

Oracle® eMail Center

Implementation Guide

Release 11*i*

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ORACLE®

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Oracle eMail Center Implementation Guide, Release 11*i*

Part No. A86113-07

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Preface

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

This Implementation Guide provides information and instructions to help you effectively implement Oracle eMail Center.

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

Intended Audience

This guide is aimed at the following users:

- Anyone implementing Oracle eMail Center

This guide assumes you have the following prerequisites:

- Understanding of the company business processes
- Knowledge of products and services as defined by your marketing policies
- Basic understanding of Oracle

Structure

This guide contains the following sections:

- [Section 1.1, "eMail Center Overview"](#)
- [Section 1.2, "Application Architecture"](#)
- [Section 1.3, "eMail Center Processing"](#)

- Section 1.4, "Desktop Processing"
- Section 1.5, "Planning the Implementation"
- Section 1.6, "Integration Dependencies"
- Section 1.7, "Installation"
- Section 1.8, "Implementation"
- Section 1.9, "Troubleshooting"
- Section 1.10, "Abbreviations"
- Section 1.11, "Glossary"
- Section 1.12, "Related Documentation and Resources"

Related Documents

For more information, see the following manuals:

- *Oracle Email Server Installation and Configuration Guide*
- *Oracle Email Server Implementation Guide*

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Implementing Oracle eMail Center

This document contains the following sections:

- [Section 1.1, "eMail Center Overview"](#)
- [Section 1.2, "Application Architecture"](#)
- [Section 1.3, "eMail Center Processing"](#)
- [Section 1.4, "Desktop Processing"](#)
- [Section 1.5, "Planning the Implementation"](#)
- [Section 1.6, "Integration Dependencies"](#)
- [Section 1.7, "Installation"](#)
- [Section 1.8, "Implementation"](#)
- [Section 1.9, "Troubleshooting"](#)
- [Section 1.10, "Abbreviations"](#)
- [Section 1.11, "Glossary"](#)
- [Section 1.12, "Related Documentation and Resources"](#)

1.1 eMail Center Overview

Oracle eMail Center is a complete solution for managing both inbound and outbound email interactions with customers, partners, suppliers, employees and other entities that interact with an organization.

Oracle eMail Center invokes appropriate, customizable processes that are targeted to handle different types of inbound email interactions. Every inbound email is analyzed using the interMedia Text (iMT) component of the Oracle 8i database to

determine the intent of the message based on its linguistic properties. iMT provides a string of keywords or themes which are utilized by the classification engine to classify or categorize the email. eMail Center also uses the same set of keywords or themes to search the Knowledge Base for related documents. The email is then routed to a queue which can be accessed by a pre-defined group of agents, based on user-defined rules which could use data extracted from the email header, email classification (or category) and system variables such as time of day, and so on.

When the first available agent requests the next email interaction from the queue, the email is assigned to that agent and can no longer be viewed by other agents who are handling that account (or queue). Oracle eMail Center provides an agent with tools and capabilities to maximize their productivity and effectiveness. The Agent User Interface (UI) displays the list of classifications (or categories) pertaining to that email sorted by their associated confidence scores (percent probability) and also provides the agent with a list of fully formed suggested responses for each of the above classifications, which are also sorted by their respective confidence scores.

In this way, the agent can respond to multi-issue emails by using the point-and-click action of a mouse button. Agents can also access the knowledge base repositories and attach documents to the email response. Additionally, the agents can browse through the folders on their desktop and select documents to be attached.

In addition to managing inbound email interactions, eMail Center provides capabilities to initiate and manage outbound interactions. An agent can be provided with a set of templates or style sheets for composing outbound emails which are not in response to an incoming email. The agent can insert text into the email by browsing through the documents available in the Knowledge Base and selecting them to be inserted into the email by the click of a mouse button. A full featured editor enables the agent to customize the responses as well as outbound email messages. You can leverage the power of Oracle eMail Center to analyze incoming emails and extract data, and its integration with other eBusiness applications.

Oracle eMail Center is a comprehensive email interaction management solution for service, marketing and proactive relationship management that ultimately translates to a better customer experience.

1.2 Application Architecture

Oracle eMail Center is comprised of the following main components.

eMail Center Agent User Interface

A Java Server Pages (JSP) based application that runs on the agent desktop in an Internet browser. The supported browser is Microsoft Internet Explorer 5.0 and higher. It utilizes two Java Applets, an editor applet that allows the user to compose messages and select the font, color, formatting, etc., and it also allows importing of images (both .gif and .jpg files) and the second is a hidden applet, which maintains a connection with the Universal Work Queue (UWQ). This applet allows the exchange of information between eMC Agent UI and UWQ.

eMail Center System Administration Interface

A Java Server Page (JSP) based graphical user interface allows defining and viewing of various eMail Center components. An administrator can define email accounts, IMAP servers, SMTP servers and database links.

eMail Center Operations Manager Interface

A Java Server Page (JSP) based graphical user interface allows authorized interaction center domain experts (operations managers) to configure operational rules or business practices for eMail Center. The Operations Manager can create and fine tune email classifications and themes from this interface.

eMail Center Server

Is a multi-threaded Java based server that delivers information derived from an email message to the Oracle Telephony Manager server for routing and delivery to the appropriate agents.

eMail Center Workflow

This is the workflow based engine that process all inbound email messages. It can be customized to process emails based on different business needs.

Oracle Email Server (OES)

This is the mail server that receives and sends the emails for eMail Center.

1.2.1 Other Modules, Servers and Components

Oracle eMail Center also uses the following other modules, servers and components.

CRM Modules

eMail Center uses several features of the CRM products, such as the Marketing Encyclopedia System (MES), Universal Work Queue and Interaction History.

Oracle Telephony Manager Server

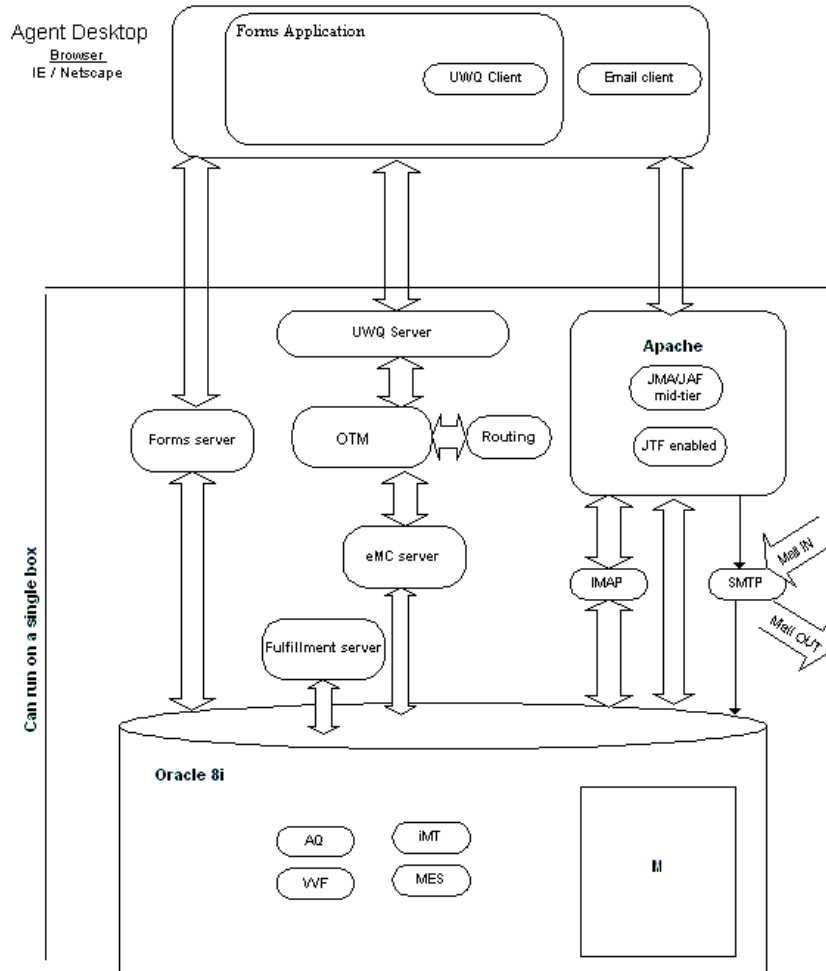
Oracle Telephony Manager (OTM) holds the state of all the agents and maintains the distribution queues for all interaction center media. OTM drives the routing server to determine which agents are to receive email. OTM receives the email from eMail Center and sends it to the routing server. The output of the routing server is a list of agents qualified to handle the interaction. Based on this list, OTM distributes email. “Distribute” in this case means that it puts the email into the agent queues that the routing engine identified.

This process occurs once for every new email. Although many agents might see the email in their queue, only one agent will service the interaction. Upon delivering the email to an agent, OTM removes it from all other agent queues. When an agent selects the email from the queue, OTM fires an event to the agent desktop. When this happens, the agent might see a screen pop with a subset of the information contained in the email interaction.

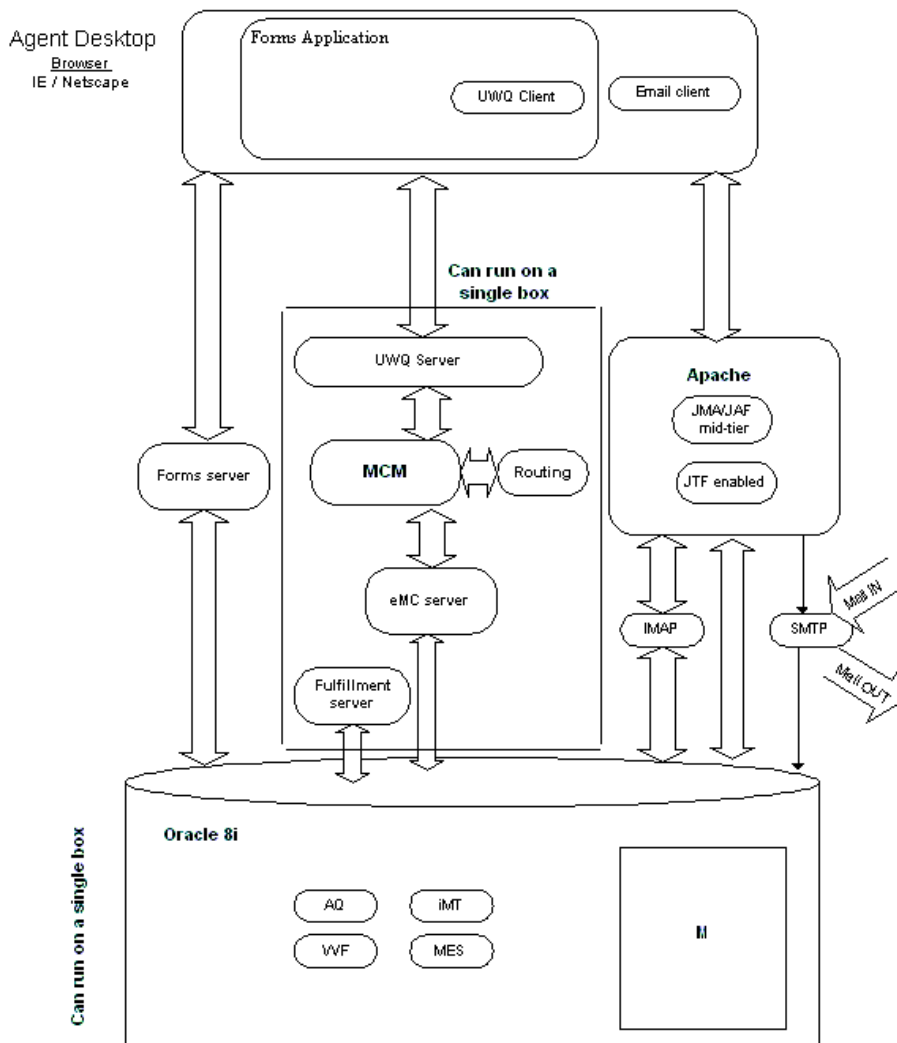
1.2.2 Application Configuration

These figures show a typical and an alternate configuration of the various servers.

Typical eMail Center Install



Non-Typical eMail Center Install



1.3 eMail Center Processing

When an incoming email arrives at Oracle Email Server (OES) component of the Oracle eMail Center, OES queues the email for the workflow to process and make

available to an agent. The information from the email header and readable attachments are then extracted from the email and is concatenated to the body of the email.

