Oracle® Call Center Connectors

Implementation Guide

Release 11*i* for Windows NT and Windows 2000

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Part No. A95164-02

1 Introduction

The following topic group provides an overview of the Oracle Interaction Center suite of products and an overview of Oracle Call Center Connectors.

1.1 Oracle Interaction Center Overview

Every customer interaction — a telephone call, an e-mail message, or a Web chat conversation — presents an opportunity to win new business or improve customer satisfaction. The Oracle Interaction Center supports the management and processing of customer relationship activity across all channels of customer contact.

The Oracle Interaction Center integrates with several customer relationship business applications in the Oracle E-Business suite. The Oracle Interaction Center consists of several modules. The modules relating to inbound telephony and outbound telephony are bundled separately.

The Oracle Interaction Center allows access to centralized customer information and business application functionality. Oracle Interaction Center integrates with CRM (Customer Relationship Management) and ERP (Enterprise Relationship Planning) applications, thereby enabling a workflow powered, end-to-end strategic e-business solution.

The Oracle Interaction Center products include:

- Oracle Advanced Inbound
- Oracle Advanced Outbound
- Oracle eMail Center
- Oracle Scripting
- Interaction Center Intelligence

1.1.1 Oracle Advanced Inbound

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 switches and CTI meddlers provided by third-party vendors
  - Switches: 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)

See Also

- Oracle Advanced Outbound
- Oracle eMail Center
- Oracle Scripting
- Interaction Center Intelligence

1.1.2 Oracle Advanced Outbound

Oracle Advanced Outbound (AO) is another key part of the Oracle E-Business Suite of applications. It is the module of Oracle Interaction Center that addresses outbound telephony. AO consists of two main components:

- A tactical list manager, which determines who to call and when to call them
- An outbound dialing engine, which dials numbers and transfers live contacts to call center agents

Advanced Outbound integrates with and relies on Oracle Marketing Online (OMO) to create campaigns and lists to execute. AO serves as the execution arm for these marketing lists to maximize both outbound list penetration and agent productivity. AO also integrates with desktop applications like Oracle TeleSales and Oracle Collections to handle the actual customer interactions. Oracle Advanced Outbound can be used any time agents need to contact parties via the telephone.

AO also integrates with Oracle Interaction History to provide feedback that marketers can use to analyze and measure the success of the marketing campaign, thereby providing a closed-loop marketing process.

Note: Oracle Advanced Outbound does not include any other telephony management modules. Oracle Advanced Inbound is required to use Advanced Outbound.

See Also

- Oracle Advanced Inbound
- Oracle eMail Center
- Oracle Scripting
- Interaction Center Intelligence

1.1.3 Oracle eMail Center

Oracle eMail Center (eMC) is designed to satisfy requirements for inbound customer support, e-mail interaction management, and outbound sales and marketing e-mail message processing.

Oracle eMail Center helps your business respond to e-mail queries with clear and comprehensive replies in a much more efficient manner. eMC automatically generates suggested responses and scores them according to how closely they match the requirements.

See Also

- Oracle Advanced Inbound
- Oracle Advanced Outbound
- Oracle Scripting
- Interaction Center Intelligence

1.1.4 Oracle Scripting

Oracle Scripting is a set of tools to create and display information sequentially to end users. Oracle Scripting is composed of three components:

- Script Author
- Scripting Engine
- Survey Component

Oracle Scripting end users include interaction center agents (for the Scripting Engine), and customers or prospects using a Web browser (using the Survey component). Other users include individuals who build the scripts (Script Author users) and administrators of scripting or survey campaigns. who may use the Oracle Scripting Survey Admin console.

Using the Script Author, trained script developers use a visual layout development environment to build scripts and survey questionnaires. Using the Script Author tool, developers insert objects into a script and associate properties with each object, including panels, groups and blocks. Panels contain specific prompts geared to the audience of the script (and contain the only elements that will display at runtime). Groups and blocks add code re-use capabilities and the ability to associate Java, PL/SQL, or other commands to a script. These objects control complicated processing and embed business rules that are evaluated at runtime. When completed, scripts are deployed to the Oracle Applications database.

