. This is typically a Direct Inward Dial (DID) number that an outside caller dials to reach this agent directly. You need to configure this field only if the canonical phone number of this agent is not the same as the Site Canonical Number Prefix (specified in the middleware configuration) concatenated with the ACD Agent ID. If a canonical phone number is associated with the teleset line extension instead of the ACD Agent ID, then configure the canonical phone number in Teleset Line Configuration instead and leave this field blank. Optional, but recommended for implementing multi-site features.	+1 (123) 456-7890

Use the following procedure to configure telephony parameters for an interaction center agent.

Prerequisites

- Create at least one employee resource.
- If the Employee has already been created in Human Resources Management System Manager, check that the employee resource has a configured USER NAME.

Steps to Configure Agent Telephony Parameters:

1. Use the Call Center HTML Administration responsibility to log in to the HTML

2. Select the Resource tab and the Telephony Parameters subtab.

The Search Telephony-enabled User page opens.

3. You can use the search criteria to search for a specific agent or a group of agents, such as all the agents in a server group. From the list, select a search criteria.

The page refreshes.

4. In the search field, enter or select the value to match the criteria that you selected in the list.

5. Click **Go**.

The page refreshes.

Note: Note: If more than one agent fits the search criteria, then all those agents' names appear in the Resource Details fields. If the search has returned several pages of agents, in the lower right you can use the page range list and the First|Previous and Next|Last links to locate specific agents.

6. Select a Resource Name.

7. The Resource Details page appears.

8. Select a Middleware and Parameter from the lists. For a description of parameters, see the list of tables following this procedure.

9. In the Value field, enter a value to correspond to the parameter that you selected in step 7.

10. Click **Add**.

The page refreshes and the new specifications appear in a list below the search criteria.

11. If necessary, repeat steps 6 through 10 for additional parameter.

12. Click **Update** to save.

The following tables list agent telephony parameters according to switch and CTI middleware combinations.

Managing Media Item Processes

Media items are controlled by the Concurrent Manager, which uses two defined processes:

- Close media items process, which takes as input the interval to check for closed media items. The default value is 15 minutes.
- Timeout media items process, which takes the interval to timeout any stale or unclosed media items, that is, if a media item has stayed open for an interval equivalent to timeout, then the media item will be forced closed. Typically, closure due to timeout applies to media items for which Oracle Telephony Manager has no way of determining whether or not the media item can be closed correctly, for example, Dial failures.

Both of these Concurrent Manager processes are self scheduling. After you schedule them, they will run automatically at the defined run intervals.

- For these processes to run correctly, the concurrent manager framework must be available at all times.
- Run these processes even if the customer has not implemented Oracle Interaction Center Intelligence.

To run the media item processes, use the following procedure:

Prerequisites

- Create a user with the Interaction Center Intelligence Admin Apps responsibility.

Steps to Manage Media Item Processes:

1. Use the Interaction Center Intelligence Admin Apps responsibility to log in to the Oracle Applications Forms Administration.
2. In the Navigator window Functions tab, select **Requests**.
3. Click **Open**.
The Find Requests window opens.
4. Click **Submit a New Request**.
The Submit a New Request window opens.
5. Accept the default option "Single Request."

6. Click OK.

The Submit Request window opens.

7. In the Name field, click to open the drop-down menu.

The Reports window opens.

8. Do one of the following:

- Select Close Media Items.
- Select Timeout Media Items.

Note: In Minipack O, the timeout interval is the same as the interval to check for timeout. From Minipack P onwards, timeout media items have two input parameters. The first parameter defines the timeout interval. The second parameter defines the interval to check for timed out media items. The default value for timeout interval is 24 hours. The default value for check timeout is 6 hours.

The Parameters window opens.

9. You can accept the default value or enter a different value. (The lower the value, the closer the interval is to real time.)

10. Click OK.

The Submit Request window opens.

11. Click Submit.

The Find Requests window opens.

12. Select All My Requests.

13. Click Find.

The Requests window opens.

14. Verify that the submitted request appears in the schedule.

15. Optionally, click a row to select a request, and then select any of the available options: Hold Request, Cancel Request, View Details, Diagnostics, View Output, View Log.

16. Select File >Save.

Setting Up Workflow Item Type

Use the following procedure to access the Workflow Item Type.

1. Launch Workflow Builder 2.6.
2. From the menu, Select File > Open.
3. Choose Database and enter the user name, password and Connect Strings.
4. Click **OK**.
5. The Show Item Types window opens.

Select "Call Center Routing Starts/Ends Here!!" from the Hidden List and move it to the Visible List.

6. Click **OK**.

The Navigator opens with the Selected Item Type.

Related Topics

Oracle Workflow Administrators Guide

Oracle Workflow User's Guide

Diagnostics and Troubleshooting

This chapter covers the following topics:

- Error Messages
- Softphone Performance Issues and Solutions

Error Messages

Refer to the following error messages for an explanation of an error message and directions on fixing the error.

- Telephony Adapter Server `java.lang.NoClassDefFoundError`, page 5-1
- `ctcUnsupProc` Error, page 5-2

Telephony Adapter Server `java.lang.NoClassDefFoundError`

The error "`java.lang.NoClassDefFoundError`" in the Oracle Telephony Adapter Server log, for what appears to be a third-party class (for example, `com/dialogic/ctcapi/ctcException`), is caused by a missing third-party client library on the Interaction Center Server Manager node where Oracle Telephony Adapter Server is running.

