Oracle® Telephony Manager

Implementation Guide

Release 11*i*

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Oracle Telephony Manager Implementation Guide, Release 11*i*

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Contents

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Preface

Welcome to the Oracle Customer Relationship Management, Release 11*i*, suite of applications.

This Implementation Guide provides general descriptions of the setup and configuration tasks required to implement Oracle Telephony Manager successfully.

This preface explains how this Implementation Guide is organized and introduces other sources of information that can help you.

Intended Audience

This guide is aimed at anyone who is tasked with implementing Oracle Telephony Manager, including:

- Database Administrators
- System Administrators
- Technical Specialists

This guide assumes you have the following prerequisites:

1. Understanding of computer-telephony integration (CTI)
2. Understanding of call center technology
3. Understanding of the company business processes
4. Understanding of Oracle Applications, Release 11i
5. Understanding of Oracle Workflow

Structure

This manual contains the following sections:

- Considerations for Planning an Implementation Project
- Typical Release Dependencies
- Related Documentation and Resources
- Upgrading from Oracle Telephony Manager 3i
- Setting Up Oracle Telephony Manager
- Setting Up Rules-Based Routing for Inbound Calls and Email
- Setting Up Workflow-Based Routing for Inbound Calls and Email
- Setting Profile Options
- System Profile Options
- Configuring and Testing Integration Points
- Testing an Implementation Project

Related Documents

For more information, see the following manuals:

- *Oracle Applications Concepts*
- *Oracle Applications Product Update Notes, Release 11i*
- *Oracle Applications Release Notes, Release 11i*
- *Oracle Applications Installation Update Notes*
- *Installing Oracle Applications, Release 11i*
- *Maintaining Oracle Applications, Release 11i*
- *Upgrading Oracle Applications, Release 11i*
- *Oracle Applications System Administrator's Guide*
- *Oracle Applications User's Guide*
- *Oracle Workflow Guide*
- *Implementing CRM Applications*
- *Oracle Telephony Manager Concepts and Procedures*

- *Oracle Telephony Manager Technical Reference Manual*

Implementing Oracle Telephony Manager

This guide provides general descriptions of the setup and configuration tasks required to implement OTM successfully. It includes an overview with list of steps to follow to set up OTM, and includes detailed instructions on completing setup tasks in each OTM setup window.

This guide contains the following information:

Considerations for Planning an Implementation Project

This topic includes the following information:

- Purpose for Planning an Implementation
- Business Requirements Mapping
- Application Architecture
- Overview of a Typical Business Process

Purpose for Planning an Implementation

Implementing Oracle Telephony Manager is a complex process that requires knowledge of a variety of technologies and processes. The implementation of Oracle Telephony Manager requires working knowledge of Oracle Forms, HTML, Java, and the installation platform (Windows NT or Unix). In addition, an understanding of the operational requirements of an interaction center and basic telephony functionality is required.

Oracle Telephony Manager implementation planning requires that you take a careful and detailed look at the following areas:

- **Verifying Operational Requirements**: This is the preliminary step in the implementation. The PBX/ACD CTI enabler configuration must be complete and the appropriate Oracle Call Center Connectors installed and configured. This integration should be tested and functional before configuring Oracle Telephony Manager.
- **Installing and Connecting Servers**: Also as part of the operational requirements, the servers and workstations to support Oracle Telephony Manager are installed and connected to the network. The consultant will need to work with the customer to determine the server architecture including the number of machines and which services will run them.
- **Installing Oracle Telephony Manager**: Oracle Telephony Manager and other related server components are installed on the various machines.
- **Configuring Oracle Telephony Manager**: Oracle Telephony Manager is then configured for the interaction center environment. The consultant will need to work with the customer to determine if OTM will run in a passive or active routing mode.
  - **Active mode:** In active mode, Oracle Telephony Manager routes calls according to defined rules. Active mode is the default mode of operation. In

active mode, Oracle Telephony Manager uses *skills-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.

If OTM will run in an active routing mode and Advanced Inbound will be implemented, each of the various inbound media routes and call classifications will need to be defined and configured. This may include routing for inbound telephone calls, inbound calls handled by the IVR, inbound eMail, and web callbacks.

In addition to defining the media routing, there may be special treatment required while media items are in queue that will need to be defined and configured. Queue treatments are only available when OTM is in an active routing mode and Advanced Inbound is being implemented.

If OTM is being implemented in an active routing mode, the route target groups will need to be defined. The target groups are the groups of agents that are allowed to be the recipient of a routed media item. Any agent that is not part of a target group for a particular media type will not be able to access that media type through the Universal Work Queue. For example, agents that are not part of any group servicing eMail will not see inbound eMail work.

For Nortel Meridian, when Oracle Telephony Manager is in active mode, skill-based routing directs inbound calls to the DN (Directory Number), also known as the Single Call Ringing key, on the teleset

- **Passive mode:** Passive mode instructs Oracle Telephony Manager to bypass any routing rules. Passive mode is typically used when an interaction center prefers traditional ACD routing features and/or the statistics and reporting tools of a switch vendor.

  In passive mode, the ACD/PBX system completely handles the routing and queueing of inbound calls. Oracle Telephony Manager does not monitor or respond to routing requests from the switch, and skill-based routing is essentially inactive. As calls arrive at the agents' extensions, Oracle Telephony Manager monitors the calls and captures any associated data (for example, ANI or DNIS) for screen pops.

  For Nortel Meridian only, when Oracle Telephony Manager is in passive mode, the ACD/PBX system routes inbound calls and delivers then to the ACD DN, also known as the Automatic Call Distribution key, on the teleset.

- **Testing Oracle Telephony Manager**: Finally, with all software installed and operating, Oracle Telephony Manager is put through the operational testing step to verify that it meets the operational requirements.

Business Requirements Mapping

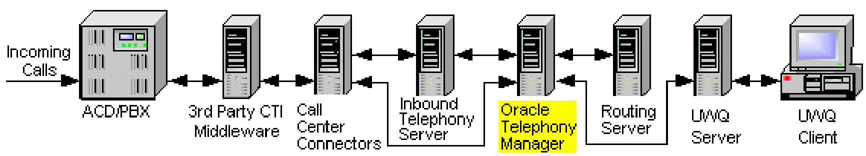
Oracle Telephony Manager is a prerequisite for providing:

- CTI support and Softphone
- IVR Integration
- Sophisticated routing across multiple media channels
- Enhanced queuing, call treatment and overflow functionality
- Pre-integrated with Oracle E-Business Suite applications
- Essential interaction center functionality includes:
  - Inbound and outbound telephony
  - Out-of-the box ACD/PBX connectivity with multiple ACDs and CTI enablers
  - Agent Softphone
  - ANI & DNIS screen-pops
  - Call and data transfer
- Additional interaction center functionality provided includes:
  - Multi-media support, telephone, Email and web callbacks
  - Intelligent out-of-the-box routing provides rules, skills and records-based routing
  - Static and dynamic routing capabilities
  - Best agent for given interaction is routed the interaction, telephone calls, email and web call backs
  - Integration to IVRs provides additional data for enhanced routing and screen-pops
  - Advanced queuing provides enhanced treatment, overflow and group queuing of calls
  - Support for web callBacks

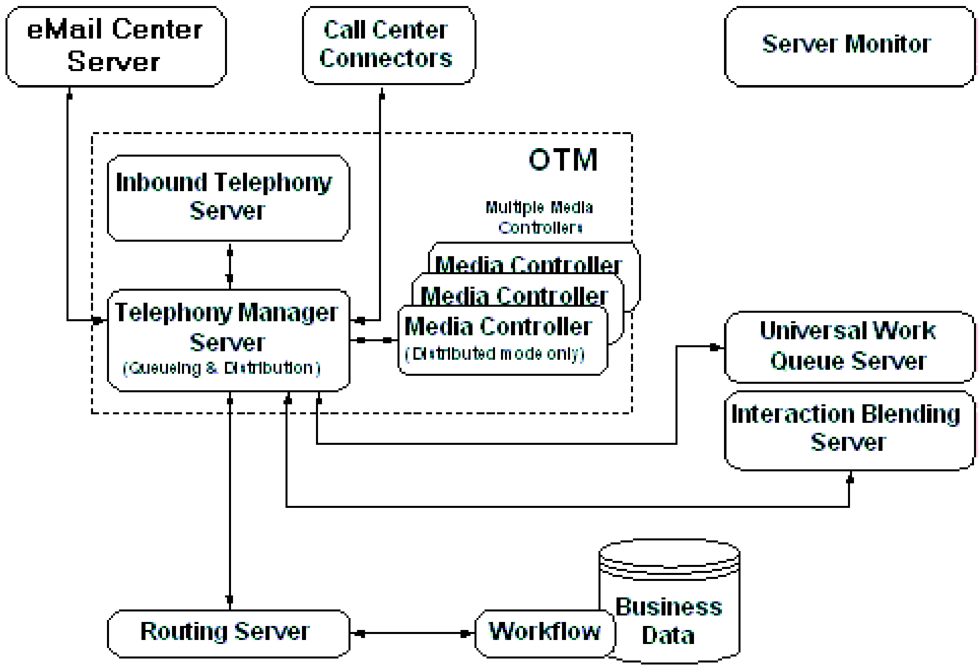
Application Architecture

Oracle Telephony Manager (OTM) is the platform for all Oracle interaction center and telephony applications. OTM translates the proprietary ACD/PBX protocol of telephony communications into computer-compatible language, and routes calls to the designated telephones and computers used by interaction center agents.

Required third-party CTI middleware provide the interface between the customer's proprietary PBX/ACD CTI link and our interaction center applications (Call Center Connectors and Oracle Telephony Manager). Third-party enablers, such as Dialogic's CT-Connect, allow server API integration for CTI messaging. The integration between the third-party middleware, the Call Center Connectors server, and Oracle Telephony Manager allow standardization of CTI functionality and protect the customer's Oracle application from the proprietary differences between PBX/ACD platforms.



An OTM interaction center is represented by a logical grouping of interaction center processes called a *server group*. The number of server applications in a server group will depend on the specific processes used in a particular interaction center.



The following types of server processes may be included in a server group:

Advanced Outbound Proxy Server is a server process for integrating the Oracle interaction center with advanced outbound telephony (Oracle Campaign Plus and Oracle Predictive).

Fulfillment Server is a server process for integrating the Oracle interaction center with Oracle 1-to-1 Fulfillment.

eMail Center Server is a server process for integrating the Oracle interaction center with Oracle eMail Center.

Inbound Telephony Server is a server process which monitors and forwards inbound telephony and web callback requests to Telephony Manager Server. The Inbound Telephony Server is required when running OTM in active mode, routing inbound telephony and/or web callback requests. If OTM will be run in passive mode or if there is only outbound telephony, you do not need the Inbound Telephony Server process. This service may or may not run on the same machine as the OTM service, depending on the size of the interaction center.

Interaction Blending Server is a server process for integrating with Oracle Interaction Blending.

Routing Server is a server process for the routing component of the Oracle interaction center. The Routing Server determines which agent(s)/agent groups receive a new interaction. The routing can be skill and/or rule based. The routes are defined for various media parameters.

The Routing Server is always used with inbound email with eMail Center. The Routing Server is only used with inbound telephony if you are running OTM in the active mode. If OTM will be run in passive mode or if there is only outbound telephony, you do not need the Routing service. This server may or may not run on the same machine as the Telephony Manager Server, depending on the size of the interaction center. You can have up to three Routing Servers, each of which can be distributed on separate server machines as dictated by the size of the interaction center and the inbound call and mail volumes being handled.

Server Monitor is a server process for monitoring and coordinating other Oracle interaction center servers. The Server Monitor monitors and launches any of the other telephony and requester server processes. These include Telephony Manager Server, Inbound Telephony Server, Routing Server, Telephony Media Controller, and iCenter Server. The Server Monitor is optional, but it is recommended that you use it for fault tolerance purposes. You must choose on which server machine to install and run the server and there is only one per server group. The remote service startup capability uses the Server Launcher that is automatically installed on any machine with one of the telephony or requester services. There is one and only Server Launcher per machine regardless of the number of telephony/requester servers running on the machine.

Telephony Manager Server is a server process for the queuing and media control component of the Oracle interaction center. Generally, there is one Telephony Manager server for a single interaction center. However, if there are multiple businesses with data segregation in a single center, you may have a Telephony Manager server for each business. The Telephony Manager server handles the queuing and distribution of media items.

The Oracle Telephony Manager maintains the agent distribution queues and agent states for any Interaction Center. It also provides access to a common routing engine. OTM is media independent and can route all types of interactions (email, telephony, faxes, web calls) to the interaction center agents.

Telephony Media Controller is an optional server process that can share the processing load of the Oracle Telephony Manager server. To help increase the scalability of the system, Oracle recommends that you start the Telephony Media Controller processes on separate physical machines. Each Oracle Telephony Media Controller process needs to have its own name and configuration.

Universal Work Queue Server is a server process for integrating desktop applications with media providers.

Oracle Telephony Manager (OTM)

The Oracle Telephony Manager maintains the agent distribution queues and agent states for any Interaction Center. It also provides access to a common routing engine. OTM is media independent and can route all types of interactions (email, telephony, faxes, web calls) to the interaction center agents.

Known Limitations

Only one OTM server can exist per Interaction Center.

Platform Dependencies

A Java Server; Runs on Solaris and NT platforms.

Configuration Options

There is a 1:1 relationship between an OTM and the eMail Center Server; however, the rest of the eMail Center modules are shared.

Overview of a Typical Business Process

A media-processing example is an eMail message that needs to be routed to an agent. An eMail event representing the mail message will be received from eMail Center for processing by the Oracle Telephony Manager request layer. OTM generates an eMail media item which is then passed to the distribution layer where a routing request and decision can be made.

Once the routing decision is made the media item is queued up, the Universal Work Queue is notified (as is Interaction Blending if it is running), and it will appear as a work item to an available and qualified agent or group of agents. When an agent selects the work item, the media item is de-queued.

A telephony media item works the same way except that it is received from the ACD and when an agent selects and receives the work item, the call is sent to the agent's phone set.0Typical Release Dependencies

This topic include the following information:

- Related Products and Components
- Implementation Starting Point

- Considerations and Constraints of Interactions with Other Types of Products

Related Products and Components

OTM integrates with Oracle Universal Work Queue (UWQ), Interaction Blending (if implemented), Routing (if Advanced Inbound is implemented), Oracle Call Center Connectors, Oracle eMail Center, and Oracle eCommerce applications, such as Oracle *i*Support and Oracle *i*Store, with a call me form enabled to generate web callbacks. OTM receives information from IVR Integrator through the Call Center Connectors server. OTM and the SoftPhone are integrated through UWQ. OTM also integrates with Workflow via the Routing Server.

Call Center Connectors are required and must be installed and configured for telephony control functionality. eMail Center is required and must be installed and configured for eMail control functionality. Universal Work Queue is required and must be installed and configured for integration to the applications running in the agent work area. The CRM Foundation (Resource Manager) must be installed and at least one test agent configured.

Implementation Starting Point

This guide assumes that the interaction center is using a Oracle certified or supported switch, that the switch interfaces to an Oracle certified or supported CTI middleware, and that Oracle Call Center Connectors has been installed and configured.

