

Oracle[®] Advanced Inbound

Concepts and Procedures

Release 11*i*

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Glossary

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Oracle Advanced Inbound Concepts and Procedures, Release 11*i*

Part No. A95130-01

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Preface

Welcome to Release 11*i* of Oracle Advanced Inbound Concepts and Procedures.

Intended Audience

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

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

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

- The Oracle Applications graphical user interface.

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

See Other Information Sources for more information about Oracle Applications product information.

Structure

Chapter 1 introduces and explains the key features of Oracle Advanced Inbound.

Chapter 2 explains the procedures necessary for implementing Oracle Advanced Inbound.

Glossary contains definitions of basic terms.

Related Documents

Oracle Advanced Inbound Implementation Guide

This guide contains the post-installation implementation procedures for configuring Oracle Advanced Inbound.

Oracle Call Center Connectors Implementation Guide

Although Oracle Call Center Connectors is part of Oracle Advanced Inbound, it is not part of the standard installation. This guide explains how to install and configure Oracle Call Center Connectors.

Oracle Interaction Center Concepts and Procedures

This guide contains basic conceptual and administrative information about the Interaction Center server group architecture.

Oracle Interaction Center Implementation Guide

This guide contains the installation and implementation information for the Interaction Center Server Manager (ICSM).

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Understanding Oracle Advanced Inbound

This topic group provides overviews of Oracle Advanced Inbound and its components, explanations of key concepts, features, and functions, as well as the application's relationships to other Oracle or third-party applications.

The topic group contains the following topics:

- [Overview of Oracle Advanced Inbound](#)
- [Oracle Advanced Inbound Architecture](#)
- [Supported Switches and CTI Middleware Combinations](#)

1.1 Overview of Oracle Advanced Inbound

This topic group provides overviews of Oracle Advanced Inbound and its components, explanations of key concepts, features, and functions, as well as the application's relationships to other Oracle or third-party applications.

Oracle Advanced Inbound is required to telephony enable business applications in the Oracle eBusiness suite. Telephony-enabled means that the product has the capability of communicating with a telephone system for inbound and/or outbound calls via the CTI middleware that handles the messaging between a telephone switch and the user's application. Oracle Advanced Outbound provides the corresponding outbound telephony capability.

The Oracle Advanced Inbound bundle consists of the following products: Call Center Technology, Oracle Universal Work Queue, Oracle Telephony Manager, Oracle Call Center Connectors and Oracle Interaction Blending.

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

- Telephony platform layer consisting of the Oracle Call Center Connectors server which provides support for ACD/PBX switches and CTI middlewares provided by third-party vendors
 - ACDs/PBXs: Alcatel 4400, Aspect Call Center, Avaya DEFINITY G3, Cisco Call Manager (VoIP Agent), Ericsson MD110, Nortel Meridian 1 ACD, Nortel Symposium Call Center Server, Rockwell Spectrum, Siemens HiCom 300E and 330E
 - CTI middlewares: Cisco Intelligent Contact Management (ICM), Intel CT Connect
- Oracle Advanced Inbound Server layer consisting of Oracle Advanced Inbound / Call Center Server processes
 - Oracle Interaction Center Server Manager
 - Oracle Interaction Queuing and Distribution
 - Oracle Telephony Manager
 - Oracle Routing Server
 - Oracle Inbound Telephony Server
 - Oracle Universal Work Queue
 - Oracle Call Center Connectors
 - Oracle Interaction Blending
- Business applications / agent desktop
 - Oracle Universal Work Queue desktop (agent desktop work queue)
 - Oracle TeleService and/or Oracle TeleSales
 - Media Desktop (soft phone)

1.2 Oracle Advanced Inbound Architecture

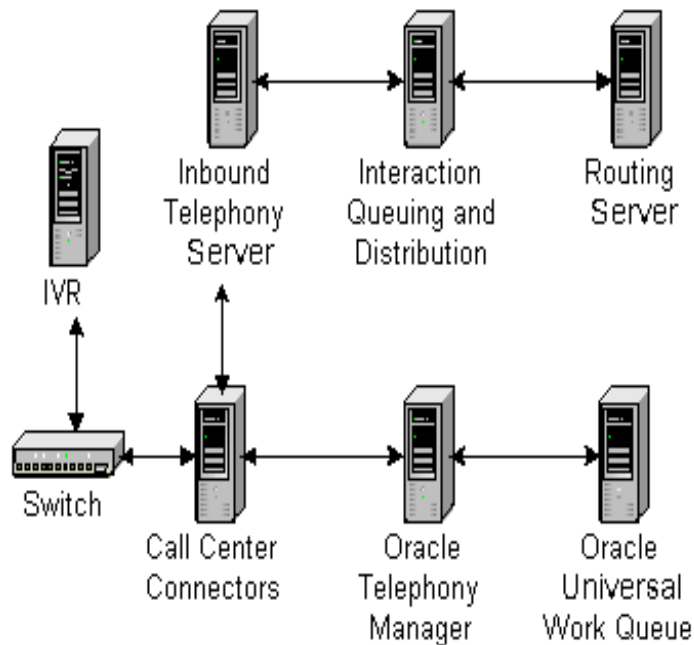
The server architecture of Oracle Advanced Inbound is scalable to run interaction centers with a single physical site or multiple sites.

- [Single Site Server Architecture](#)
- [Multisite Server Architecture](#)

1.2.1 Single Site Server Architecture

The following figure illustrates the Oracle Advanced Inbound server architecture with all Oracle Telephony Manager functions available in a single interaction center site.

Figure 1–1 Server Architecture of Oracle Advanced Inbound in a Single Interaction Center Site with All Functions Available



When all of Oracle Telephony Manager's functions (for example, active mode, web callbacks, scalability) are available in a single interaction center site, the server architecture consists of mutual communication between the following servers:

- Oracle Call Center Connectors and Oracle Inbound Telephony Server/IVR Integration Feature
- Interaction Queuing and Distribution and Oracle Telephony Manager
- Oracle Telephony Manager and Oracle Universal Work Queue
- Interaction Queuing and Distribution and Oracle Universal Work Queue

- Interaction Queuing and Distribution and the Routing Server
- Oracle Call Center Connectors and Oracle Telephony Manager

Note: Oracle Inbound Telephony Server now incorporates the IVR Integration feature.

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

- One PBX and middleware
- One Oracle Call Center Connectors (CCC)
- One Oracle Inbound Telephony Server (ITS)
- One Oracle Interaction Queuing and Distribution server (IQD)
- One or more Oracle Routing servers for scalability
- One or more Oracle Telephony Managers (OTM) for scalability
- One or more Oracle Universal Work Queues (UWQ) for scalability

Note: The architecture is identical for active and passive modes.

See Also

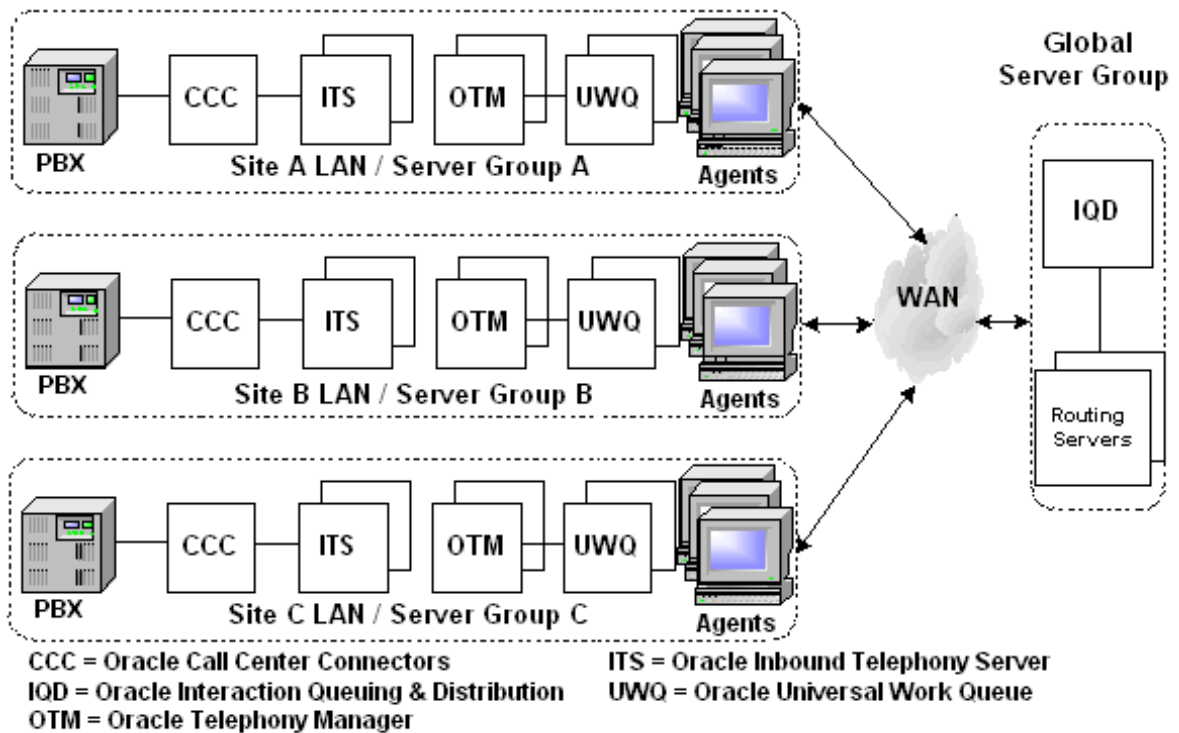
[Multisite Server Architecture](#)

1.2.2 Multisite Server Architecture

Multisite server architecture is required to support multiple ACD/PBXs that could be geographically dispersed.

The following figure illustrates the multiple PBX, multisite architecture.

Figure 1-2 Oracle Advanced Inbound Multisite Server Architecture



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

- One PBX and CTI middleware
- One Oracle Call Center Connectors (CCC)
- One Oracle Inbound Telephony Server (ITS)
- One or more Oracle Telephony Managers (OTM) for scalability
- One or more Oracle Universal Work Queues (UWQ) for scalability

The global server group includes the following servers:

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

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

See Also

- [Single Site Server Architecture](#)
- [Multisite Use Cases](#)

1.2.3 Supported Switches and CTI Middleware Combinations

Oracle Advanced Inbound supports the telephony switch and CTI middleware combinations listed in the following table.

Table 1–1 Supported Switches and CTI Middleware Combinations in Release 11.5.6

| Switch/ACD | CTI Middleware | Conditions |
|--------------------|--------------------------|-------------------|
| Avaya DEFINITY G3 | Intel CT Connect | |
| Avaya DEFINITY G3 | Cisco ICM Enterprise CTI | Passive mode only |
| Aspect Call Center | Cisco ICM Enterprise CTI | Passive mode only |
| Cisco Call Manager | Cisco ICM Enterprise CTI | Passive mode only |
| Nortel Meridian | Intel CT Connect | |
| Nortel Meridian | Cisco ICM Enterprise CTI | Passive mode only |

In future 11.5.6 minipacks, Oracle expects to also include support for the following switches, for operation in both active and passive modes.

