Cisco Unified Web and E-Mail Interaction Manager System Administration Guide
For Unified Contact Center Enterprise and Hosted and Unified ICM

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Cisco Unified Web and E-Mail Interaction Manager System Administration Guide: For Unified Contact Center Enterprise and Hosted and Unified ICM
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Preface

- About this guide
- Document conventions
- Other learning resources
Welcome to Cisco® Interaction Manager™, multichannel interaction software used by businesses all over the world to build and sustain customer relationships. A unified suite of the industry’s best applications for web and email interaction management, it is the backbone of many innovative contact centers and customer service organizations.

Cisco Interaction Manager includes a common platform and one or both of the following applications:

- Cisco Unified Web Interaction Manager (Unified WIM)
- Cisco Unified E-Mail Interaction Manager (Unified EIM)

About this guide

Cisco Unified Web and E-Mail Interaction Manager System Administration Guide discusses best practices for maintaining your Cisco Interaction Manager installation. Intended for system and database administrators, this guide will help you keep the installation in good health and to fine tune it to improve its performance.

This version of the guide is for installations that are integrated with Cisco Unified Contact Center Enterprise (Unified CCE) or Unified System Contact Center Enterprise (Unified SCCE).

Document conventions

This guide uses the following typographical conventions.

<table>
<thead>
<tr>
<th>Convention</th>
<th>Indicates</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bold</strong></td>
<td>Labels of items on the user interface, such as buttons, boxes, and lists. Or text that must be typed by the user.</td>
</tr>
<tr>
<td><strong>Monospace</strong></td>
<td>The name of a file or folder, a database table column or value, or a command.</td>
</tr>
<tr>
<td><strong>Variable</strong></td>
<td>User-specific text; varies from one user or installation to another.</td>
</tr>
</tbody>
</table>

Other learning resources

Various learning tools are available within the product, as well as on the product CD and our web site. You can also request formal end-user or technical training.
Online help

The product includes topic-based as well as context-sensitive help.

<table>
<thead>
<tr>
<th>Use</th>
<th>To view</th>
</tr>
</thead>
<tbody>
<tr>
<td>Help button</td>
<td>Topics in Cisco Unified Web and E-Mail Interaction Manager Help; the Help button appears in the console toolbar on every screen.</td>
</tr>
<tr>
<td>F1 keypad button</td>
<td>Context-sensitive information about the item selected on the screen.</td>
</tr>
</tbody>
</table>

Online help options

Documentation

- The latest versions of all Cisco documentation can be found online at http://www.cisco.com
- All Unified EIM documentation can be found online at http://www.cisco.com/en/US/products/ps7236/tsd_products_support_series_home.html
- All Unified WIM documentation can be found online at http://www.cisco.com/en/US/products/ps7233/tsd_products_support_series_home.html
- In particular, Release Notes for these products can be found at http://www.cisco.com/en/US/products/ps7236/prod_release_notes_list.html
- For general access to Cisco Voice and Unified Communications documentation, go to http://www.cisco.com/en/US/products/sw/voicesw/tsd_products_support_category_home.html
1. Setting up an integrated installation

- Relationship between objects in Unified CCE and Unified WIM and Unified EIM
- Designing your installation
- Preparing Unified CCE for the integration
- Preparing Unified SCCE for the integration
- Installing Cisco Interaction Manager and the integration
- Configuring objects in Cisco Interaction Manager
- Configuring objects for outbound activities
This chapter provides an overview of the process of setting up an integrated Unified WIM and Unified EIM–Unified CCE system. It includes a note about the relationship between objects in the two systems.

**Relationship between objects in Unified CCE and Unified WIM and Unified EIM**

This section provides a brief introduction to the relationship or “mapping” between objects that are used in both Unified CCE and Unified WIM and Unified EIM.

The mapping between objects can be set up in two ways:

- By running the Cisco Interaction Manager integration wizard for each department.
- By creating new objects in Unified WIM and Unified EIM and mapping them to objects in Unified CCE from the Unified WIM and Unified EIM Administration Console.

Typically, properties of mapped objects are set up in Unified CCE, while permissions are managed through Unified WIM and Unified EIM.