The flow of a script in runtime can be fixed or dynamic, and is controlled by the business rules and on information provided upon script execution.

Scripts are executed in a Java GUI in an interaction center (the Scripting Engine), or in a Web browser running JSP pages on a Web server (using the Survey component). Depending on the response to questions asked in the Scripting Engine GUI or the HTML page, the script developer can control the branching, or flow, from one panel to the next within the script. Custom commands can also affect flow of the script. This evaluation takes place in a manner transparent to the user.

The Survey component requires a survey campaign to be defined by an administrator using the Survey Admin console accessible from the eBusiness Center login. This console also provides several reports, which provide feedback to administrators regarding surveys and scripts that have been executed. For scripts, a Footprinting report can assist in tuning scripts by indicating every panel accessed, the order in which it was accessed, and how long the agent spent in each panel. For surveys, the administrator can review individual survey responses or summarized reports for a variety of information.

See Also

- Oracle Advanced Inbound
- Oracle Advanced Outbound
- Oracle eMail Center
- Interaction Center Intelligence

1.1.5 Oracle Interaction Center Intelligence

Interaction Center Intelligence is a Web-based reporting solution that provides intelligent reports that facilitate day-to-day operational and long-term strategic decisions.

The data is presented to the user in a easy-to-use portal format. This format gives the user a unified, role-based, easily customized view of Interaction Center information, including Universal Work Queue information, key performance information relating to agent productivity, speed to answer, and abandon rate.

The product is built on an Oracle proprietary Java-based technology stack (Oracle CRM Foundation, also known as JTF).Users of Interaction Center Intelligence require minimal training, and no additional software is needed on the user's machine other than a Web browser.

Oracle Interaction Center Intelligence is based on a three-tier architecture:

- The front end (client) using the system via an Oracle Applications-compliant Web browser.

- The middle tier, which contains the Apache Web server and application server, included as part of the installation of Oracle Applications release 11*i*.
- The database tier, using an Oracle 8*i* or 9*i* database.

See Also

- Oracle Advanced Inbound
- Oracle Advanced Outbound
- Oracle eMail Center
- Oracle Scripting

1.2 Oracle Call Center Connectors Overview

Call Center Connectors is a set of telephony "drivers" which enables the integration between Oracle Interaction Center and the telephony platform (i.e. the switch and CTI middleware).

Call Center Connectors provides Computer Telephony Integration (CTI) support to market leading traditional switches and IP Telephony through leading CTI middleware including Intel's CT Connect and Cisco's Intelligent Contact Management (ICM).

Oracle's CTI support abstracts low-level telephony protocols unique to each vendor's switch and provides Oracle Interaction Center CTI enabled applications with a consistent API for call control, agent state control, and session management.

2 Technology, Requirements, and Performance

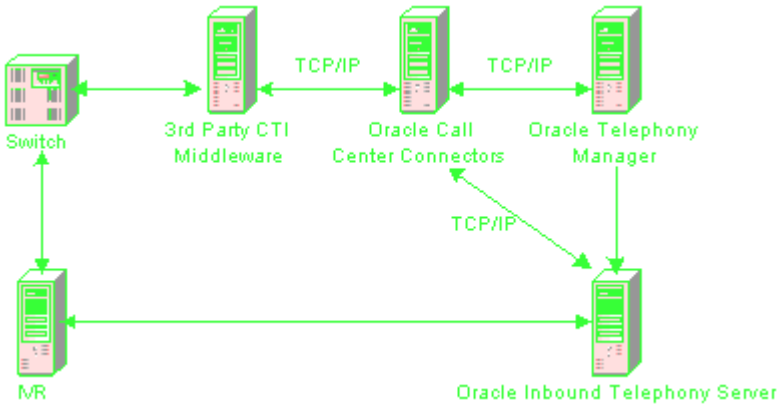
The following topic group provides an architectural overview, the minimum software requirements, the minimum hardware requirements for Oracle Call Center Connectors, as well as the Hardware requirements specific to both Oracle Advanced Inbound and Oracle Advanced Outbound.