Do the following:

1. Copy the third-party, middleware-specific client library file into the Oracle Telephony Adapter Server machine's directory `icsm/admin/scripts/3rdparty`. The middleware-specific files are:
 - For Envox CT Connect or Intel CT Connect, copy the file `ctcapi.jar`.
 - For Aspect CMI Server, copy the file `ABObject.jar`.
 - No client library is required for Cisco ICM.

2. Restart Oracle Telephony Adapter Server.

ctcUnsupProc Error

A ctcUnsupProc error sent by the CT Connect server to Oracle Telephony Adapter Server when trying to assign an extension indicates that there is a problem between the CT Connect client (ctcapi.jar) and the CT Connect server.

Do the following:

1. Use the CTC Test Java utility, instead of the CTC Test utility, to try to reproduce the ctcUnsupProc error immediately after you have typed in the CTC command.
2. Stop and restart the CTI link on the CT Connect server.
3. Restart all interaction center servers.
4. Log in the agent again.

If the error continues, do the following:

1. Stop and restart the CT Connect service.
2. Restart all interaction center servers.
3. Log in the agent again.

If the error continues, do the following:

1. Restart the CT Connect server machine.
2. Restart all interaction center servers.
3. Log in the agent again.

Note: Check that the CT Connect software is patched to CT Connect Service Pack 3, which you can download from the Intel Web site.

Softphone Performance Issues and Solutions

If you encounter the following issues in implementing or using Oracle Advanced Inbound Telephony, check the listed symptoms and possible causes to diagnose and fix an issue.

Symptom: The Transfer/Conference button on the softphone does not light up green when a consultation call is placed by pressing the Transfer/Conference button once.

Possible Cause: Server Application Data is not checked for the CTI link in the Envox CT

Connect Configuration Program.

Do the following:

1. In the CTI link in the Envox CT Connect / Intel CT Connect Configuration Program, make sure that Server Application Data is checked.
2. Restart Envox CT Connect.
3. Restart all interaction center servers.
4. Retest.

A

Middleware Parameter Equivalents Across Releases

This appendix covers the following topics:

- Envox CT Connect / Intel NetMerge Call Processing Software Parameter Equivalents
- Cisco Intelligent Contact Management Parameter Equivalents

Envox CT Connect / Intel NetMerge Call Processing Software Parameter Equivalents

11.5.5, FP-K	11.5.6/11.5.7, FP-M	11.5.8, FP-O and FP-P	11.5.9, FP-Q	11.5.10, FP-R	12.0
Connectors for Intel CT Connect	Connectors for Intel CT Connect	Adapter for Intel CT Connect	Adapter for Intel CT Connect and Adapter for Intel NetMerge Call Processing Software	Adapter for Intel NetMerge Call Processing Software	Adapter for Intel NetMerge Call Processing Software
IP Address	IP Address	Obsolete	Obsolete	Obsolete	Obsolete
Port Number	Port Number	Obsolete	Obsolete	Obsolete	Obsolete
CTI Enabler IP Address	CTI Enabler IP Address	Intel CT Connect IP Address	Intel CT Connect IP Address/CPS Server IP Address 1	CPS Server IP Address 1	CPS Server IP Address 1

11.5.5, FP-K	11.5.6/11.5.7, FP-M	11.5.8, FP-O and FP-P	11.5.9, FP-Q	11.5.10, FP-R	12.0
PBX Name	PBX Name	Intel CT Connect Link Logical Identifier	Intel CT Connect Link Logical Identifier/CPS Link Logical Identifier 1	CPS Link Logical Identifier 1	CPS Link Logical Identifier 1
Not applicable	Not applicable	Not applicable	(Intel NetMerge Call Processing Software only) CPS Server IP Address 2	CPS Server IP Address 2	CPS Server IP Address 2
Not applicable	Not applicable	Not applicable	(Intel NetMerge Call Processing Software only) CPS Link Logical Identifier 2	CPS Link Logical Identifier 2	CPS Link Logical Identifier 2
PBX Type	PBX Type	PBX Type	PBX Type	PBX Type	PBX Type
Middleware Server Info 1	Obsolete	Obsolete	Obsolete	Obsolete	Obsolete
Route Point Set 1 through 5	Moved to Route Point page	Moved to Route Point page	Moved to Route Point page	Moved to Route Point Page	Moved to Route Point Page
Not applicable	Passive Mode	Passive Mode	Passive Mode	Passive Mode	Obsolete
Outgoing Prefix	Outgoing Prefix	Outgoing Prefix	Local Number Access Code	Local Number Access Code	Local Number Access Code
Not applicable	Domestic Dialing Prefix	Domestic Dialing Prefix	Long Distance Access Code	Long Distance Access Code	Long Distance Access Code
International Dialing Prefix	International Dialing Prefix	International Dialing Prefix	International Access Code	International Access Code	International Access Code
Not applicable	Not applicable	Not applicable	Local Area Codes	Dialing Suffix	Dialing Suffix
Not applicable	Not applicable	Not applicable	Non-Local Exchanges	Local Area Codes	Local Area Codes