The following table provides a high-level view of the relationship between various objects.

<table>
<thead>
<tr>
<th>Unified CCE object</th>
<th>Mapped in Unified WIM and Unified EIM to</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agent</td>
<td>User</td>
<td>▶ An agent belongs to a peripheral.</td>
</tr>
<tr>
<td>Supervisor Administrator</td>
<td></td>
<td>▶ A peripheral belongs to an agent peripheral gateway (PG).</td>
</tr>
<tr>
<td>Skill group</td>
<td>User group</td>
<td>▶ A skill group belongs to a peripheral.</td>
</tr>
<tr>
<td>Media routing domain (MRD)</td>
<td>Queue</td>
<td>▶ Multiple queues can belong to a single MRD.</td>
</tr>
<tr>
<td>Script selector</td>
<td>Queue</td>
<td>▶ A script selector can belong to only one queue.</td>
</tr>
</tbody>
</table>

**Note:** For chat, you will need to set up queues in Cisco Interaction Manager as the routing of chat interactions is not integrated with Unified CCE in this release.

**Designing your installation**

See *Cisco Unified Web and E-Mail Interaction Manager Solutions Reference Network Design Guide* (for Unified CCE) to evaluate available deployment models and design your installation.
Preparing Unified CCE for the integration

This section describes the following procedures:

1. Obtaining Cisco Interaction Manager licenses on page 11.
2. Installing Unified CCE on page 11.

Obtaining Cisco Interaction Manager licenses

To order licenses for your Cisco Interaction Manager deployment, contact the Cisco License team. You will need licenses while setting up the integrated system.

Installing Unified CCE

Ensure that Unified CCE is installed and available for use. See the following documents for help with installing and configuring the system:

- Getting Started with Cisco Unified Contact Center Enterprise
- Cisco Unified Contact Center Enterprise Installation Guide

Configuring Unified CCE

In this section, we describe the process of configuring the Unified CCE objects required for the integration with Unified WIM and Unified EIM. It involves configuring the following objects (in the order specified):

1. Application instance
2. Media classes
3. Media routing domains (MRD)
4. Network voice response unit (Network VRU)
5. Call type
6. Media routing peripheral gateway (MR PG)
7. Script selector
8. Agent desk settings
9. Agent peripheral gateway (Agent PG)
10. Application path
11. Agents
12. Services
13. Skill groups
   - IPTA skill groups
Non-IPTA skill groups

14. Scripts
15. Extended Call Context (ECC) variables

Configuring network trunk group

Set up a dummy network trunk group as shown in the screen capture. It will be used while setting up services.

Configure dummy network trunk group

Configuring application instance

An application instance refers to a Cisco Interaction Manager deployment that is integrated with Unified CCE, and is needed for downloading configuration objects from Unified CCE and mapping these to Cisco Interaction Manager objects. Configure a single application instance for Unified WIM and Unified EIM.

To configure an application instance:

1. Go to Start > All Programs > ICM Admin Workstation > Configuration Manager.
2. In the Configuration Manager window, browse to Tools > List Tools > Application Instance List.
3. Double-click Application Instance List.
4. In the Application Instance List window, in the Select filter data section, click Retrieve. Then, in the Application Instance section, click Add.
   A new entry is created in the Application Instance section and the Attributes tab becomes editable.
5. On the Attributes tab, provide the following details:
   ○ Name: Provide a name for the application instance.
   ○ Application key: Click the Change Application Key button and provide a unique value for the key.
   ○ Application type: Set it to <Other>.
Permission level: Set it to Read only.

Click Save.

Configure the application instance

Configuring media classes

A media class is required for creating MRDs. It helps categorize the MRDs based on media type (email, for example). Create a media class for email. The media class for voice already exists.

To configure a media class:

1. Go to Start > All Programs > ICM Admin Workstation > Configuration Manager.
2. In the Configuration Manager window, browse to Tools > List Tools > Media Class List.
3. Double-click Media Class List.
4. In the Media Class List window, in the Select filter data section, click Retrieve. Then, in the Media Class section, click Add.

A new entry is created in the Media Class section and the Attributes tab becomes editable.