- Alcatel 4400
- Ericsson MD110
- Rockwell Spectrum
- Siemens HICOM US
- Siemens HICOM International

1.3 Understanding Oracle Telephony Manager

This topic group contains the following topics:

- [What's New in Oracle Telephony Manager](#)

- [Understanding Routing](#)
- [Oracle Advanced Inbound Architecture](#)
- [Active Mode Routes Calls According to Defined Rules](#)
- [Passive Mode Bypasses Routing Rules for Telephony Media](#)
- [Understanding Classifications](#)
- [Understanding the IVR Integration Feature of ITS](#)

Oracle Telephony Manager is a key component of the Oracle Interaction Center Advanced Inbound product suite and is a prerequisite for providing the following functions and features:

- CTI support
- Soft phone support
- IVR integration
- Sophisticated routing across multiple media channels
- Advanced queuing, call treatment and overflow functionality
- Pre-integration with Oracle e-Business Suite applications

Oracle Telephony Manager provides the following essential interaction center functionalities:

- Inbound and outbound telephony
- Out-of-the box ACD/PBX connectivity with multiple ACDs and CTI middlewares
- Agent soft phone
- ANI and DNIS screen pops
- Call and data transfer

Oracle Telephony Manager provides the following additional interaction center functionalities:

- Multimedia, telephone and Web callback support
- Intelligent out-of-the-box routing provides rule, skill and record-based routing
- Static and dynamic routing capabilities
- Additional data for enhanced routing and screen pops via integration to IVRs

- Advanced queuing provides enhanced treatment, overflow and group queuing of calls

The Oracle Telephony Manager product consists of the following middle-tier server processes: Oracle Inbound Telephony Server, Oracle Telephony Manager, Oracle Routing Server and Oracle Interaction Queuing and Distribution Server.

1.3.1 What's New in Oracle Telephony Manager

In Release 11.5.6 major changes from previous versions of Oracle Telephony Manager include the following:

Note: The functionality listed here applies to all CTI middleware PBX platforms unless specified otherwise.

- Multi-PBX support for multiple interaction center sites.
- Stand-alone mode and distributed mode are now obsolete with the scalability of multisite support.
- Internet Protocol (IP) telephony support.
- Routing administration is now done with the Oracle Call Center HTML Administration.
- The forms version of Oracle Telephony Manager Administration, including call center, routing and classification administration, is no longer supported. Users should use the Call Center HTML Administration for administering Oracle Telephony Manager.
- For e-mail processing enhancements, see the Oracle eMail Center Concepts and Procedures.
- Interaction Queuing and Distribution (IQD) server process maintains the queue of all media interactions and contains the logic for distributing media interactions.
- Inbound Telephony Server is now required for both passive mode and active mode.
- Server Monitor has been replaced by the Interaction Center Server Manager (ICSM), which is now the only server process that is required to be explicitly started on each target machine.

- ICSM is responsible for starting, stopping and monitoring all the other Oracle Advanced Inbound server processes. The ICSM server processes are controlled by the Interaction Center Server HTML Administration. For more information on ICSM, see *Oracle Interaction Center Concepts and Procedures* and *Oracle Interaction Center Implementation Guide*.
- Oracle IVR Integrator is now a built-in feature of the Inbound Telephony Server (ITS), rather than a separate product.
- Passive mode now includes the option to detect calls that are abandoned at route points.
- ITS no longer handles Web callback interactions. The Web callback function is now handled directly by the IQD server.

1.3.2 Routing Server Enhancements

The Route Identification Algorithm has been changed to strictly function according to the priority of the individual routes set by the Routing Administrator. As a result, if more than one route satisfies all the applicable rules, the route with the highest priority is chosen.

Thread pool was introduced to process incoming Routing and Classification Requests. Thread pool parameters can be configured using “min_thread” and “max_thread” routing server parameters. The parameter min_thread specifies the number of concurrent route requests (threads) that the routing server can process at startup. The default value is 2. The number that the routing server can process could range from 1 to the max_thread value and changes depending upon the rate of route requests. The parameter max_thread specifies the maximum number of concurrent route requests that routing server can process. The default value is 5. The routing server can process more concurrent requests if the max_thread value is increased.

JDBC Connection Pool was introduced to increase the speed of serving incoming dynamic routing requests. The number of JDBC Connections can be configured using “dsm_count” server parameter. The parameter dsm_count specifies the number of JDBC connections maintained by Routing server for dynamic or workflow routes. The default value is 2. The routing server can process more concurrent dynamic routes if the value of the parameter dsm_count is increased.

1.3.3 Automatic Refresh of Meta Data for Routing Server

If a server group is deleted, the routing server will pick up this change only when an existing server group is updated or when a new server group is added. Similarly,

if a resource is removed from a server group in the Resource Administration form, the routing server will pick up this change only when an existing resource is updated or if a resource is added to a server group.

You can specify the time out for a particular route. This value overrides any classification time out for specific classification entries in the Administration.

1.3.4 Dynamic Route/Classification Changes

The routing server now expects Database Function to be defined instead of Database Procedure for Dynamic Routes and DB-Proc Classification.

For Dynamic Routes, Database Function could return a list of AgentIDs separated by the “:::” delimiter as a String value as a Function return type. If AgentID interaction key is used as one of the function Out parameters, it takes precedence over AgentIDs returned by Function as a return value.

For DB-Proc Classification types, Database Function could return the value of “Classification.” If a Classification interaction key is used as one of the function out parameters, it takes precedence over the classification value returned by function as a return value.

1.3.5 Changes to Support ICSM

The Routing Server *must* be launched through ICSM.

The Routing Server no longer requires an ors.ini file.

Note: Parameters from the ors.ini file will not be read by the Routing Server. Instead, you can pass these parameters as server parameters through the ICSM HTML Administration.

1.3.6 Callback Support

Callbacks are customer requests that originate from Oracle eCommerce products, such as Oracle iStore or Oracle iSupport, that provide a means for the customer to request a telephone call from an interaction center agent.

1.4 Understanding Routing

This section includes conceptual information about routing, including the following topics:

- [Route Details](#)
- [Route Destinations](#)
- [Procedure Parameters](#)
- [Route Rules](#)
- [Skill-Based Routing](#)
- [Rule-Based Routing](#)
- [Customer Information-Based Routing](#)
- [Unmonitored Routing](#)

1.4.1 Route Details

The Route Detail screen contains fields for configuring static, dynamic and route point routes. To access the Route Detail screen, choose the Routes tab and then choose Create to configure a new Route or choose the Route Name of an existing route that you want to reconfigure.

When configuring routes, use the following guidelines:

- The Route Name is an arbitrary, descriptive name of the route.
- If the Route Type is dynamic, the procedure detail section is visible.
- If the Route Type is static, the Static Destination drop-down lists are visible.
- Route filters are available only for static and dynamic Route Types.
- The Use Default Workflow Procedure button is visible only if the selected Route Type is Dynamic.
- Choosing Use Default Workflow Procedure clears the Parameters section and makes that section unusable.
- The Default Database field is visible only if the selected Route Type is Dynamic. If you select Other for Default Database, you need to enter:
 - Database Driver
 - Database URL

See Also

- [Configuring Static Routes](#)
- [Configuring Dynamic Routes](#)

1.4.2 Route Destinations

A route destination is either an agent group or groups, or agents, or a route point to which a call is routed.

When configuring route destinations, use the following guidelines:

- If the selected Route Type is static, the Default Destination and the Static Destinations drop-down menus are both visible.
- If the selected Route Type is dynamic or route point, only the Default Destination drop-down menu is visible.
- If the selected Route Type is dynamic, then the Procedure Parameters are visible. Use the Procedure Parameters to:
 - Set the Default Workflow as the destination for the route.
 - Define a custom PL/SQL function as the destination for the route.
- If the routing server cannot determine agents from the defined destinations, then the server defaults to the selected Default Destination.

See Also

- [Configuring Static Routes](#)
- [Configuring Dynamic Routes](#)

1.4.3 Procedure Parameters

When configuring Procedure Parameters in the Route Detail screen, use the following guidelines:

- The Procedure Parameters fields are visible *only* if the selected Route Type is Dynamic.
- An example of a Parameter is CUSTOMER_ID.
- Sequence is the sequence of the parameter for a PL/SQL function.

Example 1–1 Procedure Parameter

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

GET_AGENTS_FROM_CUSTOMER_PRODUCT is the PLSQL function which returns a list of agents as a VARCHAR2 from Customer_ID and parameter_id.

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

Procedure Name: GET_AGENTS_FROM_CUSTOMER_PRODUCT

Description: a function which returns agents from customer_id and product-id

Parameter: p_customer_ID

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

Direction: IN

Data Type: VARCHAR2

Sequence: generated by the Admin=1

Parameter: p_product_ID

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

Direction: IN

Data Type: INTEGER

Sequence: generated by the Admin=2

1.4.4 Route Rules

Route Rules in the Route Detail screen define the parameters that can be expected in an incoming call. When configuring Route Rules, note the following conditions:

- Choose a Key and Operation from the drop-down lists and enter a Value, for example, “DNIS Ends With 0155.”
- Value must correspond with Key. For example, if the Key is ANI, the Value could be a telephone number.
- “Day of Week In” value should be the number of the day of the week, for example, 1,2,3 for Monday, Tuesday, Wednesday, and so on, respectively.

See Also

[Operators for Route Rules and Classification Rules](#)

1.4.5 Skill-Based Routing

Skill-based routing is a type of call routing that delivers inbound calls to an agent who is most appropriately skilled to meet the needs of the caller. Skill-based routing can be set up either by using dynamic groups or by using dynamic route types.

Oracle Routing Server determines which agents or agent groups receive a new interaction based on routing rules that can be skill-based or rule-based. Skill-based routing leverages data derived from Oracle Human Resources Management System. Agent skill information can be used as a routing variable to send a call to the most appropriate agents. Skills can be a singular ability, such as whether or not an agent is bilingual, or multiple abilities like product competency, license level, or certification status. Realistically, any skill that can be tracked in the human resources database can be used as search and routing criteria for Oracle Advanced Inbound to intelligently and efficiently route the call.

For example, in routing based on spoken language skill, callers can press the prompt indicating that they prefer to speak French. The routing server looks to the human resources database to query all agents who are able to speak French, compares agents who are logged in and available to take calls, and then routes the call to the appropriate agent's desktop. The administrator does not have to assign the agent to a specific telephone. Oracle Telephony Manager knows both the agent's location (because the agent has logged on to the system) and the agent's skills (by accessing the human resources database). Criteria such as time of day, telephone number dialed (DNIS), or telephone number from which the caller is dialing (ANI), are a few of the variables used to route the call to the appropriately skilled agent.