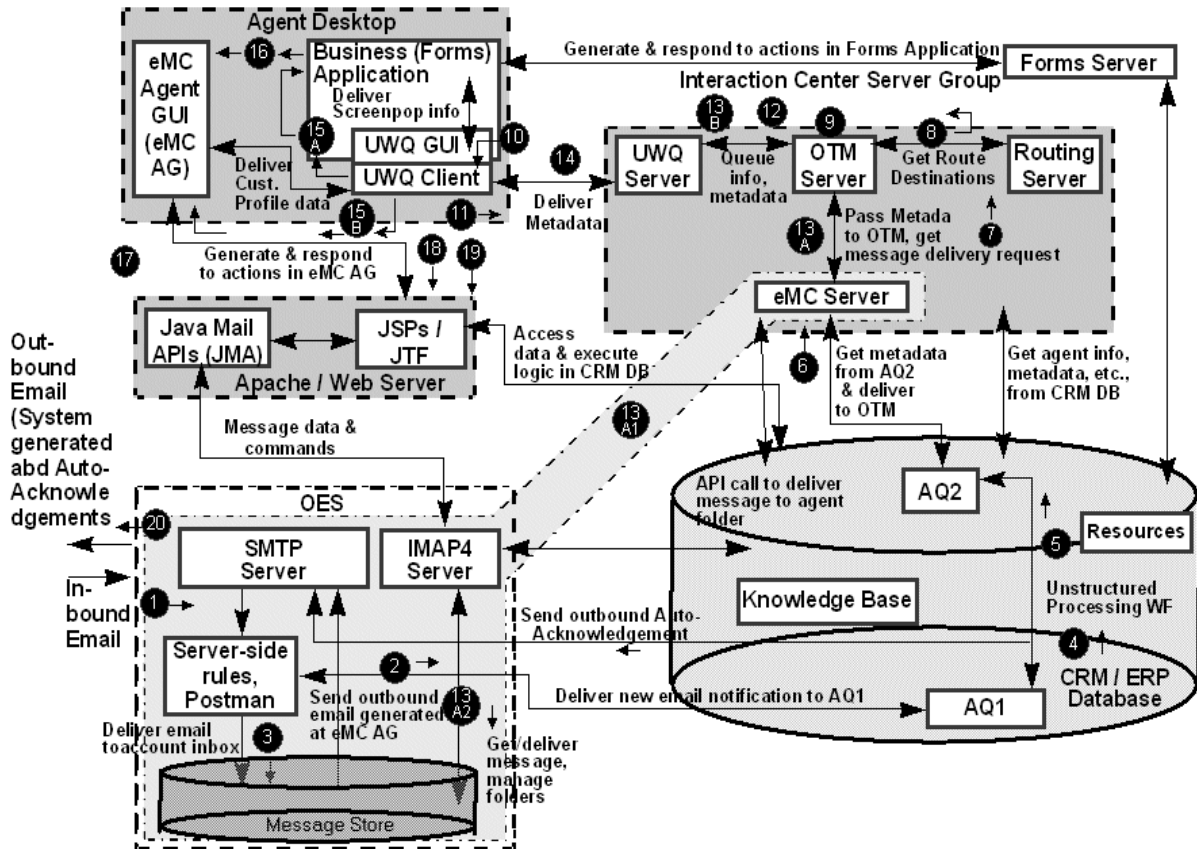
The data from the incoming email (along with the header and attachment data) is then analyzed by the interMedia Text (iMT), which then provides a string or signature of keywords or themes. The signature is then used by the classification engine to categorize or classify the email and also scan the knowledge base repository for related response documents. The meta-data regarding the email and top (based on the calculated confidence score or percent probability) classifications and top suggested response documents is then made available to Oracle Telephony Manager (OTM) through the Oracle eMail Center server.

The routing engine then uses the meta-data and applies user-defined rules to route the email to an account or queue. The OTM server then provides the queue information to the Universal Work Queue (UWQ), which displays the totals for every account or queue to which an agent is assigned.

When an agent selects a particular email queue in the UWQ and request the next interaction, the UWQ informs the OTM server regarding the agents request, which in turn requests the Oracle Email Server to assign the next email in the queue to that particular agent. Oracle Email Server transports the email to the agent's personal folder.

At the agents desktop, the business application is launched displaying the customer contact information. The eMail Center Agent UI is also launched with the contents of the fetched email displayed for the agent to preview. The agent can then perform any of the operations discussed in detail in the following section titled "Desktop Processing."

Finally, the agent is required to end the current interaction to be able to fetch the next email (or any other media supported in the interaction center) interaction.



1. Inbound email arrives at the SMTP Server.
2. OES attempts to place the email ID into AQ1.
 - OES (Oracle Email Server) lets eMC know that a new email has arrived by executing a server-side rule that places the email ID in AQ1.
 - AQ (Advanced Queuing) is a feature of the Oracle 8i database that provides asynchronous notification between components. In this case, AQ1 items are picked up by the unstructured workflow that is initiated by the Concurrent Manager.
3. OES delivers the incoming message to the appropriate account inbox folder if the email ID was successfully put in to AQ1.

- If the email ID could not be put in to AQ1, the incoming message is delivered to the RETRY folder of the appropriate account.
 - Later (controlled by the administrator), eMC processes items in the retry folder and attempts to put the email IDs of these items into AQ1.
- 4. Concurrent Manager launches the unstructured email processing workflow.
 - The unstructured email processing workflow (WF) picks up the next email ID from AQ1 and begins processing the associated email.
 - The appropriate path in the unstructured processing WF is executed, based on the OES account to which the email was delivered.
 - The account is a business account, such as “support”, “service”, “sales”, or “marketing”. Later in this diagram, the email message is moved to the account of an agent associated with the business account.
 - (go to step 5A)

(5A) Unstructured email processing continues.

- Execute any user defined business rules / procedures to analyze the email.
- The iMT based automated intent analysis is performed to generate suggested classifications and suggested responses for the email being processed.
- Note: The ability to send an automated response if the confidence threshold is exceeded is only available as a local customization

(5B) Unstructured email manual (agent) response.

- Additional implementation specific unstructured email processing (if any) is done and the email ID, along with other metadata, is delivered to AQ2.
 - AQ2 is another advanced queuing notification, similar to AQ1.
 - AQ2 is an asynchronous notification between the unstructured workflow and the eMC server.
- 5. eMC Server fetches the metadata from AQ2.
- 6. eMC Server delivers the metadata to Oracle Telephony Manager.
- 7. Oracle Telephony Manager sends the metadata to and gets back route destinations from the Routing Server.
 - The Routing Server evaluates implementation specific static or dynamic routing rules to determine route destinations for the email message.

- The Routing Server specifies which individual agents can receive the email message. (The individual agents are the route destinations).
 - If an agent group qualifies for the email message, the Routing Server identifies all the agents in the group as route destinations.
 - The route destination information is sent to Oracle Telephony Manager.
8. Oracle Telephony Manager adds the email item to the personal queue of each agent specified by the Routing Server.
 - Oracle Telephony Manager keeps track of the status of all the agent queues. It manages the agent queues.

Note: Step 9 is the end of the email driven process. That is, the arrival of a new email message triggers the processing described up to this point.

9. In the agent work area, the agent requests the next media item (email) from the UWQ GUI.
 - Agent selects the appropriate email account / campaign in UWQ and clicks on the “Get Work” button in the UWQ GUI.
 - The UWQ GUI form invokes the UWQ Client bean.
 10. UWQ Client sends the “Get Work” request to UWQ Server.
 - It specifies which agent is making the request.
 - It specifies that the request is for the next email item.
 11. UWQ Server passes the “Get Work” request to the Oracle Telephony Manager Server.
 12. **(13A)** Oracle Telephony Manager passes the “Get Work” request to the eMC Server.
- (13A1)** The eMC Server makes a call to OES to move the appropriate email message from the account inbox to the agent’s email folder inbox.
- (13A2)** OES executes the request.
- OES moves the email message content from the account Inbox to the agent’s folder.

(13B) Oracle Telephony Manager passes the email item metadata to the UWQ Server. The metadata contains:

- Media item type (email, telephony, ...)
- Email ID (MSG_ID)
- Sender's email address
- Other key value pairs

13. UWQ Server passes the metadata to the UWQ Client.

14. (15A) UWQ Client pops the business application and sends it the metadata so that fields in the business application screen are filled appropriately.

- In most cases, the sender's email address from the incoming message is used to identify the customer and populate the business application form with the appropriate customer information

(15B) UWQ Client pops the eMC Agent UI (eMC AG) to the "Preview" screen. The actual message content is retrieved from agent's folder in the OES Message Store and displayed in the eMC AG

- The agent can read the message and choose to:
 - **Respond** to the message
 - **Cancel** immediate processing of the message (put it off until later)
 - **Reroute** the email
 - **Forward** the email
 - **Transfer** the email

Note: Only the **Respond** option is used as an example.

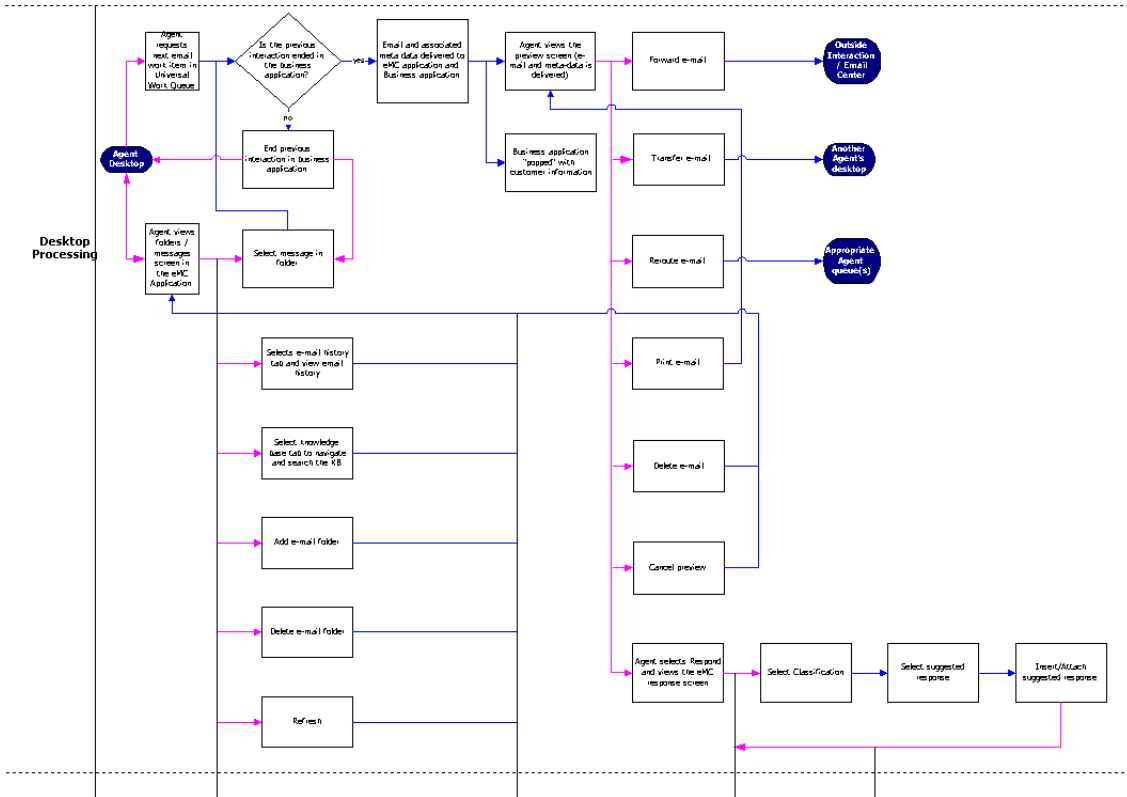
15. On the Agent UI, eMC AG displays customer data, made available from the business application by the UWQ Client.

- eMC AG displays the customer data in its Customer Profile area.
- TeleService Contact Center is an example of a business application.
- UWQ Client delivers the screen pop to the business application form being displayed on the Agent UI (see 15A).
- The business application form sends appropriate data to eMC AG for display.

16. The agent selects the 'Respond' option in the eMC AG 'Preview' screen and the 'Response screen is displayed.
 - Other metadata for the message retrieved from the database and displayed in the various eMC AG screens includes:
 - Suggested classifications
 - Suggested responses
 - Marked up message information
17. JSP / JTF components interpret actions taken in the eMC Agent UI and makes the appropriate API calls in response to these requests to perform the desired actions.
18. Create and send the agent generated response.
 - The agent constructs the response in the editor by typing in the response and / or picking up suggested responses or response documents and attachments from the knowledge base or file system.
 - The response is composed and formatted by the JSP / JTF servlets on the web server.
19. The outbound email submitted is sent to the SMTP server process running on the host machine.

1.4 Desktop Processing

The eMail Center Agent UI provides an agent with the capability and functionality to respond to incoming emails as well as compose outgoing emails with sheer point-click action of the mouse button, thereby increasing the productivity of the agent. Below we discuss the various screens available to the agent while processing an incoming email or generating an outgoing email and the functionality provided in each screen.



1.4.0.1 My Messages Screen

In this screen all folders pertaining to that agent are displayed. For every account that the agent handles an inbox is created along with a Draft folder. The agents can add/delete other personal folders and move messages within the folders using the self-explanatory buttons provided on this screen. Only emails fetched by the agent which have yet to be responded to are displayed in the Inbox. Once an agent responds to an email, the email is moved out of the agents folder into a universal “Resolved” folder for that account. If the agent decides to delete an email, then the email is moved from the agents folder to the universal “Delete” folder for that account. The agent can preview an email by clicking on the subject line of the email or compose an outbound email by clicking on the Compose button. The agent is also provided an option to fetch multiple emails from this screen, rather than attend to single interactions. However the agent has to end an interaction if they are currently attending to one prior to fetching future interactions.

1.4.0.2 Preview Screen

When the agent selects the next email interaction from the Universal Work Queue, the contents of the email is displayed in the Preview screen. In the Preview screen, the agent is provided with the following options:

- Respond
Agent will select this option if they wish to respond to the incoming email inquiry.
- Transfer
If the agent feels that they are not the expert on the subject that email is referring to, they can transfer the email to another agent, who is known to be the expert on that particular subject.
- Forward
Forward option enables the agent to forward the email to anybody inside the organization (external to the interaction center) or outside the organization.
- Reroute
Reroute directs the email back to the routing server to route it again. This is primarily useful if the agent is not an expert on the subject and is not aware of which agent has the expertise.
- Print
Prints the email currently displayed in the preview screen.
- Delete
Enables the agent to delete the email they are currently reviewing. The eMail Center does not physically delete the email but stores the email in a “Delete” folder for that email account.
- Cancel
If the agent does not wish to take any action at this time, then they can cancel the preview operation without taking any action.