5. On the Attributes tab, provide the following details:
   - Name: Provide the name for the media class as CIM_EIM. Note that the names of media classes are case sensitive.
   - Life: 300 seconds
   - Start timeout: 10000 seconds
   - Max Duration: 28800 seconds

Click Save.
Configure media classes

Configuring media routing domains (MRDs)

A media routing domain is created in Unified CCE for mapping to queues in Cisco Interaction Manager. For the email media class, configure one or more email media routing domains.

To configure a media routing domain:

1. Go to Start > All Programs > ICM Admin Workstation > Configuration Manager.

2. In the Configuration Manager window, browse to Tools > List Tools > Media Routing Domain List.


4. In the Media Routing Domain List window, in the Select filter data section, click Retrieve. Then, in the Media Routing Domain section, click Add.

   A new entry is created and the Attributes tab becomes editable.

5. On the Attributes tab, provide the following details:
   - Name: Provide a name for the media routing domain.
   - Media class: Select a media class created for Cisco Unified Web and E-Mail Interaction Manager.

   In the Calls in Queue section, set the following:
   - Max: Specify a value. This is required information. The recommended value is 5000.

   Click Save.
Configuring Network VRU

A Network VRU is required for supporting incoming voice calls to Unified CCE.

To configure a Network VRU:

1. Go to Start > All Programs > ICM Admin Workstation > Configuration Manager.
2. In the Configuration Manager window, browse to Tools > Explorer Tools > Network VRU Explorer.
4. In the Network VRU window, in the Select filter data section, click Retrieve. Then, click [1] Add Network VRU.

A new entry is created and a new set of tabs appear.
5. On the Network VRU tab, provide the following details:
   - **Name**: Provide a name for the network VRU.
   - **Type**: Set it to Type 2.

Click Save.
6. Click **Add Label**.

   The Label tab appears.

7. On the Label tab, provide the following details:
   - **Routing client**: From the dropdown list, select a routing client.
   - **Label**: Provide a name for the label.

   Click **Save**.

### Configuring call types

A call type is required to categorize a dialed number (for voice) or script selector (for email). Call types are used in configuring ICM routing scripts.

**To configure a call type:**

1. Go to **Start > All Programs > ICM Admin Workstation > Configuration Manager**.
2. In the Configuration Manager window, browse to **Tools > List Tools > Call Type List**.
3. Double-click **Call Type List**.
4. In the Call Type List window, in the Select filter data section, click **Retrieve**. Then, in the Call Type section, click **Add**.

   A new entry is created and the Attributes tab becomes editable.

*Configure network VRU*
5. On the Attributes tab, in the Name field, provide a name for the call type. Click Save.

![Provide the name of the call type]

**Configuring media routing peripheral gateways (MR PGs)**

An MR PG handles new activity routing requests initiated by Cisco Interaction Manager, over the connection established by the embedded MR PIM (side A or side B).

The MR PG configuration involves three steps:

- Configuring MR PG using the Configuration Manager: The details are described in this section.
- Installing MR PG: For details, see the Unified CCE Installation Guide.
- Creating MR PIM for the installed MR PG: For details, see the Unified CCE Installation Guide.

**To configure a media routing peripheral gateway (MR PG):**

1. Go to Start > All Programs > ICM Admin Workstation > Configuration Manager.
2. In the Configuration Manager window, browse to Tools > Explorer Tools > PG Explorer.
3. Double-click PG Explorer.
4. In the PG Explorer window, in the Select filter data section, click Retrieve. Then, click [1] Add PG.
5. On the Logical Controller tab, provide the following details:
   - **Name**: Provide a name for the media routing peripheral gateway.
   - **Client type**: Set it to MR PG.

A new set of tabs appear.

7. On the Peripheral tab, select the **Enable Post Routing** option.
8. On the Advanced tab, in the **Network VRU** field, from the dropdown list, select the Network VRU configured for Unified WIM and Unified EIM (page 15).

![Select a network VRU](image)

9. On the Routing client tab, provide the following details:
   - **Name**: Provide a name for the routing client.
   - **Default media routing domain**: From the dropdown list, select the MRD configured for Unified WIM and Unified EIM (page 14).
   - **Default call type**: From the dropdown list, select the call type configured for Unified WIM and Unified EIM (page 16).