This guide also assumes that Oracle Applications 11i, the Call Center Java middle tier, and Oracle Telephony Manager have been installed.

Considerations and Constraints of Interactions with Other Types of Products

Oracle Telephony Manager has several implementation dependencies. This includes:

- Customer’s PBX/ACD switch must be certified and/or supported through the interaction center’s PBX Integration Program.
  - For OTM, release 11.5.1, supported PBX/ACDs include Lucent Definity G3 and Nortel Meridian.
  - For OTM, release 11.5.2, supported PBX/ACDs include Lucent Definity G3, Nortel Meridian, Siemens Hicom (US version), and Alcatel 4400.

  - Additional switches are supported quarterly and/or at point/patch releases.
  - All PBX/ACDs are not compatible and may not be supported.
  - The PBX/ACD matrix includes references to specific PBX models and software releases as well as information on PBX platforms supported via specific third-party CTI enabler software.

- The customer's PBX must be interfaced to an Oracle certified/supported third-party CTI Middleware. CTI Middleware is purchased by the customer directly from the supported third-party vendor and must be installed/implemented in accordance with the third-party CTI vendor specifications.
  - For Oracle Telephony Manager, release 11.5.1, supported CTI Middleware include Dialogic's CT Connect.
  - For Oracle Telephony Manager, release 11.5.2, supported CTI Middleware include Dialogic's CT-Connect and Cisco ICM CTI Server (formerly GeoTel).
  - For Oracle Telephony Manager release 11.5.3, support CTI Middleware includes Dialogic's CT-Connect, Cisco ICM CTI Server (formerly GeoTel), Nortel Symposium Call Center Server, and Siemens Hicom (international version).
  - Additional PBX/middleware combinations are supported quarterly and/or at point/patch releases.
  - For information about approved third-party CTI middleware see the Oracle Call Center Switch (ACD) Support at the locations referenced above.
- OTM is also dependent on the proper installation of Oracle Call Center Connectors, a CTI server product included in the Advanced Inbound product module group. Call Center Connectors integrates the customer's approved third-party CTI middleware to the Oracle Telephony Manager server. For complete details on installing the Oracle Call Center Connectors server see the documentation, Installing Oracle Call Center Connectors

Since 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 the following considerations should be considered prior to beginning the implementation:

- Does the Customer have a PBX/ACD switch that has been certified by Oracle?

- Is the PBX/ACD the model, software release and does it have the proper PBX-based CTI interfaces or links?
- Has the customer purchases and installed/implemented an approved third-party CTI middleware?
- Has the PBX and CTI middleware been fully tested and operation on the customer's ethernet LAN?
- Have the PBX Application Notes been referenced and the list of supported CTI functions tested.

Related Documentation and Resources

There are several locations within the Oracle intranet where you can find information on Oracle Telephony Manager and how to implement Oracle Telephony Manager. Following is a listing of many of these resources:

Implementing CRM Applications Describes manual post-installation steps for selected Customer Relationship Management (CRM) modules.

Oracle Call Center Applications Setup Describes the installation of the Oracle Telephony Manager server processes.

Oracle Telephony Manager Technical Reference Manual Provides information about the Oracle Telephony Manager schema.

Oracle Call Center Technology Technical Reference Manual Provides information about the Oracle Call Center (not a module) schema.

Installing Oracle Call Center Connectors Provides information about installing and configuring Oracle Call Center Connectors.

Setting Up Oracle Telephony Manager

Follow the steps in the following chart to set up OTM. The chart shows you where to read in detail about the setup step. The Window Name(s) column shows you in which window(s) to perform the step, and if the window is available only if you use a specific responsibility or product.

Step Number	Required?	OTM Setup Step Description	Window Name(s)
❏ Step 1	Required for telephony	**Oracle Call Center Connectors and dependencies** See: Oracle Call Center Connectors Installation Guide	NA
❏ Step 2	Required for IVR integration	**Install Oracle IVR Integrator and dependencies** See: Oracle IVR Integrator Installation Guide	NA
❏ Step 3	Required	**Define the Oracle interaction center server group.** See: Defining an Oracle Interaction Center Server Group	Server Locator window, Server Group tab
❏ Step 4	Required	**Define and configure the Oracle interaction center server processes.** See: Configuring Oracle Interaction Center Server Processes	Server Locator window, Server tab
❏ Step 5	Required	**Define and configure the CTI middleware.** See: Configuring the CTI Middleware	Call Center Administration window, Middleware tab
❏ Step 6	Optional	**Define the interaction center telesets.** See: Defining Interaction Center Telesets	Call Center Administration window, Teleset tab
❏ Step 7	Optional	**Map the inbound IVR data to fields in Oracle Applications.** See: Mapping Inbound Data to Oracle Applications Fields	Call Center Administration window, IVR Mapping tab
❏ Step 8	Required	**Create an Advanced Inbound User** See: Creating an Oracle Advanced Inbound User	

Step Number	Required?	OTM Setup Step Description	Window Name(s)
❑ Step 9	Optional	**Set up routing for inbound calls or email.** See: Configuring Call Routing	Routing Administration window or Workflow Builder

Defining an Oracle Interaction Center Server Group

An Oracle interaction center is represented by a logical grouping of interaction center processes called a *server group*. If there are multiple interaction centers or if separate lines of business are operating in the same interaction center, then there can be multiple server groups. Once the server group is defined, you can configure the individual interaction center processes in the group. (See Configuring Oracle Interaction Center Server Processes.)

Use this procedure to define a server group.

Prerequisites

None

Steps

1. Navigate to the Server Locator window.

   a. In the Navigator window, on the Functions tab, choose **Call Center Admin** > **Call Center Administration**.

      The Call Center Administration window opens.

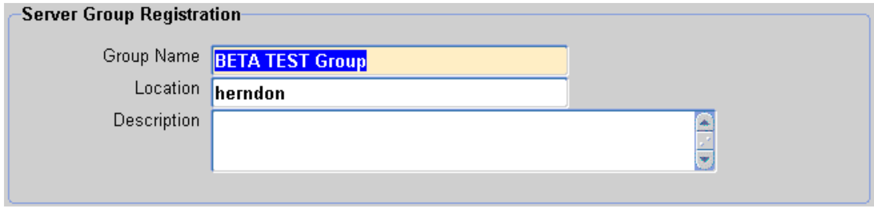
   b. Click **Server Admin**.

      The Server Locator window opens.

2. From the **File** menu, choose **New**.

3. In the Server Group tab, enter a unique name for the server group, the location of the server group, and a description of the server group.

Server Location Window: Server Group Tab: Server Group Registration Area



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

Configuring Oracle Interaction Center Server Processes

Oracle interaction center processes, such as routing, are governed by individual server applications. A logical grouping of server processes is called a server group. (See Defining an Oracle Interaction Center Server Group.)

The number of server applications in a server group will depend on the specific processes used in a particular interaction center. The following types of server processes may be included in a server group:

- Advanced Outbound Proxy Server
- eMail Center Server
- Inbound Telephony Server
- Interaction Blending Server
- Routing Server
- Server Monitor
- Telephony Manager
- Telephony Media Controller
- Universal Work Queue Server

For a detailed description of each server process, see Application Architecture.

The server applications may run on one or more server machines. Each server process is configured individually.

If you are implementing Advanced Inbound telephony in active mode, you need the following servers:

- Inbound Telephony Server
- Interaction Blending Server (does not need to be configured unless blending is used)
- Routing Server
- Server Monitor
- Telephony Manager
- Telephony Media Controller
- Universal Work Queue Server

If you are implementing Advanced Inbound telephony in passive mode, you need the following servers:

- Inbound Telephony Server (required only if Web Callback functionality is enabled)
- Server Monitor
- Telephony Manager
- Telephony Media Controller
- Universal Work Queue Server

Note: Large volume call center configurations may require OTM to be run with one or more Telephony Media Controllers. Telephony Media Controller is an optional server process that can share the processing load of the Oracle Telephony Manager server. To help increase the scalability of the system, Oracle recommends that you install and start the Telephony Media Controller processes on separate physical machines. Each Oracle Telephony Media Controller process needs to have its own distinct name and configuration within the interaction server group.

If you are implementing Advanced Outbound, you need the following servers:

- Advanced Outbound Proxy Server
- Inbound Telephony Server
- Interaction Blending Server (does not need to be configured unless blending is used)

- Routing Server
- Server Monitor
- Telephony Manager
- Telephony Media Controller
- Universal Work Queue Server

If you are implementing eMail Center, you need the following servers:

- eMail Center Server
- Interaction Blending Server (does not need to be configured unless blending is used)
- Routing Server
- Server Monitor
- Telephony Manager
- Telephony Media Controller
- Universal Work Queue Server

Prerequisites

❏ Define the Oracle interaction center server group. For more information, see Defining an Oracle Interaction Center Server Group.

Steps

1. Navigate to the Server Locator window.

   a. In the Navigator window, on the Functions tab, choose **Call Center Admin** > **Call Center Administration**.

      The Call Center Administration window opens.

   b. Click **Server Admin**.

      The Server Locator window opens.

2. In the Server Group tab, find your server group.

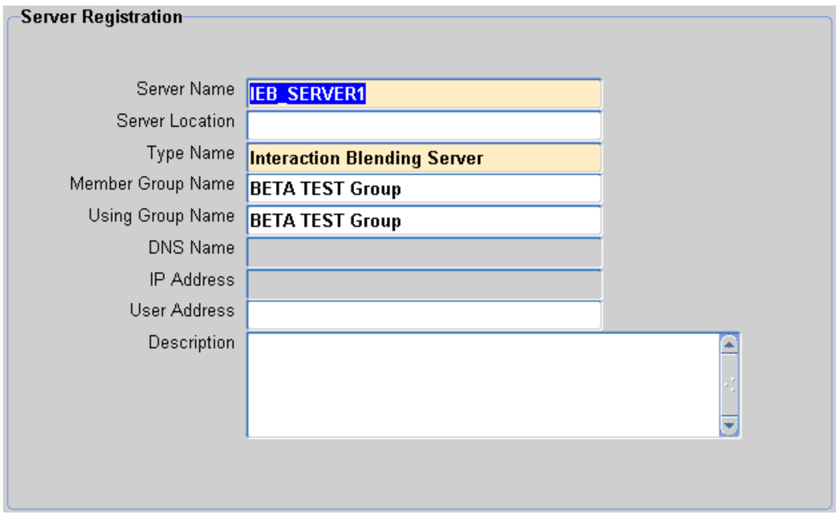
   a. Choose **View** > **Query by Example** > **Enter** to invoke the query entry mode.

   b. Enter your query.

c. Choose **View** > **Query by Example** > **Run** to find the matching server groups.

3. Select the Server tab.
4. If necessary, choose **File** > **New**.
5. In the Server Registration area, identify the server process.

Server Locator Window: Server Tab: Server Registration Area



a. Server Name: This is a mandatory field. Enter a name by which to identify the server. This is the user-defined name that you entered while installing the server. The name you enter here must be the same name that you entered in the Enter the *Component* Name window when defining the server name for your server.

b. Server Location: This field is optional. Enter the location of your server.

c. Type Name: This is a mandatory field. Use the list of values to select the server type that matches the server that you are defining. For example, if the server name is Oracle_OTM, the server type would be Telephony Manager.

d. Member Group Name: This mandatory field defaults to the name of the server group for which you are defining servers.

e. Using Group Name: This is an optional field. Do not enter a value in this field.

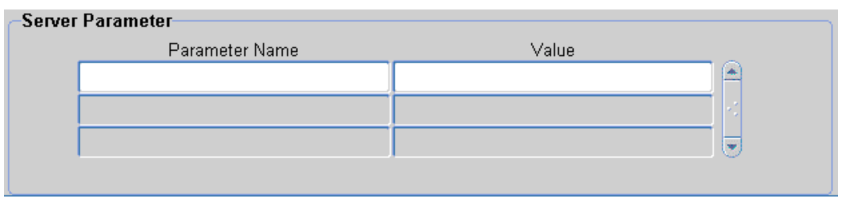
f. DNS Name and IP Address: The values for these fields will be automatically assigned after Advanced Inbound is run for the first time.

g. User Address: This field is optional and is used to specify the IP address of the server machine. In general, you do not need to enter a value for this field. This field value is used when the server is running on a machine with DHCP or multihomed network configuration, in which case, normal DNS lookup would fail and the IP address would have to have been explicitly specified, thus enabling the client to properly connect to the server.

h. Description: This field is optional and is used to add a description of the server.

6. In the Server Parameter region, enter values if you are configuring the Oracle Telephony Manager server, Inbound Telephony server, Oracle Telephony Media Controller server, or Oracle Universal Work Queue server.

Server Locator Window: Server Tab: Server Parameter Area



Note: For specific Universal Work Queue parameters, refer to the Oracle Universal Work Queue Implementation Guide.

Inbound Telephony Server Parameters Refer to the following table for a description of Inbound Telephony Server parameters.

Name	Required?	Description	Sample Value
OTM_SERVER_NAME	Required	Server name of the Telephony Manager Server to which this server is associated.	SampleOTMServer
TELE_MIDDLEWARE_CONFIG	Required	Configuration name of the middleware used by this server.	SampleMWConfig
WEB_CALL_PORT	Required if using web callback	Port used to listen for web call-back requests. If left blank, the default port 888 is used. This number must match the OTM Server Port field in the iSupport Admin UI -> Support tab -> Call Me sub-tab.	888

Telephony Manager Server Parameters Refer to the following table for a description of Telephony Manager Server parameters.

Name	Required?	Description	Example
TELE_MIDDLEWARE_CONFIG	Required	Configuration name of the middleware used by this server.	MWConfig
DEFAULT_TIMEOUT	Optional	Default timeout for re-route in minutes. For example, when this parameter is set to 5, a media item will be re-routed if it has been waiting in queue for more than 5 minutes.	5
IB_SERVER_NAME	Optional	Server name of the Interaction Blending Server	IBServer
MQA_MODE	Optional	TRUE/FALSE parameter. TRUE if multiple queue mode is on. Applicable to Nortel switch only.	TRUE
PASSIVE_MODE	Optional	TRUE/FALSE parameter. TRUE if passive mode is on.	FALSE
ROUTE_SERVER_1	Required for active mode only	Server name of Routing Server	RouteServer1
ROUTE_SERVER_2	Optional	Additional Routing Server for load balancing	RouteServer2
ROUTE_SERVER_3	Optional	Additional Routing Server for load balancing	RouteServer3
STANDALONE	Optional	TRUE/FALSE parameter. TRUE if Telephony Manager is running in STANDALONE mode. FALSE if running in DISTRIBUTED mode.	TRUE

Note: You can currently support up to three routing servers for an OTM. OTM sends work to each routing server on a round-robin basis.

Telephony Media Controller Parameters Refer to the following table for a description of Telephony Media Controller Server parameters.

Telephony Media Controller Parameters

Field Name	Required	Description	Example
TELE_MIDDLEWARE_CONFIG	Required	Configuration name of the middleware used by this server.	MWConfig
OTM_SERVER_NAME	Required	Server name of the Telephony Manager Server.	SampleOTM
MQA_MODE	Optional	TRUE/FALSE parameter. TRUE if multiple queue mode is on. Applicable to Nortel switch only.	TRUE
PASSIVE_MODE	Optional	TRUE/FALSE parameter. TRUE if passive mode is on.	FALSE

7. From the File menu, select **Save**.
8. Repeat steps 2–7 to define all the servers in your Call Center server group.
9. To configure another interaction center server process, repeat steps 5 through 10.