1.4.0.3 Respond Screen

This screen provides the agent with the functionality to respond to incoming emails by selecting top classifications and the top responses for each classification and customizing the response by using the full featured editor. The agent also has the option of attaching or inserting documents from the Knowledge Base or their

personal hard drive. The top classifications or categories displayed in the bin on the left hand side. When the agent clicks on the classification name, the list of top suggested responses for that classification is displayed in a separate pop-up window. The agent can then view the contents of any of the suggested responses by clicking on the response document title. The customer name will be automatically merged into the response document as a result of the integration of eMail Center with the business application. The agent can then insert the document into the response or attach it to the response. In the response screen, the agent has the following options:

- **Send**

When the agent has composed a response to the incoming email, the agent can send the response back to the customer by clicking the Send button.

- **Cooperate**

The Cooperate functionality enables the agent to collaborate with another agent on a multi-issue email. The email response drafted by the first agent is then forwarded to the second agent who adds to the response and sends the response to the customer.

- **Attach**

This feature allows agents to add documents from their personal hard drives to responses.

- **Save**

Using this option, agents can save the draft of the response if they wish to complete it later.

1.4.0.4 Compose Screen

The agent can compose an outgoing email (that is not a reply to an incoming email) to a customer by clicking on “Compose” from the agent’s messages screen. The Compose screen provides the agents with templates or style sheets that they can use as building blocks for composing emails. The agent can click on the Knowledge Base tab to view documents stored in the repository and to add/insert to the same response.

1.4.0.5 Knowledge Base Screen

When an agent clicks on the Knowledge Base tab, the documents stored within the Marketing Encyclopedia system are displayed. The agent can either search for a

document or flow through the navigation tree to view a particular document. An agent is able to insert the contents of a document into the response or attach it.

Note: In the current release, documents that contain embedded image files can **ONLY** be inserted into the response, they **CANNOT** be attached to it.

1.4.0.6 History Screen

The History screen enables an agent to view the contents of an archived email. However, the agent needs to know the message ID of the archived email.

1.5 Planning the Implementation

Implementing Oracle eMail Center is a complex process that requires knowledge of a variety of technologies and processes. Persons implementing Oracle eMail Center should have a working knowledge of Oracle Forms, HTML, Java, and the installation platform (Windows NT or Unix), in addition to an understanding of the operational requirements of an interaction center.

This topic group contains an implementation planning questionnaire that will help you determine and collect information you will need during the implementation process.

1.5.1 The Implementation Process

The following diagram depicts the implementation process for eMail Center:

Planning the Implementation	Integration Dependencies	Installation	Implementation/ Running eMail Center
Planning Questionnaire	Oracle Email Server/ Internet Messaaging	Pre-install Steps	Create email accounts on the email server
	Oracle interMediaText	Auto Install	Create user accounts
	Oracle Telephony Manager and Rounting Server	Post Install	Define Email Server Accounts
	Work Blending	Install & Configure Interaction Center Servers	Configure eMail Center Properties
	Universal Work Queue		Create Classifications and Themes
	Interaction History		Upload Suggested Respnse Documents
	Forms Business Application/ Concurrent Manager		Configure Email Processing Workflow
	Knowledge Management Systems (SMS & MES)		

1.5.2 Implementation Planning Questionnaire

The following questions provide a high level overview of the information necessary to successfully implement Oracle eMail Center. This is information that should be decided upon prior to beginning the implementation process.

Use the following questionnaire to gather information crucial to the implementation process:

1. What email addresses does the business want to set up to receive email?

You will need to define the corresponding email accounts on OES to which inbound email will be directed. Examples could be: support@company.com, info@company.com, promotions@company.com, sales@company.com, etc.

2. For each email account to be defined, which agents will be processing interactions?

Note: An agent may be defined for multiple accounts, e.g., if an agent needs to work on email interactions sent to the 'support' account as well as those sent to the 'info' account.

3. How will agents be grouped for each account?

Is it sufficient to define only one group for all the agents assigned to a particular account, or does it make sense to divide the agents into groups?

It would make sense to define multiple agent groups for a particular account if there will be different agents who focus on working on certain types of issues / classifications for the account, so that routing rules can be set up appropriately.

Note: Setting up multiple groups for a given account does not mean that you cannot route a given interaction to multiple groups. Defining multiple groups provides additional granularity for routing purposes.

4. For each account, what's the set of classifications that need to be defined?

These classifications are essentially labels for the buckets into which the customer wants to sort incoming emails for a particular account. Classifications can be used to route individual emails to agents as well as select the appropriate responses from the knowledge base. The subject matter for each classification should be mutually exclusive and collectively exhaustive for emails expected to be received in that account.

5. What are good sample messages for each classification?

- Does the customer already have sample data?
- Do you need to create samples for classifications?
- Do the samples completely represent the different subject matter anticipated in emails belonging to the classification?

Note: The quality of the sample messages directly impacts the effectiveness of the classification functionality. Sample messages should only contain text that is directly relevant to the subject matter for that classification (the text can be regular sentences as opposed to a list of keywords, but should not contain text such as ‘Thank you in advance for your prompt attention to this matter,’ or other extraneous text).

6. What are good sample responses for each classification?
 - Does the customer already have sample data?
 - Do you need to create samples for classifications?
 - Do the samples completely represent the different types of responses for the classification?

Ideally, there should be at least one sample response for each sample message. As is the case with sample messages, the quality of the sample responses directly impacts the effectiveness of the response selection functionality and should only contain text that is directly relevant to the response subject matter.

7. What documents need to be uploaded to the knowledge bases?
8. What static routing rules need to be defined?

What should be the destination agents / agent groups for each static route?
9. What dynamic routing procedures / workflows need to be developed?

What are the implementation details for creating the stored procedures / workflows?
10. What keywords or key phrases in the headers or contents of a message indicate which eMC account a message belongs to?

For example, a message with the key phrase ‘service request’ belongs in the ‘support’ account, and if it was sent to the ‘info@company.com’ account it should be redirected to ‘support@company.com’.
11. What are the business requirements for processing unstructured emails?
 - What are the rules for determining when to send an auto-acknowledgement and selecting the response for the auto-acknowledgement?

- What information from the CRM DB needs to be extracted to make processing decisions for an email message?
 - What information should the system look for in the incoming message to use in rules processing?
 - And so on...
12. How should bounced messages and other responses to tagged emails be handled?
- Responses routed directly to the agent who sent out the message, or routed according to the routing server rules?
13. Notify sending application on message bounce?
14. What are the default outbound email header values for each account?
From address, reply-to address, etc.

1.6 Integration Dependencies

This topic group contains a list of the core products with which Oracle eMail Center integrates and a brief description of each core product.

1.6.1 Oracle Email Server (OES)

Oracle Email Server is the core email system. The native email functionality is supported by this system. Oracle Email Server has both PL/SQL and IMAP interfaces and is bundled with the Sendmail implementation of SMTP service.

The topics in this section describe its important sub-components.

1.6.1.1 IMAP server

Oracle Email Server implements the server section of the IMAP protocol. The server is mainly used by the IMAP implementation of JMA (middle tier) to access emails stored in the Message Store.

1.6.1.2 Message Store

The Message Store resides in an Oracle database (8.1.6), and it is a collection of database tables and stored procedures that implement the various email specific operations. Email accounts including folders, all incoming emails, and all outgoing emails are stored here.

1.6.1.3 SMTP Server

Currently Oracle Email Server is bundled with the Sendmail's implementation of the SMTP protocol. Various options like third party spam and virus checks can be added to make a more robust system.

1.6.1.4 OES PL/SQL APIs

The Oracle Email Server PL/SQL APIs extend the normal email functionality to implement rule based notifications, account maintenance, and interMedia Text (iMT) processing of incoming email messages. This additional functionality results in a close integration with the Oracle Email Server product.

Known Limitations:

- Oracle eMail Center is tightly integrated with this product. Other Email Services, existing or new, must integrate with this product.
- Spam and Virus check features are currently missing.
- Email encryption/decryption features are missing in the Oracle Email Server release 5.1.x.
- Oracle interMedia Text's linguistic processing currently work only on English text. Other languages are being supported in the future releases.

Platform Dependencies:

Oracle Email Server and its components are ported to most major platforms.

Configuration Options:

Oracle eMail Center can integrate to multiple instances of Oracle Email Server. In some cases there will be multiple instances of Oracle Email Server Message store, which share a common IMAP server and SMTP components.

1.6.2 Oracle interMediaText (iMT)

Oracle interMedia Text is a text/linguistic-processing module bundled as a component of Oracle 8.x database. It is mainly used to determine the intent of each incoming email message.

Known Limitations

- Oracle interMedia Text's linguistic processing currently work only on English text. Other languages are being supported in the future releases.

- Only bundled with Oracle 8 and higher versions. Not available on earlier versions.

Platform Dependencies

Ported to most major platforms.

Configuration Options

You can customize the linguistic processing module by modifying the theme and iMT Knowledge Base sections. This focuses the linguistic processor to look for more relevant information and enables you to fine-tune email processing.

1.6.3 Oracle Telephony Manager (OTM)

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

Known Limitations

Only one OTM server can exist per Interaction Center.

Platform Dependencies

A Java Server; Runs on Solaris and NT platforms.

Configuration Options

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

1.6.4 Routing Server

The Routing Server determines which agent(s)/agent groups get a new interaction. The routing can be skill and/or rule based. The routes are defined for various classifications and parameters.

Platform Dependencies

A Java Server; Runs on Solaris and NT platforms.

1.6.5 Work Blending

The Work Blending server determines the type (email, phone call, fax, etc.) of interaction an agent should service next. To make this determination, Work Blending obtains real time information about the agent from UWQ.

1.6.6 Universal Work Queue

UWQ Client and Server code work in unison to do the following:

1. Relay information between OTM and the Forms Application.
2. Capture certain information for statistical purposes.
3. Capture certain information for work blending purposes.

UWQ also works in conjunction with Work Blending to determine what type of interaction the agent should service next.

Platform Dependencies

- A Java Server; Runs on Solaris and NT platforms.

1.6.7 Interaction History (IH)

The Interaction History maintains all interaction life-cycle segments, i.e. accounts for the entire time duration beginning at the moment an Interaction (fax, phone call, email.) is registered in the system to the instant it is resolved. This is a cumulative record of all interactions passing through the system. It also records information about various agents who handled the interaction in the recorded time duration.

1.6.8 Forms Business Application

This can be any Oracle CRM Forms application (Oracle Service, Oracle TeleSales, Customer Care). These forms applications embed the UWQ client, enabling them to work with the Oracle eMail Center Agent UI. This is done via Java socket communication between the UWQ client and the eMC Agent UI. The business applications contain the necessary profiles and business intelligence.

1.6.9 Knowledge Management Systems (KMS)

At present, the Knowledge Management system consists of SMS and MES. All KMS interactions are channeled through the SMS system which exposes a single set of

APIs hiding the complexity of the various sub-systems. Both PL/SQL and Java APIs exist to enable interMedia based queries and retrievals.

Both MES and SMS are knowledge bases. eMail Center uses MES to store eMC specific documents. SMS is currently optional for eMail Center.

1.6.9.1 Solution Management System (SMS)

A repository of problem, diagnosis, related symptoms and their solutions.

1.6.9.2 Marketing Encyclopedia Systems (MES/KB)

MES is also known as the Knowledge Base (KB). It is a repository of various documents, URL, images and such. MES is partitioned into various application spaces, each application (e.g Tele-Sales, Oracle eMC, etc.) can store documents, URLs, images and such in its own private space in this system. Various PL/SQL and Java APIs and a JSP UI exists to create/upload, list, categorize and order these entities.

Platform Dependencies

- A database module; Oracle 8.x ported to most platforms.

1.6.10 Concurrent Manager

Concurrent Manager is a component of Oracle Application Object Library. It is responsible for scheduling and running various concurrent programs submitted by the user. It uses Distributed Concurrent Processing and can simultaneously run concurrent requests on several different server machines or CPUs. Oracle eMail Center makes use of this facility to schedule and run various email processing modules.

Platform Dependencies

- A database module; Oracle 8.x ported to most platforms.

1.7 Installation

This topic group covers the following topics:

- [Installation by Rapid Install](#)
- [Post-installation steps](#)

Note: Make sure Oracle Email server and interMedia Text are certified on your operating system platform before starting the installation. Oracle eMail Center requires these Oracle products to function.

1.7.1 The Auto-Installation Process

This topic provides a high level overview of the auto-installer (Rapid Install) process. This process installs the schema and core functionality (Foundation Components) for Oracle applications. There are five steps in the process, as well as some finishing steps that need to be performed to successfully complete the installation process.

Steps

1. Choose the desired install environment (production, test, or demo).
2. Select the products to install.
3. Select the NLS settings.
4. Select the location of the top-level directories.
5. Select the name of the configuration file.
6. Complete the finishing steps necessary for the products you selected to install.