Click Save.

![Configure routing client](image)
10. On the Default route tab, in the **Media Routing Domain** field, from the dropdown list, select an MRD configured for Unified WIM and Unified EIM (page 14).

![Select an MRD]

---

**Important:** Now install the MR PG and configure the MR PIM. For more information, see the Unified CCE Installation Guide.

---

### Configuring script selectors

A script selector is a keyword that identifies the ICM routing script for an activity request from Cisco Interaction Manager to Unified CCE. Script selectors are used in the ICM routing scripts as part of the **Dialed Number** node.

**To configure a script selector:**

1. Go to **Start > All Programs > ICM Admin Workstation > Configuration Manager**.
2. In the Configuration Manager window, browse to **Tools > List Tools > Dialed Number/ Script Selector List**.
3. Double-click **Dialed Number/ Script Selector List**.
4. In the Dialed Number/ Script Selector List window, in the Select filter data section, click **Retrieve**. Then, in the Dialed Number/ Script Selector section, click **Add**.
   
   A new entry is created and the Attributes tab becomes editable.
5. On the Attributes tab, provide the following details:
   
   - **Routing client:** From the dropdown list, select the routing client configured for the MR PG in step 9 in “Configuring media routing peripheral gateways (MR PGs)” on page 17.
   
   - **Media routing domain:** From the dropdown list, select the MRD configured for Unified WIM and Unified EIM (page 14).
Setting up an integrated installation

- **Name**: Provide a name for the script selector.

Configure script selector

6. Click the Dialed Number Mapping tab. Click **Add**.
7. On the Dialed Number Map Entry window, associate the script selector with a call type.
8. Click **OK** to save the entry. Then click **Save** to save the script selector configuration.

Map call type

**Configuring agent desk settings**

Agent desk settings are a common set of properties for a group of agents working on voice call requests.

**To configure agent desk settings:**

1. Go to **Start > All Programs > ICM Admin Workstation > Configuration Manager.**
2. In the Configuration Manager window, browse to Tools > List Tools > Agent Desk Settings List.
3. Double-click Agent Desk Settings List.
4. In the Agent Desk Settings List window, in the Select filter data section, click Retrieve. Then, in the Agent Desk Settings section, click Add.

A new entry is created and the Attributes tab becomes editable.
5. On the Attributes tab, in the Name field, provide a name for the agent desk setting group. Click Save.

Provide the name of the agent desk settings group

**Configuring agent peripheral gateway (Agent PG)**

An Agent PG is required for creating one or more peripherals that manage agent distribution within Unified CCE. Configure an Agent PG using the Configuration Manager and then install it on the appropriate machine.

**To configure an agent peripheral gateway:**

1. Go to Start > All Programs > ICM Admin Workstation > Configuration Manager.
2. In the Configuration Manager window, browse to Tools > Explorer Tools > PG Explorer.
3. Double-click PG Explorer.
4. In the PG Explorer window, in the Select filter data section, click Retrieve. Then, click [1] Add PG.
5. On the Logical Controller tab, provide the following details:
   - **Name:** Provide a name for the agent peripheral gateway.
   - **Client type:** Set it to CallManager/SoftACD.
   - **Primary CTI address:** Provide the address of the primary CTI server in the format IP_Address:Port_Number.
- **Secondary CTI address**: Provide the address of the secondary CTI server in the format `IP_Address:Port_Number`. This is optional.

Configure agent PG

6. Click [2] **Add Peripheral**.

   A new set of tabs appear.

7. On the Peripheral tab, in the **Default desk settings** field, from the dropdown list, select the agent desk settings configured for Unified WIM and Unified EIM (page 21).

Select agent desk settings

8. On the Agent Distribution tab, do the following:
   a. Click **New**.
b. Select the **Enable agent reporting** option.

c. Select the **Agent event detail** option.

d. In the Currently Selected Site section, set the following:
   - **Distributor site name**: Provide the host name of the machine where distributor is installed.
   - **Enable**: Select the option.