1.4.6 Rule-Based Routing

Rule-based routing associates user-defined rules using variables such as time of day, ANI or DNIS. For example, a rule could specify to route calls from a particular telephone area code to a designated agent group, and another rule could specify to route calls to the first available agent.

See Also

[Active Mode Routes Calls According to Defined Rules](#)

1.4.7 Customer Information-Based Routing

With customer information-based routing, Oracle Telephony Manager routes calls based on data that is supplied by the database instead of by the PBX. For instance, if a customer places a call for computer technical support, the ACD receives the call and the customer keys in an account number that is captured by the IVR and sent to Oracle Telephony Manager via the IVR Integration Feature. Oracle Telephony Manager searches the database to check the number of open service requests for this customer. If the acceptable threshold for open service requests has been exceeded, then the account can be placed in the front of the call queue and handled by the most experienced customer service representative.

1.5 Multisite Use Cases

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

- [Multisite Call and Data Transfer Use Cases](#)
- [Multisite Routing Use Cases](#)

1.5.1 Multisite Call and Data Transfer Scenarios

The following table describes multisite call and data transfer scenarios.

Table 1–2 Multisite Call and Data Transfer Scenarios

| Scenario | Definition |
|--|--|
| Agent to agent transfer within a single site | Agent A transfers a call to Agent B. Both Agent A and Agent B are both logged on to the same PBX. |
| Agent to agent transfer across sites | Agent A who is logged on to PBX A transfers a call to Agent B who is logged on to PBX B. A physical connection (tie line) must exist between PBX A and PBX B. Agent A transfers the call to Agent B by dialing a prefix (which instructs PBX A to connect to PBX B) plus an extension number local to PBX B. |
| Agent to Route Point transfer within a single site | Agent A who is logged on to PBX A transfers a call to a route point of PBX A. The call is then routed to an available agent who is logged on to PBX A. |
| Agent to Route Point transfer across sites | Agent A who is logged on to PBX A transfers a call to a route point of PBX B. The call is then routed to an available agent who is logged on to PBX B. |

1.5.2 Multisite Routing Scenarios

The following table lists multiple interaction center site routing scenarios.

Table 1–3 Multisite Routing Scenarios

| Use Case | Definition |
|-----------------------------------|---|
| Route to agents in local site | Routing returns a list of agents at the local site |
| Route to agents in remote site | Routing returns a list of agents at a remote site |
| Route to agents in multiple sites | Routing returns a set of agents from multiple sites |

Oracle Telephony Manager provides advanced queuing capabilities which include the ability to queue based on media type, classification and rerouting when a predetermined time limit has been met.

1.5.3 Routing Calls to Unmonitored Route Points

The Inbound Telephony Server (ITS) monitors route points to determine which routing servers can route inbound calls. You can also route calls either to route points that are not monitored by ITS or to a non-route point device such as voice mail or an IVR extension. The extension or device must be registered in the Route Points Details screen as “Unmonitored” by clicking the Unmonitored check box.

See Also

[Configuring Route Points](#)

1.5.4 Active Mode Routes Calls According to Defined Rules

In active mode, Oracle Telephony Manager can use skill-based, rule-based or customer information-based routing. Active mode is the default mode of operation.

When inbound calls arrive at the switch, the switch issues a routing request. Oracle Telephony Manager monitors the routing request, applies routing rules, and identifies suitably skilled agents.

Meanwhile, a representation of the call waits in the virtual queue within Oracle Telephony Manager. When a suitable agent becomes available, Oracle Telephony Manager responds to the routing request and instructs the switch to deliver the call to the agent’s extension via Oracle Universal Work Queue.

1.5.5 Passive Mode Bypasses Routing Rules for Telephony Media

If necessary, you can configure Oracle Telephony Manager to run in passive mode and bypass routing rules for inbound telephony media. 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.

Passive mode is the only configuration when integrated with Cisco ICM as the CTI middleware.

In passive mode, the ACD/PBX system completely handles the routing and queuing 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, DNIS) for screen pops.

1.6 Understanding Classifications

Classifications specify how calls are identified and which business applications should be used to screen pop the caller data. Classifications are used by Oracle Universal Work Queue to identify the telephony call queues. Classifications are also used in reporting and blending.

Classifications are of two types: *literal* or *database procedure*. A literal classification is a string. A database procedure classification is a stored procedure.

See Also

- [Classification Parameters](#)
- [Classification Rules](#)

1.6.1 Classification Parameters

Classification parameters are PL/SQL parameters that establish a classification in conjunction with route rules. Only database procedure classifications require classification parameters. In the Classification Detail screen, the Classification Parameters fields are visible *only* if the selected Classification Type is Database Procedure. An example of a parameter is CUSTOMER_ID.

1.6.2 Classification Rules

Every classification must have classification rules that define the conditions under which the classification occurs. When a call meets all these conditions, the classification is the result and the call is routed accordingly.

Example 1–2 Examples of Classification Rules

- Agent ID Ends With 0
- Call Answer Time After 1
- ANI Begins With 650
- Customer ID >= 500000

Classification rules can determine the route that a call must take, or a classification rule can designate a call as a classification for reports or for screen pops.

In an example scenario, if a request to route ANI of 800 is a classification for Gold Card customer, then the resulting route destination could be the priority group.

When creating classification rules, use the following guidelines:

- The Key that you choose from the drop-down menu must be the same Key that is entered in the Procedure Detail area of the Route Detail screen.
- A classification can have multiple rules associated with it. An individual route can have multiple destinations, which can be either static or dynamic.
- Every route has a sequence of a Key and a Value whose relationship is determined by one of the available Operations.
- If an incoming routing request results in a new classification, the new classification is added to the route request as one of the parameters. The server tries to find a new route based on this route request.
- The area code is required in the ANI to generate screen pops.

1.7 Understanding the IVR Integration Feature of ITS

The IVR Integration feature of ITS enables Oracle TeleSales and Oracle TeleService to use IVR-collected data to automatically screen pop customer records. In this way, interaction center agents can identify callers without having to request information from them. The IVR-collected data is also used by the Oracle Routing Server for classification and routing.

IVR Integration is only required when using Intel CT Connect CTI middleware.

Choose one of the following IVR Integration topics:

- [What's New in the IVR Integration Feature](#)
- [the IVR Integration Feature Architecture](#)
- [Understanding the IVR Integration Feature Call Flows](#)
- [Understanding the IVR Data Packet Format](#)
- [Starting and Stopping the IVR Integration Feature](#)
- [About IVR Interaction Logging in Oracle Interaction History](#)

1.7.1 What's New in the IVR Integration Feature

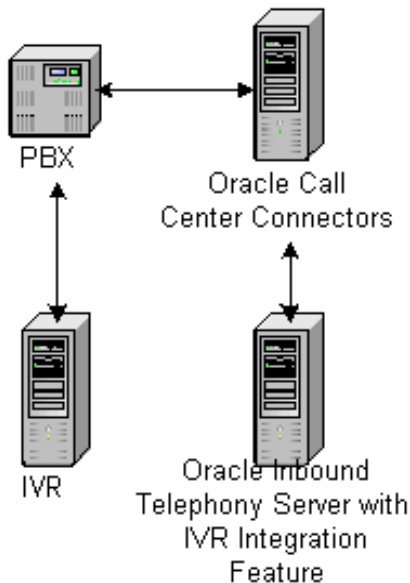
The following conditions and features are new in the current release (11.5.6) of the IVR Integration feature.

- Oracle IVR Integrator has merged with the Inbound Telephony Server (ITS) to form an extension of the ITS.
- Entegrity (Gradient) PC-DCE, which was used for communication between Oracle Call Center Connectors and Oracle IVR Integrator, is no longer required.
- Data exchange formats between IVR systems and the IVR Integration feature have been modified to send name/value pairs instead of a continuous data stream.
- The IVR Integration feature supports both intelligent IVR and dumb IVR. (An intelligent IVR passes the Call ID to the IVR, while a dumb IVR does not.)

1.7.2 IVR Integration Feature Architecture

The following figure illustrates the Oracle Advanced Inbound server architecture for making IVR-collected data available for screen pops.

Figure 1–3 IVR Integration Feature Architecture



In the Oracle Advanced Inbound configuration for making IVR-collected data available for screen pops, mutual communication occurs between the following server processes:

- The PBX and Oracle Call Center Connectors
- The PBX and the IVR system
- The IVR system and the combined Oracle Inbound Telephony Server / IVR Integration feature
- The Oracle Inbound Telephony Server with IVR Integration feature and Oracle Telephony Manager
- Oracle Telephony Manager and Oracle Universal Work Queue

1.8 Understanding the IVR Integration Feature Call Flows

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

1. The PBX receives an incoming call and sends the call to the IVR system.
2. When the call reaches an IVR port/extension, the IVR immediately sends a START packet to Oracle Inbound Telephony Server. The START packet contains the IVR extension, time, date, ANI and DNIS.
3. The IVR plays recorded messages and prompts the caller to enter additional digits (for example, an account number), as defined by an IVR script that is programmed in the IVR.
4. The caller enters digits as prompted by the IVR recording. The IVR needs to send an END packet to Oracle Inbound Telephony Server before sending the call back to the PBX. If the caller hangs up before the IVR sends the call back to the PBX, the IVR should still send an END packet if possible. The END packet contains the IVR extension, time, date, ANI and DNIS, plus any additional data that is collected by the IVR.
5. The IVR sends the call to a route point of the PBX.
6. The call is routed from the route point to an agent's extension
7. A screen pop appears on the agent's desktop.

1.8.1 Understanding IVR Data Packets

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

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

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

IVR sends data packets to the Oracle Inbound Telephony Server as key/value pairs in the format described in the following table.

Table 1–4 Data Packet Format

| PBXEXTN | TYPE | TIME | DATE | ANI | DNIS | IVR Data |
|------------------------------------|------------------|--------------------------|---------------------|-----|------|---|
| The PBX extension for the IVR port | S=Start E=End | In seconds :00:00.000 | Format: yyyymmdd | | | IVRINFO1 through IVRINFO4 for user-defined values, for example: Cust ID, Name, Account, (The number of fields is variable.) |

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

Example 1–3 IVR Start Data Packet (Time 2)

```
PBXEXTN:7203;TYPE:S;TIME:988239405;DATE:20010425;ANI:6506075201;DNIS:Unknown;
```

Example 1–4 IVR End Data Packet (Time 3)

```
PBXEXTN:7203;TYPE:E;TIME:988239411;DATE:20010425;IVRINFO1:1111;IVRINFO2:1234567;IVRINFO3:Unknown;IVRINFO4:Unknown;
```

1.8.1.1 Required Data Packet Fields

The following four fields are required in data packets.

- PBXEXTN
- TYPE
- TIME
- DATE

1.8.1.2 Optional Data Packet Fields

The following six fields are optional in data packets.