Configuring the CTI Middleware

CTI (computer telephony integration) middleware enables Oracle Telephony Manager and the Inbound Telephony Server to control telephony devices (for example, agent phones and telesets) and shared telephony resources (for example, phone switches and PBX/ACD).

Use this procedure to configure the CTI enabler for the interaction center.

Prerequisites

❑ Define the Oracle interaction center server group. See Defining an Oracle Interaction Center Server Group.

Steps

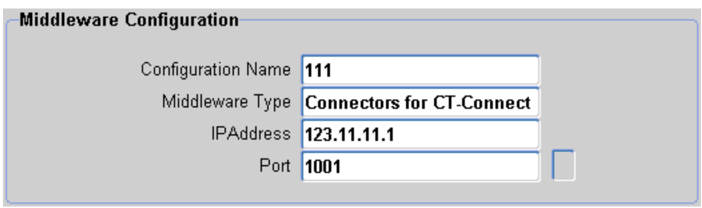
1. Navigate to the Call Center Administration window.

   a. In the Navigator window, on the Functions tab, choose **Call Center Admin** > **Call Center Administration**.

      The Call Center Administration window opens.

2. If necessary, find your server group.
   a. Choose **View** > **Query by Example** > **Enter** to invoke the query entry mode.
   b. Enter your query.
   c. Choose **View** > **Query by Example** > **Run** to find the matching server groups.
3. Select the Middleware tab.
4. In the Middleware Configuration area, specify your middleware.

Call Center Administration Window: Middleware Tab: Middleware Configuration Area



   a. Enter a unique name for the middleware configuration.
   b. From the Middleware Type list, select the middleware type.

Middleware Types Refer to the following table for a description of middleware types.

Middleware Type	Middleware Server	CTI Enabler Server (Middleware)	Switch (PBX/ACD)
Dialogic CT-Connect	Oracle Call Center Connectors	Dialogic CT-Connect	■ Alcatel 4400 ■ Avaya (Lucent) Definity G3 ■ Nortel Meridian ■ Nortel Symposium Call Center Server ■ Siemens HICOM (US and international)
Cisco ICM / Enterprise CTI	Oracle Call Center Connectors	Cisco ICM CTI Server	■ Aspect ■ Avaya (Lucent) Definity G3 ■ Nortel Meridian

c. Enter the IP address of the machine hosting Call Center Connectors, for example, Oracle Call Center Connectors or Prospect CTI Server.

d. Enter the port number of the middleware server, for example, Oracle Call Center Connectors or Prospect CTI Server.

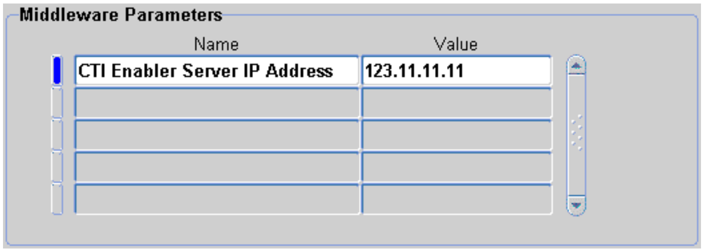
Note: Check the port number against the configuration of the middleware server. For Oracle Call Center Connectors, default port number is 3201.

---

5. In the Middleware Parameter area, configure the parameters for the selected middleware type.

   Each row in the table corresponds to an Oracle interaction center server parameter.

Call Center Administration Window: Middleware Tab: Middleware Parameters Area



a. From the Name list, select a parameter.

The parameters listed in the Name list depend on the type of middleware selected from the Middleware Type list. For information about server type parameters, see Guidelines below.

b. Enter a value for the parameter.

Middleware Parameters for Dialogic CT-Connect Refer to the following table for a description of middleware parameters for CT-Connect.

Field Name	Required	Description	Sample Value
CTI Enabler IP Address	Required	IP address of the CT-Connect server.	123.45.67.890
PBX Name	Required	Link logical identifier defined in CT-Connect configuration to represent the CTI link between CT-Connect and the switch.	ctc_nortel ctc_lucent
PBX Type	Required	PBX type. Enter: ▪ A - Lucent Definity ▪ M - Nortel Meridian or Symposium Call Center Server ▪ S - Siemens HICOM ▪ C - Alcatel 4400	A
Middleware Server Info 1	Required	Enter the value `ncacn_ip_tcp` as the identifier for the network protocol used between Oracle Call Center Connectors and CT-Connect.	Enter `ncacn_ip_tcp` for TCP/IP (actual value)

Field Name	Required	Description	Sample Value

Route Points Set 1
Route Points Set 2
Route Points Set 3
Route Points Set 4
Route Points Set 5
	Required if using active mode	Devices within the PBX/ACD where inbound calls are initially received and route requests are issued.
		■ Lucent Definity
		Enter one or more vector directory numbers (VDN), separated by commas. The format is:
		`vdn[,vdn...]`
		■ Nortel Meridian:
		Enter one or more CDN-immediate treatment pair(s), separated by commas. (CDN stands for Control Directory Number; the immediate treatment of an inbound call arriving at a CDN can be ringback or music). The format is:
		`cdn:treatment[,cdn:treatment...]`
		The format for `treatment` is:
		`##{R|M#musicRouteNumber}`
		■ Siemens HiCom and Alcatel 4400:
		Enter one or more pilot number(s), separated by commas. The format is:
		`pilotNumber[,pilotNumber...]`
		There is a 256 maximum character limit. You can configure as many route points in each Route Points Set X field as the 256-character limit permits.
			7400
			7400,7500
			7520:##R
			7530:##M#02
			7400

Outgoing Prefix	Required if using web callback	Numeric prefix dialed to place outside calls. Check against the configuration of the PBX.	9
International Dialing Prefix	Required if using web callback	Numeric prefix dialed for placing international calls.	011 (from within the USA)
Site Country Code	Required if using web callback	The country code for the site where the PBX is located.	1
Site Area Code	Required if using web callback	The area code for the site where the PBX is located.	650
IVR Server Name	Required if using IVR Integrator	The PCDCE name of the IVR Integrator server. Check against PCDCE configuration.	SAMPLEIVR (IVR server values must be in uppercase)

Middleware Parameters for Cisco ICM (GeoTel) Refer to the following table for a description of middleware parameters for Cisco ICM.

Field Name	Required	Description	Sample Value
CTI Enabler IP Address	Required	IP address of the Cisco ICM CTI server (Server A).	123.45.67.890
Middleware Server Info 1	Required	Port number of the Cisco ICM CTI server (Port A).	42027
Middleware Server Info 2	Required	IP address of the Cisco ICM CTI server (Server B).	123.45.67.890
Middleware Server Info 3	Required	Port number of the Cisco ICM CTI server (Port B).	42027
PBX Name	Required	Peripheral ID defined in Cisco ICM CTI server for the PBX of interest.	5008
PBX Type	Required	PBX type. ■ A - Lucent Definity ■ M - Nortel Meridian ■ P - Aspect	A
Outgoing Prefix	Required if using web callback	Numeric prefix dialed to place an outside call. Check against the configuration of the PBX.	9
International Dialing Prefix	Required if using web callback	Numeric prefix dialed for placing international calls.	011
Site Country Code	Required if using web callback	The country code for the site where the PBX is located.	1
Site Area Code	Required if using web callback	The area code for the site where the PBX is located.	650

Note: Be sure to provide a value for all required parameters for the selected middleware type. Values entered into the Value fields are not checked for validity.

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

Defining Interaction Center Telesets

Use this procedure to configure Oracle Telephony Manager for use with a teleset. You can integrate Oracle Telephony Manager with the following teleset types:

- Lucent
- Nortel
- Aspect

- Siemens
- Alcatel

Prerequisites

❑ Define the Oracle interaction center server group. See Defining an Oracle Interaction Center Server Group.

Steps

1. Navigate to the Call Center Administration window.

   a. In the Navigator window, on the Functions tab, choose **Call Center Admin** > **Call Center Administration**.

      The Call Center Administration window opens.

2. If necessary, find your server group.

   a. Choose **View** > **Query by Example** > **Enter** to invoke the query entry mode.

   b. Enter your query.

   c. Choose **View** > **Query by Example** > **Run** to find the matching server groups.

3. Select the Teleset tab.

4. In the Teleset Configuration area, create a teleset definition for each teleset in the interaction center.

   Each row in the table corresponds to one teleset in the interaction center.

   a. In the Teleset Name field, enter a unique name for the teleset (for example, Nortel7701).

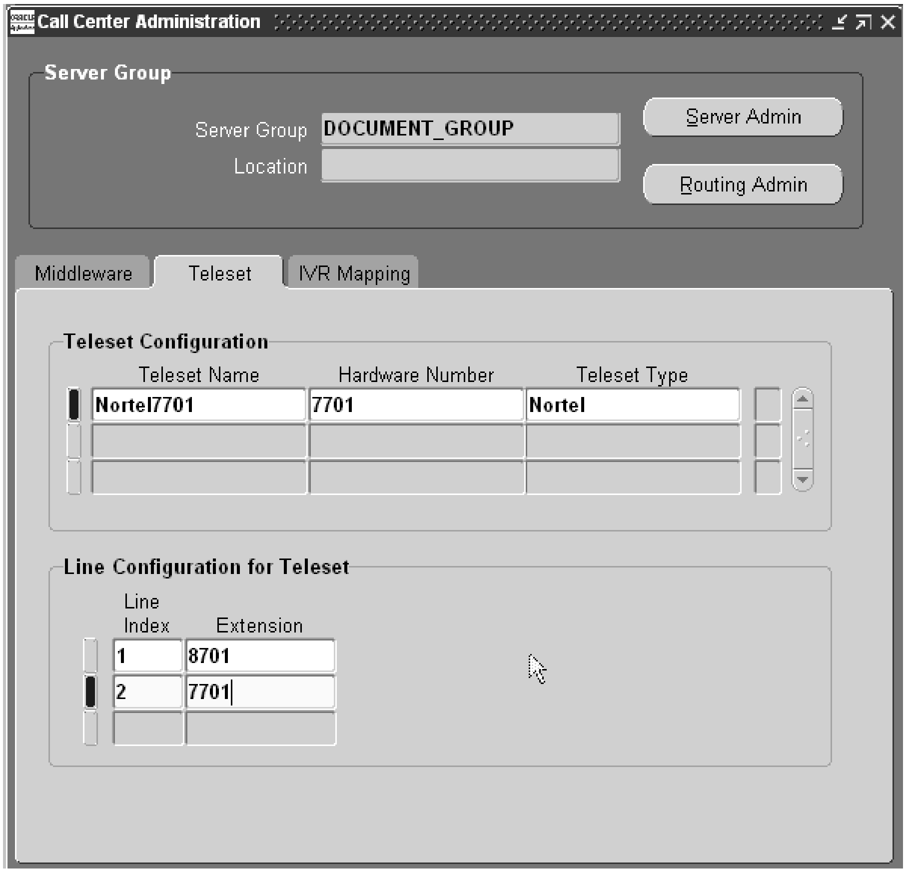
   b. In the Hardware Number field, enter a unique identifier for this teleset (for example, 7701).

      Oracle recommends that you follow the convention of using the primary extension number of the teleset.

   c. From the Teleset Type list, select the vendor name for the teleset (for example, Nortel).

   See the graphic below for an example.

Call Center Administration Window: Teleset Tab



5. In the Line Configuration for Teleset area, configure the line configuration for each teleset definition.

   See the graphic above for an example.

   You can configure a maximum of three lines per teleset, one line each for Line Index 1, 2, or 3. The line configuration will depend on the type of teleset. For information about teleset line configurations, see Guidelines below:

Guidelines

Refer to the following table to determine the teleset line configuration for a particular teleset type.

Teleset	Line Configuration
Lucent	You can configure 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) in the Extension field for all line indexes.
Nortel	You must configure exactly two lines: ■ For Line Index 1, enter the DN (Directory Number) in the Extension field. This corresponds to the Single Call Ringing key on the actual teleset. ■ For Line Index 2, enter the ACD DN in the Extension field. This corresponds to the Automatic Call Distribution key on the actual teleset.
Aspect	Configure three lines for each teleset. Enter the same teleset extension number for all line indexes.
Siemens	You must configure exactly one line for each teleset. Enter the teleset phone number in the Extension field for Line Index 1.
Alcatel	You must configure exactly one line for each teleset. Enter the teleset phone number in the Extension field for Line Index 1.

   a. In the Teleset Configuration area, select the row for the teleset that you want to configure.
   b. In the Line Configuration for Teleset area, select a line index from the Line Index list.
   c. Enter the extension for the line index.

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

Mapping Inbound Data to Oracle Applications Fields

Data collected by an interactive voice response (IVR) or web callback can be passed by Oracle IVR Integrator to Oracle Applications in the form of name-value pairs. Oracle Applications can use this data to generate a more complete and meaningful screen pop on the agent desktop.

Use the following procedure to map the name associated with a value in an IVR data packet to a field in Oracle Applications.

Prerequisites

- ❏ Define the Oracle interaction center server group. See Defining an Oracle Interaction Center Server Group.

Steps

1. Navigate to the Call Center Administration window.

    a. In the Navigator window, on the Functions tab, choose **Call Center Admin** > **Call Center Administration**.

    The Call Center Administration window opens.

2. If necessary, find your server group.

    a. Choose **View** > **Query by Example** > **Enter** to invoke the query entry mode.

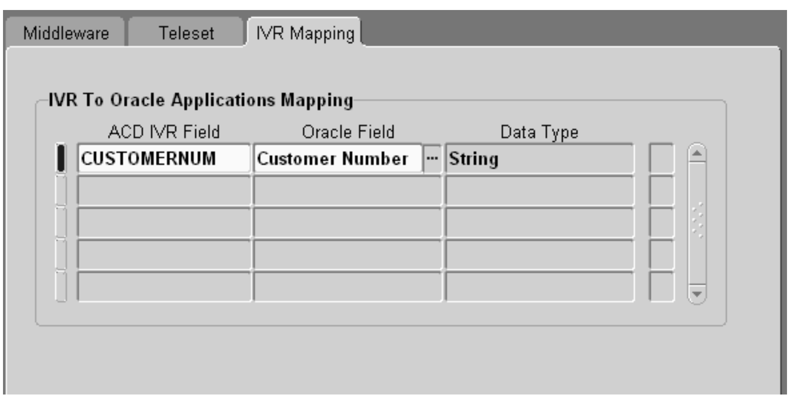
    b. Enter your query.

    c. Choose **View** > **Query by Example** > **Run** to find the matching server groups.

3. Select the IVR Mapping tab.

    Each row in the table corresponds to the mapping of one data item in the IVR data packet to one field in Oracle Applications.

Call Center Administration Window: IVR Mapping Tab



4. For each piece of IVR data that you want to map to a field in Oracle Applications, do the following:

a. In the ACD IVR cell, enter or select the name of the IVR field.

b. In the Oracle Field cell, enter or select an Oracle Applications field name.