Click **Save**.

---

**Configure agent distribution**

---

**Configuring application path**

An application path is required to open a communication channel with a CTI server, associated with an Agent PG, for agent and task status reporting. For each agent PG, create an application path, which Unified WIM and Unified EIM will use to connect to the agent PG. The application path member list must include all possible MRD-peripheral combinations for the Agent PG.

---

**Important:** For configuring an application path, you need to log in as a superuser.

---

**To configure an application path:**

1. Go to **Start > All Programs > ICM Admin Workstation > Configuration Manager.**

2. In the Configuration Manager window, go to **Options (menu) > Application Object Filter.**
3. In the Application Object Filter window, in the Disable / Enable application object filter section, in the **Superuser password** field, provide the password of the superuser and click the **Disable** button. Click **OK**.

![Application Object Filter](image)

*Provide the password of the superuser*

4. In the Configuration Manager window, browse to **Tools > List Tools > Application Path List**.

5. Double-click **Application Path List**.

6. In the Application Path List window, in the Select filter data section, click **Retrieve**. Then, in the Application Path section, click **Add**.

   A new entry is created and the Attributes tab becomes editable.

7. On the Attributes tab, provide the following details:
   - **Application Instance**: From the dropdown list, select an application instance configured for Unified WIM and Unified EIM (page 12).
   - **Peripheral Gateway**: From the dropdown list, select an agent peripheral gateway configured for Unified WIM and Unified EIM (page 22).
   - **Name**: This field is auto-populated.

   In the Application Path Members section, click the **Add** button and set the following:
   - **Peripheral**: From the dropdown list, select the agent peripheral configured for Unified WIM and Unified EIM (page 22).
   - **Media routing domain**: From the dropdown list, select an MRD configured for Unified WIM and Unified EIM (page 14).

   Click **Save**.
8. In the Configuration Manager window, go to Options (menu) > Application Object Filter.

9. In the Application Object Filter window, in the Disable / Enable application object filter section, click the Enable button. Click OK.

**Configuring agents**

An agent is created in Unified CCE for mapping to users in Cisco Interaction Manager.

**To configure an agent:**

1. Go to Start > All Programs > ICM Admin Workstation > Configuration Manager.

2. In the Configuration Manager window, browse to Tools > Explorer Tools > Agent Explorer.

3. Double-click Agent Explorer.

4. In the Agent Explorer window, in the Select filter data section, click Retrieve. Then, click [1]Add Agent button.

   A new entry is created and a new set of tabs appear.

5. On the Agent tab, provide the following details:
   - **First name:** Provide the first name.
   - **Last name:** Provide the last name.
   - **Login name:** Provide the login name for the Agent.
   - **Login enabled:** Select the option.
   - **Password:** Provide the password for the agent.
   - **Enterprise name:** This field is auto-populated.

   Click Save.
Configuring services

A service is defined for a peripheral to describe the category of requests being processed by skill groups that belong to the peripheral. For example, billing, inventory, etc. A service is required for creating skill groups.

To configure a service:

1. Go to Start > All Programs > ICM Admin Workstation > Configuration Manager.
2. In the Configuration Manager window, browse to Tools > Explorer Tools > Service Explorer.
3. Double-click Service Explorer.
4. In the Service Explorer window, in the Select filter data section, click Retrieve. Then, click Add Service button.

   A new entry is created and a new set of tabs appear.

5. On the Service tab, provide the following details:
   - **Media routing domain:** From the dropdown list, select an MRD configured for Unified WIM and Unified EIM (page 14).
   - **Peripheral number:** Provide a unique peripheral number.
   - **Name:** Provide a name for the service.

   Click Save.
Configuring skill groups

A skill group is created in Unified CCE for mapping to user groups in Cisco Interaction Manager. You can create two types of skill groups:

- **Cisco Interaction Manager picks the agent (Non-IPTA):** For a Non-IPTA skill group, the skill group members (agents) are administered and managed in Cisco Interaction Manager. A Non-IPTA skill group is created for email routing in cases where a label is returned by Unified CCE to Cisco Interaction Manager. When a label is returned, Cisco Interaction Manager load balances the email activity to a group of agents defined in the user group (that maps to the Non-IPTA skill group) identified by the suffix of the label.