11.5.5, FP-K	11.5.6/11.5.7, FP-M	11.5.8, FP-O and FP-P	11.5.9, FP-Q	11.5.10, FP-R	12.0
Site Area Code	Site Area Code	Site Area Code	Site Area Code	Non-Local Exchanges	Non-Local Exchanges
Site Country Code	Site Country Code	Site Country Code	Site Country Code	Site Area Code	Site Area Code
Not applicable	Site Internal Number Length	Site Internal Number Length	Site Internal Number Length	Site Country Code	Site Country Code
Not applicable	Site Local Number Maximum Length	Site Local Number Maximum Length	Site Local Number Maximum Length	Site Internal Number Length	Site Internal Number Length
Not applicable	Site Overlay	Site Overlay	Site Overlay	Site Local Number Maximum Length	Site Local Number Maximum Length
Not applicable	Not applicable	Not applicable	Active Routing Target Type	Site Overlay	Site Overlay
Not applicable	Not applicable	Not applicable	Site Canonical Number Prefix	Site Canonical Number Prefix	Site Canonical Number Prefix
Not applicable	Not applicable	Not applicable	Default Inbound Phone Number Suffix Type	Default Inbound Phone Number Suffix Type	Default Inbound Phone Number Suffix Type
Not applicable	Not applicable	Not applicable	Default Outbound Phone Number Suffix Type	Default Outbound Phone Number Suffix Type	Default Outbound Phone Number Suffix Type
Not applicable	Not applicable	Not applicable	Default Enterprise Routing Route Point	Default Outbound Phone Number Suffix Type	Default Outbound Phone Number Suffix Type
IVR Server Name	IVR Host	IVR Host	IVR Host	Active Routing Target Type	Obsolete

11.5.5, FP-K	11.5.6/11.5.7, FP-M	11.5.8, FP-O and FP-P	11.5.9, FP-Q	11.5.10, FP-R	12.0
Not applicable	IVR Port	IVR Port	IVR Port	IVR Host	IVR Host
Not applicable	IVR Info [1-3]	Obsolete	Obsolete	IVR Port	IVR Port
Not applicable	IVRI Mode	IVRI Mode	IVRI Mode	IVRI Mode	IVR Mode
Not applicable	IVRI Abandon Threshold				
Not applicable	Use Advanced Outbound	Not applicable	Not applicable	Not applicable	Not applicable
Not applicable	Predictive Transfer Flag	Not applicable	Not applicable	Warm Transfer/Conference Initiation Wait Time (seconds)	Warm Transfer/Conference Initiation Wait Time (seconds)
Not applicable	Disable Warm Transfer/Conference for all Applications	Not applicable			
Not applicable	Warm Transfer/Conference Initiation Wait Time (seconds)				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Enable Softphone Reset Popup Menu
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Disable Softphone

Cisco Intelligent Contact Management Parameter Equivalents

11.5.5, FP-K	11.5.6 and 11.5.7, FP-M	11.5.8, FP-O and FP-P	11.5.9, FP-Q	11.5.10, FP-R	12.0
Connectors for Cisco ICM	Connectors for Cisco ICM	Adapter for Cisco ICM	Adapter for Cisco ICM	Adapter for Cisco ICM	Adapter for Cisco ICM
IP Address	IP Address	Obsolete	Obsolete	Obsolete	Obsolete
Port Number	Port Number	Obsolete	Obsolete	Obsolete	Obsolete
CTI Enabler IP Address	CTI Enabler IP Address	Site A Host IP Address	Site A Host IP Address	Site A Host IP Address	Site A Host IP Address
PBX Name	PBX Name	Peripheral Identifier	Peripheral Identifier	Peripheral Identifier	Peripheral Identifier
PBX Type	PBX Type	PBX Type	PBX Type	PBX Type	Obsolete
Middleware Server Info 1	Middleware Server Info 1	Site A Host IP Port	Site A Host IP Port	Site A Host IP Port	Site A Host IP Port
Middleware Server Info 2	Middleware Server Info 2	Site B Host IP Address	Site B Host IP Address	Site B Host IP Address	Site B Host IP Address
Middleware Server Info 3	Middleware Server Info 3	Site B Host IP Port	Site B Host IP Port	Site B Host IP Port	Site B Host IP Port
Not applicable	Middleware Server Info 4	Obsolete	Obsolete	Obsolete	Obsolete
Not applicable	Middleware Server Info 5	Media Item Call Variable	Media Item Call Variable	Media Item Call Variable	Media Item Call Variable
Route Point Set [1-5]	Moved to Route Point page	Moved to Route Point page	Moved to Route Point page	Moved to Route Point page	Moved to Route Point page
Not applicable	Passive Mode	Passive Mode	Passive Mode	Not applicable	Not applicable
Outgoing Prefix	Outgoing Prefix	Outgoing Prefix	Local Number Access Code	Local Number Access Code	Local Number Access Code