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

Creating an Oracle Advanced Inbound User

Follow the steps in the following table to create an Oracle Advanced Inbound agent. The Required column indicates whether a step is required. The Setup Step Description column describes a high-level step and, where applicable, provides a reference to a more detailed topic in this document. The Responsibility column indicates the Oracle Applications user account responsibility required to complete the step. The Navigation column provides the path for navigating to the necessary window.

Step Number	Required?	Setup Step Description	Responsibility	Navigation
❏ Step 1	Required	**Create an employee.** See: Creating an Employee in Oracle Human Resource Management Systems	<country code>_ HRMS_ MANAGER	People > Enter and Maintain
❏ Step 2	Required	**Create an Oracle Applications user account for the employee.** See: Creating an Oracle Applications User Account for an Employee	SYSTEM_ ADMINISTRATOR	Security > User > Define
❏ Step 3	Required	**Configure the Oracle Universal Work Queue profile options for the user account.** See: Configuring Universal Work Queue Profile Options for a User	SYSTEM_ ADMINISTRATOR	Profiles > System
❏ Step 4	Required	**Create a CRM (Customer Relationship Management) resource for the employee.** See: Creating a CRM Resource for an Employee	JTF_RESOURCE_ MANAGER	Maintain Resources > Import Resources
❏ Step 5	Required	**Configure interaction centers parameters for the CRM resource.** See: Configuring Interaction Center Roles and Parameters for a CRM Resource	JTF_RESOURCE_ MANAGER	Maintain Resources > Resource

Creating an Employee in Oracle Human Resource Management Systems

Note: If you do not have Oracle Human Resource Management Systems, use CRM Resource Manager to create an employee in CRM.

Use this procedure to create an employee in Oracle Human Resource Management Systems (HRMS).

Prerequisites

❑ Review *Managing People Using Oracle HRMS*.

❑ Obtain an Oracle Applications user account with access to the <country code>_HRMS_MANAGER (for example, US HRMS Manager) responsibility.

Steps

1. If necessary, select the HRMS Manager responsibility.
2. In the Navigator window, on the Functions tab, choose **People** > **Enter and Maintain**.

   The Find Person window appears.
3. Click **New**.

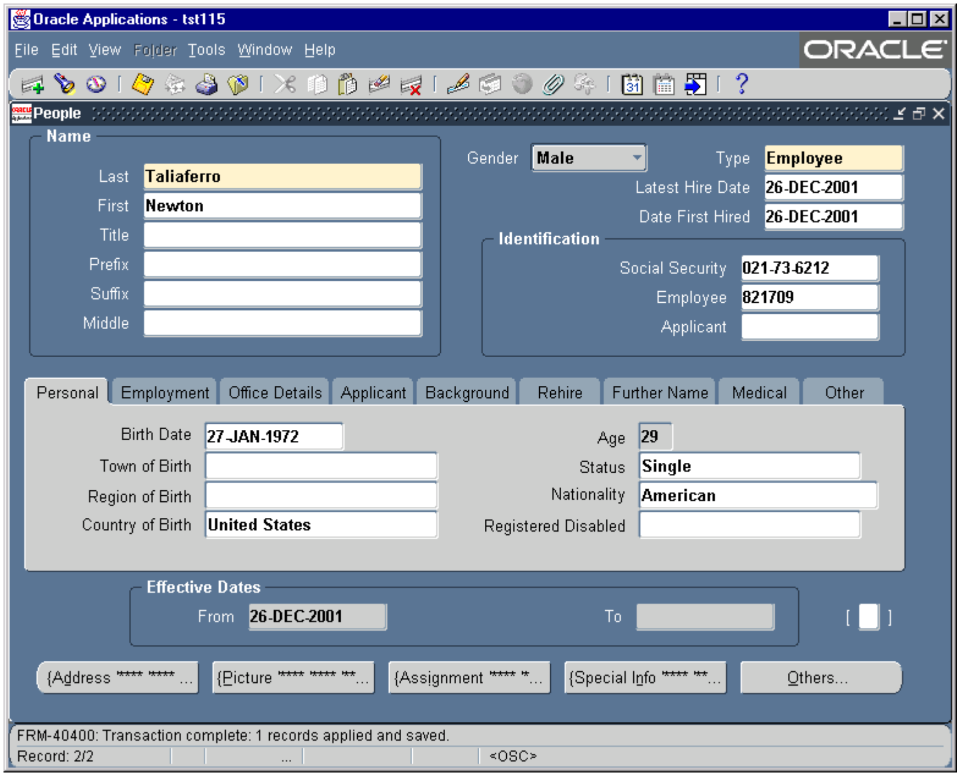
   The People window appears.
4. Enter the information for the new person.

   The following fields are required:
   - Last (Name)
   - Gender
   - Type
   - Employee (Number)

   Note: In the Type field, select **Employee**.
5. From the **File** menu, choose **Save**.

Guidelines

In the following example, Newton Taliaferro is a person in Oracle HRMS. He has a type of Employee. His employee number is 821709.



See Also

- Creating an Oracle Applications User Account for an Employee
- Configuring Universal Work Queue Profile Options for a User
- Creating a CRM Resource for an Employee
- Configuring Interaction Center Roles and Parameters for a CRM Resource

Creating an Oracle Applications User Account for an Employee

Use this procedure to create an Oracle Applications user account and to associate a person in Oracle Human Resource Management Systems (HRMS) with a user account.

Prerequisites

- ❏ Review *Oracle Applications Systems Administrator's Guide*.
- ❏ Obtain an Oracle Applications user account with access to the SYSTEM_ ADMINISTRATOR (System Administrator) responsibility.

Steps

1. If necessary, select the System Administrator responsibility.
2. In the Navigator window, on the Functions tab, choose **Security** > **User** > **Define**.

   The User window appears.
3. In the User Name field, enter the name of the user account.
4. In the Password field, enter the password for the user account and then enter the password again to verify it.

   Note: This is a temporary password. When the user logs into Oracle Applications for the first time, the message "Your password has expired" appears. The Password Update window allows the user to enter a new password.
5. In the Person field, select the employee to be associated with the user account.
6. In the Responsibilities tab, add the following responsibilities:

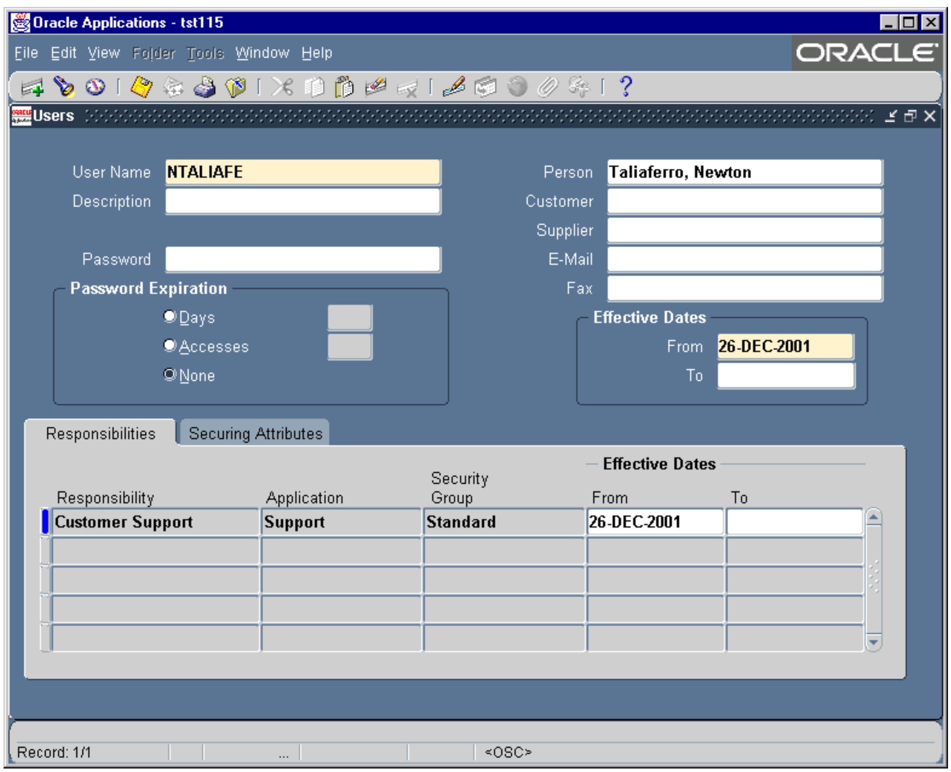
To do this...	Add this responsibility...
Create ? and access an Oracle Telephony Manager view from Oracle Support	
Create ? and access an Oracle Telephony Manager view from Oracle Support	
Create ? and access an Oracle Telephony Manager view from Oracle Support	

To do this...	Add this responsibility...
Access email via Oracle eMail Center	

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

Guidelines

In the following example, NTALIAFE is an Oracle Applications user account. Newton Taliaferro, an employee in Oracle HRMS, is associated with the NTALIAFE user account. A user who logs in to Oracle Applications using the NTALIAFE user account will have access to functions associated the Customer Support responsibility.



See Also

- Creating an Employee in Oracle Human Resource Management Systems
- Configuring Universal Work Queue Profile Options for a User
- Creating a CRM Resource for an Employee
- Configuring Interaction Center Roles and Parameters for a CRM Resource

Configuring Universal Work Queue Profile Options for a User

Oracle Telephony Manager assigns work to agents based on the Oracle Universal Work Queue user profile options set in the agent's user account. Use Oracle Universal Work Queue profile options to:

- Specify whether the client network layer attempts to use the system's proxy server, or a direct connection to the UWQ server
- If using Oracle Interaction Blending, specify the blending style for the agent (Oracle Interaction Blending ensures service levels across multiple channels)
- Enable or disable access to a particular type of work for a specific agent
- Enable or disable automatic launching of the client-side plugin for media tasks
- Change the order of the queues in the Oracle Universal Work Queue view

Prerequisites

- ❏ Review *Oracle Applications Systems Administrator's Guide.*
- ❏ Obtain an Oracle Applications user account with access to the SYSTEM_ADMINISTRATOR (System Administrator) responsibility.

Steps

1. If necessary, select the System Administrator responsibility.
2. In the Navigator window, on the Functions tab, choose **Profiles** > **System**.

   The Find System Profile Values window appears.
3. Select the User check box.
4. Type the user name in the field adjacent to the User check box (for example, ABCDEF).
5. Select the Profiles with No Values check box.
6. In the Profiles field, type **IEU%**.

7. Click **Find**.

   The System Profiles window appears.

8. Enable or disable access to a particular type of work.

   Select **Yes** to enable access to a type of work; otherwise, select **No**.

   The default queue determination process is dynamic by nature, so we cannot simply say the default is Y or N.

   When the user logs in, we see what Interaction Center they're in (a.k.a. Server Group). This is set in the CRM Resource configuration form, under the Interaction Center tab. We know which types of servers support which types of media by using other (internal) configuration tables.

   Based on this lookup, the user is deemed to be "eligible" to work on any Queue type that the servers in his group can support. Therefore, if only OTM were in his group, he would be eligible to work on: Inbound Telephony, Inbound Email, Web Callbacks.

   If this processing is not desired, then our determination process can be affected by setting the Queue access to N for any that you don't want. This can be done for the whole site, a specific user, etc., per User Profile functionality.

To enable or disable access to...	Set this profile option...
Inbound Email	IEU: Queue: Inbound Email
Inbound Telephony	IEU: Queue: Inbound Telephony
Outbound Telephony	IEU: Queue: Outbound Telephony
Web Callback	IEU: Queue: Web Callback

9. Enable or disable automatic launching of the client-side plugin for media tasks.

   Select **Yes** to enable automatic launching of the client-side plugin; otherwise, select **No**.

   Normally, the client plug-ins are loaded based on the media types each user is eligible to work on. The mentality being that there's no sense in launching Softphone, for example, if the user cannot even work on any telephony work.

   Just in case there are situations in which we need a particular client plug-in loaded regardless of our determination, these overrides were provided.

If any override is set to Y, then we'll load it even if we don't think we need to. Setting it to N is ignored.

To automatically launch...	Set this profile option...
eMail Center client	IEU: Media: Email
Softphone	IEU: Media: Telephony

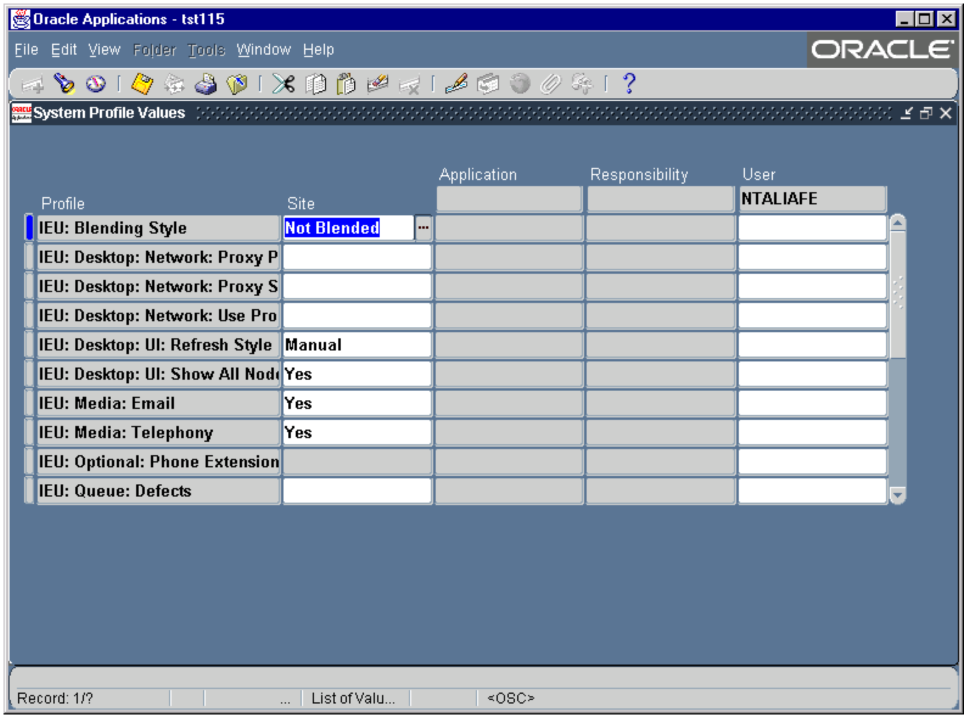
10. Modify the order of the queues displayed on the Oracle Universal Work Queue desktop.

    For each IEU: Queue Order profile option, select a value between 1 and 26 to set the order of the queue. Queues are displayed in ascending order of the profile option value on the Oracle Universal Work Queue desktop.

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

Guidelines

In the following example, all users at this site have access to telephony media and email media by default.



See Also

- Creating an Employee in Oracle Human Resource Management Systems
- Creating an Oracle Applications User Account for an Employee
- Creating a CRM Resource for an Employee
- Configuring Interaction Center Roles and Parameters for a CRM Resource

Creating a CRM Resource for an Employee

Use this procedure to create a Customer Relationship Management (CRM) resource based on a person in Oracle Human Resource Management Systems (HRMS).