References

For more detailed information on the Rapid Install process, please refer to the How Rapid Install Works topic group in the Installation Overview section, and the Running Rapid Install topic group in the Starting Your Installation section of the Oracle Applications *Installing Oracle Applications* documentation.

1.7.2 Post-Installation Steps

Two post-installation procedures are necessary for the eMail Center server side. The first procedure consists of installing and configuring the Email Server. The second procedure involves installing and configuring the eMC Server. For the second process, you will need the *Oracle Call Center Applications Setup CD*.

[Installing and Configuring Oracle Email Server \(OES\)](#)

[Installing and Configuring Oracle eMail Center Server \(eMC\)](#)

1.7.2.1 Installing and Configuring Oracle Email Server (OES)

Use this procedure to install and configure Oracle Email Server.

Prerequisites

Before configuring the Email Server, you should complete the initial Rapid Install process. The Oracle Email Server documentation provides detailed instructions on installing Email Server with Rapid Install.

Steps

1. Install Oracle Email Server (OES) 5.1 (patchset 3) on the same or on a separate instance as the Oracle Applications Instance. Follow the instructions provided in the *Oracle Email Server Installation Guide* (Installing Oracle Email Server section). Oracle Email Server was formerly known as Oracle Internet Messaging (IM).

In the post-install Email Server configuration, select **NO** for LDAP install. For more information on this step, refer to the *Oracle Email Server Installation Guide* (Configuring Oracle Email Server section).

Once the installation process is complete, you can configure the Oracle Email Server instance to talk with the Oracle Applications Instance.

2. Connect to the Oracle Email Server database instance with the **OO** user and password. Grant privilege on IM_IMT_EXTN to oraoffice.

Note: The default configuration is single instance. Single instance implies that Oracle Applications data and Oracle Email Server data reside in the same database.

3. Create a sqlnet tnsnames entry on the Oracle Email Server machine to point to the Oracle Applications Instance. (If installed on an instance separate from Oracle Applications Instance).
4. Create a Database Link to the CRM instance from the Oracle Email Server instance. You need the following:
 - Password for the Oracle Applications APPS schema.
 - Password for the Oracle Email Server OO schema.

Use SQLPLUS to login to Oracle Email Server as user **OO** (using the **OO** password entered during Oracle Email Server installation) and use the following to create the database link:

```
CREATE DATABASE LINK <link name> CONNECT TO <APPS  
username> IDENTIFIED BY <APPS password> USING <tns / service  
name>;
```

Note: The name of the above mentioned database link <link name> is used later to configure other eMC components.

1.7.3 Installing and Configuring Interaction Center Servers

Use the following procedures to install and configure interaction center servers. Email Center will not work without these servers installed, configured and running.

To install and implement the Interaction Center servers that are required to implement eMail Center, read the following documentation and follow the specified installation and implementation procedures.

Additional Required Documentation

Install the interaction center servers by reading Oracle Call Center Application Setup Guide, "Installing Call Center Applications Setup Components."

Implement the interaction center servers by reading the *Oracle Telephony Manager Implementation Guide*, "Defining an Oracle Interaction Center Server Group."

Basic Universal Work Queue setup is done with the other interaction server setup in the previous procedure. For additional questions or troubleshooting on UWQ, refer to the Oracle Universal Work Queue Implementation Guide.

1.7.3.1 Installing and Configuring eMail Center Server (eMC)

Note: Oracle eMail Center follows the Oracle standard for User Interfaces and the following field colors indicate:

Yellow - required field

White - optional field

Grey - read only field

Light blue - query mode

Overview

eMC Server is installed as part of the Call Center Applications installation process.

Prerequisites

Before you can create an eMC Server, you must create a Server Group for the eMC Server.

Note: The server group you create here will be referenced in the Create Account screen as an Interaction Center.

Perform the following steps to create a server group:

1. Open the Server Administration module from the Front Office Navigator, the Call Center Administration module, or the Routing Server Administration module.
The Server Locator Window opens at the Server Group tab screen.
2. In the Server Group Registration area, enter the server **Group Name**, **Location**, and **Description**.
3. From the File menu, choose **Save**.

Steps

1. From the Forms application login screen, login using the default system administrator user name and password.
2. From the list of application responsibilities, select **Call Center Server Administration**.

The Call Center Server Administration module appears.

3. From the Call Center Server Administration module, double-click **UWQ Server Locator** (if it doesn't open automatically).

The Server Locator screen appears.

4. From the Server Locator screen, click the **Server** tab.
5. In the Server Registration area, type data for the following fields:
 - Server Name
 - Server Location
 - Type Name - select **iCenter Server** from the drop-down list, click **OK**
 - Member Group Name - select the server group you want this server to belong to, click **OK**
 - Using Group Name - select the using group ID from the drop-down list, click **OK** This identifies other groups that have permission to use this server.

Note: DNS Name and IP Address will be automatically assigned after the eMC Server is run for the first time.

- User Address - optional field, enter information if you wish
 - Description - optional field, enter information if you wish
 - Server Parameter - not required for configuring eMC Server
 - Value - not required for configuring eMC Server
6. From the File menu, click **Save**.

References

For detailed information on installing eMC Server, please refer to the *Oracle Call Center Applications Setup* documentation.

Refer to the *Oracle Telephony Manager Concepts and Procedures* documentation for detailed information on creating a server group.

1.8 Implementation

This topic provides a high level overview of the implementation process. This section is designed to furnish you with an overall idea of the order in which the implementation of Oracle eMail Center occurs. Each of the steps will be expanded upon in individual topics.

Prerequisites

The installation process must be completed before you can begin implementing eMail Center.

Steps

1. Creating Email Accounts on the Email Server
2. Creating User Accounts
3. Defining Email Server Accounts
4. Creating an eMail Center Agent
5. Setting up Routing for Inbound Email.
6. Configuring eMail Center Properties
7. Configuring UWQ to Launch the Business Application
8. Creating Classifications and Themes
9. Creating Suggested Response Documents and Associated Queries
10. Using Email Processing Workflow
11. Administering Concurrent Manager

1.8.1 Creating Email Accounts on the Email Server

For detailed information about creating email accounts on the Email Server, refer to the Managing Directory Information chapter of the *Oracle Email Server Administration* documentation (Creating Email Server User Accounts section).

1.8.2 Creating User Accounts

Oracle eMail Center ships with four default responsibilities: eMail Center Administrator, eMail Center Operations Manager, eMail Center DBA, and eMail Center Client. The process of setting up Users with each of these Responsibilities consists of several steps.

Note: You should have system administrator level access to the forms based applications to perform these tasks.

1. Creating an employee (forms app)
2. Creating an application user and assigning user responsibilities (forms app)
3. Setting JTF default profiles (forms app)
4. Setting UWQ Default Profiles (forms app)
5. Creating CRM resource (forms app)

Table 1–1 Steps Necessary to Create Specific User Accounts

Step:	1	2	3	4	5
DBA	X	X			
Admin	X	X	X		
Ops. Manager	X	X	X		X
Agent	X	X	X	X	X ^t

^t You cannot perform this step until the OES accounts are defined in eMail Center

Note: You cannot create a CRM Resource for an agent at this time. You must first define the email server accounts as shown in the “Defining Email Server Accounts” topic.

1.8.2.1 Creating an Employee with HRMS

Use this procedure to create employees with the Oracle Human Resources Management System.

Prerequisites

To perform the following steps, you must have Oracle HRMS installed and configured. If you do not have Oracle Human Resources Management System installed, you will need to create the employee using the Oracle Resource Manager application.

Note: If the employee already exists, you do not need to perform this step.

Steps

1. From the Forms application login screen, login using the default system administrator user name and password.
2. From the list of application responsibilities, select **US HRMS Manager**.
The Navigator-HRMS Manager screen appears, displaying a list of functions.
3. From the list of functions, double-click **People**.
4. Double-click **Enter and Maintain**.
The Find Person screen appears.
5. In the Find Person screen, click **New**.
The People form appears.
6. On the form, enter all information in required fields, for example:
 - Last - (name)
 - First - (name)
 - Title - (select from the drop-down list)
 - Type - (select from the drop-down field)
 - Employee Number
 - Birth Date
 - Social Security Number (for US version only)
7. Save the record to complete the process of creating an employee.

References

For more information and detailed steps on creating employees, refer to the *Oracle HRMS/Payroll* documentation.

1.8.2.2 Creating an Application User and Assigning Responsibilities

Use this procedure to create application users and assign responsibilities.

Steps

1. Select File and switch responsibility to System Administrator.
2. In the Functions tab, navigate to **Security > User > Define**.
3. Enter the User Name and Password.
4. In the Person field, select the name of the person that you created in HRMS.
5. Select the appropriate eMail Center Responsibility or Responsibilities.

Table 1–2 User Types and Responsibilities

User Type	Responsibility
Administrator	eMail Center Administrator
Operations Manager	eMail Center Operations Manager
DBA	eMail Center DBA
Agent	eMail Center Client (agent interface)

6. Click **Save**.
7. Repeat steps 1 through 6 for each user and each responsibility.

Note: Create a unique User Name for each employee.

8. For an agent, in addition to assigning the eMail Center client Responsibility, you must assign a business application Responsibility, for example, Customer Care or TeleService.

1.8.2.3 Setting JTF Default Profiles

Use this procedure to set JTF default profiles.

Prerequisites

You must know the responsibility ID for eMail Center Administrator, Operations Manager and Agent before setting the JTF profile. To find the responsibility ID, perform the following steps:

1. From the Navigator System Administrator screen, click **Security, Responsibility**, then **Define**.
2. Query the desired responsibility based on the table below:

Table 1–3 User Types and Responsibilities

User Type	Responsibility
Administrator	eMail Center Administrator
Operations Manager	eMail Center Operations Manager
Agent	eMail Center Client (agent interface)

3. From the Help menu, click **Diagnostics > Examine**.
The Examine Field and Variable Values screen appears.
4. If the password prompt appears, enter the ORACLE password for the APPS account.
5. Click the drop-down list in **Field**.
The Choose a Field screen appears.
6. From the list in the Choose a Field screen, select the RESPONSIBILITY_ID.
7. Click **OK**.
The value of the RESPONSIBILITY_ID is displayed in the Value Field of the Examine Field and Variable Value screen.
8. Click **OK**.

Steps

1. From the Navigator System Administrator screen, click **Profile**, then **System**.
The Find System Profile Values screen appears.
2. Click the User check box and from the drop-down list in the User field, and select the user name.
3. In the Profile field, type **JTF_PROFILE_DEFAULT%** and click **Find**.
A list of system profile values appears.
4. In the User column, set the values for these profiles according to the following table.

Table 1–4 JTF Profile Values

Profile	Value	Description
JTF_PROFILE_DEFAULT_APPLICATION	680	eMail Center value for the application ID.
JTF_PROFILE_DEFAULT_LANG	US	This is the language code. (It is possible that you may not have this profile. If this is the case, your language setting is controlled by the ICX: Language profile).
JTF_PROFILE_DEFAULT_NUM_ROLES	15 (recommended)	This determines the number of rows you can see on each page when in browse mode.
JTF_PROFILE_DEFAULT_RESPONSIBILITY		This is the value responsibility ID you obtained in the prerequisite steps.

- From the File menu, click **Save**.

1.8.2.4 Setting UWQ Profiles

In setting up Universal Work Queue for email, there are several questions which determine the profile settings.

Site Level Versus User Level

If all of your agents will be doing email or all will be both email and telephony, then you can set those profile values in UWQ at the site level. If different agents will handle different media duties, then set the profile values at the user (agent) level for each individual user.

A setting at the user level will override a setting at the site level, so if the site is email only, you can set a particular agent to both email and telephony by setting the email and telephony profile values for that particular user. Most of the UWQ profiles have default values that can remain unchanged.

For details on each value, see the *Universal Work Queue Implementation Guide*.

Common Cases

To configure email on a working UWQ, change or verify the UWQ profile setting listed below that applies to your implementation.

1.8.2.4.1 Email Only

IEU : Queue : Inbound Email : Yes

IEU : Queue : Inbound Telephony : No

IEU : Queue : Web Callback : No

1.8.2.4.2 Email and Inbound Telephony

IEU : Queue : Inbound Email : Yes

IEU : Queue : Inbound Telephony : Yes

IEU : Queue : Web Callback : No

1.8.2.4.3 Email and Inbound Telephony and Web Callback

IEU : Queue : Inbound Email : Yes

IEU : Queue : Inbound Telephony : Yes

IEU : Queue : Web Callback : Yes

Steps

1. To set the UWQ profiles at the Site level, check the **Site** box in the Display area.
2. To set the UWQ profiles at the User level, check the **User** box and select the appropriate user from the list of values.
3. Type **IEU:%** in the **Profile** field (this will search for the appropriate profiles).
4. Click **Find**.
A list of profiles appears.
5. In the list of profiles, find **IEU: Queue: Inbound Email**.
6. From the drop-down list in the Site / User field, select **YES**.
7. Save the record.
8. Repeat steps 5 through 7, selecting profiles for **IEU: Queue: Inbound Telephony** and **IEU: Queue: Web Callback**.
9. In the list of profiles, find **IEU: Blending Style**, and then select **Not Blended** from the drop-down list in the User / Site field.
10. Save the record to complete the process of setting up UWQ profiles.

1.8.2.5 Setting CRM Resources

These steps should be performed to set CRM Resources for users with the Operations Manager responsibility.

Use this procedure to set the CRM resources.