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

1.8.2 Starting and Stopping the IVR Integration Feature

To enable the IVR Integration feature of Oracle Inbound Telephony Server, define the CTI middleware parameter `IVR_Host` in the Call Center HTML Administration.

To disable the IVR Integration feature, leave blank the CTI middleware parameter `IVR_Host`.

1.8.3 About IVR Interaction Logging in Oracle Interaction History

Oracle Inbound Telephony Server with the IVR Integration feature reports customers' interaction with the IVR to the database as part of Interaction History (IH). The current implementation of the IVR Integration feature logs the Start time, End time and Duration of every call that reaches the IVR. Calls that are abandoned while in the IVR, and therefore not routed to an agent, are also logged into Interaction History. Additional user data can be logged into Interaction History depending on future requirements.

1.9 Understanding Oracle Call Center Connectors

Oracle Call Center Connectors provides a consistent telephony interface for Oracle Advanced Inbound and Oracle Advanced Outbound. It supports a variety of PBX-middleware combinations and abstracts the telephony protocols unique to each telephony platform.

For Oracle Advanced Inbound, both Oracle Inbound Telephony Server and Oracle Telephony Manager server processes connect to Oracle Call Center Connectors, which in turn connects to third-party CTI middleware (for example, Intel CT Connect and Cisco ICM), which in turn connects to a PBX/ACD (for example, Avaya Definity). TCP/IP sockets are used for connecting to Oracle Call Center Connectors.

Oracle Call Center Connectors is certified for Microsoft Windows NT 4.0 or higher only.

Administering Oracle Advanced Inbound

To configure major functions, see the following topics:

- [Administering Oracle Telephony Manager](#)
- [Updating Group Member and Administrator Records](#)
- [Administering Routing with Oracle Workflow Builder](#)

See Also

- *Oracle Interaction Center Servers Concepts and Procedures*
- *Implementing Oracle Interaction Center Servers*

2.1 Administering Oracle Telephony Manager

This section contains the following topics:

- [Configuring Oracle Interaction Center Servers](#)
- [Configuring CTI Middlewares](#)
- [Configuring Telesets](#)
- [Doing Mass Updates](#)
- [Mapping IVR Fields to Oracle Applications Fields](#)
- [Configuring Multisites](#)
- [Configuring Multisite Paths](#)
- [Configuring Route Points](#)
- [Configuring Routing](#)

- [Operators for Route Rules and Classification Rules](#)
- [Configuring Classifications](#)
- [Configuring Oracle Telephony Manager Server Modes and Processes](#)

2.1.1 Configuring Oracle Interaction Center Servers

For instructions on configuring Oracle Interaction Center servers, including ICSM, see *Oracle Interaction Center Concepts and Procedures* and *Oracle Interaction Center Implementation Guide*.

2.1.2 Configuring CTI Middlewares

Use the following procedure to configure or reconfigure CTI middlewares.

Prerequisites

At least one server group must have been configured.

Steps

1. In the Oracle Call Center Web Administration, choose the Call Center tab.
The CTI Middlewares screen opens.
2. Choose a **Server Group** from the pull-down menu.
3. To configure new CTI middleware, choose **Create**.

OR

To reconfigure an existing CTI middleware, click the **Configuration Name**.

The CTI Middleware Details screen opens.

4. Proceed to “[Configuring CTI Middleware Details](#).”

2.1.3 Configuring CTI Middleware Details

Choose one of the following topics:

- [Configuring New CTI Middlewares](#)
- [Reconfiguring Existing CTI Middlewares](#)

2.1.3.1 Configuring New CTI Middlewares

Use the following procedure to configure new CTI middlewares.

Prerequisites

- Navigate to the Middleware Details screen. See [“Configuring CTI Middlewares.”](#)
- At least one server group must have been created.

Steps

1. In the Middleware Details screen, enter a unique **Middleware Name**.
2. Enter the **IP Address** and the **Port** number of the Oracle Call Center Connectors server. The IP Address must be in the format xxx.xxx.xxx.xxx, for example, 255.255.255.255.
3. Choose a **Middleware Type** from the drop-down menu.
4. Optionally, you may choose the hyperlinks to Associate and Configure Telesets or Associate and Configure Route Points.
5. Choose **Update**.

The screen refreshes and the Middleware Parameters fields and the Teleset Details and Route Point Details hyperlinks appear.

6. In the **Value** fields, enter values for the Middleware Parameters. For most fields, if you enter invalid values, an error message advises you on entering a correct value. Check that you enter the correct IP address format and port number.
 - a. For Intel CT Connect, enter the middleware parameter values that are listed in the following table.

Table 2–1 Middleware Parameters for Intel CT Connect

| Field Name | Required | Description | Sample Value |
|---------------------------|----------|--|--------------------------|
| CTI middleware 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: <ul style="list-style-type: none"> ■ A — Avaya Definity ■ C — Alcatel 4400 ■ E — Ericsson MD110 ■ M — Nortel Meridian or Symposium Call Center Server ■ R — Rockwell Spectrum ■ S — Siemens HICOM | A |

Note: In Release 11.5.6, middleware server Info 1 is no longer required for Intel CT Connect

Note: In Release 11.5.6, route points are now configured in the Route Points tab of the HTML Call Center Administration. See “[Configuring Route Point Details.](#)”

| | | | |
|------------------------------|--------------------------------|---|---------------------------|
| 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 |

- b. For Cisco ICM, enter the middleware parameter values that are listed in the following table.

Table 2–2 Middleware Parameters for Cisco ICM (GeoTel)

| Field Name | Required | Description | Sample Value |
|---------------------------|----------|--|---------------|
| CTI middleware 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 |

Table 2–2 Middleware Parameters for Cisco ICM (GeoTel) (Cont.)

| Field Name | Required | Description | Sample Value |
|------------------------------|--------------------------------|---|--------------|
| 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. <ul style="list-style-type: none"> ▪ A — Avaya Definity ▪ M — Nortel Meridian ▪ P — Aspect Call Center ▪ Z — Cisco Call Manager | 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 |

- c. Enter the required additional middleware parameters that are listed in the following table.

Table 2–3 Required Additional Parameters and Values for Middleware Configuration Settings

| Parameter | Value |
|------------------------|--|
| IVRI Mode | Either server or client. |
| IVR Port | Integer between 1024 through 65535. It should be the same number used by the IVR Host to send packets. |
| IVR Host | IP address of the IVR host that sends the data packets. |
| IVRI Abandon Threshold | Number of seconds (usually five to ten) used to mark a packet as stale. This value should be greater than the time for a call to transfer from the IVR to the route point and ITS. |

7. Choose **Update** to save.

See Also

[Doing Mass Updates](#)

2.1.3.2 Reconfiguring Existing CTI Middlewares

Use the following procedure to reconfigure existing CTI middlewares.

Prerequisites

- Navigate to the Middleware Details screen. See “[Configuring CTI Middlewares](#).”
- At least one server group must have been created.

Steps

1. In the Middleware Details screen, as necessary edit the **Middleware Name**, the **IP Address** and the **Port** number of the Oracle Call Center Connectors server. The IP Address must be in the format xxx.xxx.xxx.xxx, for example, 255.255.255.255.
2. Choose a different **Middleware Type** from the drop-down menu.
3. Optionally, you may choose the hyperlinks to Associate and Configure Telesets or Associate and Configure Route Points.
4. To change the values of existing Middleware Parameters, overwrite or delete the existing values in the fields. For most fields, if you enter invalid values, an error message advises you on entering a correct value. If you use the CTI Enabler Server IP Address field, check that you enter the correct IP address format.
 - a. For Intel CT Connect, enter the middleware parameter values that are listed in the following table.

Table 2–4 Middleware Parameters for Intel CT Connect

| Field Name | Required | Description | Sample Value |
|---------------------------|----------|--|--------------------------|
| CTI middleware 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: <ul style="list-style-type: none"> ▪ A — Avaya Definity ▪ C — Alcatel 4400 ▪ E — Ericsson MD110 ▪ M — Nortel Meridian or Symposium Call Center Server ▪ R — Rockwell Spectrum ▪ S — Siemens HICOM | A |

Note: In Release 11.5.6, middleware server Info 1 is no longer required for Intel CT Connect

Note: In Release 11.5.6, route points are now configured in the Route Points tab of the HTML Call Center Administration. See “[Configuring Route Point Details.](#)”

| | | | |
|------------------------------|--------------------------------|---|---------------------------|
| 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 |

- b. For Cisco ICM, enter the middleware parameter values that are listed in the following table.

Table 2–5 Middleware Parameters for Cisco ICM (GeoTel)

| Field Name | Required | Description | Sample Value |
|---------------------------|----------|--|---------------|
| CTI middleware 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 |

Table 2–5 Middleware Parameters for Cisco ICM (GeoTel) (Cont.)

| Field Name | Required | Description | Sample Value |
|------------------------------|--------------------------------|--|--------------|
| 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. <ul style="list-style-type: none"> ▪ 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 |

- c. Enter the required additional middleware parameters that are listed in the following table.

Table 2–6 Required Additional Parameters and Values for Middleware Configuration Settings

| Parameter | Value |
|------------------------|--|
| IVRI Mode | Either server or client. |
| IVR Port | Integer between 1024 through 65535. It should be the same number used by the IVR Host to send packets. |
| IVR Host | IP address of the IVR host that sends the data packets. |
| IVRI Abandon Threshold | Number of seconds (usually five to ten) used to mark a packet as stale. This value should be greater than the time for a call to transfer from the IVR machine to the route point and ITS. |

5. Choose **Update** to save.

See Also

[Doing Mass Updates](#)

2.1.4 Configuring Telesets

Use the following procedure to configure new telesets or to reconfigure existing telesets.

Prerequisites

- At least one server group must have been configured.
- At least one CTI middleware must have been configured.

Steps

1. In the Oracle Call Center Web Administration, choose Call Center > Teleset.
The Telesets screen opens.
2. Choose the appropriate **Server Group** and **Middleware**.
The screen refreshes and lists the telesets assigned to the selected server group and CTI middleware.
3. To configure a new teleset, choose **Create**.
OR
To reconfigure an existing teleset, click the **Teleset Name** of the teleset.
The Teleset Details screen opens.
4. Proceed to “[Configuring Teleset Details](#).”

2.1.5 Configuring Teleset Details

Choose one of the following topics:

- [Configuring New Telesets](#)
- [Reconfiguring Existing Telesets](#)

2.1.5.1 Configuring New Telesets

Use the following procedure to configure new telesets.

Prerequisites

- Navigate to the Teleset Details screen. See “[Configuring Telesets](#).”
- At least one server group must have been created.

- At least one middleware must have been configured for the selected server group.

Steps

1. In the Teleset Details screen, enter a descriptive **Teleset Name**.
2. Enter a unique **Hardware Number**. The Hardware Number is typically the number of the physical teleset, and is the same number used when logging into Oracle Universal Work Queue and the soft phone.
3. From the **Teleset Type** drop-down menu, choose a teleset type.
4. From the **Server Group Name** drop-down menu, choose a server group.
5. From the **Middleware Name** drop-down menu, assign this teleset to a CTI middleware.
6. Choose **Update**.