Prerequisites

- ❏ Review *Oracle CRM Foundation Concepts and Procedures*.
- ❏ Obtain an Oracle Applications user account with access to the JTF_RESOURCE_MANAGER (CRM Resource Manager) responsibility.

Steps

1. If necessary, select the CRM Resource Manager responsibility.
2. In the Navigator window, on the Functions tab, choose **Maintain Resources** > **Import Resources**.

   The Selection Criteria window appears.
3. In the Resource Category field, select **Employee**.
4. Enter any additional selection criteria.
5. Click **Search**.

   Employees that meet the search criteria are listed in the Search Results area. The Select check boxes for the matching employees are automatically selected.
6. Clear the Select check boxes of the employees for which you do not want to create a CRM resource.
7. Click **Create Resource**.

   The Default Values window appears. Use the Default Values window to apply a (Resource) Start Date, (Resource) End Date, Role, Role Start Date, and Role End Date to the resources that you want to create. You can also add or modify this information in the resource details later.
8. To apply default values to the selected resources, enter the information and then click **OK**; otherwise click **Cancel**.

   The Selected Resources window appears. A transaction number is associated with each resource created during this transactions. More than one resource can have the same transaction number. In the Comments field, "New Record" indicates that a new resource will be created for the employee.

   The Select check boxes for the matching employees are automatically selected.
9. Clear the Select check boxes of the employees for which you do not want to create a CRM resource.
10. To confirm the creation of the resources, click **Save Resources**.
11. To view the details for a resource, click Details.

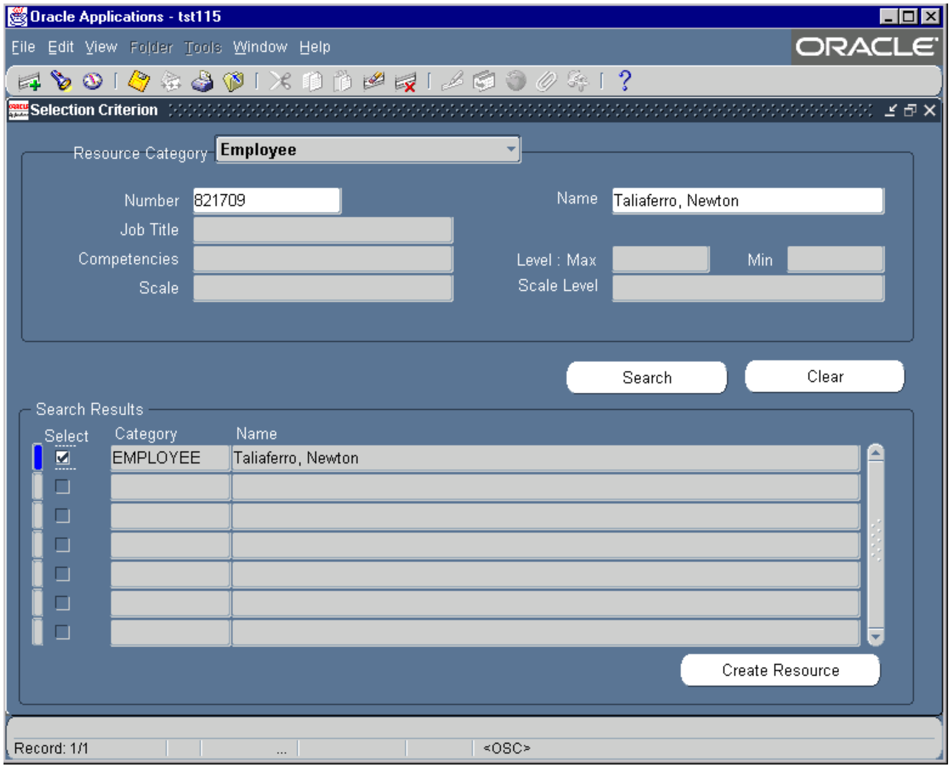
Guidelines

In the following example, the selection criteria for creating a resource is:

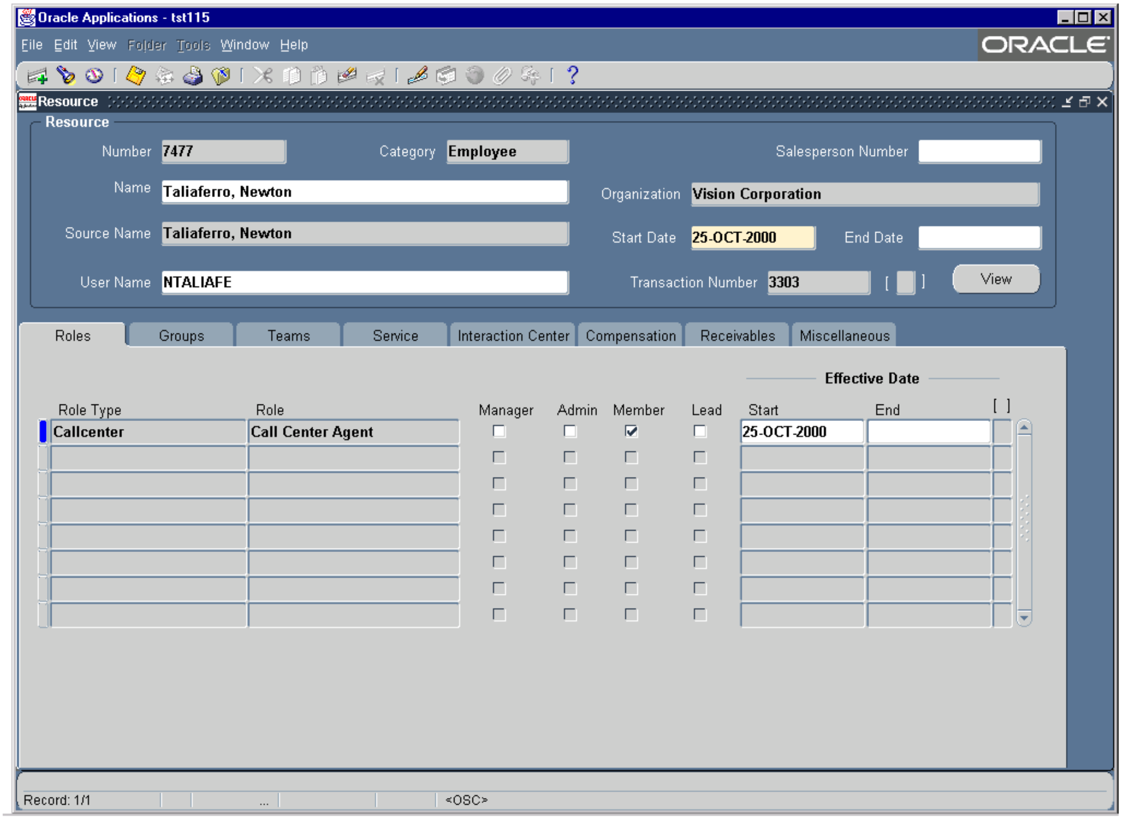
- Resource Category: Employee

- (Employee) Number: 821709

The Search Results area lists Newton Taliaferro, an employee in Oracle HRMS.



The resource details show the name of the employee and the user account associated with the employee. Every CRM resource has a resource number (see the Number field in the Resource window). If resource information is imported based on an employee in Oracle HRMS, then the CRM resource also has a transaction number (see the Transaction Number fields in the Resource window).



See Also

- Creating an Employee in Oracle Human Resource Management Systems
- Creating an Oracle Applications User Account for an Employee
- Configuring Universal Work Queue Profile Options for a User
- Configuring Interaction Center Roles and Parameters for a CRM Resource

Configuring Interaction Center Roles and Parameters for a CRM Resource

Use this procedure to configure the interaction center roles and parameters for a CRM (Customer Relationship Management) resource. You need to specify the following information for the CRM resource:

- CRM roles

- Interaction center server group
- Telephony parameters
- Email parameters

Prerequisites

❏ Review *Oracle CRM Foundation Concepts and Procedures*.

❏ Obtain an Oracle Applications user account with access to the JTF_RESOURCE_MANGER (CRM Resource Manager) responsibility.

Steps

1. If necessary, select the CRM Resource Manager responsibility.
2. In the Navigator window, on the Functions tab, choose **Maintain Resources** > **Resources**.

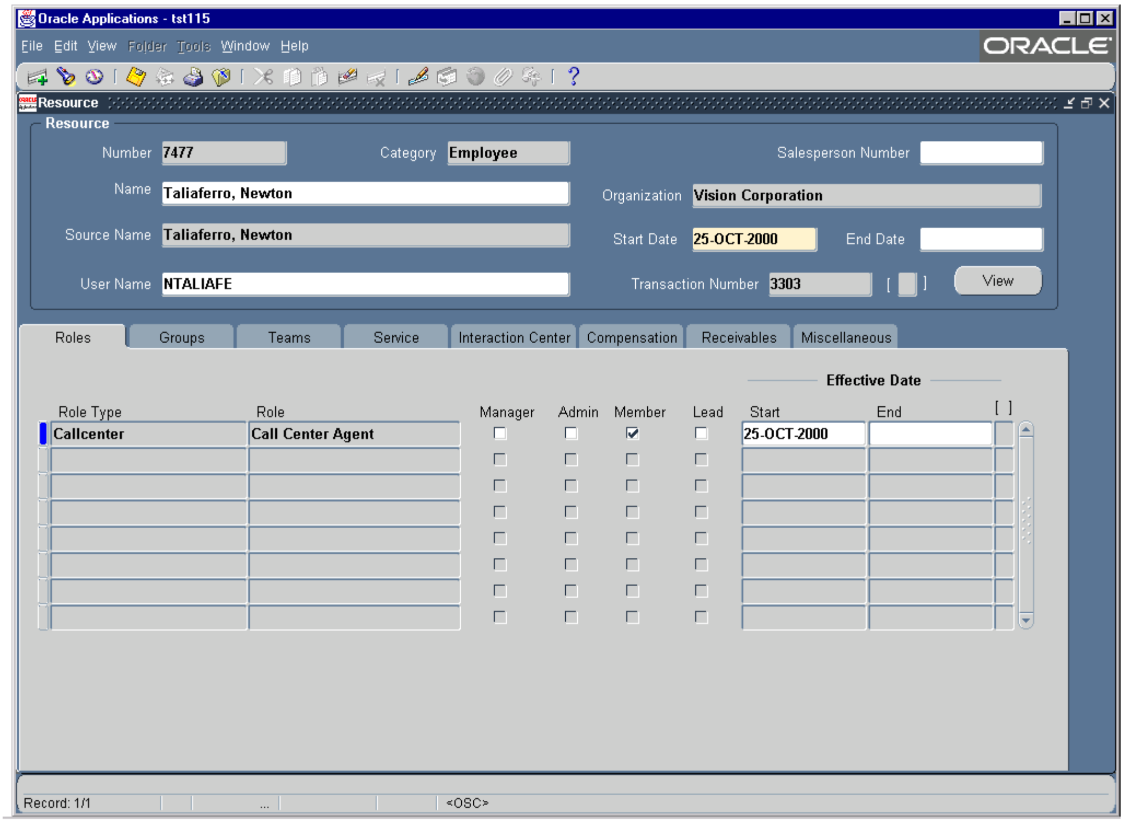
   The Find window appears.
3. Enter any additional selection criteria.
4. Click **Search**.

   The Resource window is displayed.
5. In the Roles tab, assign an interaction center role.
   a. In the Role Type field, select **Callcenter**.
   b. In the Role field, select the role.

      The list of available roles is determined by the selected role type.

Guidelines

In the following example, Newton Taliaferro has a role of Call Center Agent.



6. In the Interaction Center tab, specify the interaction center parameters.

   a. In the Interaction Center field, select the interaction center server group for this interaction center resource.

   b. For telephony:

      The telephony parameters that are required and the values to specify depend on the types of switch and CTI middleware in use in the interaction center.

      The following tables provide specific instructions for each supported switch-middleware combination.

Telephony Parameters for Lucent Definity with CT-Connect

Field Name	Description	Sample Value
ACD Data 1	Agent’s ACD password, if any, as defined in the PBX admin.	34181
ACD Data 2	Agent’s ACD login ID, as defined in the PBX admin.	34181

Telephony Parameters for Lucent Definity with Cisco ICM CTI Server (GeoTel)

Field Name	Description	Sample Value
ACD Data 1	Agent’s ACD password, as defined in the PBX admin.	34181
ACD Data 2	Agent’s ACD login ID, as defined in the PBX admin.	34181
ACD Queue	Agent’s skill group number, as defined in the PBX admin.	46

Telephony Parameters for Nortel Meridian or Symposium Call Center Server with CT-Connect

Field Name	Description	Sample Value
ACD Data 1	(Require only when the switch is in login ID mode) Agent’s ACD login ID, as defined in the PBX admin	1001

Telephony Parameters for Nortel Meridian with Cisco ICM CTI Server (GeoTel)

Field Name	Description	Sample Value
ACD Data 1	Agent’s ACD password, as defined in the PBX admin.	1001
ACD Data 2	Agent’s ACD login ID, as defined in the PBX admin.	1001
ACD Queue	Agent’s skill group number, as defined in the PBX admin.	46

Telephony Parameters for Aspect with Cisco ICM CTI Server

Field Name	Description	Sample Value
ACD Data 1	Agent’s ACD password, as defined in the PBX admin.	1001
ACD Data 2	Agent’s ACD login ID, as defined in the PBX admin.	1001

Field Name	Description	Sample Value
ACD Queue	Agent's skill group number, as defined in the PBX admin.	46

Telephony Parameters for Siemens Hicom with CT-Connect

Field Name	Description	Sample Value
ACD Data 2	Agent's ACD login ID, as defined in the PBX admin.	40027

Telephony Parameters for Alcatel 4400 with CT-Connect

Field Name	Description	Sample Value
ACD Data 1	Agent's ACD password, as defined in the PBX admin.	0000
ACD Data 2	Agent phone number, as defined in the PBX admin.	3551
ACD Queue	Agent's processing group number, as defined in the PBX admin.	3700

c. For email:

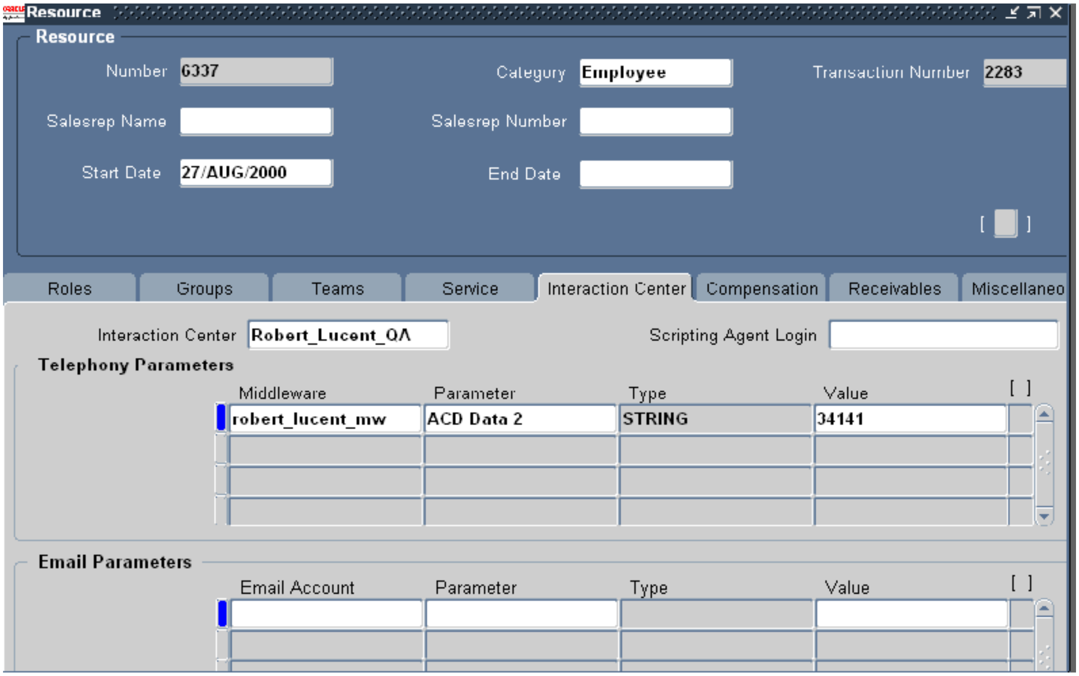
From the drop-down list in the Email Account field, select the desired **Email Account**. Select **Default** from the drop-down list for the **Parameter** field and click the **Value** field to select the default value (IEM_DEFAULT_VALUE).