Steps

1. From the Navigator System Administrator screen, click **File**, then **Switch Responsibility**.
2. Select the **CRM Administrator** responsibility.
A screen appears, displaying a list of functions.
3. From the list of functions, double-click the **Resource Manager**.
4. Double-click **Maintain Resources**.
5. Double-click **Import Resources**.
The Selection Criteria screen appears.
6. From the Resource Category field, select **Employee**.
7. From the Name field, select the new employee's name.
8. Click **Search**.
The Search Results list appears, displaying a row of data with Category set to Employee and Name set to the new employee's name.
9. Click **Create Resource**.
The Default Values screen appears.
10. Click **OK**.
The Selected Resource screen appears.
11. In the Selected Resources screen, click **Save Resource**.
12. Click **Details**.
The Resource screen appears.
13. In the Roles tab, select **Marketing Encyclopedia** from the drop-down list for Role Type and select **MES Administrator** from the drop-down list for Roles (this allows integration with the MES application).
14. Accept the default values on the remaining tabs.

15. From the File menu, click **Save** to save the resource.

1.8.3 Defining Email Server Accounts

This topic group provides a high-level overview of the steps necessary to define Email Server accounts in the eMail Center System Administrator Interface, a worksheet for gathering all the necessary information, and detailed steps for performing each part of the defining Email Server accounts procedure.

Note: The eMail Center System Administrator Interface is an HTML based console and is separate from the Oracle Applications forms based Admin console.

1.8.3.1 High-Level Steps

Prerequisites

To perform the following steps, you must have an administrator level status.

Steps

1. Create a Server Group entry.
2. Define an eMC Server entry and assign the eMC Server entry to the previously created Server Group.
3. Define an Email Db entry and assign this Email Db entry to the previously created Server Group.
4. Define one database link and create two others. You will define the link from OES to the Apps instance created earlier, and you will create two links to your Email Db (your Oracle Email Server database). One link for user <oraoffice> and one for user <OO>. In a single instance scenario, the database link would be self-referencing.
5. Define two Email Server entries, one IMAP and one SMTP, and assign them to the previously created Server Group.
6. Create an account for every user.

1.8.3.2 Worksheets

Use the following worksheet to gather all the necessary information for completing the detailed tasks in the Defining Email accounts procedure.

Create Server Group

Group Name: any unique name that you want to assign to a group.

Group Description: any free-form text that you want to use to describe the group.

Create EMC Server

EMC Server Name: any unique name that you want to assign to this server.

IP Address: the IP address of the machine on which the server is running.

DNS Name: the unique machine identifier on the network.

Group Server: the server group of which this server is a part, set in the previous step.

Create Email Database Server

Database Name: any unique name that you want to assign to the server.

Host Name: the domain name of the machine on which the server is running.

Port: the SQL *Net port of the database.

Protocol: the protocol for network communication, for example, TCP.

Database SID: standard system identifier for the database.

Server Name: the DNS entry of the machine on which the database is running.

Database Description: any free-form text that you want to use to describe the database.

RT Availability: run time availability, the default is YES.

Group Server: the server group of which this server is a part, set in the previous step.

Create Database Link

Database Name: the name of the eMail DB.

Database Global Name: the GLOBAL_NAME of the Oracle Email Server database. Enter the GLOBAL_NAME parameter value of the eMail DB for the OO and ORAOFFICE database links (from the application database to the Oracle Email Server), or the name of the APPS database link (from Oracle Email Server to the application database).

User: the database user.

Password: the password for the database user.

Create Email Server

Server Name: any free-form text that you want to use to describe the server.

DNS Name: the unique machine identifier on the network.

IP Address: the IP address of the machine on which the server is running.

Port: the port on which the IMAP server is running.

RT Availability: run time availability.

Group Server: the server group of which this server is a part, set in the previous step.

Server Type: the Email Server type. Select IMAP or SMTP.

Create Account

Name: any free-form text that you want to use to describe the account.

Email Account: the email account name.

Profile: any free-form text that you want to use to describe the account.

Email Server: the name of the eMail DB.

Interaction Center: the name of the interaction center server group.

1.8.3.3 Detailed Steps

Use the following procedures to define Email Server accounts.

Define Email Server Group

1. From the HTML login screen, type the eMail Center administrator user name and password.

Note: The email server group is different from the interaction center server group. The Email Server Group contains only email specific servers, such as IMAP, SMTP, OES Database and Email Center (EMC) servers. The Interaction Center Server Group contains UWQ, OTM, ITS, Routing and generic interaction center servers, plus the Email Center Server (EMC). The only server in common between the different server groups is the EMC server, so you must set up that server twice.

The eMail Center System Administrator Interface appears, displaying the Account, Server, and Queue tabs.

2. Click the Server tab and then the Group sub-tab.

The Server Groups screen appears.

3. From the Server Groups screen, click **Create**.

The Create Group screen appears.

4. Type a group name and a group description in the provided fields.
5. Click **Create** to save the record.

The server group is created and you return to the Server Groups screen.

Note: If you do not see your new server group displayed, use the **Next** and **Last** commands to locate it in the list.

Define EMC Server

1. From the Server tab, click the EMC sub-tab.

The EMC Servers screen appears.

2. From the EMC Servers screen, click **Create**.

The Create EMC Servers screen appears.

3. Type the EMC server name, DNS name, and IP address in the provided fields.
4. From the drop down list in the Group Server field, select the server group you previously created.
5. Click **Create** to save the record.

The EMC server is created and you return to the EMC Servers screen.

Note: If you do not see your new EMC server displayed, use the **Next** and **Last** commands to locate it in the list.

Define Email Database Server

1. From the Server tab, click the Email DB sub-tab.

The Database Servers screen appears.

2. From the Database Servers screen, click **Create**.

The Create Database screen appears.

3. Type the database name, host name, port, protocol, database SID, Service Name, database description, and RT availability in the provided fields.
4. From the drop down list in the Group Server field, select the server group you previously created.
5. Click **Create** to save the record.

The database server is created and you return to the Database Servers screen.

Note: If you do not see your new database server displayed, use the **Next** and **Last** commands to locate it in the list.

Create Database Link

Note: You will need to perform these steps three times: first, for the <oraoffice> user, next for the <OO> user, and then to define the link from OES to Apps that you created earlier.

Steps

1. From the Server tab, click the DB Link sub-tab.

The Database Links screen appears.

2. From the Database Links screen, click **Create**.

The Create Database Link screen appears.

3. From the drop-down list in the Database Name field, select the database name.
4. Type the Database Global Name, User and Password in the provided fields.
5. Click **Create** to create the record.

The database link is created and you return to the Database Links screen.

Define Email Server

Note: These steps apply to the OES processes, not to the EMC Server. You need to perform these steps twice: once to define the IMAP server and again to define the SMTP server. IMAP is the protocol for the Agent UI to talk to the server, and SMTP is the protocol for communications across the internet.

1. From the Server tab, click the Email sub-tab.
The E-mail Servers screen appears.
2. From the E-mail Servers screen, click **Create**.
The Create E-mail Server screen appears.
3. Type the server name, DNS name, IP address, port, and RT availability in the provided fields.
4. From the drop down list in the Group Server field, select the server group you previously created.
5. From the drop-down list in the Server Type field, select the email server type.
6. Click **Create** to create the record.

The email server is created and you return to the E-mail Servers screen.

Note: If you do not see your new email server name displayed, use the **Next** and **Last** commands to locate it in the list.

Queues

The Queue tab displays information about eMail Center queues. Queues are enabled by default. Clicking Refresh updates the status of the queues.

Create Account

Follow the steps below to create accounts, for example, Classification, Support.

1. Click the Account tab.

The Accounts screen appears, displaying information in table form for all current accounts.

2. Click **Create**.

The Accounts screen appears.

3. Type the account information in the **Name, Email Account, Domain, Profile, Email Server, and Interaction Center fields**.

4. Click **Create** to create the record.

You are returned to the accounts screen and your new account is displayed in the table.

5. Repeat steps 2 through 4 for each account.

Note: You must create at least one Email Account (for example, Support, Sales, and so on) to associate with your agents. Each agent must be associated with an account. You also must create an account called 'classification', if you wish to set up themes and classifications in the system.

For each email account defined in the eMail Center Admin console, the following folders are automatically created:

Resolved - The "Resolved" folder stores all incoming messages for that particular account, once the agent responds to it. For example, when an agent clicks on the "Send" button from either the "Respond" or "Forward" screen, the original incoming message is moved from the agent's folder to the "Resolved" folder for that particular account.

Sent - A copy of each email response generated by an agent is stored in the "Sent" folder for that particular account. When an agent clicks on the "Send" button from either the "Respond" or "Forward" screen, a copy of the outgoing email message is made and stored in the "Sent" folder for that particular account.

Deleted - The "Deleted" folder stores all incoming messages that were deleted. When an agent clicks on the "Delete" button from the "Preview" screen, the original

incoming message is moved from the agent's folder to the "Deleted" folder for that particular account.

Retry - The "Retry" folder stores all messages that fail with API errors while they are being processed. There is a concurrent manager request 'Process Retry Folder' that can be scheduled to reprocess these messages.

Admin - The "Admin" folder stores all messages that fail while reprocessing from the Retry folder. An administrator manually monitors this folder.

Using the above default folders, eMail Center provides the mechanism to store all incoming emails and a copy of all outgoing emails.

1.8.4 Creating an eMail Center Agent

1.8.4.1 Setting CRM Resources

When logged in to Forms, perform these steps to set CRM Resources for each eMC Agent user.

Use this procedure to set the CRM resources.

Steps

1. From the Navigator System Administrator screen, click **File**, then **Switch Responsibility**.
2. Select the **CRM Administrator** responsibility.
A screen appears, displaying a list of functions.
3. From the list of functions, double-click **Resource Manager**.
4. Double-click **Maintain Resources**.
5. Double-click **Import Resources**.
The Selection Criterion screen appears.
6. From the Resource Category field, select **Employee**.
7. In the **Name** field, select the name of the new employee that you created previously in the HRMS or Resources.
8. Click **Search**.

The Search Results list appears, displaying a row of data with Category set to Employee and Name set to the new employee's name.

9. Within the Search Results list, click the **Select** box for the appropriate employee.
10. Click **Create Resource**.
The Default Values screen appears.
11. Click **OK**.
The Selected Resources screen appears.
12. From the Selected Resources screen, click **Save Resource**.
13. Click **Details**.
The Resource screen appears.
14. In the Interaction Center tab, from the drop-down list in the Interaction Center field, select the interaction center that you defined previously.
15. Continuing in the Interaction Center tab, Email Parameters area, from the drop-down list in the Email Account field, select the desired **Email Account**. Select **Default** from the drop-down list for the **Parameter** field and click the **Value** field to select the default value (IEM_DEFAULT_VALUE).

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

16. In the Roles tab, select **Call Center** from the drop-down list for Role Type and select **Call Center Agent or Call Center Supervisor or Call Center Manager** from the drop-down list for Roles. This is required for integration with the Routing Server.
17. From the **File** menu, click **Save** to save the resource.

Default folders created for every agent

For every eMail Center user to whom eMC Agent responsibilities are assigned, the following folders are created automatically in the Oracle eMail Server:

Agent's User Name - For every account that an agent is assigned to, a folder bearing the agent's user name will be created.

Draft - For every account that an agent is assigned to, a "Draft" folder will be automatically created under the folder bearing the agent's user name.

1.8.5 Setting up Routing for Inbound Email

Use the steps in the following chart to set up rules-based routing. The Window Name(s) column shows you in which window(s) you perform a step, and for which responsibility the window is available. The Required column shows you if the step is required, optional, required with defaults, or conditionally required.

Step Number	Required?	Oracle Sales Setup Step Description	Window Name(s)	Responsibility
❑ Step 1	Required for rules-based routing	Define a group. See: “Defining Groups” in this document	Define Groups window; Dynamic Groups window	CRM Resource Manager
❑ Step 2	Required for rules-based routing	Define a route. See: “Defining Routes” in this document	Routing Administration window	Oracle Call Centers
❑ Step 3	Required for rules-based routing	Define the route priorities. See: “Defining Route Priorities” in this document	Routing Priority window	Oracle Call Centers
❑ Step 4	Required for rules-based routing	Define the classifications. See: “Defining Routing Classifications” in this document	Classification Administration window	Oracle Call Centers

1.8.5.1 Defining Groups

There are two types of groups for rules-based routing: static and dynamic. A static group requires that you manually edit information about individual group members. In a dynamic group, information about group members is updated automatically as the result of a SQL query.

For procedures, see:

- [Defining a Static Group](#)
- [Defining a Dynamic Group](#)

1.8.5.1.1 Defining a Static Group

Use this procedure to configure a static group for routing.

Prerequisites

None

Steps

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

The Routing Administration window appears.

- a. Click **Static Groups**.

The Define Groups window appears.

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

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

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

Caution: Enter an End Date only if you want to terminate the group. If you do not have an active group, the routing will fail and eMail Center will not be functional.

Use extreme caution when using this feature!

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

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

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

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

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

Use extreme caution when using this feature!

11. Select **File > Save**.

1.8.5.1.2 Defining a Dynamic Group

Use this procedure to configure a dynamic group for routing.

Prerequisites

None

Steps

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

The Routing Administration window appears.
 - b. Click **Dynamic Groups**.

The Dynamic Groups window appears.
2. If necessary, choose **File > New**.