2.1 Architectural Overview

The following topic group provides examples of Oracle Call Center Connectors' role in the CTI architecture for both inbound and outbound situations.

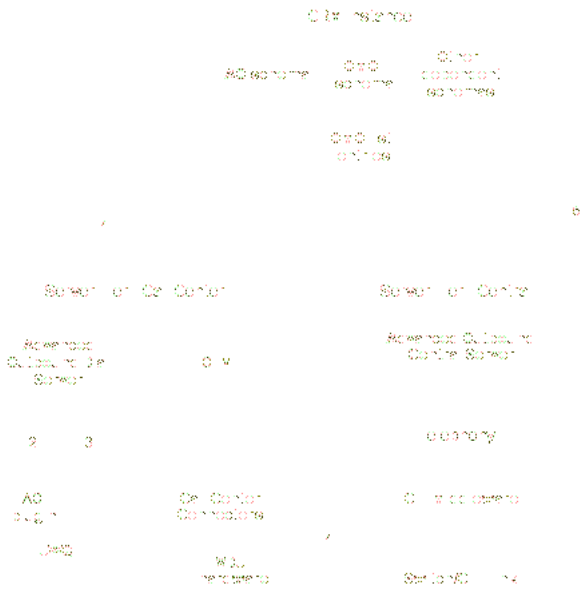
2.1.1 Call Center Connectors' Role in an Inbound Architecture

As the following figure illustrates, 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 computer-telephony integration (CTI) middleware (for example, Intel CT Connect or Cisco ICM), which in turn connects to a switch (for example, Avaya Definity). TCP/IP sockets are used for connecting to Oracle Call Center Connectors, Oracle Telephony Manager, and the Oracle Inbound Server.



Oracle Call Center Connectors is certified for Microsoft Windows NT 4.0 and Microsoft Windows 2000.

2.1.2 Call Center Connectors' Role in an Outbound Architecture



1. The Advanced Outbound Dial Server removes records from Oracle Marketing list indirectly through the central cache. It returns these records through the return queue.
2. Advanced Outbound integrates into UWQ through the Media Provider interface.
3. The Advanced Outbound Dial Server uses Call Center Connectors for both CTI and VDU control.
4. Call Center Connectors were modified for the 11.5.6 release to support VDU operations.
5. The Advanced Outbound Central Server is a lightweight server, which does cache management, time zone and calendar management, and recycling.

2.2 Minimum Software Requirements

Microsoft Windows NT 4.0 (Service Pack 4 or above) or Microsoft Windows 2000 must be installed before you can install Oracle Call Center Connectors.

If the CTI middleware in use is Intel CT Connect, then install the CT Connect client API (from the CT Connect CD-ROM) on the same server on which Oracle Call Center Connectors is installed.

If the CTI middleware in use is Cisco ICM, then you do not need to perform any extra tasks as Cisco ICM does not utilize client APIs.

2.3 Minimum Hardware Requirements

Install Oracle Call Center Connectors on a network-connected, server-class machine. The following table lists the hardware requirements for installing Oracle Call Center Connectors.

Hardware	Minimum Requirements
Processor	Pentium II 300 MHz
Hard Drive	25 MB free space
Network Card	100 Mbit/sec
RAM	Minimum 64 MB

2.3.1 Hardware Requirements for Oracle Advanced Inbound

The following table lists the 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
Nortel Meridian	Intel CT Connect	
Nortel Meridian	Cisco ICM Enterprise CTI	Passive mode only

The following table lists the supported switches and CTI middleware combinations in Release 11.5.6 + Family Pack.

Switch/ACD	CTI Middleware	Conditions
Alcatel 4400	Intel CT Connect	
Cisco Call Manager	Cisco ICM Enterprise CTI	Passive mode only
Ericsson MD110	Intel CT Connect	
Siemens Hicom (US)	Intel CT Connect	

Switch/ACD	CTI Middleware	Conditions
Siemens Hicom (International)	Intel CT Connect	
Rockwell Spectrum 100	Intel CT Connect	

Note: Switch and CTI middleware support is dependent on an active certification program. Please verify platform support, switch and middleware release dependencies with your Oracle Sales, Consulting or Support representative.