11.5.5, FP-K	11.5.6 and 11.5.7, FP-M	11.5.8, FP-O and FP-P	11.5.9, FP-Q	11.5.10, FP-R	12.0
Not applicable	Domestic Dialing Prefix	Domestic Dialing Prefix	Long Distance Access Code	Long Distance Access Code	Long Distance Access Code
International Dialing Prefix	International Dialing Prefix	International Dialing Prefix	International Access Code	International Access Code	International Access Code
Not applicable	Not applicable	Not applicable	Not applicable	Dialing Suffix	Dialing Suffix
Not applicable	Not applicable	Not applicable	Local Area Codes	Local Area Codes	Local Area Codes
Not applicable	Not applicable	Not applicable	Non-Local Exchanges	Non-Local Exchanges	Non-Local Exchanges
Site Area Code	Site Area Code	Site Area Code	Site Area Code	Site Area Code	Site Area Code
Site Country Code	Site Country Code	Site Country Code	Site Country Code	Site Country Code	Site Country Code
Not applicable	Site Internal Number Length	Site Internal Number Length	Site Internal Number Length	Site Internal Number Length	Site Internal Number Length
Not applicable	Site Local Number Maximum Length	Site Local Number Maximum Length	Site Local Number Maximum Length	Site Local Number Maximum Length	Site Local Number Maximum Length
Not applicable	Site Overlay	Site Overlay	Site Overlay	Site Overlay	Site Overlay
Not applicable	Not applicable	Not applicable	Active Routing Target Type	Active Routing Target Type	Obsolete
Not applicable	Not applicable	Not applicable	Site Canonical Number Prefix	Site Canonical Number Prefix	Site Canonical Number Prefix

11.5.5, FP-K	11.5.6 and 11.5.7, FP-M	11.5.8, FP-O and FP-P	11.5.9, FP-Q	11.5.10, FP-R	12.0
Not applicable	Not applicable	Not applicable	Default Inbound Phone Number Suffix Type	Default Inbound Phone Number Suffix Type	Default Inbound Phone Number Suffix Type
Not applicable	Not applicable	Not applicable	Default Outbound Phone Number Suffix Type	Default Outbound Phone Number Suffix Type	Default Outbound Phone Number Suffix Type
Not applicable	Not applicable	Not applicable	Default Enterprise Routing Route Point	Default Enterprise Routing Route Point	Obsolete
Not applicable	Disable Warm Transfer or Conference for all Applications	Disable Warm Transfer or Conference for all Applications	Disable Warm Transfer or Conference for all Applications	Disable Warm Transfer/Conference for all Applications	Obsolete
Not applicable	Warm Transfer or Conference Initiation Wait Time in seconds	Warm Transfer or Conference Initiation Wait Time in seconds	Warm Transfer or Conference Initiation Wait Time in seconds	Warm Transfer/Conference Initiation Wait Time (seconds)	Warm Transfer/Conference Initiation Wait Time (seconds)
Not applicable	Not applicable	Not applicable	Not applicable	Enable Softphone Reset Popup Menu	Enable Softphone Reset Popup Menu
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Disable Softphone

Data Type Operators and Media Type Values for Rules

This appendix covers the following topics:

- Introduction
- Operators for Data Type: String
- Operators for Data Type: Number
- Operators for Data Type: Date
- Supported Media Type Values for Rules

Introduction

The topics in this section explain specific data type operators and media type values for route rules and classification rules that are defined in the Route tab, Route Detail page, and the Classification tab, Classification Detail page, respectively.

Note: The selected Key determines the availability of operators.

Operators for Data Type: String

The following table lists and describes the operators for data type: string and the condition under which the rule is evaluated to be true.

Operators for Data Type: String

Operator	The rule is evaluated to be true if the media item value for a given key ...
begins with	Begins with the given string
contains	Contains the given string
does not contain	Does not contain the given string
does not equal	Does not match the given string
does not exist in	Does not exist in the given string
ends with	Ends with the given string
equals	Matches the given string without any case restrictions
equals (Match Case)	Matches the given string with case restriction
exists in	Is a subset of any of the given strings (a simplified OR operator)

Operators for Data Type: Number

The following table lists and describes the operators for data type: number and the condition under which the rule is evaluated to be true.

Operators for Data Type: Number

Operator	The rule is evaluated to be true if the media item value for a given key ...
!=	Is not equal to the given value
<	Is lesser than the given value

Operator	The rule is evaluated to be true if the media item value for a given key ...
<=	Is lesser than or equal to the given value
=	Is equal to the given value
>	Is greater than the given value
>=	Is greater than or equal to the given value
between	Is between the two given values
does not exist in	Does not match any of the given values
exists in	Matches any of the given values (a simplified OR operator)

Operators for Data Type: Date

The following table lists and describes the operators for data type: date and the condition under which the rule is evaluated to be true.

Operators for Data Type: Date

Operator	The rule is evaluated to be true if the media item value for a date/time key is ...
after(hh:mm:ss)	After the given time
before(hh:mm:ss)	Before the given time
between(hh:mm:ss-hh:mm:ss)	Between the given times
day of the week in (1,2,3,4,5,6,7)	Specific day/s, where 1=Sunday, 2=Monday, and so on.

Supported Media Type Values for Rules

The following values are supported by Oracle Routing Server for the Key "Media Type" in the Values fields of the Route Rules and Classification Rules pages.

The Value for Key "Media Type" can be any of the case-independent values (inbound, outbound, email and Web callbacks) that are listed in the following table.