Note: Use the default values for all tabs except the Interaction Center tab and the Roles tab. Do not perform any changes to the other tabs unless explicitly directed to do so.

In the Roles tab, select **Call Center** from the drop-down list for Role Type and select **Call Center Agent or Call Center Supervisor or Call Center Manager** from the drop-down list for Roles. This is required for integration with the Routing Server.

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

In the following example, the interaction center server group called Robert_Lucent_QA is assigned to the resource.



See Also

- Creating an Employee in Oracle Human Resource Management Systems
- Creating an Oracle Applications User Account for an Employee
- Configuring Universal Work Queue Profile Options for a User
- Creating a CRM Resource for an Employee

Configuring Call Routing

The call routing server consists of three components: classification, routing, and workflow.

Prerequisites

- Configure employees in Oracle Human Resources Management System (HRMS).

- Set up the employees as CRM Resources and configure them as Call Center Resources in Resource Manager.
- Configure the Routing Server in the Server Locator window.

Setting Up Routing for Inbound Calls

The Routing Server is the server process for the routing component of the Oracle interaction center. The Routing Server is used in the following scenarios:

- With Inbound Telephony only if you are running Oracle Telephony Manager in the active routing mode
- With Inbound eMail in Oracle eMail Center

The Oracle routing module has two basic types of routing which are used for different situations based on the requirements of the configuration: rules based routing and workflow based routing.

Setting Up Routing for Inbound Calls and Email

Use the steps in the following chart to set up routing. The Window Names(s) column shows you in which window(s) to perform the step, and whether the window is available only if you use a specific responsibility or product. The Required column shows whether the step is required, optional, required with defaults, or conditionally required. The chart also indicates where you may read detailed instructions about the setup step.

Step Number	Required?	OTM Setup Step Description	Window Name(s)
❑ Step 1	Required	**Define the classifications.** See: Defining Routing Classifications	Classification Administration window
❑ Step 2	Required only for static routing	**Define a group.** See: Defining Groups	Define Groups window; Dynamic Groups window
❑ Step 3	Required	**Define a route.** See: Defining Routes	Routing Administration window
❑ Step 4	Required	**Define the route priorities.** See: Defining Route Priorities	Routing Priority window
❑ Step 5	Required only for workflow based routing	**Set up Workflow Based Routing for Inbound Calls and Email** See: Setting Up Workflow-Based Routing for Inbound Calls and Email	

Defining Routing Classifications

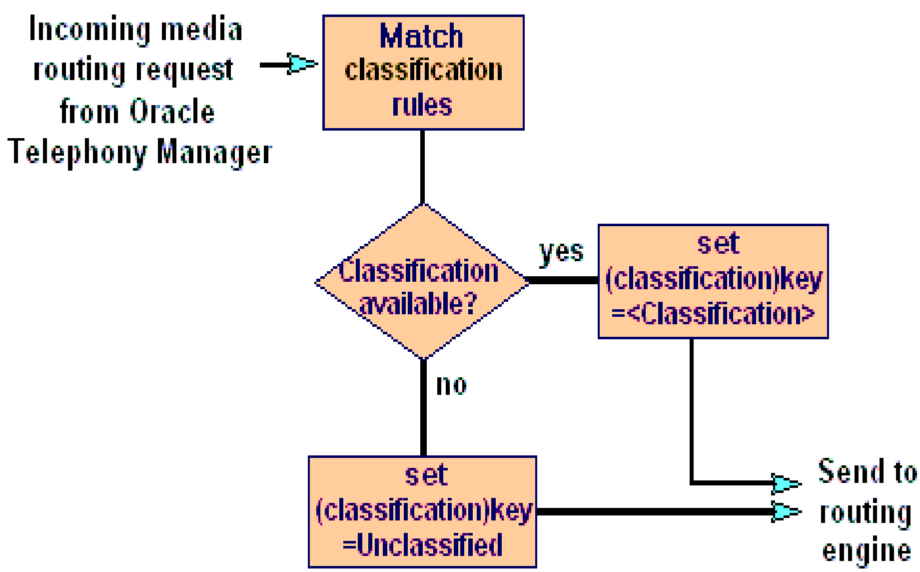
Classifications specify which business application is launched on the agent desktop and how an interaction is listed in the UWQ screen. Classifications are of two types: literal and database procedure. A literal classification assigns the string specified to be the classification of an interaction. A database procedure classification derives the classification value from a stored procedure and then assigns it to an interaction.

Note: Routing Classification is different from Email Classification. Email classification is the intent of the email. Routing Classification determines how an interaction is tracked in UWQ and Business Intelligence, and which business application is popped when the media arrives on the desktop.

Every classification is defined by a set of rules. These rules define the conditions under which the classification occurs. For example, if Customer Name=Oracle Corporation and DNIS=18005551234, then the classification=Gold Support.

If multiple rules are associated with a classification, all the rules must be satisfied for the classification to be considered a match. Every classification rule has a Key and a Value whose relationship is defined by one of the available Operations (=, !=, >, >=, <, <=).

Routing Classification Engine



For procedures, see:

- Defining a Literal Classification

- Defining a Database Procedure Classification

Defining a Literal Classification

Use this procedure to define a literal classification.

Prerequisites

None

Steps

1. Navigate to the Classification Administration window.

   a. In the Navigator window, on the Functions tab, choose **Call Center Admin** > **Classification Administration**.

      The Classification Administration window appears.

2. If necessary, choose **File** > **New**.

3. In the Classification Definition area, define the classification.

   a. Enter a unique name to describe the classification.

   b. From the Type list, select **Literal**.

   c. In the Time Out field, enter the number of minutes you want to use as your time out period.

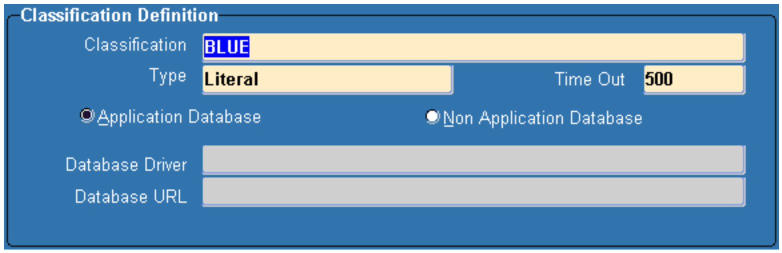
      After a media item is routed, it waits in the OTM queues for one of the agents in the group to become available. The Time Out field sets the maximum length of time that the media item waits in the OTM queues. By the end of that period, if an agent does not become available, the media item is sent back to the Routing server to be re-routed to another group of agents. The Time Out field is set in minutes.

      For inbound email, if you do not want the email to be rerouted for a long period, Oracle recommends that you enter the number 100000 in this field.

   d. Choose the default **Application Database**.

      See the graphic below for an example.

Classification Administration Window: Classification Definition area



4. On the Classification Rules tab, define the rules for classifications. You can define multiple rules for a classification. The Classification Engine used "AND" relations to evaluate thee rules.

   a. From the Key list, select a key.

   b. From the Operation list, select an operator.

   c. Enter the value for the selected key.

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

Defining a Database Procedure Classification

Use this procedure to define a database procedure classification.

Prerequisites

None

Steps

1. Navigate to the Classification Administration window.

   a. In the Navigator window, on the Functions tab, choose **Call Center Admin** > **Classification Administration**.

      The Classification Administration window appears.

2. In the Classification Definition area, define the classification.

   a. Enter the name of the database PLSQL function that will determine the classification of the media item, for example, GET_CLASSIFICATION_FROM_SUBJECT. The function should return the value for Classification.

Note: The value entered in the Classification field is not verified against the stored procedures. Be sure to enter the correct procedure name.

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b. From the Type list, select **Database Procedure**.

c. In the Time Out field, enter the number of minutes you want to use as your time out period.

   After a media item is routed, it waits in the OTM queues for one of the agents in the group to become available. The Time Out field sets the maximum length of time that the media item waits in the OTM queues. By the end of that period, if an agent does not become available, the media item is sent back to the Routing server to be re-routed to another group of agents. The Time Out field is set in minutes.

   For inbound email, if you do not want the email to be rerouted for a long period, Oracle recommends that you enter the number 100000 in this field.

d. Choose the default **Application Database**.

e. If the following condition is true, select **Non Application Database:**

   The PL/SQL procedure that determines the classification is stored in the Non Applications database. Also, enter a **Database Driver** and **Database URL** for the Non Application database.

3. On the Classification Rules tab, define the rules for classification. You can define multiple rules for a classification. The Classification Engine uses "AND" relations to evaluate these rules.

   a. From the **Key** list, select a key.

   b. From the **Operation** list, select an operator.

   c. Enter the **Value** for the selected key.

4. In the Classification Parameters tab, enter the following parameters:

   Parameter: The name of the parameter for the procedure.

   Value: Choose the Value from the list of values, or enter a custom value for this parameter.

   Data Type: Choose the Data Type of the parameter from the list of values.

   Direction: Choose the direction of the parameter from the list of values.

Sequence: A generated number that indicates the position of the parameter in the PL/SQL procedure. Verify that the accuracy of the parameter Sequence.

Define all parameters for the procedure.

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

Defining Groups

There are two types of groups: static and dynamic. A static group requires that you manually manage the group membership. In a dynamic group, group membership is managed automatically as the result of a SQL query.

For procedures, see:

- Defining a Static Group
- Defining a Dynamic Group

Defining a Static Group

Use this procedure to configure a static group.

Prerequisites

None

Steps

1. Navigate to the Define Groups window. You can also access the Define Groups form from the Resource Manager Responsibility.

   a. In the Navigator window, on the Functions tab, choose **Call Center Admin** > **Routing Server Administration**.

      The Routing Administration window appears.

   b. Click **Static Groups**.

      The Define Groups window appears.

2. In the **Name** field, enter a unique descriptive name for the group.

Note: The Accounting Code and Email Address fields are not required.

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3. In the Active Dates area, select or enter the Start Date.

Caution: Enter an End Date only if you want to terminate the group. If you do not have at least one active group, the routing will fail.

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4. To assign agents exclusively to this group, check the **Exclusive Flag** box. This means the agent may not be a member of any other group.
5. Click the Members tab.
6. In the **Category** field, select **Employee** from the list of values.
7. In the **Number** field, select the resource number of the appropriate agent. You can assign as many group members as you want.

   The Name and Operating Unit fields are populated automatically.
8. Click the Usages tab.
9. In the **Usage** field, select **Call Center** from the list of values.

Note: When defining a static/dynamic group for Routing, the usage of the group should be set to “Call Center” so that the group will be available in the Routing Admin LOV for static/dynamic groups.

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10. Optionally, if you want to define this group as a sub-group of another static group, click the Relations tab.
    a. Select the **Group Number** from the list of values in the Group Number field.
    b. In the Relation Type field, select the default value **Parent Group**.
    c. In the Active Dates area, select or enter the Start Date.

Caution: Enter an End Date only if you want to terminate the relation between the parent group and the sub-group.

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11. Select **File** > **Save**.

Defining a Dynamic Group

Use this procedure to configure a dynamic group for routing.

Prerequisites

None

Steps

1. Navigate to the Dynamic Groups window. You can also access the Dynamic Groups form from the Resource Manager Responsibility.

   a. In the Navigator window, on the Functions tab, choose **Call Center Admin** > **Routing Server Administration**.

      The Routing Administration window appears.

   b. Click **Dynamic Groups**.

      The Dynamic Groups window appears.

2. If necessary, choose **File** > **New**.
3. Enter a unique name for the group.
4. In the **Usage** field, select **Call Center** from the list of values.

Note: When defining a static/dynamic group for Routing, the usage of the group should be set to “Call Center” so that the group will be available in the Routing Admin LOV for static/dynamic groups.

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5. Optionally, enter a free text description of the group.
6. In the Active Dates area, select or enter the Start Date.

Caution: Enter an End Date only if you want to terminate the group. If you do not have at least one active group, the routing will fail.

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7. Enter the SQL statement that selects the members of the group. The SQL statement must return only a list of resource IDs.
8. Click **Check Syntax**.

   If the SQL statement is invalid, then an error message appears. If the SQL statement is valid, then no message appears. This does not check that the return values are valid, only that the SQL is well formed.
9. From the **File** menu, choose **Save**.

Defining Routes

A route definition identifies the potential groups or members to which an interaction may be routed and the parameters (such as Email User Name or Telephony DNIS) to be used in determining the destination of the interaction.

There are two types of rules-based routing, static and dynamic. Static routing is faster, but dynamic routing is more flexible.

Static routing consists of rules defined in the routing administration form, which then direct the interaction to either a static or a dynamic group. An example of a static route would be “if the email user name = support then route to Group A”. Group A could be either a static group or a dynamic group. As defined in the previous section, a static group is cached by the routing server and a dynamic group is evaluated by a SQL query.

Dynamic routing consists of rules defined in the routing administration form, which then direct the email to either a PL/SQL procedure or the routing workflow. The rule itself is similar to static routing, but the destination of the rule is different. An example of the first type would be “if the email user name = support then route to the agents returned by the PL/SQL procedure ‘CUST_GET_AGENTS’”.

An example of using the routing workflow would be “if the email user name = support then route to the agents returned by the routing workflow ‘CCT_ROUTINGWORKFLOW_PUB.LAUNCH_WORKFLOW_VERSION5’ “.

For procedures, see:

- Defining a Static Route

- Defining a Dynamic Route

Defining a Static Route

Use this procedure to define a static route.

Prerequisites

Define a static group or a dynamic group. For more information, see Defining Groups.

Steps

1. Navigate to the Routing Administration window.
   a. In the Navigator window, on the Functions tab, choose **Call Center Admin** > **Routing Server Administration**.