2.3.2 Hardware Requirements for Oracle Advanced Outbound

If your environment is employing Oracle Advanced Outbound with Predictive dialing, then at least one VDU board must be installed on the Call Center Connectors server. For more information on installing VDU boards and configuring the middleware with Advanced Outbound specific parameters, please refer to the *Oracle Advanced Outbound Implementation Guide*.

Advanced Outbound utilizes Dialogic VDU hardware to do predictive dialing. These are physical hardware cards which must be placed into a server running Windows NT or 2000. They allow Advanced Outbound to do voice detection and classification of non-contact calls.

VDU cards must be configured into the database using the Advanced Outbound administrative interface before they can be used. For more information on configuring the VDUs, refer to the *Oracle Advanced Outbound Implementation Guide* and *Oracle Advanced Outbound Concepts and Procedures Guide*.

The following Dialogic VDUs are supported by Oracle Advanced Outbound:

- Basic Operation (no messaging support)
  - DTI/481SC, which is an ISA card and supplies 2 T1s (48 ports)
  - DTI/241SC, which is an ISA card and supplies 1 T1 (24 ports)
  - DTI/601SC, which is an ISA card and supplies 2 E1s (60 ports)
  - DTI /301SC, which is an ISA card and supplies 1 E1 (30 ports)
  - LSI/161SC, which is an ISA card and supplies 16 analog ports
- Enhanced Operation (messaging support)
  - D/480SC - 2T1, which is an ISA card and supplies 2 T1s (48 ports)

- D480JCT - 2T1, which is a PCI card and supplies 2 T1s (48 ports)
- D/240SC - T1, which is an ISA card and supplies 1 T1 (24 ports)
- D240PCI - T1, which is a PCI card and supplies 1 T1 (24 ports)
- D/600SC - 2E1, which is an ISA card and supplies 2 E1s (60 ports)
- D600JCT - 2E1, which is a PCI card and supplies 2 E1s (60 ports)
- D/300SC - E1, which is an ISA card and supplies 1 E1 (30 ports)
- D/300PCI - E1, which is a PCI card and supplies 1 E1 (30 ports)
- D/160SC - LS, which is an ISA card and supplies 16 analog ports
- D120JCT - LS, which is a PCI card and supplies 16 analog ports

3 Dependency Requirements and Verification

This topic group provides information on the mandatory (ones that must be implemented for an Oracle Interaction Center to function) and conditional dependencies (ones that provide desired functionality to an Oracle Interaction Center, but are not required for the Oracle Interaction Center to function) for Oracle Call Center Connectors.

3.1 Mandatory Dependencies

The mandatory dependencies for Oracle Call Center Connectors include:

- An Oracle certified CTI ready switch - should be installed, tested, and operational prior to the installation of Oracle Call Center Connectors.
- CTI Middleware (CT Connect or Cisco ICM) - should be installed and tested before installation of Oracle Call Center Connectors.
- The CTI middleware must be configured for use with Oracle Advanced Inbound and Oracle Advanced Outbound. For more information on configuring the CTI middleware with Advanced Inbound or Advanced Outbound specific parameters, refer to the *Oracle Advanced Inbound Implementation Guide* and the *Oracle Advanced Outbound Implementation Guide*.
- The switch/middleware combination should be tested for inter operability with the middleware testing utilities provided by the 3rd party middleware.
- Oracle Advanced Inbound - Oracle Telephony Manager must be installed after the installation/configuration of Oracle Call Center Connectors.

Note: If Intel CT Connect is the middleware used, then Intel CT Connect client API must be installed and configured on the Oracle Call Center Connectors server. For information, see the Intel documentation.

3.2 Conditional Dependencies

The conditional dependencies for Oracle Call Center Connectors include:

- Oracle Advanced Outbound - allows outbound dialing (for predictive dialing, you must also install at least one VDU board and its required software on the Call Center Connectors server)
- Oracle Universal Work Queue - allows queueing of work items

4 Implementation Overview

This topic group provides a high level process description and a list of installation/implementation tasks for Oracle Call Center Connectors.