Supported Media Type Values for Rules

Inbound Telephony	Outbound Telephony	Email	Web CallBack
call	outboundphone	email	webcall
inboundcall	outboundtelephone		
	inboundphone		
	inboundtele		
	inboundtelephony		
	inboundtelephone		
phonecall	outboundcall	inboundemail	webcallback
phone	outboundtele		
telephony	outboundtelephony		

C

Multi-Site Implementation Worksheet

This appendix covers the following topics:

- Telesets
- Agents
- Route Points
- Middleware Config Active Routing Target Type

Telesets

If phone numbers are assigned to telesets, gather the following teleset information. Not all switches assign phone numbers to telesets, and some switches can be configured so that a phone number is assigned to either an agent or a teleset.

Teleset Phone Numbers

Teleset/Line	Extension	Inbound Phone Number	Outbound Phone Number
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

The inbound phone number is the Direct Inward Dial (DID) number, the number that

an outside caller dials to reach the teleset line directly. The outbound phone number is the number displayed at the destination of a call that is placed to the outside. For most call centers, the inbound and outbound phone numbers are the same. For most call centers, the last few digits of the phone number match the extension number.

Agents

If phone numbers are assigned to agents, record the following information.

Agent Phone Numbers

Agent	ACD Agent ID	Inbound Phone Number	Outbound Phone Number
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

Inbound and outbound phone numbers are analogous to the teleset. For most call centers, the inbound and outbound phone numbers are the same, and the last few digits of the phone number match the ACD Agent ID.

Route Points

The following information about route points is required for every implementation.

Route Point Phone Numbers

Route Point Number	Inbound Phone Number
^	^
^	^
^	^

Route Point Number	Inbound Phone Number
^	^
^	^

Route points do not have an outbound phone number because they cannot place calls.

Middleware Config Active Routing Target Type

Before proceeding with the implementation, prepare an answer to the following question: When a call is routed to an agent or teleset, is the actual target of the call a specific teleset line, the agent, or the teleset as a whole? The answer is the Middleware Config Active Routing Target Type, even if you are not using Oracle Advanced Inbound active mode.

Glossary

adapter

A telephony driver of the Oracle Telephony Adapter Server developed specifically to integrate Oracle Interaction Center to a specific switch and CTI middleware platform. Oracle develops adapters for certified switch and middleware combinations. Third-parties can use the Oracle Telephony Adapter SDK to develop adapters for switch and middleware combinations that are not certified by Oracle. Typically, each adapter is developed to integrate only with the telephony system of a specific manufacturer.

ACD

Automatic Call Distribution, systems designed to automatically answer, queue and route incoming calls to interaction center agents. An ACD differs from a PBX in that while a PBX allows users to share a limited number of telephone lines, an ACD has at least one telephone line for each agent.

ANI

Automatic Number Identification, a service, similar to caller ID, that long distance carriers provide to identify the calling party's telephone number.

blind transfer

A call transferred from one person to another and completed without the receiving party first answering the call (that is, no consultation call is established).

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.

DNIS

Dialed Number Identification Service, a feature of 800 and 900 lines that identifies the called number to a telephony system, which routes the call to the correct extension.

dynamic route

A route that is based on a PL/SQL query.

enhanced passive mode

A routing mode in which standard ACD/PBX routing and distribution of calls to call center agents occurs with Oracle Advanced Inbound Telephony monitoring ACD/PBX route points to allow classification of calls for targeted screen pops, inbound call queue counts and tracking of calls that are abandoned at the route point for reporting by Oracle Interaction Center Intelligence. Specific ACD/PBX configurations are required to ensure that inbound calls pass through a ACD/PBX route point that is monitored by Oracle Advanced Inbound Telephony.

external data variable processing

A simpler alternative to the IVR Integration feature for capturing data collected in an IVR or a PBX's built-in call processing system (such as Avaya's vectoring capability) and passing that data to Oracle Advanced Inbound Telephony for call classification, routing, and screen pops.

Interaction Center Server Manager (ICSM)

The only server process that is required to be explicitly started on each target machine, ICSM is responsible for starting, stopping and monitoring all the other Oracle Advanced Inbound Telephony server processes. The ICSM server processes are controlled by the Interaction Center Server HTML Administration.

Inbound Telephony Server

The Oracle Interaction Center server that handles inbound telephony interactions. ITS supports the following features:

- (Active mode only) ITS enables enterprise data-based routing by listening for route queries offered by the CTI middleware and responding to them to instruct the switch where to route the call.
- ITS monitors calls arriving at route points
- ITS detects calls that are abandoned at route points

interaction center server

Any interaction center server, such as Oracle Interaction Queuing and Distribution, Oracle Universal Work Queue, Oracle Routing Server, and Oracle Inbound Telephony Server.

IVR

Interactive Voice Response, an automated system that, in response to incoming

telephone calls, plays a recorded message that gives callers the option of pressing telephone buttons to route the call to one or more extensions.

JDBC

Java Database Connectivity, part of the Java Development Kit that defines an application programming interface for Java for standard SQL access from Java programs to databases.

media item

A representation of a telephone call, e-mail, Web callback or other type of media.

monitoring

The ability to view server status.

multi-site

Interaction centers that work together across multiple physical locations.

multi-site routing

The ability to route a call to agents who are located across multiple sites.

multi-site queuing and distribution

A single system storing and maintaining agent queues across multiple sites.

Oracle Advanced Inbound Telephony

The Oracle E-Business application that is required to telephony enable business applications in the Oracle E-Business Suite. The server architecture of Oracle Advanced Inbound Telephony is scalable to run interaction centers with a single physical site or multiple sites. The Oracle Advanced Inbound Telephony bundle consists of the following products: Call Center Technology, Oracle Universal Work Queue, Oracle Telephony Manager, and Oracle Interaction Blending.