      The Routing Administration window appears.
2. If necessary, choose **File** > **New**.
3. In the Route Definition area:
   a. Enter a unique name to describe the route.
   b. From the Route Type list, select **Static**.
   c. In the Default Destination field, select a group (static or dynamic) from the list of values.

      Note: If the routing server cannot determine agents from the defined destinations, then the server routes the media item to the agents defined in the Default Destination.

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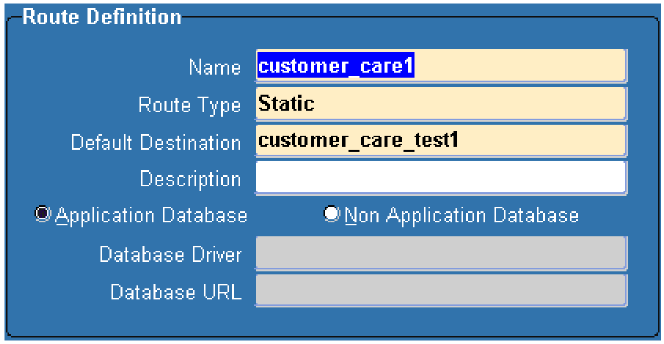
   d. Optionally, enter the free text Description of the static route.
   e. For static routes, select the default **Application Database**.
4. On the Route Rules tab, define the rules for the route. You can define multiple rules for a route. Routing Server uses "AND" relations to evaluate these rules.
   a. From the Key list, select a key (for example, Email User Name).
   b. Enter the value for the selected key (for example, Support).

Routing Administration Window: Route Definition Area



5. On the Route Destinations tab, select the static groups or dynamic groups to which email may be routed.
6. From the **File** menu, choose **Save**.

> **Note:** Chaining rules is only available for 'and' relations. For example, a rule can be "if X=Y **and** A=B" but not "if X=Y **or** A=B".

Defining a Dynamic Route

Use this procedure to define a dynamic route.

Prerequisites

None

Steps

1. Navigate to the Routing Administration window.
   a. In the Navigator window, on the Functions tab, choose **Call Center Admin** > **Routing Administration**.

      The Routing Administration window appears.
2. If necessary, choose **File** > **New**.
3. In the Route Definition area, identify the route.
   a. Enter a unique name to describe the route.

b. From the Route Type list, select **Dynamic**.

c. In the Default Destination field, select a group (static or dynamic) from the list of values.

Note: If the routing server cannot determine agents from the defined destinations, then the server routes the MEDIA ITEM to the agents defined in the Default Destination.

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d. Optionally, enter a description of the dynamic route.

e. If either of the following conditions is true, select **Application Database:**

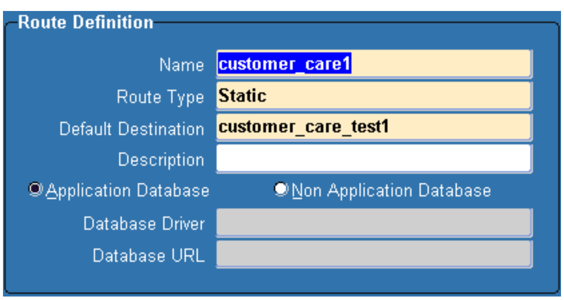
The PL/SQL procedure that is the route destination is stored in the Oracle Applications database.

OR

The routing workflow is the route destination.

f. If the following condition is true, select **Non Application Database**: The PL/SQL procedure that is the route destination is stored in the Non Applications database. Also, enter a **Database Driver** and **Database URL** for the Non Application database.

Routing Administration Window: Route Definition Area



4. On the Route Rules tab, define the rules for the route. You can define multiple rules for a route. Routing Server uses "AND" relations to evaluate these rules.

   a. From the Key list, select a key (for example, Email User Name).

   b. Enter the value for the selected key (for example, Support).

5. On the Route Destinations tab:

   a. In the Dynamic Destination area, enter the name of the custom procedure (Package.Procedure) that will be used to derive the list of agents for this email. The custom procedure must have an output parameter for returning the list of agents. The parameter must return nothing but a semi-colon delimited list of agents.

      OR

      Select the routing workflow from LOV.

   b. If you are using a custom procedure, in the Procedure Parameters area, enter the procedure parameters. Doing this allows the system to know about each input and output parameter for your custom procedure.

      Note: One of the parameters for the custom procedure must be an output parameter returning the list of agents. From the LOV, select **occtAgentID** as the value for this parameter. This parameter must return only a semi-colon delimited list of agents.

      Parameter: The name of the parameter for the procedure (either input and/or output).

      Value: Choose the Value from the list of values, or enter a custom value for this parameter.

      Data Type: Choose the Data Type of the parameter from the list of values.

      Direction: Choose the direction of the parameter from the list of values to determine if it is an input and/or output parameter.

      Sequence: A generated number that indicates the position of the parameter in the PL/SQL procedure. Verify that the accuracy of the parameter Sequence.

      Define all parameters for the procedure.

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

See also:

Setting up Workflow Based Routing for Inbound Calls and Email

Defining Route Priorities

You can define and change the priority of route definitions. Logically, the route rules will be evaluated in order of priority, starting with number 1. The first route rule which evaluates as true will determine the routing destination - starting with number 1, then number 2, and so on.

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

Use the following procedure to set the priority for a route.

> **Note:** By default, newly defined routes have the lowest priority among the existing routes.

Prerequisites

None

Steps

1. Navigate to the Routing Priority window.
   a. In the Navigator window, on the Functions tab, choose **Call Center Admin** > **Routing Priority Administration**.

      The Routing Priority window appears.
2. From the Priority list of values, select a priority.
3. Click **Change Priority**.
4. From the **File** menu, choose **Save**.

Setting Up Workflow-Based Routing for Inbound Calls and Email

Workflow based routing is the most flexible routing. This is full-function routing, which relies upon the database and uses pre-defined nodes that access business data from the Oracle business applications.

All routing information about the interaction is available in key-value pairs. Media data (for example, ANI: 655-3458 or MediaType: Email) and IVR data (for example, BugID: 6091549) are available to nodes. The nodes perform logic in a workflow that determines the recipients of a call and routes the call to those recipients.

Example 1: If you want to route a call to the agent who has a detailed knowledge of a particular product, you could create that functionality with the workflow. A workflow node that takes the Customer Product ID and returns a list of agents associated with that product within the CRM Territory Manager is pre-built and shipped with this product. Since that node already exists, it would be dragged into the workflow and dropped in to create the desired logic.

Example 2: You can also create a custom node that performs most any action you can write into a PL/SQL function, for example, to identify all agents who have been with a company more than one year. In this example, a custom PL/SQL procedure could compare today’s date with a list of agents from the Human Resources database. The result could then be wrapped into a workflow node, saved and dropped into future workflows.

Advantages:

- Pre-built nodes with pre-built integration to CRM
- Drag and drop functionality
- Workflow engine, so there is a visible representation of the logic
- Can be used to perform any type of complex logic
- Able to be customized, so a customer can write their own nodes
- Little technical ability necessary to configure nodes.

Disadvantages:

- Request must travel to the database and back
- Normally has an overhead of at least 50ms
- Technical skill needed to write custom nodes

With Oracle Workflow Builder 2.5, you can use drag-and-drop routing functions to implement and administer the Call Routing screen.

To create and configure a route path using the Oracle Workflow Builder-based Call Routing screen, you need to have a thorough understanding of Oracle Workflow Builder.

All Oracle Workflow Builder processes are associated with an item type. An item type can include one or more processes. When you save your work in Oracle Workflow Builder, you actually save everything associated with the item type that is currently selected. You can save an item type to a database or a flat file, and similarly load an item type into Oracle Workflow Builder from a database or a flat file. Opening an item type automatically retrieves all the attributes, messages, lookups, notifications, functions, and processes associated with that item type.

See:

- Accessing the Call Route Item Type
- Applying a Pre-Defined Route
- Running a Pre-Defined Routing Process
- Modifying a Process
- Designating Start and End Activities
- Adding a New Node to a Process
- Creating a New Process Route
- Administering Call Routing Filters
- Setting Time and Date Rules
- Deriving Rules for the Customer Initialization Phase
- Deriving Rules for the Customer Product Initialization Phase
- Deriving Rules for the Product Initialization Phase
- Deriving Rules for Telesales Routing
- Deriving Rules for Banking Center Routing

Accessing the Call Route Item Type

To open the Oracle Workflow Builder Call Route item type, use the following procedure.

Prerequisites

None

Steps

1. Launch Oracle Workflow Builder.

2. Open the database connection by entering the username, password and connect string for the database, then click **OK**.
3. From the Show Item Types window, choose **Call Route** from the Hidden section. Click **Show**.

   Call Route should appear on the Visible section.
4. Click **OK**.

Applying a Pre-Defined Route

Oracle Workflow Builder includes routing process examples that you can apply as your interaction center routing process or you can use as templates to build your own routing processes.

Use this procedure to access a pre-defined routing process.

Prerequisite

None

Steps

1. From the navigator tree, click **Call Route Item type**.
2. Expand the Processes folder to see a list of available pre-defined processes. Oracle Telephony Manager includes pre-defined example routes.
3. Double-click on the process name to view.

Running a Pre-Defined Routing Process

To run a pre-defined routing process with Oracle Workflow Builder, use the following procedure.

Prerequisites

None

Steps

1. From the Call Route Item Type, drill down to the Attributes folder.
2. Double-click **The Selected Process**.

   The Oracle Workflow Navigator Control Properties window opens.

3. In the Default Value field, type the internal name of the process that you want to run.
4. Click **OK**.

Modifying a Process

The Process window in Oracle Workflow Builder graphically represents the activities (icons) and transitions (arrows) for a particular process. Notification, function, and process activities make up the nodes of a process.

If a process contains a process activity in its diagram, then that process activity is known as a *subprocess*. To display information on the subprocess in a separate Process window, double-click on the subprocess activity node in the parent Process window.

Each activity is a node, a logical step that contributes toward the completion of a process. Nodes contain stored procedures that operate on parameters. The GetAgents node routes information to a database table, invokes a stored procedure and returns the results.

You can drag and drop activities from the navigator tree into the Process window. Define transitions between activities by drawing arrows from one activity to the next using the secondary mouse button.

Designating Start and End Activities

Each Oracle Workflow Builder process must have a Start activity that identifies the beginning point of the process. You may designate any node from which it is logical to begin the process as a Start activity. An End activity should return a result that represents the result of the completion of the process.

Prerequisite

None

Steps

1. Right click the icon that you wish to change.
2. Choose Properties.
3. Click the Node tab.
4. Using the Start/End pull-down list, change the step in the process.

5. Indicate whether the current node is a start or end activity in the process by choosing START or END, respectively. The default is NORMAL. A process may have multiple START and END nodes.

   A Start activity is marked (Start) and has a small green arrow in its activity icon. An End activity is marked (End) and has a red arrow in its activity icon.

6. For an END node, if the overall process activity has a result type associated with it, you must also select a value for the final process result. The list of values for the final process result derive from the lookup type defined as the process activity's result type.

Adding a New Node to a Process

From the Oracle Workflow Builder Process window, create a new node by dragging and dropping a function or process activity from the navigator tree into the Process window. Use functions to fine-tune the route. The activity you drag must belong to the same data store as the process to which you drag it.

If you use the right mouse button menu New Activity in the Process window to create a new node, the property pages for the node appear. Select the name of the item type and activity in the Activities property page. If you create a node by dragging and dropping an activity from the navigator tree into the process window, then double-click on the node to display the property pages so you can further specify the details of the node.

If the node is a function activity that has activity attributes, you can assign values to those activity attributes by choosing the Attribute Values tab to display the Attribute Values property page.

If the node is a process activity, then a small subprocess overlay icon appears over the upper right corner of process activity icon. The subprocess overlay icon identifies the node as a subprocess within the process diagram.

Creating a New Process Route

Use this procedure to create a new process route with Oracle Workflow Builder.

Prerequisite

None

Steps

1. Select the Processes folder and right mouse click to create a new process.

2. When the Oracle Workflow Navigator Control Properties dialog box opens, select the Activities tab and:

   a. Enter a unique Internal Name.

   b. Enter the Display Name.

   c. Enter a Description of your new route.

   d. Leave the Result Type as None.

   e. Set the process to Runable.

   Caution: If the selected Process is not set as Runable, Workflow Routing will generate an error at runtime.

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   f. Click **OK**.

3. From Standard Functions, drag the Start activity to the new Process window.

4. From Call Route Functions, drag the Get Agents activity to the window.

5. From Call Routing Filters, CCT Environmental Conditions, Customer Initialization Phase, Customer Product Initialization, Product Initialization Phase, and Standard Item Types, drag and drop the activities you want to use in routing the calls to the appropriate agent.

Administering Call Routing Filters

Use Oracle Workflow Builder Call Routing Filters to route calls only to those agents who meet the filter criteria. Refer to the following table for a description of call routing filters.

Call Routing Filter	Description
Competency - Language Filter	Ensures that only those agents who are competent in the language selected by the customer answer the call. Requires that a language selection be made at the IVRU. 1. Language competencies should be created using the Oracle Human Resources Manager>Competence Type form. 2. Agents should be assigned language competencies in the Create Employees form. 3. Requires that a language selection should be made at the IVRU.

Call Routing Filter	Description
Competency - Knowledge Filter	Ensures that only those agents who are competent in the area of expertise selected by the customer answer the call. **1.** Knowledge Competencies should be created using Oracle Human Resources> Competencies form. These competencies should be assigned to Competence Type Knowledge using Oracle Human Resources > Competence Type form. **2.** Agents should be assigned knowledge competencies in the Create Employees form. **3.** Requires that an area of expertise selection be made at the IVRU.
Competency - Product Filter	Used to ensure that only those agents who are competent in the product selected by the customer answer the call. **1.** Product Competencies should be created using Oracle Human Resources> Competencies form. These competencies should be assigned to Competence Type Product using Oracle Human Resources > Competence Type form. **2.** Agents should be assigned product competencies in the Create Employees form. **3.** Requires that a product selection be made at the IVRU.
Customer Product Filter	This filter is used to ensure that only those agents who are assigned to handle the particular 'Customer Product' combination answer the call. Requires that the 'Derive Customer Product ID' sub-process be completed before this activity in the routing workflow process.
Customer ID Filter	This filter is used to ensure that only those agents who are assigned to handle this particular customer answer the call. Requires that the 'Derive Customer ID' sub-process be completed before this activity in the routing workflow process.
Problem Code Filter	This filter is used to ensure that only those agents who are assigned to handle the particular 'Problem Code' answer the call. Requires that a problem code selection be made at the IVRU.
Product ID Filter	This filter is used to ensure that only those agents who are assigned to handle the particular product answer the call. Requires that the 'Derive Product ID' sub-process be completed before this activity in the routing workflow process.

Call Routing Filter	Description
Request Owner Filter	This filter is used to ensure that the call is routed to the agent who owns the ‘Service Request’, when the customer is calling about the particular ‘Service Request’. Requires that a service request number selection be made at the IVRU.
Agents from Dynamic Group Name	This filter is used to retrieve the agents returned based on the dynamic group_name
Agents from Dynamic Group Number	This filter is used to retrieve the agents based on the dynamic group number
Agents from static group name	This filter returns agents based on a static group name
Agents from static group number	This filter returns agents based on static group number.
Agents not in dynamic group name	This filter returns agents not in dynamic group name
Agents not in dynamic group number	This filter returns agents not in dynamic group number
Agents not in static group name	This filter returns agents not in static group name
Agents not in static group number	This filter returns agents not in static group number.
All logged in agents	This filter returns a list of all logged in agents

Setting Time and Date Rules

In Oracle Workflow Builder, for each of these attributes, the relevant value is specified after you drag the node onto the process diagram.