4.1 Process Description

Oracle Call Center Connectors is installed as a Microsoft Windows NT service and contains a Service Configuration program that allows you to configure Call Center Connectors.

4.2 Implementation Task Sequence

The implementation process for Oracle Call Center Connectors consists of the following tasks:

- Downloading Oracle Call Center Connectors
- Installing Oracle Call Center Connectors
- Configuring Oracle Call Center Connectors

Each of these tasks is explained in detail in the Implementation Tasks topic group of this document.

5 Implementation Tasks

This topic group provides detailed steps for downloading and installing Call Center Connectors, and configuring Call Center Connectors. This topic group also contains information on how to properly reinstall Oracle Call

Center Connectors, as well as information on installing VDU board(s) for predictive dialing.

5.1 Downloading and Installing Oracle Call Center Connectors

Use the steps below to download the Call Center Connectors .zip file and install Oracle Call Center Connectors on a Windows NT server.

Prerequisites

If Intel CT Connect is the middleware used, then Intel CT Connect client API must be installed and configured on the Oracle Call Center Connectors server. For information, see the Intel documentation.

If the CTI middleware in use is Cisco ICM, then you do not need to perform any extra tasks as Cisco ICM does not utilize client APIs.

Steps

1. To download the Call Center Connectors Installer .zip file (cctietsetup.zip), use a web browser to log in to the Oracle Applications Web tier as a user with the Call Center HTML Administration responsibility.
2. On the Call Center > Middleware tab, under Call Center Connectors click the hyperlink **Download Installer**.

   The Windows download dialog box appears.
3. Choose **Save File** and save the .zip file (cctietsetup.zip) to a local directory.
4. Unzip this file in a temporary directory.
5. Extract the compressed files to a local directory, such as Temp.

   The files decompress and establish a sub-directory structure.
6. In the sub-directory \iet1156\install\win32, run **setup.exe**.

   The Oracle Universal Installer appears.
7. At the Welcome screen, click **Next**.

   The File Locations screen appears. The Source area **Path** field is populated automatically and points to the installation file.
8. In the Destination area **Path** field, choose the directory where you want to install the application.
9. In the **Name** field, enter an Oracle alias name for the directory.
10. Click **Next**.

The Call Center Connectors Service screen appears.

11. In the **Name** field, enter a name for the service.

    The default name that appears is “Oracle Connectors”.

12. Click **Next**.

    The Call Center Connectors Port Number field appears, displaying the default value of 3201.

13. Enter a port Number for Oracle Call Center Connectors.

14. Click **Next**.

    The Middleware Type screen appears with the prompt “Do you use Dialogic CT Connect as your Middleware?”

    If Yes, click **Browse** and choose the path to the Dialogic CT Connect Install bin directory, and then click **Next**.

    OR

    If No, click **Next**.

    The Start the NT Service after the Install screen appears.

15. Choose **Yes**. If you choose No, after the installation you will need to start Oracle Call Center Connectors manually from the Windows NT Services Control panel, or it will start automatically after rebooting.

    Caution: If you are using CT Connect, choose **Yes** only if the Intel CT Connect client is installed and ctcapi32.dll is in the system path.

16. Click **Next**.

    The Summary screen appears.

17. Verify the installation summary.

    OR

    If you want to change any settings, click Previous to return to previous screens.

18. Click **Install**.

    The Install screen appears, showing the progress of the installation.

    When the installation is complete, the End of Installation screen appears.

19. Choose **Exit**.

The Exit screen appears, displaying the prompt, “Do you really want to exit?”

20. Click **Yes**.

    The installation is complete and Oracle Call Center Connectors is ready to use.

5.2 Reinstalling Oracle Call Center Connectors

If you ever need to reinstall Oracle Call Center Connectors, first un-install the existing installation and delete all of its files, then reboot before starting the new installation.

5.3 Configuring Oracle Call Center Connectors

To configure, reconfigure, add, or change the Call Center Connectors Services, use the tool CCCServiceConfigration.exe, which is located in the directory INSTALL_DIR\OracleCallCenterConnectors\bin, where INSTALL_DIR is the directory where Oracle Call Center Connectors is installed. You can also access this file from the Windows Start menu by navigating to Programs > Call Center Connectors > Service Configuration.