3. Enter a unique name for the group.
4. In the **Usage** field, select **Call Center** from the list of values.

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

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

Caution: Enter an End Date only if you want to terminate the group. If you do not have an active group, the routing will fail and eMail Center will not be functional.

Use extreme caution when using this feature!

7. Enter the SQL statement that selects the members of the group. The SQL statement must return only a list of resource IDs.
8. Click **Check Syntax**.
If the SQL statement is invalid, then an error message appears. If the SQL statement is valid, then no message appears. This does not check that the return values are valid, only that the SQL is well formed.
9. From the **File** menu, choose **Save**.

1.8.5.2 Defining Routes

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

There are two types of rules-based routing, static and dynamic.

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

section, a static group is cached by the routing server and a dynamic group is evaluated by a SQL query.

Dynamic routing consists of rules defined in the routing administration form, which then direct the email to either a PL/SQL procedure or the routing workflow. The rule itself is similar to static routing, but the destination of the rule is different. An example of the first type would be “if the email user name = support then route to the agents returned by the PL/SQL procedure ‘CUST_GET_AGENTS’”. An example of using the routing workflow would be “if the email user name = support then route to the agents returned by the routing workflow ‘CCT_ROUTINGWORKFLOW_PUB.LAUNCH_WORKFLOW_VERSION5’ “.

For procedures, see:

- [Defining a Static Route](#)
- [Defining a Dynamic Route](#)

1.8.5.2.1 Defining a Static Route

Use this procedure to define a static route.

Prerequisites

Define a static group or a dynamic group. For more information, see [Defining Groups](#).

Steps

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

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

- d. Optionally, enter the free text Description of the static route.
- e. For static routes, select the default **Application Database**.
4. On the Route Rules tab, define the rules for the route.
 - a. From the Key list, select a key (for example, Email User Name).
 - b. Enter the value for the selected key (for example, Support).
5. On the Route Destinations tab, select the static groups or dynamic groups to which email may be routed.
6. From the **File** menu, choose **Save**.

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

1.8.5.2.2 Defining a Dynamic Route

Use this procedure to define a dynamic route.

Prerequisites

None

Steps

1. Navigate to the Routing Administration window.
 - In the Navigator window, on the Functions tab, choose **Call Center Admin > Routing Administration**.
The Routing Administration window appears.
2. If necessary, choose **File > New**.
3. In the Route Definition area, identify the route.
 - a. Enter a unique name to describe the route.
 - b. From the Route Type list, select **Dynamic**.

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

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

- d. Optionally, enter the free text description of the dynamic route.
- e. If either of the following conditions is true, select **Application Database**:
The PL/SQL procedure that is the route destination is stored in the Oracle Applications database.

OR

The routing workflow is the route destination.

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

4. On the Route Rules tab, define the rules for the route.

- a. From the Key list, select a key (for example, Email User Name).
- b. Enter the value for the selected key (for example, Support).

5. On the Route Destinations tab:

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

OR

Select the routing workflow from LOV.

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

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

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

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

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

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

Define all parameters for the procedure.

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

1.8.5.3 Defining Route Priorities

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

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.

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

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

Prerequisites

None

Steps

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

The Routing Priority window appears.

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

1.8.5.4 Defining Routing Classifications

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

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

Every classification must have rules that define the conditions under which the classification occurs. For example, if Customer Name=Oracle Corporation then the classification=Gold Support.

A classification can have multiple rules associated with it. Every classification rule has a Key and a Value whose relationship is defined by one of the available Operations (=, !=, >, >=, <, <=).

For procedures, see:

- [Defining a Literal Classification](#)
- [Defining a Database Procedure Classification](#)

1.8.5.4.1 Defining a Literal Classification

Use this procedure to define a literal classification.

Prerequisites

None

Steps

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

The Classification Administration window appears.

2. If necessary, choose **File > New**.
3. In the Classification Definition area, define the classification.
 - a. Enter a unique name to describe the classification.
 - b. From the Type list, select **Literal**.
 - c. In the Time Out field, enter the number of minutes you want to use as your time out period.

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

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

- d. Choose the default **Application Database**.
4. On the Classification Rules tab, define the rules for routing based on the keys identified in the route definition.
 - a. From the Key list, select a key.
 - b. From the Operation list, select an operator.
 - c. Enter the value for the selected key.
 5. From the **File** menu, choose **Save**.

1.8.5.4.2 Defining a Database Procedure Classification

Use this procedure to define a database procedure classification.

Prerequisites

None

Steps

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

The Classification Administration window appears.

2. In the Classification Definition area, define the classification.
 - a. Enter the name of the database procedure that will determine the classification of the email, for example, GET_CLASSIFICATION_FROM_SUBJECT.

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

- b. From the Type list, select **Database Procedure**.
- c. In the Time Out field, enter the number of minutes you want to use as your time out period.

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

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

- d. Choose the default **Application Database**.
- e. If the following condition is true, select **Non Application Database**:

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

3. On the Classification Rules tab, define the rules for classification.
 - a. From the **Key** list, select a key.
 - b. From the **Operation** list, select an operator.

- c. Enter the **Value** for the selected key.
4. In the Classification Parameters tab, enter the following parameters:
 - Parameter:** The name of the parameter for the procedure.
 - Value:** Choose the Value from the list of values, or enter a custom value for this parameter.
 - Data Type:** Choose the Data Type of the parameter from the list of values.
 - Direction:** Choose the direction of the parameter from the list of values.
 - Sequence:** A generated number that indicates the position of the parameter in the PL/SQL procedure. Verify that the accuracy of the parameter Sequence.
Define all parameters for the procedure.
5. From the **File** menu, choose **Save**.

1.8.6 Configuring eMail Center Properties

Use this procedure to configure the properties for eMail Center. This procedure provides the UWQ Server with the URL to launch the eMail Center UI. This step is only required when setting up the system for first time use, or after changing the Apache server root.

Steps

1. From the HTML login screen, type the default system administrator user name and password.
The CRM default screen appears.
2. From the default screen, click the Advanced tab.
The Advanced screen appears.
3. From the Advanced screen, click the Properties sub-tab.
4. From the View drop-down list on the Properties sub-tab, select **IEM**.
A list of Key Details appears.
5. From the list, click the link **iem.base.url**.

Note: If the list of links does not appear after step 4, click **Create** and the Create Key screen appears. Type **iem.base.url** in the Key field and move on to step 6.

6. Type the Apache server system root URL in the Value field (for example, <http://www.visioncorp.com:8000/>)

Notes:

- The last slash (/) in the URL is required.
 - You need only one Key Detail for **iem.base.url**.
-
-

7. Click **Update**.

You return to the previous screen.

References

For more information, refer to the “Administering Oracle eMail Center” section of the *Oracle eMail Center Concepts and Procedures* documentation.

1.8.7 Configuring UWQ to Launch the Business Application

Follow the steps below to define the business application which UWQ will launch when emails are delivered to users.

Prerequisites

Any application that needs to be launched on the agent desktop must be successfully installed, configured, and made available to UWQ.

Steps

1. From the Forms application, log in using an account that has access to the Universal Work Queue Administration responsibility.
2. Double click the **UWQ Administration** menu.
The Media-Action-Classification-Association form appears.
3. Select **Inbound Email** from list of values in the Media Type field.

4. In the **Classification** field, enter the Routing Classification that you want to associate with the screen pop or Media Action.

Notes:

- If you do not enter a value for Classification, the default application for the selected Media Type will be the application that you select in the Media Action field.
 - The Classification field is case sensitive. The value that you enter here must exactly match the Classification that you entered in the Classification field in the Classification Administration form.
-
-

5. From the list of values in the **Media Action** field, select Customer Care Media function.
6. From the File menu, choose **Save**.

1.8.8 Creating Classifications and Themes

Resolving interactions involves two major challenges:

- Understanding the intent of the communication. What is being requested or communicated?
- Determining the appropriate responses or actions necessary to resolve the interaction

These challenges can be answered by human intervention (an agent reads and responds), a semi-automated process that requires human assistance, or a fully automated analysis and response.

A fully automated process requires three processes:

- **Beginning:** Analyze the intent of the unstructured email message
- **Middle:** Classify the intent
- **End:** Suggest one or more responses to the message, based on the classification

Oracle eMail Center uses the iMT (interMedia Text) feature of the Oracle 8i database to analyze incoming email messages based on the linguistic properties of the various parts of the email, such as header, subject, body and attachments. The term “classification” refers to the category under which the email should be classified. A

good example of classifications for a hardware company would be Accessories, Service, Product Information, Installation, etc.

Each classification has a set of underlying theme signatures that are used by iMT to classify the email. A theme signature is a combination of the themes and their respective scores for each classification.

All incoming unstructured emails are processed by iMT to generate a theme signature that is similar to the classification theme signatures. Emails are classified by comparing the incoming message theme signatures with classification theme signatures. The four best matches are selected.

After a message is classified, eMail Center creates a search string based on the combination of the incoming message theme signature and the response theme signature. This search string is then used to query the MES database to retrieve the suggested response documents.

Note: Please note the distinction between eMC classifications and the classifications derived by the routing server.

- eMC classifications indicate the intent of a message.
 - Routing classifications are used in the UWQ UI to display media items and may or may not relate to the intent of a message.
 - Routing classifications can be the account name into which the email arrived.
-
-

Classifications and themes can be created in two ways:

- By sending email to the “classification” email account
- From the eMail Center Operations Manager Console

1.8.8.1 Creating Classifications and Themes by Sending Email

Use this procedure to create classifications by sending email to the “classification” email account.

Prerequisites

A “classification” email account should be created on the Email Server and should also be defined in the eMail Center.

Steps

1. Send an email to the “classification” account you created with the subject line reading:

<Classification Name><accountname@domainname><Q>

OR

<Classification Name><accountname@domainname><R>

The letters ‘Q’ and ‘R’ above indicate whether the classification and corresponding theme signatures generated are for the incoming message (Q) or the outgoing response (R).

For example, if you created an email account called “support” for handling all support related issues and if you want to create a classification called “hardware” to categorize all hardware support issues, the email would have the following the subject line.

<hardware><accountname@domainname><Q>

OR

<hardware><accountname@domainname><R>

Based on whether you append the letter Q or the letter R to the subject line, the iMT will treat the email body as a sample inbound message or a sample response and generate themes with associated weights for the same.

Note: If the classification name specified in the subject line already exists, then the theme’s signatures (and their weights) will be updated for the existing classification based on the content of the email.

References

For detailed information on creating email accounts on the Email Server, refer to the Managing Directory Information chapter of the *Oracle Email Server Administration* documentation (*Creating Email Server User Accounts* section).

For detailed information on defining Email Server Accounts in the eMail Center, refer to the *Defining Email Server Accounts* section of the *Oracle Email Server Administration* documentation.

1.8.8.2 Creating Classifications from the Operations Manager Console

Use this procedure to create classifications from the eMail Center Operations Manager Console.

Prerequisites

You need to have an email account set up before you can create a classification.

Steps

1. Log in to the Admin Console as Operations Manager.
The Classification screen appears.
2. From the Classifications screen, click **Create**.
The Create Classification screen appears.
3. In the Classification Name field, type the classification name.
4. From the drop down list in the Email Account field, select the email account.
5. Click **Create**.
The classification is created and you return to the Classifications screen.

1.8.8.3 Creating Themes from the Operations Manager Console

Use this procedure to create themes from the eMail Center Operations Manager Console.

Prerequisites

The eMail Center classification for which you are creating a theme must already be created.

Steps

1. Log in to the Admin Console as Operations Manager.
The Classification screen appears.
2. From the Classifications screen, click the Themes sub-tab.
A drop down list appears, displaying all of the existing classifications.
3. From the drop down list, select the classification for which you wish to create themes.
4. Click **Create**.

The Create Themes screen appears, displaying the selected classification name.

5. In the provided fields, type the name and score for the theme you are creating.
6. From the drop-down list in the Type field, select the type of theme.
7. Click **Create**.

The new theme is created for the selected classification and you return to the Classifications screen.

1.8.9 Creating Suggested Response Documents and Associated Queries

Suggested response documents are standard responses that are used by eMail Center agents when responding to an email enquiry.

A suggested response document can be a Netscape Composer or an HTML document that may or may not have merge fields. A merge field is a place holder, for a variable which gets automatically filled when a query associated with document is fired. The associated query is executed when a response document is selected. The merge fields need to be enclosed within special tags, “«”, which can be entered by holding down the “Alt” key and typing “0171” on the numeric keypad (with the Num Lock Turned off), and “»”, which can be entered by holding down the “Alt” key and typing “0187” on the numeric keypad (with the Num Lock Turned off). Example:

Dear «CP_FIRST_NAME» «CP_LAST_NAME»,

Thank you for your interest in «PRODUCT_NAME». This product will be released on «RELEASE_DATE».

Important: Merge Fields are case sensitive and should be referred to exactly the same as they were obtained from the query.

1.8.9.1 Create an Associated Query

Use this procedure to create a query in Fulfillment before associating it with a master document.

Prerequisites

None

Steps

1. From the HTML Login screen, login as the Fulfillment administrator.
2. Click the Query tab.
3. Click **Create**.
4. In the “Create Query” screen, type in data for the following fields.
 - Query Name - this name should be unique.
 - Query Description - a brief description of the query.
 - Query String - this is the SQL statement for the query. The number of fields in the “Select” clause should equal the number of merge fields in the master document. Do NOT end the query with a “;” or “/”, the standard SQL syntax to execute the query.
5. Click **Create**.