The screen refreshes and the Line Details fields appear. The selected Teleset Type determines the number of available lines. Use the following table to determine the teleset line configuration for a particular teleset type.

Table 2–7 Teleset Line Configurations

| Teleset | Line Configuration |
|--------------------|--|
| Alcatel | Requires one line for each teleset. Enter the teleset extension number in the Extension field for Line Index 1. |
| Aspect | Three lines for each teleset. Enter the same teleset extension number for all line indexes. |
| Cisco Call Manager | Three lines for each teleset. Enter the same teleset extension number for all line indexes |
| Ericsson | Three lines for each teleset. |
| Lucent | 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. |

Table 2–7 Teleset Line Configurations (Cont.)

| Teleset | Line Configuration |
|----------|--|
| Nortel | Requires two lines: <ul style="list-style-type: none"> ■ 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. |
| Rockwell | Three lines for each teleset. Enter the same teleset extension number for all line indexes |
| Siemens | Requires one line for each teleset. Enter the teleset extension number in the Extension field for Line Index 1. |

7. In the Lines Details area, enter the **Extension** number of each line.
8. Choose **Update**.
The screen refreshes and the Lines fields appear.
9. Enter the extension number of each teleset.
10. Choose **Update** to save.

See Also

[Doing Mass Updates](#)

2.1.5.2 Reconfiguring Existing Telesets

Use the following procedure to configure new telesets.

Prerequisites

- Navigate to the Teleset Details screen. See “[Configuring Telesets.](#)”
- At least one server group must have been created.
- At least one middleware must have been configured for the selected server group.

Steps

1. In the Teleset Details screen, as necessary edit the descriptive **Teleset Name**.

2. Enter a unique **Hardware Number**. The Hardware Number is the number of the physical teleset, and is typically the same number used when logging into Oracle Universal Work Queue and the soft phone.
3. If necessary, from the **Teleset Type** drop-down menu, choose a teleset type. The selected Teleset Type determines the number of available lines. Use the following table to determine the teleset line configuration for a particular teleset type.

Table 2–8 Teleset Line Configurations

| Teleset | Line Configuration |
|--------------------|--|
| Alcatel | Requires one line for each teleset. Enter the teleset extension number in the Extension field for Line Index 1. |
| Aspect | Three lines for each teleset. Enter the same teleset extension number for all line indexes. |
| Cisco Call Manager | Three lines for each teleset. Enter the same teleset extension number for all line indexes |
| Ericsson | Three lines for each teleset. |
| Lucent | 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 | Requires two lines: <ul style="list-style-type: none"> ■ 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. |
| Rockwell | Three lines for each teleset. Enter the same teleset extension number for all line indexes |
| Siemens | Requires one line for each teleset. Enter the teleset extension number in the Extension field for Line Index 1. |

4. If necessary, change the **Extension** number of each line, the **Server Group Name**, and the **Middleware Name**.
5. Choose **Update**.

See Also[Doing Mass Updates](#)

2.1.6 Doing Mass Updates

A mass update involves reassigning telesets or IVR mappings from one destination server group or middleware to another. The mass update function is available in the Teleset and IVR tabs.

Use the following procedure to do a mass update.

Prerequisites

- For telesets, at least two CTI middlewares must have been configured.
- For IVR mappings, at least two route points must have been configured.

Steps

1. Choose a server group and middleware from the drop-down menus.
The screen refreshes.
2. In the Mass Update area, choose a **Destination Server Group**.
The screen refreshes.
3. Choose a **Destination Middleware**.
The screen refreshes.
4. Choose a Destination Route Point.
The screen refreshes.
5. Choose **Mass Update**.
The screen refreshes.

2.1.7 Mapping IVR Fields to Oracle Applications Fields

Use the following procedure to map Interaction Voice Recorder (IVR) fields to Oracle Applications field.

Prerequisites

You must have defined at least one of each of the following.

- Server group

- CTI middleware
- Route point

Steps

1. In the Oracle Call Center Web Administration, choose Call Center > IVR.
The IVR Mappings screen opens.
2. From the drop-down menus, choose the appropriate **Server Group**, **Middleware** and **Route Point**.
The screen refreshes and lists the IVR fields for the selected server group.
3. In **IVR Field**, type the *case sensitive* name of an IVR data key name of your IVR system, for example, customer_number.

Note: The IVR Field is case sensitive.

4. In the corresponding **Oracle Field**, choose the value that corresponds to the IVR Field that you entered in step 3, for example, Customer ID.
5. Repeat steps 3 and 4 for each IVR field.
6. Choose **Update**.

See Also

[Doing Mass Updates](#)

2.1.8 Configuring Multisites

Use the following procedure to configure new interaction center multisites or to reconfigure existing multisites.

Prerequisites

At least one server group must have been configured.

Steps

1. In the Oracle Call Center Web Administration, choose Call Center > Multisite.
The Multisite Configuration Summary screen opens.

2. Choose the appropriate server group and CTI middleware from the **Choose Server Group** and **Choose Middleware** drop-down menus.

The screen refreshes and lists the multisites assigned to the selected server group and CTI middleware.

3. To configure a new multisite, choose **Create**.

OR

To reconfigure an existing multisite, click the **Multisite Name** of the multisite.

The Multisite Details screen opens.

4. Proceed to “[Configuring Multisite Details](#).”

2.1.9 Configuring Multisite Details

Choose one of the following topics:

- [Configuring New Multisites](#)
- [Reconfiguring Existing Multisites](#)

2.1.9.1 Configuring New Multisites

Use the following procedure to configure new multisites.

Prerequisites

- Navigate to the Multisite Configuration Detail screen. See “[Configuring Multisites](#).”
- At least one CTI middleware must have been configured.
- At least one server group must have been configured.

Steps

1. Assign media from one middleware to another middleware. Use the following guidelines:
 - All fields are required.
 - The From Middleware and To Middleware may or may not be in the same server group.
 - The From Middleware and To Middleware cannot be the same CTI middleware.

- The Multisite Configuration Name must be unique and is limited to 128 characters.
2. Optionally, you may choose the hyperlink to Associate and Configure Multisite Path.
 3. Choose **Update**.
The screen refreshes and the Parameter Detail fields and Multisite Path Details hyperlink appear.
 4. Enter a **Value** for each Parameter.
 5. Choose **Update** to save.

See Also

- [Multisite Server Architecture](#)
- [Multisite Use Cases](#)

2.1.9.2 Reconfiguring Existing Multisites

Use the following procedure to reconfigure existing multisites.

Prerequisites

- Navigate to the Multisite Configuration Detail screen. See “[Configuring Multisites](#).”
- At least one server group must have been configured.

Steps

1. As necessary, assign media from one middleware to another middleware. Use the following guidelines:
 - All fields are required.
 - The From Middleware and To Middleware may or may not be in the same server group.
 - The From Middleware and To Middleware cannot be the same CTI middleware.
 - The Multisite Configuration Name must be unique and is limited to 128 characters.
2. As necessary, in the Parameter Detail fields, change the **Value** of Parameters.

3. Choose **Update** to save.

See Also

- [Multisite Server Architecture](#)
- [Multisite Use Cases](#)

2.1.10 Configuring Multisite Paths

Use the following procedure to configure new multisite paths and to reconfigure existing multisite paths.

Prerequisites

- At least one multisite must have been created.
- At least one server group must have been created.
- At least one route point must have been configured for the selected server group.

Steps

1. In the Oracle Call Center Web Administration, navigate to the Multisite Configuration Details screen and choose **Associate and Configure Multisite Path**. See “[Configuring Multisites](#).”
The Multisite Path Summary screen opens.
2. Make a selection from the **Choose Multisite Configuration** pull-down menu.
The screen refreshes and lists the available Route Point Numbers.
3. To configure a new Multisite Path, choose **Create**.
OR
To reconfigure an existing Multisite Path, click its **Route Point Number**.
The Multisite Path Details screen opens.
4. Proceed to “[Configuring Multisite Path Details](#).”

2.1.11 Configuring Multisite Path Details

Choose one of the following topics:

- [Configuring a New Multisite Path](#)
- [Reconfiguring an Existing Multisite Path](#)

2.1.11.1 Configuring a New Multisite Path

Use the following procedure to configure multisite path details and to reconfigure existing multisite path details.

Prerequisites

- Navigate to the Multisite Path Details screen. See “[Configuring Multisite Paths.](#)”
- At least one multisite must have been created.
- At least one server group must have been created.

Steps

1. In the Multisite Path Details screen, choose a **Multisite Configuration** from the drop-down menu.
2. From the pull-down menus, choose a **Route Point Number**.
3. Optionally, enter a **Description**.
4. Choose **Update**.

The screen refreshes and the Parameter Detail fields appear.

5. In the Parameter Details fields, enter **Values** for the Dialed Number Prefix and Dialed Number Suffix. The Translation Route Dialed Number field is not used in the current release.
6. Choose **Update** to save.

2.1.11.2 Reconfiguring an Existing Multisite Path

Use the following procedure to reconfigure an existing multisite path.

Prerequisites

Navigate to the Multisite Path Details screen. See “[Configuring Multisite Paths.](#)”

Steps

1. If necessary, in the Multisite Path Details screen choose a **Multisite Configuration** from the drop-down menu.
2. If necessary, from the pull-down menu choose the **Route Point Number**.
3. Optionally, enter a new **Description**.
4. As necessary, in the Parameter Detail fields, change **Values** for the Dialed Number Prefix and Dialed Number Suffix. The Translation Route Dialed Number field is not used in the current release.
5. Choose **Update** to save.

2.1.12 Configuring Route Points

Use the following procedure to configure new route points and to reconfigure existing route points.

Prerequisites

- At least one server group must have been created.
- At least one CTI middleware must have been created.

Steps

1. In the Oracle Call Center Web Administration, navigate to the Middleware Details screen. See [“Configuring CTI Middlewares.”](#)
2. Click **Associate and configure route points**.
The Route Point Summary screen opens.
3. From the pull-down menus, choose the **Server Group** and **Middleware**.
The screen refreshes and lists the available Route Points for the selected server group and CTI middleware.
4. To configure a new Route Point, choose **Create**.
OR
To reconfigure an existing Route Point, click the **Route Point Number**.
The Route Point Details screen opens.
5. Proceed to [“Configuring Route Point Details.”](#)

2.1.13 Configuring Route Point Details

Choose one of the following topics:

- [Configuring a New Route Point](#)
- [Reconfiguring an Existing Route Point](#)

2.1.13.1 Configuring a New Route Point

Use the following procedure to configure a new route point.

Prerequisites

Navigate to the Route Point Details screen. See “[Configuring Route Points.](#)”

Steps

1. In the Route Point Number field, enter the route point extension number.
2. Optionally, enter a **Description**.
3. From the drop-down menus, choose a **Server Group Name** and **Middleware Name**.
4. Optionally, if you want this route point to be unmonitored by the Inbound Telephony Server, click the Unmonitored check box.
5. Choose **Update**.