Use the following steps to configure or reconfigure Oracle Call Center Connectors.

Prerequisites

If Intel CT Connect is the middleware used, then Intel CT Connect client API must be installed and configured on the Oracle Call Center Connectors server. For information, see the Intel documentation.

If the CTI middleware in use is Cisco ICM, then you do not need to perform any extra tasks as Cisco ICM does not utilize client APIs.

Steps

1. From the Windows NT Taskbar, choose **Start** > **Programs** > **Oracle Call Center Connectors** > **Service Configuration**.

   The Oracle Services Configuration dialog box appears.

2. In the Config tab, check the **Call Center Connectors Server** check box to configure Oracle Call Center Connectors.

   The Call Center Connectors Server tab appears.

3. Click the Call Center Connectors Server tab.

4. In the Call Center Connectors Servers tab, choose **New Server** to create an executable service.

   OR

   Choose an existing Windows NT Service to edit from the Name drop-down menu, then proceed to step 6.

5. Enter a unique name to identify this instance of Oracle Call Center Connectors.

6. Click **OK**.

   Information automatically populates the Name, Executable, Port, and Output Level fields.

   Note: In the Executable field, verify that the path for OpenTelProxyServer.exe is correct.

7. If you are installing a single instance of Oracle Call Center Connectors on this machine, use port number 3201. If you configure two or more instances of Oracle Call Center Connectors on the same machine, choose an unused port number between 3300 and 5000.

8. Select an Output Level from 0 to 4 for logging.

   - Oracle recommends that you use Output Level 1 in normal operations for moderate logging without slowing performance.
   - Level 0 returns no logging, but results in the fastest performance.
   - Level 4 returns the most detailed logging, such as for troubleshooting, but results in slower performance.

9. Click **OK**.

10. From the Windows NT Taskbar, choose **Start** > **Settings** > **Control Panel** > **Services**.

    The Services dialog box appears.

11. In the Services window, scroll to **OracleCCCServer <name that you entered in step 5>**. Check that Startup is set to Automatic.

    If Startup is not set to Automatic, click **Startup** to open the Service panel. Choose **Automatic**, then click **OK**. The Service panel closes, and you return to the Services window.

12. Click **Start** to restart the service, or you can restart the service on the next reboot.

5.4 Installing VDU Card(s) on the Call Center Connectors Server

If you want to use predictive dialing, at least one VDU card must be installed on the Call Center Connectors server. This installation process involves the following tasks:

- Install the VDU board on the Call Center Connectors server
- Install the VDU software on the Call Center Connectors server
- Configure the VDU software

For more information on installing the VDU board, refer to the board manufacturer's installation instructions.

For more information on installing and configuring the VDU software, refer to the *Oracle Advanced Outbound Implementation Guide*.

6 Verifying the Implementation

In order to ensure a correct installation and configuration, you should verify that the OracleCCCServer is visible from the Services console and that you can start and stop the Call Center Connectors service.

6.1 Verification Tasks for Oracle Call Center Connectors

This topic group provides information on verifying your installation of OracleCCCServer and verifying your ability to start and stop the service.

6.1.1 Verifying the Installation of Oracle Call Center Connectors

Use the following steps to verify that Oracle Call Center Connectors has been installed correctly:

Steps

1. Navigate to the Control Panel and click **Services**.

   The Services dialog box appears, displaying a list of all services installed on the server.

2. On the Services dialog box, use the scroll bar to verify that **OracleCCCServer** appears in the list of services (in the Services column).

   If you see it, then Call Center Connectors has been properly installed.

6.1.2 Starting and Stopping Oracle Call Center Connectors

Oracle Call Center Connectors starts automatically as a Windows NT Service after being installed properly and if all applicable requirements have been met. Requirements include the installation of Intel CT Connect client API, and selection during the installation of the option to automatically start Oracle Call Center Connectors.

If Oracle Call Center Connectors does not start automatically after completing the installation, use the following procedure to start it manually.