Oracle Advanced Outbound

The Oracle E-Business application that provides the outbound telephony capability corresponding to Oracle Advanced Inbound Telephony.

Oracle Interaction Center

A group of server processes that serves as the telephony-enabling foundation of Oracle E-Business Suite applications.

Oracle Telephony Adapter Server

The CTI adapter server that substitutes for Oracle Call Center Connectors. Oracle Telephony Adapter Server encompasses one telephony adapter per switch.¹

Oracle Telephony Manager

The Oracle Interaction Center application that performs queuing, routing and distribution of media items.

package

Groups of procedures, functions, variables and SQL statements grouped together into a single unit.

passive mode

A routing mode in which standard ACD/PBX routing and distribution of calls to call center agents occurs. Oracle Advanced Inbound Telephony becomes aware of the call through CTI when the call rings at the agent's teleset. Oracle Advanced Inbound Telephony does not monitor or control any ACD/PBX route points in this mode.

PBX

Private Branch eXchange, a telephone system within a company or other organization that switches calls between the company's users and allows them to share a number of outside telephone lines. In passive mode, calls are routed by the PBX.

route point

A point from which inbound calls are queued and routed. Route point refers to Avaya VDN, Nortel CDN/ACDN, Aspect DID DNIS, and so on.

scalability

A measure of how well a software or hardware product is able to adapt to future business needs.

screen pop

A user interface presentation of customer data and product and service information that appears on an interaction center agent's monitor simultaneously with the customer's incoming telephone call.

site

A single geographic location where an interaction center is located. A site typically has a PBX and CTI middleware installed.

skill-based routing

A dynamic call routing intelligence that delivers inbound calls to an agent who is appropriately skilled to meet the needs of the caller.

softphone

A functional GUI representation of a telephone that is displayed on interaction agents'

monitors.

Software Development Kit (SDK)

Software that is provided by software vendors to allow their products to be used with the products of other software vendors.

static route

A route that is based on cached data.

super group

The topmost, parent server group in a hierarchy of server groups.

switch simulator

A process that uses Envox CT Connect middleware to simulate a Nortel switch and the connection and message behavior of the Oracle Telephony Adapter Server. The switch simulator makes it possible to set up an interaction center without connecting to a real switch. The server architecture is configured as Switch Simulator <==> OTAS <==> ITS /IQD/OTM <==> UWQ.

Wait Time

The time between the Call Birth Time (database system time) and the time the call comes to the agent's softphone (database system time). The two values must be both database system time, otherwise the wrong Wait Time will be generated.

Web callback

An outbound call made by an agent in response to a request for assistance that a customer has made on the business's Web site.

Index

A

ABObject.jar, 2-2, 5-1
Account Code, 4-33
AccountNum, 1-20, 1-20
ACD/PBX
 and IVR Integration, 1-37
 call processing, 1-40
 dependency verification, 2-3
 in enhanced passive mode, Glossary-2
 in multi-site, 1-10
 in passive mode, Glossary-4
 in supported modes, 1-
 in telephony platform, 1-8
 multiple, 1-10
 multi-site support for, 1-8
ACD/PBX in supported modes
active mode
 and Inbound Telephony Server, Glossary-2
 and IVR field mapping, 4-25
 in routing, 3-4
 in single-site architecture, 1-10
 supported, 1-
active-standby mode configuration, 1-17
adapter
 C-based, 1-12
 Custom C, 4-9
 definition, Glossary-1
 for SDK, 2-3
 Java-based, 1-12
Adapter for Aspect Contact Server, 1-12

Adapter for Cisco ICM
 and Oracle Telephony Adapter Server, 1-12
Adapter for Envox CT Connect, 1-12
agents, 4-52
Alcatel, 1-5
Alcatel teleset configuration, 4-19
ANI, 1-20, 1-31, Glossary-1
AO Customer Name interaction key, 4-32
AO Customer Phone Number interaction key, 4-
32
architecture
 IVR Integration, 1-12
 multi-PBX, 1-11
 multi-site, 1-10
 server, 1-8
 single-site, 1-10
Aspect, 1-5
Aspect Call Center, 1-41
Aspect CMI Server, 2-2, 4-2, 4-3, 5-1
Aspect Contact Center, 1-41
Aspect Contact Server, 2-2
Aspect teleset configurations, 4-19
Avaya Call Center, 1-40
Avaya MultiVantage, 1-5, 1-40
 and middleware, 4-1
Avaya teleset configurations, 4-20