Use the following procedure to set time and date rules.

Guidelines

Refer to the following table for a description of time and date rules.

Rule	Description
Between Two Dates?	If the current date falls between the start and end dates specified, this rule returns a Yes, otherwise it returns a No.

Rule	Description
During Business Hours?	If the call is received during business hours, this rule returns a Yes, otherwise it returns a No.
Get Day of the Month?	This rule returns the current day of the month as a number. You can use this rule to handle special, but not contiguous, days of the month differently.
Get Day of the Week?	This rule returns the current day of the week. You can use this rule to handle weekends or certain days of the week differently.
Is It After Specified Date?	If the current date is after the specified date, this rule returns a Yes, otherwise it returns a No.
Is It Before Specified Date?	If the current date is before the specified date, this rule returns a Yes, otherwise it returns a No.
Is It After Specified Time?	If the current time of day is after the specified time of day, this rule returns a Yes, otherwise it returns a No.
Is It Before Specified Time?	If the current time of day is before the specified time of day, this rule returns a Yes, otherwise it returns a No.

Prerequisites

None

Steps

1. In the process diagram, double click on the node icon to open the node properties sheet.

   The property page for the node opens.

2. Choose the Attribute Values tab.

   The Attribute Values property page for the node appears.

3. Choose the applicable attribute or attributes and enter them in the Value field.
4. Choose **Apply** to save your changes or choose **OK** to save your changes and close the Property page.

Deriving Rules for the Customer Initialization Phase

The Oracle Workflow Builder Customer initialization phase derives Customer ID information from the caller's responses to the IVR. The phase is represented by the Derive Customer ID sub-process, which you drag onto the process diagram.

You can drag the following rules for derivation of Customer ID onto the Derive Customer ID sub-process. You can also use these rules directly in the Routing process diagram.

Refer to the following table for a description of customer initialization phase rules.

Rule	Description
Customer ID Exists?	If the customer ID is already known, this rule returns a Yes, otherwise it returns a No. Using this as the first rule in the 'Derive Customer ID' sub-process, will allow for a quick exit from the sub-process without applying any derivation rules if the Customer ID is already known.
Can Get Customer ID from Invoice Num?	If the customer ID can be derived from the Invoice Num, this rule derives the Customer ID and returns a Yes, otherwise it returns a No.
Can Get Customer ID from Serial Num?	If the customer ID can be derived from the Serial Num, this rule derives the Customer ID and returns a Yes, otherwise it returns a No.
Can Get Customer ID from System Name?	If the customer ID can be derived from the System Name, this rule derives the Customer ID and returns a Yes, otherwise it returns a No.

Deriving Rules for the Customer Product Initialization Phase

The Oracle Workflow Builder Customer Product initialization phase derives the Customer Product ID information from caller's responses to the IVRU. The phase is represented by the Derive Customer Product ID sub-process, which you drag onto the process diagram.

You can drag the following rules for derivation of Customer Product ID onto the Derive Customer Product ID sub-process. You can also use these rules directly in the Routing process diagram.

Refer to the following table for a description of customer product initialization phase rules.

Rule	Description
Customer Product ID Exists?	If the customer product ID is already known, this rule returns a Yes, otherwise it returns a No. Using this as the first rule in the Derive Customer Product ID sub-process, will allow for a quick exit from the sub-process without applying any derivation rules if the Customer Product ID is already known.

Rule	Description
Can Get Customer Product ID from Reference Num?	If the customer product ID can be derived from the Reference Number, this rule derives the Customer Product ID and returns a Yes, otherwise it returns a No.
Can Get Customer Product ID from Request Num?	If the customer product ID can be derived from the Request Number, this rule derives the Customer Product ID and returns a Yes, otherwise it returns a No.
Can Get Customer Product ID from Serial Num?	If the customer product ID can be derived from the Serial Number, this rule derives the Customer Product ID and returns a Yes, otherwise it returns a No.

Deriving Rules for the Product Initialization Phase

The Oracle Workflow Builder Product initialization phase derives the Product ID information from the caller's responses to the IVR. The phase is represented by the Derive Product ID sub-process, which you drag onto the process diagram.

You can drag the following rules for derivation of Product ID onto the Derive Product ID sub-process. You can also use these rules directly in the Routing process diagram.

Refer to the following table for a description of product initialization phase rules.

Rule	Description
Product ID Exists?	If the product ID is already known, this rule returns a Yes, otherwise it returns a No. Using this as the first rule in the 'Derive Product ID' sub-process, will allow for a quick exit from the sub-process without applying any derivation rules if the Product ID is already known.
Can Get Product ID from Reference Num?	If the product ID can be derived from the Reference Number, this rule derives the Product ID and returns a Yes, otherwise it returns a No.
Can Get Product ID from Request Num?	If the product ID can be derived from the Request Number, this rule derives the Product ID and returns a Yes, otherwise it returns a No.
Can Get Product ID from Serial Num?	If the product ID can be derived from the Serial Number, this rule derives the Product ID and returns a Yes, otherwise it returns a No.

Deriving Rules for Telesales Routing

The Oracle Workflow Builder routing functions for Oracle Telesales derive the Customer ID information from the caller’s responses to the IVR. The phase is represented by the Derive Telesales Customer ID sub-process, which you drag onto the process diagram.

You can drag the following rules for derivation of Customer ID onto the Derive Telesales Customer ID sub-process. You can also use these rules directly in the Routing process diagram.

Refer to the following table for a description of Oracle Telesales routing rules.

Rule	Description
Customer ID Exists?	If the Customer ID is already known, this rule returns a Yes, otherwise it returns a No. Using this as the first rule in the ‘Derive Telesales Customer ID’ sub-process, will allow for a quick exit from the sub-process without applying any derivation rules if the Product ID is already known.

Deriving Rules for Banking Center Routing

The Oracle Workflow Builder routing functions for Oracle Banking Center derive the group information from the caller’s responses to the IVR. You can also use these rule functions directly in the Routing process diagram.

Refer to the following table for a description of Oracle Banking Center routing rules.

Rule	Description
Group from Bank Branch	If the group can be derived from the Bank Branch, this rule derives the Agent Ids based on the group.
Group from Bank ID	If the group can be derived from the Bank Id, this rule derives the Agent Ids based on the group.
Group from Profitability	If the group can be derived from profitability, this rule derives the Agent Ids based on the group.

Setting System Profile Options

There are no system profile options for Oracle Telephony Manager.

Configuring and Testing Integration Points

When implementing and troubleshooting Oracle Telephony Manager, consideration should be given to the PBX components being configured and operational. Troubleshooting should begin at the third-party CTI middleware layer and progress up through the stack.

It is important to verify proper configuration of the PBX CTI link and its communication to the CTI middleware and, subsequently, to the Oracle Call Center Connectors server.

In some cases, troubleshooting CTI issues must include the customer's PBX/CTI engineer to ensure proper configuration on the PBX and its proprietary CTI link.

Testing an Implementation Project

Restarting the Server Monitor

If the Server Monitor goes down and you restart it, all clients of the Server Monitor automatically re-register with the Server Monitor and other servers. The server launcher also automatically reconnects when the Server Monitor restarts.

Starting Servers

When you need monitoring, Oracle suggests that you start the Server Monitor first. When the Server Monitor is in use, you can start the Inbound Telephony Server before starting Oracle Telephony Manager.

When the Server Monitor is *not* in use, Oracle Telephony Manager must be running before you can start the Inbound Telephony Server. If you start the server monitor at any time after startup, the monitored servers will automatically connect to it.

Monitored servers detect when the server monitor starts and by default connect to the server monitor within five minutes. To change this connect default value specify the `sm_reconnect_interval` parameter in the SERVER.INI file and the SMI.INI file.

Starting the Server Monitor

On Windows NT, Oracle recommends that you start the Server Monitor as the service `OracleServerMonitor_ServerName`. To start the server monitor in console window, run the batch file SM.BAT from the home directory.

On UNIX, to start the server monitor, run the script file SM.SH.

Starting the Server Launcher

The server launcher performs remote startup of the server monitor. The server launcher is installed automatically in the installation of any interaction center server. The server launcher must run on every machine that a) runs any interaction center and telephony server and b) requires remote startup. When the server monitor notifies

the server launcher, the server launcher starts an NT service on Windows NT and starts a background process on UNIX.

Starting the Server Monitor Command Line

To access the Server Monitor commands, you need to start another command line.

On Windows NT, run the file SMCMD.BAT.

On UNIX, run the file SMCMD.SH.

Administering Server Monitor Commands

Refer to the following table for a description of command line commands for administering the Server Monitor.

Command	Definition
`HELP`	Display the server monitor commands.
`SHUTDOWN`	Shutdown the server monitor and server monitor command line tool.
`STATUS`	Display server monitor status information.
`GC`	Initiate server monitor Garbage Collect.
`RSTART(serverName)`	Start a remote server.
`RSTOP(serverName)`	Stop a remote server.
`RSTATUS(serverName)`	Show the status of a remote server.
`RSTATUS`	Display the status of all servers that are monitored by the server monitor.

Command	Definition
RLIST	Display a list of servers installed on different hosts.
STOPCMDLINE	Stop the command line interface.

Auto-Restarting Servers with the Server Monitor

You can configure your servers to be re-started automatically on a crash. Currently only the Inbound Telephony Server, the Oracle Telephony Manager, the Oracle Telephony Media Controller(s), the Email Center server, the Oracle Routing Server(s) connect to the server monitor and can avail of this fault tolerance functionality. The Oracle Server Launcher must be running on every node that has any of the aforementioned servers connected to the server monitor. *By default Server Monitor is configured to restart all servers automatically on a crash.* To disable auto-restart for all servers set the parameter AUTO_RESTART_DISABLED to TRUE in the SM.INI file. To disable auto- restart for a specific server set the parameter AUTO_RESTART_DISABLED to TRUE in the servers init file (SVR.INI). Example configurations for init files follow:

Configuration 1

auto_restart_disabled=true in sm.ini

Result: No server will be restarted automatically.

Configuration 2

auto_restart_disabled=false in sm.ini

auto_restart_disabled=true in ors.ini (the Oracle Routing Servers init file), auto_ restart_disabled=false in otm.ini (the Oracle Telephony Managers init file)

Result: If the Oracle Routing Server crashes, it will not be restarted automatically

Restarting a Crashed Server Application

Before you restart a crashed server application on the same server, you need to wait the length of time equal to the server refresh rate, which is currently one minute. If

you restart sooner, you will receive the error message `Server by name "ServerName" is already running`. If you shut down the Windows NT service or, on Solaris, invoke the “shutdown” command off the command line interface, you do not need to wait before restarting.

Configuring Oracle Telephony Manager to Run in Passive Mode

Use this procedure to configure Oracle Telephony Manager to run in passive mode.

Prerequisites

None

Steps

1. Navigate to the Server Locator window.
   a. In the Navigator window, on the Functions tab, choose **Call Center Admin** > **Call Center Administration**.

      The Call Center Administration window opens.

   b. Click **Server Admin**.

      The Server Locator window opens.

2. Select the Server tab.
3. Run a query to display the instance of Oracle Telephony Manager.
4. In the Server Parameters area, set the value of the PASSIVE_MODE parameter to TRUE.

Configuring Oracle Telephony Manager to Run in Active Mode

Use this procedure to configure Oracle Telephony Manager to run in active mode.

Prerequisites

None

Steps

1. Navigate to the Server Locator window.
   a. In the Navigator window, on the Functions tab, choose **Call Center Admin** > **Call Center Administration**.

      The Call Center Administration window opens.

   b. Click **Server Admin**.

      The Server Locator window opens.

2. Select the Server tab.

3. Run a query to display the Telephony Manager of interest.
4. In the Server Parameters area, set the value of the PASSIVE_MODE parameter to FALSE.

Connecting Inbound Telephony Server to Oracle Telephony Manager

Inbound Telephony Server is a server process which monitors and forwards inbound telephony and web callback requests to Telephony Manager Server (OTM). The Inbound Telephony Server is required when running OTM in active mode, routing inbound telephony and/or web callback requests.

To configure Inbound Telephony Server to connect to OTM, configure the parameter OTM_SERVER_NAME with the appropriate Telephony Manager Server name.

Configuring Oracle Telephony Manager to Run in Standalone Mode

Standalone Oracle Telephony Manager is a single server application that handles both media queueing and media control. Standalone configuration is suitable for interaction centers with fewer than 300 agents, and is easier to maintain than distributed configurations.

Use this procedure to configure Oracle Telephony Manager to run in standalone mode.

Prerequisites

None

Steps

1. Navigate to the Server Locator window.
   a. In the Navigator window, on the Functions tab, choose **Call Center Admin** > **Call Center Administration**.

      The Call Center Administration window opens.
   b. Click **Server Admin**.

      The Server Locator window opens.
2. Select the Server tab.
3. Run a query to display the Telephony Manager of interest.

4. In the Server Parameters area, set the value of the STANDALONE parameter to TRUE.

Configuring Oracle Telephony Manager to Run in Distributed Mode

Distributed configuration can support interaction centers with more than 1000 agents, and has better scalability than standalone configuration. A distributed Oracle Telephony Manager system consists of one media queue server application, that is, Oracle Telephony Manager, and one or more media controller server applications, that is, Telephony Media Controller.

Use this procedure to configure Oracle Telephony Manager to run in distributed mode.

Prerequisites

None

Steps

1. Navigate to the Server Locator window.

   a. In the Navigator window, on the Functions tab, choose **Call Center Admin** > **Call Center Administration**.

      The Call Center Administration window opens.

   b. Click **Server Admin**.

      The Server Locator window opens.

2. Select the Server tab.
3. Run a query to display the Telephony Manager of interest.
4. In the Server Parameters area, set the value of the STANDALONE parameter to FALSE.

Configuring Media Controller to Run in Distributed Mode

Use this procedure to configure Oracle Telephony Media Controller to run in distributed mode.

Prerequisites

None

Steps

1. Navigate to the Server Locator window.

   a. In the Navigator window, on the Functions tab, choose **Call Center Admin** > **Call Center Administration**.

      The Call Center Administration window opens.

   b. Click **Server Admin**.

      The Server Locator window opens.

2. Select the Server tab.
3. Run a query to display a Telephony Media Controller in the same server group as the Telephony Manager of interest.
4. In the Server Parameters area, set the value of the OTM_SERVER_NAME parameter to the server name of the Telephony Manager Server.

Connecting Oracle Telephony Manager to Routing Servers

You can configure up to three routing servers per Oracle Telephony Manager. A load-balancing algorithm distributes the calls among the routing servers.

To configure Oracle Telephony Manager to connect to routing servers, configure the parameter `ROUTING_SERVER_1, ROUTING_SERVER_2, ROUTING_SERVER_3` with the appropriate routing server names.