Steps to Start Oracle Call Center Connectors

1. Navigate to Control Panel, and click **Services**.

   The Services dialog box appears, displaying a list of all services installed on the server.

2. In the Services column of the Services dialog box, select **OracleCCCServer**, and click **Start**.

   The status column for OracleCCCServer will change from "Stopped" to "Started".

Steps to Stop Oracle Call Center Connectors

1. Navigate to Control Panel, and click **Services**.

   The Services dialog box appears, displaying a list of all services installed on the server.

2. In the Services column of the Services dialog box, select **OracleCCCServer**, and click **Stop**.

   The status column for OracleCCCServer will change from "Started" to "Stopped".

7 Diagnostics and Troubleshooting

This topic group provides information on troubleshooting Oracle Call Center Connectors.

7.1 Configuring Additional Logging for Troubleshooting Oracle Call Center Connectors

OpenTel API Configuration Assistant is a utility for configuring OpenTel troubleshooting log settings. Use this utility only if you need to troubleshoot Oracle Call Center Connectors.

Prerequisites

Oracle Call Center Connectors must have been installed properly.

Steps

1. Launch OpenTel API Configuration Assistant by running the file ot32cfg.exe, which is located in the directory INSTALL_DIR\OracleCallCenterConnectors\bin, where INSTALL_DIR is the directory where Oracle Call Center Connectors is installed.

   OpenTel Configuration Assistant appears.

2. Verify that the **Logging** check box is checked.
3. In the **Log file** field, enter the full path of the log file, for example, D:\Temp\opentel.log.
4. In the **Maximum log file size** field, enter the number of *bytes* to limit the size of the log file. The recommended number is 1000000 (approximately 1MB).
5. In the **Maximum number of log files** field, enter a value such as 20.
6. To turn on the highest level of logging, check all the check boxes.
7. Click **OK**.

   A new OpenTel log is created each time OpenTel Proxy Server is started or when the current log file reaches the maximum file size. The first log is named as specified in the OpenTel API Configuration Assistant, for example, opentel.log. Additional logs are renamed with ascending three-digit numeric file extensions, for example, opentel.001, opentel.002, and so on.

   When you are done with troubleshooting, make sure you turn off all logging by unchecking all the check boxes in ot32cfg.exe.

7.2 Running Oracle Call Center Connectors in Console Mode

Call Center Connectors normally runs as a Windows NT Service. If you are troubleshooting Call Center Connectors, you may run it in console mode to view log messages in real time by using the following procedures.

Prerequisites

Oracle Call Center Connectors must have been installed properly.

Steps

To enable the option to run Oracle Call Center Connectors in console mode:

1. Launch ot32cfg.exe, which is located in the directory INSTALL_DIR\OracleCallCenterConnectors\bin, where INSTALL_DIR is the directory where Oracle Call Center Connectors is installed.
2. Verify that the `Use console?` check box is checked.
3. Activate the highest level of logging by checking all check boxes.

To run Oracle Call Center Connectors in console mode:

1. From the Windows NT Taskbar, navigate to **Start** > **Control Panel** > **Services**.
2. In the Services dialog box, verify that Oracle Call Center Connectors is *not* already running as a Windows NT Service. If it is running, click **Stop**.
3. Open the MS-DOS command prompt.
4. Navigate to the directory where the file opentelproxyserver.exe is located, for example, D:\Oracle\OracleCallCenterConnectors\bin.
5. Type **`OpenTelProxyServer.exe /console`**.
6. To stop Oracle Call Center Connectors in console, press Ctrl-C using your keyboard.

   When you are done with troubleshooting, make sure you turn off all logging by unchecking all the check boxes in ot32cfg.exe.

7.3 Collecting Intel CT Connect Trace Files

Use the steps below to collect CT Connect trace files.

Prerequisites

The ctccp.exe file is not installed with the CT Connect Client. To obtain this file, you must install the CT Connect Server.

Steps

1. Launch the CT Connect Control Program ctccp.exe.
2. Enter the following command to enable ctcfull logging:

   ```
   ctccp> set trace /level=ctcfull /log=logical_identifier /state=on
   ```

   Where `logical_identifier` is an identifier for the logical link between the CTC server and the switch. For command syntax, enter the help command to display the Help Topics dialog box and search for SET TRACE in the Index tab.