B

backup nodes, 1-17
blind transfer, 4-4, Glossary-1

C

call and data transfer scenarios, 1-32
call data keys, 4-25
Campaign Classification, 4-32
Campaign Name, 4-32
Campaign Schedule Name, 4-32
Canonical Phone Number, 4-17, 4-21, Glossary-1
C-based adapter, 1-12
cctapi.jar, 2-1
Cisco, 1-5
Cisco CallManager
 teleset line configuration, 4-19
 with Cisco ICM, 1-41
Cisco ICM, 1-41, 5-1
Cisco ICM Extended Call Context, 1-41
Cisco ICM Peripheral Gateway, 4-4
classification rules
 features and functions, 1-25
 operators and values for, B-1
classifications
 configuring, 4-39
 IVR mappings for, 4-25
 types of, 1-24
 versus routing, 1-24
Classification Value interaction key, 4-32
classification values
 definition, 1-24
Click-to-dial, 1-8
close media items, 4-61
computer telephony integration
 in Oracle Advanced Inbound, 1-6
concurrent manager, 4-61
conditional dependencies, 2-2
Contact Center, 1-20
ContactNum, 1-20
ContractNum, 1-20
ctcapi.jar, 2-2, 5-1, 5-2
CT Connect
 in upgrading, 2-2
 Service Pack 3, 5-2
ctcUnsupProc, 5-2
CTI middleware, 4-1
 and adapter, Glossary-1
 and ITS, Glossary-2
 and IVR mapping, 4-27
 and route points, 4-17
 and sites, Glossary-4
 configuring, 4-1

implementation overview, 3-1
in multi-site architecture, 1-11
in Oracle Advanced Inbound, 1-8
in single-site architecture, 1-10, 1-10
 installation and dependency verification, 2-3
Custom C adapter, 4-9
Custom C Adapter Server, 1-12
Customer Data Lookup, 1-22
customer information-based routing, 1-30
customer name, 1-21
Customer Name, 4-32

D

data and call transfer scenarios, 1-32
data packets, 1-37, 1-38, 1-38
data type operators, B-1
date operators, B-3
dependency verification, 2-3
Dialed Number interaction key, 4-32
DNIS, 1-31, Glossary-1
dynamic groups, 1-31
dynamic route, Glossary-2
 and PL/SQL queries, 1-29
 and procedure parameters, 1-29
 skill-based, 1-31

E

enhanced passive mode, 1-4, 1-5, Glossary-2
enterprise call and data transfer, 1-7
enterprise routing scenarios, 1-33
Envox CT Connect, A-1
 and client files, 2-1
 and server log error, 5-1
 and supported switches, 1-5
 softphone performance issue, 5-2, 5-3
Ericsson, 1-5
Ericsson teleset configuration, 4-20
error
 Intel CT Connect client and server, 5-2
error messages, 5-1
external data variable processing, 1-40, Glossary-2

G

global server group, 1-11, 1-12

groups
dynamic, 1-31

H

Hardware Number, 4-19
Hewlett-Packard UX11, 1-12

I

IBM AIX, 1-12
implementation sequence, 3-1
Inbound Telephony Server, 1-17
and CTI middleware, 4-1
and IVR Integration, 1-37
definition of, Glossary-2
function of, 1-8
in multi-site server architecture, 1-11
in single-site architecture, 1-10
in single-site server architecture, 1-9
load balancing, 1-18
monitoring, 4-17
installation verification, 2-3

Integration, 1-3

Intel, 5-2

Intel CT Connect

and server log error, 5-1
client and server error, 5-2
in upgrading, 2-2

Interaction and Queuing Distribution Server
reroute timeout, 1-17

Interaction Blending, 1-9

Interaction Center Server Manager (ICSM)
definition, Glossary-2
in implementation, 3-1
in multi-site architecture, 1-12

interaction keys
for Contact Center, 1-20
for Oracle TeleService, 1-20
purposes of, 1-18
using, 1-19

Interaction Queuing and Distribution, 1-8
server types, 1-17

interaction queuing and distribution feature, 1-7
Interaction Queuing and Distribution server, 1-9, 1-10, 1-12

InvoiceNum, 1-20

IVR

and classification rules, 1-25
call processing, 1-40
data, 1-34
data packets, 1-38
definition, Glossary-2
fields, 4-25
mapping fields, 1-34

IVR Integration

alternative to, 1-40
and Oracle TeleService, 1-37
architecture, 1-12
call flows, 1-37
feature, 1-7

J

java.lang.NoClassDefFoundError, 5-1
Java-based adapter, 1-12
Java client files, 2-1
JDBC
definition of, Glossary-3

K

key-value pairs, 1-38

L

Linux, 1-12
load balancing, 1-7, 1-17
log in, 1-41
Lucent, 4-20

M

media item, 4-61, Glossary-3
media types, 4-41
media type values, B-1
Microsoft Windows NT, 1-12, 1-12, 1-37, 1-37
middleware
and adapter, Glossary-1
and ITS, Glossary-2
and IVR mapping, 4-27
and route points, 4-17
and sites, Glossary-4
configuring, 4-1
implementation overview, 3-1
in multi-site architecture, 1-11
in Oracle Advanced Inbound, 1-8

in single-site architecture, 1-10, 1-10
installation and dependency verification, 2-3
parameters for adapters, 4-1
middleware-based multi-site functionality, 1-8
modes, supported, 1-
monitoring, Glossary-3
multi-PBX architecture, 1-11
multi-site
definition, Glossary-3
queuing and distribution, Glossary-3
routing, Glossary-3
server architecture, 1-11, 1-11

N

node
assigning multiple servers to, 1-17
in active-standby mode configuration, 1-17
Nortel, 1-5
Nortel Meridian, 1-5, 4-1
Nortel Meridian with Envox CT Connect, 1-40
Nortel teleset configuration, 4-21
number operators, B-2