Note: After creating the query, click on the query name displayed in the table under the Query tab. Make a note of the Query Identifier for the query that you just created. You will need this Identifier (ID) to associate the query with the suggested response document.

1.8.9.2 Associate the Suggested Response Document and the Query

To associate the suggested response document and the query to expand the merge fields in the document, you need the Document ID and the Query ID (which you should have obtained by performing the procedure in the preceding Note).

To obtain the document ID, run the following SELECT statement in SQL*Plus:

```
SELECT ITEM_ID
FROM JTF_AMV_ITEMS_TL
WHERE ITEM_NAME = 'DOCUMENT_TITLE';
```

(Where DOCUMENT_TITLE is the title of the suggested response document you uploaded in MES).

To associate the suggested response document with the query, run the following INSERT statement in SQL*Plus:

```
INSERT INTO JTF_FM_QUERY_MES
VALUES (DOCUMENT_ID, QUERY_ID, SYSDATE, USER_ID, SYSDATE, USER_ID, NULL,
```

```
NULL, NULL);
```

Where *DOCUMENT_ID* is the document ID of the suggested response document obtained by running the SELECT statement above.

QUERY_ID is the ID of the uploaded query (noted when the query was uploaded)

SYSDATE is a system variable provided by SQL*Plus that always has the value of the current system date.

USER_ID is the user ID for the account you used to log in, e.g. 11001

NULL values are inserted in the final three columns since they are not related to our product

1.8.9.3 Uploading Suggested Response Documents and Message Format Templates

Oracle eMail Center (eMC) uses the Marketing Encyclopedia System (MES) as its document repository. This topic group describes the process of uploading response documents into the response document repository (also referred to as KB or the knowledge base). MES stores documents under different categories.

eMail Center requires a category called “Email Center” to store suggested response documents. These documents are standard email responses that an agent may respond to an enquiry. Currently, eMail Center searches all available categories for suggested response documents.

eMail Center requires a category called “EMC Templates” to store the message format templates. These templates are style sheets used when composing an email in the eMail Center Agent UI. Currently, eMail Center ONLY searches the “EMC Templates” category for message format templates.

Important: To be created, eMail Center requires a minimum of two categories:

- Email Center
 - EMC Templates
-
-

High-level steps

1. Create the category in MES (only performed once).
2. Define a hierarchy among categories (only performed once).

3. Upload the documents into MES.
4. Verify the document was uploaded.

References

For more information on MES categories, refer to the *Oracle Marketing Online* and *Oracle Marketing Encyclopedia System* documentation.

1.8.9.4 Creating a Category in MES

Use this procedure to create a category in MES for the response templates.

Prerequisites

You must have a valid administrator login account.

Steps

1. Login to Oracle Marketing Online application (which owns the MES repository) as an administrator.
2. From the default screen in Marketing Online, click the MES tab.
3. From the MES tab, click the Administration sub-tab.
4. From the MES Administration sub-tab, click **Category Manager**.
The Category Manager screen appears.
5. In the provided fields, enter the category **Name** and a **Description**.

Important: To be created, eMail Center requires a minimum of two categories:

- Email Center
 - EMC Templates
-
-

6. Click **Update**.
Oracle Marketing Online creates the new category.
7. To create additional categories, repeat steps 5 and 6.

1.8.9.5 Defining a Hierarchy Among Categories

Use this procedure to define a hierarchy among categories by creating sub-categories.

Prerequisites

Before you can define a hierarchy among categories, you must first create the categories as shown in the “*Creating a Category in MES*” topic.

Steps

1. Login to Oracle Marketing Online application (which owns the MES repository) as an administrator.
2. From the default screen in Marketing Online, click the MES tab.
3. From the MES tab, click the Administration sub-tab.
4. From the MES Administration sub-tab, click **Hierarchy Manager**.
The Hierarchy Manager screen appears, displaying a list of child and parent categories.
5. From the drop-down list in the Parent Name (left) column, select the corresponding parent category.

Important:

- For the category Email Center, leave the parent name as “-None-”.
 - For the category EMC Templates, select the parent name “Email Center” from the list of values.
-
-

6. Click **Update**.

Oracle Marketing Online links the child category to the selected parent category.

7. If you created additional categories, create the appropriate hierarchies using steps 5 and 6.

1.8.9.6 Uploading Documents Into MES

Use this procedure to upload suggested response documents and message format templates into MES.

Prerequisites

Before you upload response documents into MES, you must first create a category.

Steps

1. Login to Oracle Marketing Online application (which owns the MES repository) as an administrator.
2. From the default screen in Marketing Online, click the MES tab.
3. From the MES tab, click the Publish sub-tab.
4. From the drop-down list in the **Item Type** field, select the item type **File**.
5. In the provided fields, enter a **Title**, **Author Name**, and **Description**.
6. From the drop-down list in the **Content Type** field, select the content type **Master Document**.
7. Leave the **Content Creation Date** and **Effective Start Date** fields blank.
8. Select the **Permanent** radio button.

Caution: If you enter a value for a specific time period, the document will not be available after the time period has expired.

9. From the Category field, click **Find**.
The Find screen appears, displaying a list of the categories.
10. From the list, select the corresponding category.
 - If the document that you are publishing is a message format template, expand the category tree for the category Email Center and select the category “EMC Templates.”
 - You can expand the category tree by clicking the (+). Once the parent category expands, click the desired child category name to select it.
11. Click **Upload File**.
12. Click **Browse** to browse through the file system.
13. From the file system, select the document or template that you want to upload.
14. Click **Open**.

The entire path for the selected document or template is now displayed under File Name.

15. Click Attach File.

The file uploads. Once the file has fully uploaded, the File Name is no longer displayed.

Important: Do not click any other button until the file has fully uploaded, or the upload process will fail. Also, if the response document contains one or more inline images, repeat steps 11 through 15 for every image file (.gif or .jpeg) that needs to be included in the document or template.

16. When the file or files have uploaded and the File Name disappears, click Finished.

The file name should display under Files.

17. Click Publish.

A success message appears on the top of the screen in red letters.

Note: To publish another document you must start by clicking the Publish sub-tab again. Do not try to use (recycle) data entered for a previous file.

1.8.9.7 Verifying the Document Uploaded Successfully

Use this procedure to verify the document successfully uploaded into MES.

Prerequisites

Before you verify the success of your upload, you must first complete all the steps in the “*Uploading Suggested Response Documents and Message Format Templates*” topic.

Steps

1. Login to Oracle Marketing Online application (which owns the MES repository) as an administrator.
2. From the default screen in Marketing Online, click the MES tab.
3. From the MES tab, click the Categories sub-tab.

- Click the category name under which you uploaded your response documents.

The name of the file and its description should appear. If not, go back and repeat the steps listed in the “*Uploading Suggested Response Documents and Message Format Templates*” topic.

1.8.10 Using Email Processing Workflow

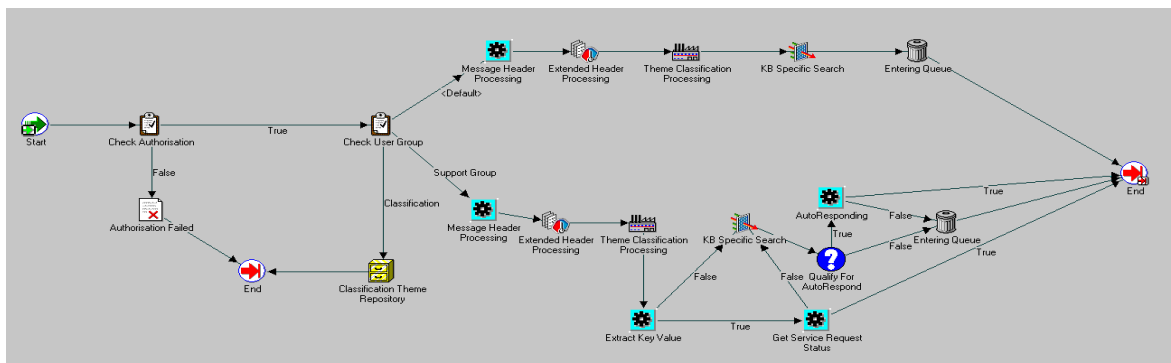
Email Processing Workflow can be used out of the box without any configuration or customizing. The backbone of email processing is created by using Oracle Workflow, which is a part of Oracle Applications 11i. The name of the workflow for unstructured eMail Processing is “Mail Preprocessing.”

This topic group provides an overview of unstructured workflow, a high-level view of the steps involved in configuring operations for workflow, and detailed instructions for performing each of the configuration steps.

Defining Workflows

To build or modify workflows, you use the Oracle Workflow Builder application. Oracle Workflow Builder lets you create, view, or modify a business process with simple drag and drop operations. Using the Workflow Builder, you can create and modify all workflow objects, including activities, item types, and messages.

Email Processing Workflow



Terms to Know

Activity - A unit of work performed during a business process.

Node - An instance of an activity in a process diagram as shown in the Process window.

Process - A set of activities that need to be performed to accomplish a business goal.

Workflow - A workflow is a processing path, consisting of a series of process nodes linked together to form paths that support a particular business rule or set of business rules.

1.8.10.1 Unstructured Email Processing Workflow

The “Mail Preprocessing” workflow contains some mandatory nodes, which must be present to get messages processed and passed to the eMail Center server. The following table describes the nodes for mandatory workflow.

Table 1–5 Mandatory Workflow Nodes

Node Name	Function
Check Authorization	Checks whether the message coming for the user has a valid email account. If not, it discards the message.
Check User Group	Routes the message depending on the account for which it was sent. For example, if the message was sent to the “Support” account, then it branches to the path for Support. If there is no path for the “Support” account, it branches to the default path.
Classification Theme Repository	This node processes emails that are sent to the “Classification” account. Processes the classification and theme. Stores the query and response themes for each account.
Message Header Processing	Extracts the standard email message headers, for example, subject, date, from, to, and so on.
Extended Header Processing	Extracts the standard email extended headers, for example, SMTP ID, language, and so on.
Theme Classification Processing	Classifies the incoming message and extracts the themes.
KB Specific Search	Searches the knowledge base to retrieve related response documents.
Entering Queue	Places the message in a queue after Processing. eMC Server retrieves the message from this queue and processes it further.

The Mail Preprocessing workflow also contains a node that is not mandatory, but is essential to enhance the functionality. The following table describes the nodes for non-mandatory workflow.

Table 1–6 Non-Mandatory Workflow Node

Node Name	Function
Extract Key Value	This node searches the message body of an email for the occurrence of a character or word(s).

1.8.10.2 Creating Additional Email Workflow Processes

The following steps comprise configuring additional email workflow processes. For using default email workflow processes, no configuration is required.

1.8.10.2.1 Creating the Lookup Codes

Lookup codes are used in the workflow to link the email accounts with their respective workflow paths or processes. eMail Center ships with a set of default Lookup Codes, such as Support. These lookup codes should match the email accounts created in the Email Server (Refer to Creating Email Server Accounts) and defined in the eMail Center (Refer to Defining Email Server Accounts). If the account name does not match the default lookup codes, follow the steps below to create a new lookup code.

Steps

1. Log in to Oracle Workflow Builder.
2. Select process->**Mail Preproc** (this selects the mail preprocessing workflow).
3. Double-click the screen.
In the Workflow Builder, Mail Preproc gets loaded.
4. From the Navigator screen of Oracle Workflow Builder, click **Lookup Type**.
5. Select **IM User Address**.
A list of default lookup codes appears.
6. Right-click **IM User Address**.
7. Select **New Lookup Code**.
The Lookup Code screen appears.
8. Enter the following data:
 - Internal Name - this is the email account name that was created in IM and defined in the eMail Center. For example, you can enter “Marketing” for the Marketing account.

- Display Name - this is the descriptive name that appears in the lookup code. (The Oracle Workflow Builder recommends that the Internal Name and Display Name are different).

9. Click **OK**.

1.8.10.2.2 Configuring the Global Attributes Use this procedure to customize the global attributes for unstructured workflow.

Steps

1. Log in to the Oracle Workflow Builder as Oracle Applications User.
The Show Item screen appears, displaying a list of items.
2. From the list of items in the Show Item screen, select **Email Preprocessing** for unstructured.
3. Click **OK**.
The Workflow Builder loads the workflow.
4. Configure the global attributes for unstructured workflow according to the following table.

Table 1–7 Global Attributes

Attribute Name	Value
Repository Name	Pre-seeded with SMS,MES. If other repositories are required, they must be added here.
Application ID	Application ID that loaded, and therefore owns, documents into Marketing applications.

Table 1–7 Global Attributes

Attribute Name	Value
Extended Headers	<p>Currently picking up five extended headers that come with a message. The headers are pre-seeded with the following values:</p> <p>Extended Header 1: MESSAGE-ID</p> <p>Extended Header 2: ORGANIZATION</p> <p>Extended Header 3: MAILER</p> <p>Extended Header 4: LANGUAGE</p> <p>Extended Header 5: CONTENT-TYPE</p> <p>These attributes are retrieved from the messages and passed to the eMC Server.</p> <p>These values can be changed to meet user requirements.</p>

1.8.10.3 Using a Workflow Node

This topic provides a high-level overview of the steps necessary to use nodes when building a workflow.