The screen refreshes and the Parameter Detail fields appear.

6. In the **Immediate Treatment** field, enter one or more Control Directory Number (CDN) immediate treatment pair(s), separated by commas. The immediate treatment of an inbound call arriving at a CDN can be ringback, music or silence, defined by the following values:
 - Ringback: ##R
 - Music: ##M
 - Silence: ##S
7. In the **Music Route Number**, enter a route number for recorded music to play while callers are on hold, for example #02.
8. Choose **Update** to save.

See Also

- [Unmonitored Routing](#)
- *Oracle Advanced Inbound Implementation Guide*
- *Oracle Interaction Center Implementation Guide*

2.1.13.2 Reconfiguring an Existing Route Point

Use the following procedure to reconfigure an existing route point.

Prerequisites

Navigate to the Route Point Details screen. See “[Configuring Route Points.](#)”

Steps

1. If necessary, change the route point extension number in the **Route Point Number** field.
2. If necessary, edit the **Description**, **Server Group** and **Middleware** fields.
3. For Nortel Meridian with CT Connect only, in the **Immediate Treatment** field enter the three-letter code that specifies the immediate treatment of an inbound call arriving at a CDN as follows:
 - For ringback, enter ##R .
 - For music, enter ##M .
 - For silence, enter ##S .
4. If Immediate Treatment is set to ##M for music, in the **Music Route Number**, enter or edit a route number for recorded music to play while callers are on hold, for example #02, otherwise, leave this field blank.
5. Optionally, if you want this route point to be unmonitored by the Inbound Telephony Server, click the Unmonitored check box.
6. Choose **Update** to save.

See Also

- [Unmonitored Routing](#)
- *Oracle Advanced Inbound Implementation Guide*
- *Oracle Interaction Center Implementation Guide*

2.1.14 Configuring Routing

Configuring routing in Oracle Telephony Manager requires understanding rule-based routing concepts and business requirements. The number and kind of procedures depends upon whether routing to groups is static, dynamic or a route point.

Use the following procedure to configure new routes or to reconfigure existing routes.

Prerequisites

None

Steps

1. In the Oracle Call Center Web Administration, choose the Route tab.
The Routes screen opens.
2. To configure a new route, choose **Create**.
OR
To reconfigure an existing route, click the **Route Name** of the route.
The Route Details screen opens.
3. Proceed to “[Configuring Route Details](#).”

See Also

- [Operators for Route Rules and Classification Rules](#).
- [Understanding Routing](#)

2.1.15 Configuring Route Details

Choose one of the following topics:

- [Configuring New Static Route Types](#)
- [Configuring New Dynamic Route Types](#)
- [Configuring New Route Point Route Types](#)
- [Reconfiguring Existing Static Route Types](#)
- [Reconfiguring Existing Dynamic Route Types](#)

- [Reconfiguring Existing Route Point Route Types](#)

See Also

[Operators for Route Rules and Classification Rules](#)

2.1.15.1 Configuring New Static Route Types

A static route type is based on cached data. Use the following procedure to configure a new static route type.

Prerequisites

Navigate to the Route Detail screen. See [“Configuring Routing.”](#)

Steps

1. In the Route Detail screen, enter a **Route Name**. The Route Name is an arbitrary, descriptive name of the route.
2. In the Route Type drop-down menu, choose **Static**.
3. Optionally, in the Time-out field, enter a Value for the route. This value overrides any classification time-out for a route request.
4. In the Default Destination drop-down menu, choose a default route destination. If the routing server cannot determine agents from the defined destinations, then the server defaults to the selected Default Destination.
5. Optionally, enter a **Description**.
6. Choose **Update**.
The screen refreshes and the Static Destination, Route Rules and Route Filter Details fields appear.
7. Choose one or more destinations from the Static Destination drop down list.
8. In the Route Rules fields, create a route rule by choosing a **Key** and **Operation** from the Route Rules drop down lists and enter a **Value**, for example, “Language Competency Equals French” or “Customer Number Begins With 0.” The available Operations depend on the selected Key. For a list of operators, see [“Operators for Route Rules and Classification Rules.”](#)
9. In the Route Filter Details, move one or more Available Filters (server groups) to the Filtered By column. Adding filters restricts the route results to the agents in the selected server groups.

10. Choose **Update** to save.

2.1.15.2 Reconfiguring Existing Static Route Types

Use the following procedure to reconfigure an existing static route type.

Prerequisites

None

Steps

1. If necessary, in the Route Detail screen, enter a new **Route Name**. The Route Name is an arbitrary, descriptive name of the route.
2. In the Route Type drop-down menu, check that the selected Route Type is **Static**.
3. Optionally, in the Time-out field, enter a Value for the route. This value overrides any classification time-out for a route request.
4. If necessary, in the Default Destination drop-down menu, choose a different default route destination. If the routing server cannot determine agents from the defined destinations, then the server defaults to the selected Default Destination.
5. Optionally, enter a **Description**.
6. If necessary, choose one or more new destinations from the Static Destination drop down list.
7. In the Route Rules fields, edit the route rule by choosing a **Key** and **Operation** from the Route Rules drop down lists and enter a **Value**, for example, “Language Competency Equals French” or “Customer Number Begins With 0.” The available Operations depend on the selected Key. For a list of operators, see [“Operators for Route Rules and Classification Rules.”](#)
8. If necessary, in the Route Filter Details, move one or more Available Filters (server groups) to the Filtered By column. Adding filters restricts the route results to the agents in the selected server groups.
9. Choose **Update** to save.

2.1.15.3 Configuring New Dynamic Route Types

Use the following procedure to configure dynamic route types.

Prerequisites

Navigate to the Route Detail screen. See “[Configuring Routing](#).”

Steps

1. In the Route Detail screen, enter a **Route Name**. The Route Name is an arbitrary, descriptive name of the route.
2. In the Route Type drop-down menu, choose **Dynamic**.
3. Optionally, in the Time-out field, enter a Value for the route. This value overrides any classification time-out for a route request.
4. In the Default Destination drop-down menu, choose a default route destination. If the routing server cannot determine agents from the defined destinations, then the server defaults to the selected Default Destination.
5. Optionally, enter a **Description**.
6. Optionally, if you choose Other for Default Database, enter the Database Driver and Database URL.
7. Choose **Update**.

The screen refreshes and the Procedure Detail, Route Rules and Route Filter Details fields appear.

8. Enter a **Procedure Name**.

OR

Optionally, choose **Use Default Workflow Procedure**. The Default Workflow Procedure is the seeded routing workflow. If you use the Default Workflow Procedure, you do not need to enter any parameters. The Default Workflow Procedure is slower than static routes.

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

9. In the Parameters table, enter the **Parameter** and choose a **Value** from the drop-down menu. In the left Value field you can enter a fixed, hard-coded value

or choose an Oracle value from the drop-down menu in the right Value field. An example of a Parameter is CUSTOMER_ID.

10. Choose a **Datatype** and **Direction** from the drop-down menus.
11. In the Route Rules fields, create a route rule by choosing a **Key** and **Operation** from the Route Rules drop down lists and enter a **Value**, for example, “Language Competency Equals French” or “Customer Number Begins With 0.” The available Operations depend on the selected Key. For a list of operators, see [“Operators for Route Rules and Classification Rules.”](#)
12. In the Route Filter Details, move one or more Available Filters (server groups) to the Filtered By column. Adding filters restricts the route results to the agents in the selected server groups.
13. Choose **Update** to save.

2.1.15.4 Reconfiguring Existing Dynamic Route Types

Use the following procedure to reconfigure existing dynamic route types.

Prerequisites

None

Steps

1. In the Route Detail screen, if necessary edit the **Route Name**. The Route Name is an arbitrary, descriptive name of the route.
2. In the Route Type drop-down menu, check that the selected route type is **Dynamic**.
3. Optionally, in the Time-out field, enter a Value for the route. This value overrides any classification time-out for a route request.
4. If necessary, in the Default Destination drop-down menu, choose a default route destination. If the routing server cannot determine agents from the defined destinations, then the server defaults to the selected Default Destination.
5. Optionally, enter a **Description**.
6. Optionally, if you choose Other for Default Database, enter the Database Driver and Database URL.
7. Edit the **Procedure Name**.

OR

Optionally, choose **Use Default Workflow Procedure**. The Default Workflow Procedure is the seeded routing workflow. If you use the Default Workflow Procedure, you do not need to enter any parameters. The Default Workflow Procedure is slower than static routes.

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

8. If necessary, in the Parameters table, enter the **Parameter** and choose a **Value** from the drop-down menu. In the left Value field you can enter a fixed, hard-coded value or choose an Oracle value from the drop-down menu in the right Value field. An example of a Parameter is CUSTOMER_ID.
9. If necessary, change the **Datatype** and **Direction** in the drop-down menus.
10. In the Route Rules fields, create or change the route rule by choosing a **Key** and **Operation** from the Route Rules drop down lists and enter a **Value**, for example, “Language Competency Equals French” or “Customer Number Begins With 0.” The available Operations depend on the selected Key. For a list of operators, see “[Operators for Route Rules and Classification Rules](#).”
11. In the Route Filter Details, move one or more Available Filters (server groups) to the Filtered By column. Adding filters restricts the route results to the agents in the selected server groups.
12. Choose **Update** to save.

2.1.15.5 Configuring New Route Point Route Types

A route point is an agent group. Use the following procedure to configure route point route types.

Prerequisites

Navigate to the Route Detail screen. See “[Configuring Routing](#).”

Steps

1. In the Route Detail screen, enter a **Route Name**. The Route Name is an arbitrary, descriptive name of the route.
2. In the Route Type drop-down menu, choose **Route Point**.
3. Optionally, in the Time-out field, enter a Value for the route. This value overrides any classification time-out for a route request.

4. In the Default Destination drop-down menu, choose a default route destination. If the routing server cannot determine agents from the defined destinations, then the server defaults to the selected Default Destination.
5. Optionally, enter a **Description**.
6. Optionally, if you choose Other for Default Database, enter the Database Driver and Database URL.
7. Choose **Update**.
The screen refreshes and the Route Point Details and Route Rules fields appear.
8. Choose a route point from the **Route Point** drop-down menu.
9. In the Route Rules fields, create route rules by choosing a **Key** and **Operation** from the Route Rules drop down lists and enter a **Value**, for example, “Language Competency Equals French” or “Customer Number Begins With 0.” The available Operations depend on the selected Key. For a list of operators, see [“Operators for Route Rules and Classification Rules.”](#)
10. Choose **Update** to save.

2.1.15.6 Reconfiguring Existing Route Point Route Types

Use the following procedure to reconfigure existing route point route types.