Trace information is formatted and written to a trace file on the CTC server. After the CTC trace facility has written approximately 1000 records to a file, it is automatically closed. Tracing continues, and the results are written to a new trace file with the file name extension increased by 1, for example, CTCTRACE.001, CTCTRACE.002, and so on.

3. To properly close a trace file, use the SET TRACE command to switch tracing OFF.

8 Oracle Call Center Connectors Implementation Worksheets

Use the following worksheet to ensure you have correctly installed and implemented Oracle Call Center Connectors:

8.1 Planning Considerations Worksheet

Use the following worksheet to map out your needs when installing and configuring Oracle Call Center Connectors:

1. Is this a single site interaction center or a multi-site interaction center?

   If it is a multi-site interaction center, you must install Oracle Call Center Connectors on each server housing a VDU card.

2. Will you be utilizing predictive dialing?

   If so, then you must install at least one VDU card on the Call Center Connectors Server.

8.2 Pre-Installation Worksheet

Use the following worksheet to verify that all of the dependencies for Oracle Call Center Connectors have been installed, configured, and tested.

_____Is the switch installed and configured?

_____Has the switch been tested?

_____Is the Server on which you will be installing Oracle Call Center Connectors running on either Microsoft Windows NT 4.0 (Service Pack 4 or above) or Microsoft Windows 2000?

If not, you must first install one of these operating systems on the server before you install Oracle Call Center Connectors on the server. Call Center Connectors is only certified for these two operating systems.

_____Have you installed and configured the CTI middleware (Intel CT-Connect or Cisco ICM) for use with Oracle Advanced Inbound and/or Oracle Advanced Outbound?

_____If you are using Intel CT Connect, have you installed the CT Connect client APIs on the Call Center Connectors server?

_____Have you tested the CTI middleware to insure it has been installed and configured properly, and is working correctly?

_____Have you tested the switch - middleware for inter operability issues?

> If not, you can check this with the testing utilities provided with the 3rd party middleware.

8.3 Oracle Call Center Connectors Installation Worksheet

Use the following worksheet to ensure you record all the information you might need during the installation of Oracle Call Center Connectors:

Downloading the Oracle Call Center Connectors setup .zip file (cctietsetup.zip)

_____Note the directory name into which you downloaded the .zip file.

_____Note the directory name into which you unzipped the .zip file.

_____Note the directory name into which you extracted the .zip file.

Installing Oracle Call Center Connectors

_____Note the source area path.

_____Note the destination area path.

_____Note the name you typed in the **Name** field for the directory.

_____Note the name you typed in the **Name** field for the service.

_____Note the port number you are using

_____Note the port number you are using (if more than one instance of Call Center Connectors will be on the same machine)

_____Note the port number you are using (if more than one instance of Call Center Connectors will be on the same machine)

If you are installing a single instance of Oracle Call Center Connectors, use port number 3201. If you plan to configure more than one instance of Oracle Call Center Connectors on the same machine, select an unused port number between 3300 and 5000.

8.4 Oracle Call Center Connectors Configuration Worksheet

Use the following worksheet to ensure you record all the information you might need during the configuration or reconfiguration process:

Configuring Oracle Call Center Connectors

_____If you are using Intel CT Connect as your CTI middleware, have you installed and configured the CT Connect Client APIs on the Call Center Connectors Server?

_____Note the name you typed in the **Name** field for the service.

_____Note the port number you are using

_____Note the port number you are using (if more than one instance of Call Center Connectors will be on the same machine)

_____Note the port number you are using (if more than one instance of Call Center Connectors will be on the same machine)

If you are installing a single instance of Oracle Call Center Connectors, use port number 3201. If you plan to configure more than one instance of Oracle Call Center Connectors on the same machine, select an unused port number between 3300 and 5000.

_____What level of logging do you want to use?

The Logging level can be set to a level between 0 and 4. The higher the level of logging, the more detailed the logging is. Higher levels are useful for troubleshooting, but can impact system performance.

9 Documentation Accessibility

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