O

operators, B-1
Oracle Advanced Inbound
server architecture, 1-10, 1-11, 1-11
Oracle Advanced Outbound, Glossary-3
Oracle Call Center Connectors, 1-12
Oracle Customer Care, 1-34
Oracle Customer Interaction History, 1-37
Oracle eCommerce products, 1-27
Oracle Enterprise Routing, 1-7
Oracle Fields, 1-34, 4-25
Oracle Human Resources Management System, 1-31
Oracle Interaction Center, Glossary-3
Oracle Interaction Center Intelligence, 1-24
Oracle iStore, 1-27, 2-2
Oracle iSupport, 1-27, 2-2
Oracle IVR Integrator, 1-37
Oracle Routing Server, 1-8
Oracle Telephony Adapter SDK, 1-2
Oracle Telephony Adapter Server
and ctcUnsupProc error, 5-2
and CTI middleware, 1-10

configuring middleware, 4-1
definition, Glossary-3
function of, 1-8
in upgrading configuration, 2-1
load balancing, 1-18
log, 5-1
multi-site architecture, 1-11
overview, 1-12
single-site architecture, 1-10, 1-10
Oracle Telephony Manager
and customer information-based routing, 1-30
and screen pops, 1-34
definition, Glossary-4
in multi-site architecture, 1-11
in single-site architecture, 1-9
purpose of, 1-8

Oracle TeleSales
and IVR Integration, 1-37
and Oracle Advanced Inbound, 1-9
and screen pops, 1-34, 1-35
conditional dependencies, 2-2
screen pops, 2-2
Oracle TeleService
and IVR Integration, 1-37
and Oracle Advanced Inbound, 1-9
conditional dependencies, 2-2
screen pop generation, 1-20
screen pops, 2-2

Oracle Universal Work Queue
and classification values, 1-24
in multi-site architecture, 1-11
in single-site architecture, 1-9, 1-10
media action, 1-24
purpose of, 1-8
teleset number, 4-19

Other Party, 4-32

P

package, 1-22, Glossary-4
parameter equivalents, A-1
passive mode
and PBX, Glossary-4
definition, Glossary-4
supported, 1-4
supported switches and middleware, 1-5
PBX/ACD

and IVR Integration, 1-37
call processing, 1-40
in enhanced passive mode, Glossary-2
in multi-site, 1-10
 in passive mode, Glossary-4
PBXEXTN, 1-38
PhoneNumber, 1-20, 1-20
PL/SQL
 queries and dynamic routes, 1-29
PL/SQL functions
 and classification values, 1-24
 and parameter sequence, 4-49
 example, 1-26
primary node, 1-17
Priority Queue Time Out, 1-17
Procedure Parameters field, 1-29

Q

queues
 and classifications, 1-24
 and route points, 4-16
 in customer information-based routing, 1-30

R

ReRoute/Priority Time Out (Seconds)) field, 1-17
RMANum, 1-20
route point
 and IVR Integration, 1-37
 configuring, 4-16
 definition, Glossary-4
route priorities, 4-49
route rules, 1-30, B-1
routes
 dynamic, 1-29, 4-46
 rule-based, 1-31
 static, 1-29, 4-46
Route Type, 1-29
routing
 configuring, 4-46
 IVR mapping for, 4-25
 versus classifications, 1-24
routing engine, 1-24
routing server
 in global server group, 1-12
 single-site architecture, 1-9, 1-10
rule-based routing, 1-31

S

scalability, 1-9, 1-11, Glossary-4
screen pops
 and business applications, 1-34
 and IVR Integration, 1-12, 1-37
 and media actions, 4-41
 conditional dependencies, 2-2
 customized, 1-35
 definition, Glossary-4
 feature, 1-7
 in call flows, 1-38
 IVR mapping for, 4-25
seeded value, 1-26
sequence, 4-49
SerialNum, 1-20, 1-20
Server Application Data check box, 5-2
server load balancing, 1-7
ServiceRequestNum, 1-20
skill-based routing, 1-31, Glossary-4
softphone
 definition, Glossary-4
 media desktop, 1-9
 performance issue, 5-2
 speed dial, 4-36
 teleset number, 4-19
Software Development Kit (SDK), Glossary-5
speed dialing, 4-36
standby node, 1-17
static route, 1-29, 4-46, Glossary-5
string operators, B-1
string value, 1-24
Sun Solaris, 1-12
super group, 1-12, Glossary-5
switches
 and multi-site, 1-8
 supported, 1-
switches supported modes, supported supported modes for switches and middleware, 1-5
Switch Simulator
 and multiple middleware definitions, 4-1
 configuring middleware, 4-1
 definition, Glossary-5
 in verifying implementation, 1-9, 3-2

T

TagNumber, 1-20, 1-20
telephony parameters, 4-52
telesets
 configuring, 4-18
 line configurations, 4-19
telesets, importing and exporting, 4-23
timeout media items, 4-61, 4-62
transfer
 blind, 4-4, Glossary-1
 scenarios, 1-32
 warm, 1-7, 1-33

V

value, seeded, 1-26
vectoring, 1-40
verification of installation and dependencies, 2-3

W

Wait Time, Glossary-5
Wait Time interaction key, 4-32
warm transfer, 1-7, 1-33
Web callbacks
 application integration for, 1-7
 call data for, 1-34
 conditional dependencies for, 2-2
 definition, Glossary-5