Prerequisites

None

Steps

1. In the Route Detail screen, enter a **Route Name**. The Route Name is an arbitrary, descriptive name of the route.
2. In the Route Type drop-down menu, choose **Route Point**.
3. Optionally, in the Time-out field, enter a Value for the route. This value overrides any classification time-out for a route request.
4. In the Default Destination drop-down menu, choose a default route destination. If the routing server cannot determine agents from the defined destinations, then the server defaults to the selected Default Destination.
5. Optionally, enter a **Description**.
6. Optionally, if you choose Other for Default Database, enter the Database Driver and Database URL.

7. In the Route Rules fields, create or edit route rules by choosing a **Key** and **Operation** from the Route Rules drop-down menus and enter a **Value**, for example, “Language Competency Equals French” or “Customer Number Begins With 0.” The available Operations depend on the selected Key. For a list of operators, see “[Operators for Route Rules and Classification Rules.](#)”
8. Choose **Update** to save.

2.1.15.7 Changing Route Priorities

To change the priority of a route, choose the Route tab and choose a priority from the Priority drop-down menu.

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

2.1.16 Operators for Route Rules and Classification Rules

Operators for defining route rules and classification rules are available in drop-down menus by choosing the Route tab and choosing the Classification tab and in the Route Detail and Classification Detail screens.

Note: The availability of operators depends on the selected Key.

For specific data type operators, see one of the following topics:

- [Operators for Datatype:string](#)
- [Operators for Datatype:number](#)
- [Operators for Datatype:date](#)

See Also

- [Configuring Routing](#)
- [Configuring Classifications](#)

2.1.16.1 Operators for Datatype:string

The following table lists and describes the operators for datatype:string.

Table 2–9 Operators for Datatype:String

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

2.1.16.2 Operators for Datatype:number

The following table lists and describes the operators for datatype:number.

Table 2–10 Operators for Datatype:Number

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

2.1.16.3 Operators for Datatype:date

The following table lists and describes the operators for datatype:date.

Table 2–11 Operators for Datatype:Date

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

2.1.17 Configuring Classifications

Use the following procedure to configure new classifications or to reconfigure existing classifications.

Prerequisites

At least one server group must have been configured.

Steps

1. In the Oracle Call Center Web Administration, choose the Classification tab.
The Classification screen opens.
2. To configure a new classification, choose **Create**.
OR
To reconfigure an existing classification, click the **Classification Name** of the classification.
The Classification Detail screen opens.
3. Proceed to “[Configuring Classification Details](#).”

See Also

- [Operators for Route Rules and Classification Rules](#)
- [Understanding Classifications](#)

2.1.18 Configuring Classification Details

Choose one of the following topics:

- [Configuring a New Literal Classification.](#)
- [Reconfiguring an Existing Literal Classification](#)
- [Configuring a New Database Procedure Classification](#)
- [Reconfiguring an Existing Database Procedure Classification](#)

2.1.18.1 Configuring a New Literal Classification

Use the following procedure to configure a new literal classification.

Prerequisites

Navigate to the Classification Detail screen. See “[Configuring Classifications.](#)”

Steps

1. In the Classification Details screen, enter a **Classification**. The Classification Procedure is an arbitrary, descriptive name of the route.
2. In the Classification Type drop-down menu, choose **Literal**.
3. Enter the **Time Out** in seconds.
4. If you choose Other as the Default Database, you must enter the Database Drive and Database URL.
5. Choose **Update**.
The screen refreshes and the Classification Rules fields appear.
6. In the Classification Rules fields, create a route rule by choosing a **Key** and **Operation** from the drop down lists and enter a **Value**, for example, “Language Competency Equals French” or “Customer Number Begins With 0.” The available Operations depend on the selected Key. For a list of operators, see “[Operators for Route Rules and Classification Rules.](#)”
7. Choose **Update** to save.

2.1.18.2 Reconfiguring an Existing Literal Classification

Use the following procedure to configure a new literal classification.

Prerequisites

Navigate to the Classification Detail screen. See “[Configuring Classifications.](#)”

Steps

1. If necessary, in the Classification Details screen, edit the **Classification**. The Classification is an arbitrary, descriptive name of the route.
2. In the Classification Type drop-down menu, check that the selected Classification Type is **Literal**.
3. If necessary, change the **Time Out**.
4. If you choose Other as the Default Database, you must enter the Database Drive and Database URL.
5. In the Classification Rules fields, create or edit the route rules by choosing a **Key** and **Operation** from the drop down lists and enter a **Value**, for example, “Language Competency Equals French” or “Customer Number Begins With 0.” The available Operations depend on the selected Key. For a list of operators, see “[Operators for Route Rules and Classification Rules.](#)”
6. Choose **Update** to save.

2.1.18.3 Configuring a New Database Procedure Classification

Use the following procedure to configure new database procedure classification.

Prerequisites

- Navigate to the Classification Detail screen. See “[Configuring Classifications.](#)”
- You must have created the database function that returns a classification.
- The database procedure classification must have already been created.
- At least one server group must have been created.

Steps

1. In the Classification Detail screen, in the **Classification Procedure** field, enter the name of the database function that returns the classification value as a VARCHAR2, such as GET_CLASSIFICATION.

2. In the Classification Type drop-down menu, choose **Database Procedure**.
3. Enter the **Time Out** in seconds.
4. Choose the **Default Database**. If you choose Other, you must also enter the Database Drive and Database URL.
5. Choose **Update**.

The screen refreshes and the Parameters and Classifications Rules fields appear.

6. In the **Parameters** fields, create one or more PL/SQL parameters that establish a route classification in conjunction with route rules.
7. In the **Classification Rules** fields, create rules that define the conditions under which the classification occurs. Examples of classification rules are “Agent ID Ends With 0,” “Call Answer Time After 1,” and “ANI Begins With 650.”

Note: If you configure a classification rule that results in a new rule, you need to have a route that is defined for that new rule. For example, if the classification rules result in adding the new classification rule CLASSIFICATION=GOLD to the classification request, then a new route is determined based on the new rule.

8. Choose **Update** to save.

See Also

- [Operators for Route Rules and Classification Rules](#)
- [Understanding Classifications](#)

2.1.18.4 Reconfiguring an Existing Database Procedure Classification

Use the following procedure to reconfigure an existing database procedure classification.

Prerequisites

- Navigate to the Classification Detail screen. See “[Configuring Classifications](#).”
- The database procedure classification must have already been created.

Steps

1. If necessary, in the **Classification Procedure** field, enter the name of the database function that returns the classification value as a VARCHAR2, such as GET_CLASSIFICATION.
2. In the Classification Type drop-down menu, check that the selected Classification Type is **Database Procedure**.
3. If necessary, change the **Time Out**.
4. Choose the **Default Database**. If you choose Other, you must also enter the Database Drive and Database URL.
5. In the **Parameters** fields, create or edit one or more PL/SQL parameters that establish a route classification in conjunction with route rules.
6. In the **Classification Rules** fields, create or edit rules that define the conditions under which the classification occurs. Examples of classification rules are “Agent ID Ends With 0,” “Call Answer Time After 1,” and “ANI Begins With 650.”

Note: If you configure a classification rule that results in a new rule, you need to have a route that is defined for that new rule. For example, if the classification rules result in adding the new classification rule CLASSIFICATION=GOLD to the classification request, then a new route is determined based on the new rule.

7. Choose **Update** to save.

See Also

- [Operators for Route Rules and Classification Rules](#)
- [Understanding Classifications](#)

2.2 Configuring Oracle Telephony Manager Server Modes and Processes

Refer to the following topics for procedures on configuring server modes and processes.

- [Configuring Oracle Telephony Manager to Run in Passive Mode](#)
- [Configuring Oracle Telephony Manager to Run in Active Mode](#)
- [Connecting Oracle Inbound Telephony Server to Oracle Telephony Manager](#)

See Also

[Configuring CTI Middlewares](#)

2.2.1 Configuring Oracle Telephony Manager to Run in Passive Mode

In the Oracle Call Center Web Administration, passive mode is set in the Middleware Parameters by setting the Value for Passive Mode to `False`.

2.2.2 Configuring Oracle Telephony Manager to Run in Active Mode

In the Oracle Call Center Web Administration, active mode is set in the Middleware Parameters by setting the Value for Passive Mode to `True`.

2.2.3 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.

2.2.4 Connecting Oracle Inbound Telephony Server to Oracle Telephony Manager

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

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

2.3 Updating Group Member and Administrator Records

To define and edit group member and group administrator records, use the Define Resources Groups form.

To update group member or group administrator records, use the following procedure.

Prerequisites

- The group must already have been created.
- A parent record must have been defined.

Steps

1. Open the Define Resources Groups screen and click **Manage Static Groups**.
The Define Resources Groups window opens.
2. Choose either the **Members** or **Admins** tab.
3. From the drop-down menus, choose the **Category** and **Number**.
4. In the **Start Date** and **End Date** fields, enter the dates beginning and ending dates of the member or agent's assignment to this group.
5. Choose **File > Save**.

2.4 Moving Agents to Other Groups

Use the following procedure to move an agent from one group to another group.

Note: When you move agents from one group to another group, the agents are automatically deleted from the previous group.

Prerequisites

The groups must already have been created.

Steps

1. Open the Define Resources Groups screen and choose **Manage Static Groups**.
2. In the Members tab, from the **Category** and **Name** pull-down menus, choose the group member.
3. Choose **Move Member**.

2.5 Administering Routing with Oracle Workflow Builder

Oracle Workflow Builder is a graphical tool for creating, viewing and modifying workflow process definitions. By using Oracle Workflow Builder, you can use drag-and-drop routing function templates to implement and administer routing.

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

This section contains the following topics:

- [Understanding Oracle Workflow Builder Item Types](#)
- [Modifying a Process](#)
- [Accessing the Call Route Item Type](#)
- [Applying a Pre-Defined Route](#)
- [Running a Pre-Defined Routing Process](#)
- [Designating Start and End Activities](#)
- [Adding a New Node to a Process](#)
- [Creating a New Process Route](#)
- [Administering 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](#)

See Also

“Defining a Workflow Process” in *Oracle Workflow Guide, Release 2.6.1*.

2.5.1 Understanding Oracle Workflow Builder Item Types

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.

2.5.2 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 about the subprocess in a separate Process window, double-click 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. For example, the GetAgents node routes information to a database table, invokes a stored procedure and returns the results. The database may return up to ten parameters, each parameter represents an agent.

CAUTION: Before saving a process to the database, validate the process by choosing File >Verify. Do not save un-validated processes to the database, otherwise, the entire Call Route Item Type will be rendered an error and all routing functionality will be disabled.

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.

2.5.3 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. Choose **File > Show/Hide Item Types**.
The Show Item Types dialog box opens.
3. Choose **Call Route** in the Hidden list and click << to move Call Route to the Visible list.
4. Click **OK**.

The folder “Call Route” appears in the Oracle Workflow Builder Navigator window.

2.5.4 Applying a Pre-Defined Route

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

To access a pre-defined routing process, use the following procedure.