Steps

1. Login to Oracle Workflow Builder.
2. Select process->**Mail Preproc**
3. Double-click the screen.
In the Workflow Builder, Mail Preproc gets loaded.
4. From the Workflow Builder navigator, select **Function**.
All available nodes appear.
5. Drag and drop the desired nodes into the Process diagram.
6. Select either **TRUE** or **FALSE** for boolean return types.
7. Repeat steps 5 and 6 until you have made all desired changes to the workflow.
8. From the Workflow Builder main menu, select **Verify**.
Workflow Builder checks the verification of the new workflow.
9. If the verification is successful, save the new workflow to the database.

1.8.10.4 Guidelines for Error Processing

Errors that occur during eMail Center processing cannot be directly returned to the agent, since the agent and/or caller generally does not know how to respond to the error (in fact, eMail Center may be a background engine with no human operator). You can use Oracle Workflow Builder to define the events you want to occur in case of an error. Use Oracle Workflow Builder to modify the default error process associated with the process or create your own custom error process.

The error process can include branches based on error codes, send notifications, and attempt to deal with the error using automated rules for resetting, retrying, or skipping the failed activity. Once you define your error process you can associate it with any activity.

1.8.11 Administering eMail Center Concurrent Processes

The eMail Center Concurrent Processes use Concurrent Manager, which is a component of Oracle Application Object Library, and it is responsible for scheduling and running various concurrent programs submitted by the user. Oracle eMail Center makes use of this facility to schedule and run various eMail Center Concurrent Processes.

Note: Oracle does not recommend any specific number of concurrent processes that can be run at the same time for eMail Center, because the number of processes is strictly hardware dependent.

eMail Center uses the Oracle Applications Standard Manager to submit batch jobs for processing emails. All eMail Center concurrent programs with the exception of the eMail Center Workflow Worker are submitted from the Standard Request Submission (SRS) screen.

A concurrent process will run:

- until the specified number of messages has been processed, then
- wait for the specified time between workers to elapse, then
- if there are messages present, re-start the process.

If email processing takes longer than approximated, the process will continue until the specified number of emails has been processed and your calculated throughput will be invalidated. A batch of processes must finish before the next batch starts.

Throughput Calculation

Line five from the above table shows 3 processes, processing 100 emails each, with a delay of 20 minutes having a throughput of 600 emails per hour.

- Estimate the time required to process 600 messages.
In this example, 10 minutes is required to process 100 emails.
- Do the math: $3 * 100 = 300 * 2 = 600$ messages per hour.
In this example, each of the four workers will need to run twice for a throughput of 600/hr.
- Determine your idle time requirement per worker.
In this example, each workers processes 100 emails in approximately 10 minutes and must run twice. The remaining time is idle time.

1.9 Troubleshooting

This topic group describes ways of troubleshooting various problems that arise while installing, starting, and running Oracle eMail center. This chapter discusses problems in the following areas:

Emails not getting through to Inbox folder of my email account

Here is a check list of things to trace your email:

- Check if your email has bounced because of a bad email address. Re-send the email to the correct email address.
- Check if your email has reached the host machine where your Oracle Email Server is running. Check your system logs.
- Check if the email has reached Oracle Email Server inbound SMTP gateway. Check your Oracle Email Server logs.
- Check if your Postman process is running and delivering messages as they come. Check your Oracle Email Server logs.

Emails are not getting processed. Not sure if iMT is the cause.

Check if iMT is the cause by customizing your workflow processing branch so that it is not calling iMT.

Having problems creating database link from my Oracle Email Server database to my applications database

- Check if you have an entry in your tnsnames.ora file for your applications database.
- Check your GLOBAL_NAME and global_names parameters of your applications database.

Emails are getting moved into my Retry folder

Emails get moved into the Retry folder for two reasons:

- Oracle Email Server Postman process is unable to fire the email account rule. Check if your database link from Oracle Email Server database to the applications database exists and is usable.
- There were API failures while processing your email. Check if your database links from your applications database to your Oracle Email Server database are created and are usable. Check if your IM_API or IM_IMT_API packages are invalid.

The email metadata tokens are in my exception queues

eMail Center has two Advanced Queues in its schema. They are IEMRPP_QUEUE [AQ1] and IEMRP_QUEUE [AQ2]. Each of these queues has its own exception queue.

If your email metadata tokens are in the AQ1 exception queue:

- This means there were ORA errors while processing that email metadata token. Check your Concurrent Manager request logs for your email workflow concurrent requests.
- Submit 'Process Retry Folder' concurrent request which will reprocess emails metadata tokens from your AQ1 exception queue and the Retry folder.

If your email metadata tokens are in the AQ2 exception queue:

- This means there have been problems when eMail Center server process tried to dequeue messages. Check your eMail Center server logs.

Cannot see email counts on my UWQ agent desktop.

This means your emails are not getting successfully processed through your system. Check the following:

- Emails are in the AQ1 exception queue. [First check that there are no ORA errors in email processing workflow]
- Emails have moved from 'Inbox' to 'Retry' or 'Admin' folder. [Second check that there are no API errors in email processing workflow]
- Emails are in AQ2. [Third check that email processing workflow has successfully completed]
- eMail Center server log says that it has delivered email items to Oracle Telephony Manager. [Third check that emcserver is picking up mail media items.]

If the above issues do not apply, your emails should be in Oracle Telephony Manager's agent queues. If your Universal Work Queue server is running, then you should be able to see email counts on your UWQ agent desktop.

I have uploaded some documents into MES but they are not being picked up.

After uploading the document you need to run the "Rebuild Help Search Index" concurrent request. This will refresh the related MES Knowledge Base.

Unable to start eMail Center server.

The problem can be any of the following:

- While starting the server, if the console shows "emc_server already running," you might have an instance of this process still running. Check the server log to see if there are any warnings or errors. If everything is clean, try restarting the server after one minute.
- Make sure that you are running emcServer process using a native thread implementation of JRE/JDK. You can check this by looking at <your JRE/JDK dir>/bin/sparc directory.
- If your console or log shows any other errors, check if your <cct>.dbc is in fact pointing to the right environment/database. You might also want to revisit your emc.bat (Window NT) or emc.sh (UNIX) to check class_path and other variables.

eMail Center server is running but is not picking up email metadata tokens from AQ2.

Make sure that you assigned resources/agents who monitor your email accounts in the Resource Manager, and that eMail Center Server started properly, that is, there

are no console or log errors. Doing this tells the system that “AGENT1 is a resource who will work on my support email account.” When this is done, a folder named AGENT1 is created under the support email account on the Oracle Email Server (OES).

Check the following:

- Make sure you actually have email-tokens in AQ2. Verify this by running this SQL Command `select count(*) from iem.iemp_queue_tbl where q_name = 'IEMRP_QUEUE'` after logging in as APPS user.
- Please make sure Oracle Telephony Manager and other interaction center servers are running.
- Check that your accounts are assigned to the correct interaction center group in eMail Center Administration Console. Look for the “interaction server group id” in your emc.log and check if the email tokens in AQ2 are in fact marked for the same interaction server group that is being served by this specific instance of the eMail Center server.
- eMail Center server has built-in functionality not to pick/deliver email tokens to Oracle Telephony Manager if Oracle Telephony Manager communicates that its agent queues are full. Check your eMail Center server logs if this is the case.

iMT Processing Errors

- Ensure that your interMedia Text is properly installed and configured. Check that you are able to create sample interMedia index on a table.
- Ensure that your LD_LIBRARY_PATH environment variable contains \$ORACLE_HOME/ctx/lib for the external procedure LISTNER calls.

Classification emails are not creating classifications and themes.

- The classification account has not been created on the Oracle Email Server.
- The classification account has not been defined in the eMail Center Administration Console.

Unable to launch Agent UI

- Check that your Oracle Email Server IMAP process is running.
- Verify that your eMail Center Administration Console is configured properly.
- Check that you set up your IMAP server to allow agents to log in with their user email account without the email domain.

- Check your JTF default responsibility system profile.
- Check whether the `iem.base.url` is pointing to the correct middle tier.
- Check that agent folders have been created.
- Check if you have recently applied any patches to your environment that have changed the `apps.zip` in your `APPL_TOP`. If this is the case, you need to bounce your Apache Server after bringing down all the Interaction Center Servers.

A variety of reasons may prevent you from logging on. You can use the JInitiator console to look at the process trail of events to determine why you were not able to log on.

Some of the possible problems encountered when logging on include the following.

Unable to log on to Forms Applications

- Make sure that the Forms server and the database are up and running.
- Enable Jinitiator console for monitoring. If the error states `?Out of Memory?`, clear the contents of the `jcache` directory. This directory is typically located in `C:\Program Files\Oracle\JInitiator\jcache`.

Unable to log on to HTML Applications

- Make sure that the Apache server is up and running. Set up user and password correctly. Make sure that the System Profiles have been set up correctly.
- You forgot your password or you used an incorrect password. There is no way to determine your old password but your administrator can assign a new password.
- Your account may not be properly configured. Your administrator can make required changes to your account configuration.

Emails not being processed

Make sure that the following are up and running:

- EMC Server
- OTM Server
- UWQ Server
- Concurrent Manager
- Oracle Email Server

Documents not being retrieved

Load documents into MES.

Template merge is incomplete

Two types of merge fields, straight-insert and query, are supported in the eMail Center Template/Suggested Response Merge functionality. This error generally means that not all of the straight-insert data was available.

Email failed to reach AQ1

- Check whether your Oracle Email Server is receiving emails.
- Check that you have defined the email account in the eMail Center Administration Console.
- Check if the database link from Oracle Email Server to the applications database exists and is usable.

Email fails to reach account inbox

- This generally means that the Oracle Email Server is not functioning properly.
- Check if the emails are in the Retry folder. Emails might have failed while processing and have been moved to the Retry folder.

Email goes to Retry folder

This means there have been API errors while processing the email. Check if your interMedia Text is properly installed and configured.

Customer Support/Universal Work Queue Selector responsibility is not displayed

Check that the user is assigned the correct responsibility.

Unable to display UWQ desktop

Check that your Forms server and the UWQ server are running.

Agent UI does not display the Message Editor

Verify that you are running the correct version of Oracle JInitiator.

1.10 Abbreviations

API - Application Programming Interface
CRM - Customer Relationship Management
eMC - Oracle Email Center
IEM - Product code for eMail Center
IH - Interaction History
IMAP - Internet Messaging Access Protocol
iMT - Oracle interMedia Text
JMA - Java Mail API
JTF - Java Technology Framework
KB - Knowledge Base
KMS - Knowledge Management Systems
MES - Marketing Encyclopedia System
NLS - National Language Support
OES - Oracle Email Server
OTM - Oracle Telephony Manager
SMS - Solution Management System
SMTP - Simple Mail Transport Protocol
UWQ - Universal Work Queue

1.11 Glossary

Terms

Agent UI - The eMail Center agent user interface
Apache - A third party web server
Applet - A Java program that runs in the Internet browser
Classification - the intent(s) of an email message.

Classification (as eMC sees it) - categories into which incoming email messages are sorted.

Classification Theme Signature - collection of themes and associated scores for the specified classification.

Customer Care - Oracle Product

Domain - Refers to the domain name in which the email account resides

eMail Center - Oracle Product

Fulfillment - Oracle Product

interMedia Text - Oracle Product

iSupport - Oracle Product

JRE - Java Runtime Environment.

Knowledge Base - A repository of documents

Message Theme Signature - collection of themes and associated scores for an incoming email message.

Response Selection Theme Signature - collection of themes and associated scores for responses to a specified classification.

Sample Message - a cleaned up message or piece of text whose contents are directly related to the characteristics of the classification.

Sample Response - cleaned up response or piece of text whose contents are directly related to the characteristics of responses for the classification.

Score - signifies the relative importance of a particular word in a given theme, relates to interMedia Text processing.

Suggested Response Document - standard email response documents that are used to respond to customer enquiries by email

Theme - keywords or phrases extracted from the text of the message or relative terms selected from the knowledge base.

Theme Signature - collection of themes and their associated scores.

Unstructured email - A free form email

Work Queue - A logical queue that holds each agent's work items

1.12 Related Documentation and Resources

The following list of documentation serves as a reference set of documents for installing and implementing Oracle eMail Center:

Oracle Documentation

- *Oracle Applications Concepts*, Release 11i
- *Oracle Applications Installing Oracle Applications*, Release 11i
- *Oracle Applications Implementing CRM Applications*, Release 11i
- *Oracle eMail Center Technical Reference Manual*, Release 11i
- *Oracle eMail Center Concepts and Procedures*, Release 11i
- *Oracle Telephony Manager Installation Guide*, Release 11i
- *Oracle Call Center Applications Setup*, Release 11i
- *Oracle CRM Foundation Components Concepts and Procedures*, Release 11i
- *Oracle Email Server 5.1*
- *Oracle BR100 Planning Guide*
- *Oracle Fulfillment*, Release 11i
- *Oracle iMarketing Concepts and Procedures*, Release 11i
- *Oracle Marketing Concepts and Procedures*, Release 11i
- *Oracle Marketing Encyclopedia System*, Release 11i
- *Oracle Applications System Administrator's Guide*, Release 11i
- *Oracle Email Server Administration Guide*

Referencing TARs and Patch Information

- For BUG/TAR information:
 - Reference the Oracle BUG Database at <http://bug.us.oracle.com>
- For Patch information:
 - Patches are available for download from ARU and/or from MetaLink or TCPatch.