Prerequisite

None

Steps

1. In the Navigator window tree, click the Item Type **Call Route**.
2. Expand the Processes folder to display a list of available pre-defined processes.
3. Choose and double-click a process.

The Process window opens, displaying the routing diagram.

2.5.5 Running a Pre-Defined Routing Process

You can choose to run a pre-defined routing Process in Oracle Workflow Builder by defining it as “The Selected Process.” To run a pre-defined routing process, use the following procedure.

Prerequisites

None

Steps

1. In the Oracle Workflow Builder Navigator window, expand the Attributes folder and double-click **The Selected Process**.

Warning: Do not modify any Attribute except “The Selected Process” Attribute. Any other modification may render the Routing screen unusable.

The Oracle Workflow Navigator Control Properties window opens.

2. In the Default area **Value** field, enter the name of the Process that you want to run.
3. Choose **OK**.

2.5.6 Designating Start and End Activities

Each Oracle Workflow Builder Process must have a Start activity that identifies the beginning of the process. The Start activity can be any node from which it is logical to begin the process. An End activity should return a result that represents the completion of the process.

Prerequisite

None

Steps

1. In the Navigator window, choose the process that you want to change.
2. Click the secondary mouse button.

The mouse menu opens.

3. Choose **Properties**.

The Navigator Control Properties dialog box opens.

4. Using the **Start/End** pull-down menu, 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, which means neither. You may have multiple START and END nodes in your Process.

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 that is defined as the process activity's Result Type.

2.5.7 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 that you drag must belong to the same data store as the Process to which you drag it.

If you create a new node by using the right mouse button menu option New Activity in the Process window, the property pages for the node appear. Select the name of the Item Type and Activity in the Activities Properties page. If you create a node by dragging and dropping an Activity from the Navigator tree into the Process window, double-click on the node to display the Properties pages so that 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 Properties page.

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

2.5.8 Creating a New Process Route

To create a new Process Route with Oracle Workflow Builder, use the following procedure.

Prerequisite

None

Steps

1. In the Navigator window, choose the Process folder
2. Click the secondary mouse button.
The mouse menu opens.
3. Choose **Create New Process**.
The Oracle Workflow Navigator Control Properties dialog box opens
4. Choose the Activities tab.
5. Enter a unique **Internal Name**.
6. Enter the **Display Name**.
7. Enter a **Description** of your new route.
8. Leave the Result Type as None.
9. From Standard Functions, drag the **Start** activity to the new Process window.
10. From Call Route Functions, drag the **Get Agents** activity to the Process window.
11. From Routing Filters, CCT Environmental Conditions, Customer Initialization Phase, Customer Product Initialization, Product Initialization Phase, and Standard Item Types, drag and drop the Activities that you want to use in routing the calls to the appropriate agent.

2.5.9 Administering Routing Filters

Use Oracle Workflow Builder Routing filters to route calls only to those agents who meet the filter criteria.

To add a filter to a process, in the Navigator window drag a filter and drop it into the process window.

The following table lists and describes the Routing filters.

Table 2–12 Routing Filters

| Routing Filter | Description |
|------------------------------------|---|
| Competency - Language Filter | 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 IVR. |
| Competency - Knowledge Filter | Only those agents who are competent in the area of expertise selected by the customer answer the call. Requires that an area of expertise selection be made at the IVR. |
| Competency - Product Filter | Only those agents who are competent in the product selected by the customer answer the call. Requires that a product selection be made at the IVR. |
| Customer Product Filter | 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 | 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 | 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 IVR. |
| Product ID Filter | 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. |
| Request Owner Filter | Call is routed to the agent who owns the Service Request that is associated with the service request number selection made by a customer at the IVR. |
| System Type Filter | Only those agents who are assigned to handle the particular System Type answer the call. Requires that a serial number be input from the IVR. |
| Telesales Agent Account Filter | Retrieves a list of agents for a customer based on the account ID. |
| Telesales Agent Opportunity Filter | Retrieves a list of agents for a given sales opportunity. |
| Telesales Agent Territory Filter | Retrieves a list of agents for a customer based on their territory. |

Table 2–12 Routing Filters (Cont.)

| Routing Filter | Description |
|------------------------------------|--|
| Agents from Dynamic Group Name | Retrieves a list of agents returned based on the dynamic group name. |
| Agents from Dynamic Group Number | Retrieves a list of agents based on the dynamic group number. |
| Agents from Static Group Name | Returns a list of agents based on a static group name. |
| Agents from Static Group Number | Returns a list of agents based on a static group number. |
| Agents not in Dynamic Group Name | Returns a list of agents not in a dynamic group name. |
| Agents not in Dynamic Group Number | Returns a list of agents not in a dynamic group number. |
| Agents not in Static Group Name | Returns a list of agents not in a static group name. |
| Agents not in Static Group Number | Returns a list of agents not in a static group number. |
| All Logged in Agents | Returns a list of all agents who are logged in. |

2.5.10 Setting Time and Date Rules

In Oracle Workflow Builder, for each attribute the relevant value is specified after you drag the node into the process diagram.

To set Time and Date rules, use the following procedure.

Prerequisites

None

Steps

1. In the Process window diagram, double click on the node icon.
The property page for the node appears.
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.

The following table lists and describes the Time and Date Rules.

Table 2–13 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. |
| 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. |

2.5.11 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 into the Process window 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.

The following table lists and describes the rules for customer initialization phase.

Table 2–14 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 allows 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 Order Num? | If the customer ID can be derived from the Order Num, this rule derives the Customer ID and returns a Yes, otherwise it returns a No. |
| Can Get Customer ID from PO Num? | If the customer ID can be derived from the PO Num, this rule derives the Customer ID and returns a Yes, otherwise it returns a No. |
| Can Get Customer ID from Request Num? | If the customer ID can be derived from the Request Num, this rule derives the Customer ID and returns a Yes, otherwise it returns a No. |
| Can Get Customer ID from RMA Num? | If the customer ID can be derived from the RMA 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. |

2.5.12 Deriving Rules for the Customer Product Initialization Phase

The Oracle Workflow Builder Customer Product Initialization Phase derives the Customer Product ID information from a caller's responses to the IVR. The phase is represented by the Derive Customer Product ID sub-process, which you drag into the Process diagram.

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

The following table lists and describes the rules for the Customer Product Initialization Phase.

Table 2–15 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. |
| 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. |

2.5.13 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 into the Process diagram.

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

The following table lists and describes the rules for the Product Initialization Phase.

Table 2–16 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. |

Table 2–16 Product Initialization Phase Rules (Cont.)

| Rule | Description |
|--|--|
| 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. |

2.5.14 Deriving Rules for TeleSales Routing

The Oracle Workflow Builder telesales routing Functions 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 window 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.

The following table lists and describes the rules for telesales routing.

Table 2–17 Telesales Routing Rules

| Rule | Description |
|------------------------------|---|
| Customer ID from Address ID? | If the customer ID can be derived from the Address ID, this rule derives the Customer ID and returns a Yes, otherwise it returns a No. |
| Customer ID from ANI? | If the customer ID can be derived from the ANI, this rule derives the Customer ID and returns a Yes, otherwise it returns a No. |
| 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. |

2.5.15 Administering Call Center Environmental Conditions

Call Center Environmental Conditions refers to the routing rules based on the date and time of the call.

2.5.16 Deriving Rules for Banking Routing

This topic is obsolete. Banking routing is no longer used.

Glossary

array

A set of items which are randomly accessible by numeric index.

control

The ability to control the server process, for example, start up, shut down, garbage collect, set log level, and so on.

dynamic load balancing

The ability to launch additional server processes on demand based on the overall load of the system. See load balancing.

dynamic route

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

fault tolerance

The ability of a computing system to withstand faults and errors while continuing to provide required services.

fail over

A backup operational mode in which the functions of a system component are assumed automatically and transparently by secondary system components when the primary component becomes unavailable through a system crash.

ICSM process

The Interaction Center Server Manager (ICSM) process is responsible for starting and stopping interaction center server process as child processes. It monitors the status of its child processes and notifies other ICSM of server startup and

shutdown. When using the Interaction Center Server Manager (ICSM) configuration, the ICSM process is the only component installed on the target machine.

Inbound Telephony Server (ITS)

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

- (Active mode only) ITS enables enterprise data-based routing by listening for route queries offered by the CTI middleware and responding to them to instruct the switch where to route the call.
- ITS monitors calls arriving at route point(s) (supports Avaya Definity with CT Connect and Nortel Meridian with CT Connect only)
- ITS detects calls that are abandoned at route point(s) (supports Avaya Definity with CT Connect and Nortel Meridian with CT Connect only)
- ITS receives IVR data packets from the IVR (supports Avaya Conversant and NortelOpenIVR only)

interaction center server

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

key

The part of a group of data by which the data is sorted, indexed, cross referenced, and otherwise organized and analyzed.

load balancing

A means of dividing the amount of computer work between two or more computers by automatically redirecting requests for information to an available server, thereby reducing the time customers must wait for a response. See dynamic load balancing.

media controller

Software that bridges other systems or software with the underlying media hardware, for example, a PBX.

media queue

A media queue is the interaction center component for queuing and distributing inbound media items. It stores inbound items such as telephone calls or e-mails in a queue and integrates with the routing module so that the items can be sent to a set of agents. The media queue provides an API to other modules, such as Oracle Universal Work Queue, for querying and manipulating items in the queue.

media item

A media item is a representation of a telephone call, e-mail, web callback or any other type of media.

media item life cycle segment

The duration of a particular media item.

mid-tier server process

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

monitoring

The ability to view server status.

multisite

Interaction centers working together across multiple physical locations.

multisite CDT

Call and Data Transfer across multiple sites.

multisite routing

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

multisite queuing & distribution

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

multi-PBX

Support for multiple switches and middleware configurations by the same server.

Oracle Call Center HTML Administration

The Oracle Advanced Inbound Web-based user interface for managing configuration and administration of interaction center servers.

node

The machine where mid-tier server processes are run. Same as target machine. A node stores information about the target machine, for example, IP address, DNS name, and so on.

runtime

Runtime stores the specific optional data for each server process in addition to the runtime definition. Users can fine tune each server's Java memory size, change the trace level, and so on. Each server has a unique runtime record.

runtime definition

The process by which the Java server process is started, that is, the Java main class name, Java options such as -ms16M, and command line arguments. Each server type has a unique runtime definition. Runtime definitions are seeded.

scalability

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

server process

Any interaction center server, such as Interaction Queuing and Distribution, Oracle Universal Work Queue, Routing server, Oracle Inbound Telephony Server, and Oracle Telephony Media Controller. Same as mid-tier server process and interaction center server.

server status

Information on whether the server process is running or not, how long the server has been running, and so on.

site

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

skill-based routing

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

static route

A route that is based on cached data.

super group

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

target machine

The machine where mid-tier server processes are run. Same as node.