  > **Important:** The LABEL must be configured in the following format: LBL_Enterprise_Name_of_Non-IPTA_Skill_Group

- **ICM-picks-the-agent (IPTA):** For an IPTA skill group, the skill group members (agents) are administered and managed in Unified CCE. An IPTA skill group (with associated skill group members) is used in ICM scripts to facilitate email routing through Unified CCE to the skill group.

To configure an IPTA skill group:

1. Go to Start > All Programs > ICM Admin Workstation > Configuration Manager.
2. In the Configuration Manager window, browse to Tools > Explorer Tools > Skill Group Explorer.
3. Double-click **Skill Group Explorer**.
4. In the Skill Group Explorer window, in the Select filter data section, click **Retrieve**. Then, click [1]Add **Skill group** button.

   A new entry is created and a new set of tabs appear.
5. On the Skill Group tab, provide the following details:
   - **Media routing domain**: From the dropdown list, select an MRD configured for Unified WIM and Unified EIM (page 14).
   - **Peripheral number**: Provide a unique peripheral number.
   - **Peripheral name**: Provide a name for the skill group.
   - **Name**: This field is auto-populated.
   - **ICM picks the agent**: Select the option.

6. On the Skill Group Members tab, do the following:
   a. Click the **Add** button.
   b. From the Add Skill Group Member window, select the agents to be added in the skill group. Click **OK**.

7. Click the **Add Route** button.
   A new tab appears.
8. On the Route tab, in the **Name** field provide the name for the route and click **Save**.

![Route tab](image)

*Provide the name of the route*

**To configure a non-IPTA skill group:**

1. Go to **Start > All Programs > ICM Admin Workstation > Configuration Manager**.
2. In the Configuration Manager window, browse to **Tools > Explorer Tools > Skill Group Explorer**.
3. Double-click **Skill Group Explorer**.
5. On the Skill Group tab, provide the following details:
   - **Media Routing Domain**: From the dropdown list, select an MRD configured for Unified WIM and Unified EIM (page 14).
   - **Peripheral Name**: Provide a name for the skill group.
   - **Name**: This field is auto-populated.
   - **ICM picks the agent**: Clear the option.

Click **Save**.
Configure a non-IPTA skill group

6. Click the **Add Route** button.

   A new tab appears.

7. On the Route tab, in the **Name** field provide the name for the route and click **Save**.

Provide the name of the route

8. Click the **Add Peripheral Target** button.

   A new tab appears.

9. On the Peripheral target tab, set the following:
   
   - **DNIS**: Provide a DNIS.
- **Network trunk group:** From the dropdown list, select a network trunk group to be associated with the DNIS. Select the network trunk group you configured in “Configuring network trunk group” on page 12.

![Network trunk group selection](image)

*Provide the peripheral target details*

10. Click the **Add Label** button.

A new tab appears.

11. On the **Label** tab, set the following:

- **Routing client:** From the dropdown list, select the routing client you configured in “Configuring media routing peripheral gateways (MR PGs)” on page 17.
Label: Provide a name for the label that can be used in an ICM script for Non-IPTA routing. The label must be configured in the following format: LBL_Enterprise_Name_of_skill_Group

Configuring scripts

An ICM routing script determines the path and target object for an activity routed from Cisco Interaction Manager to Unified CCE.

The following procedure shows you how to set up a particular script. To find out more about setting up different types of scripts to meet your routing requirements, see the Unified CCE Scripting Guide.

To configure a script:

1. Go to Start > All Programs > ICM Admin Workstation > Script Editor.
2. In the Script Editor window, click the New button.
3. In the Create A New Script window, select the Routing script option.

A new script editor opens. The Star node is added by default to the script editor.
4. On the Routing tab, click the **Dialed Number** button, and click in the script editor. The Dialed Number (DN) node is added to the script editor.

5. Double-click the DN node to open the DN Properties window.

6. In the DN Properties window, on the Dialed Number node, from the list of available script selectors select a script selector and click the **Add** button. Click OK.

7. On the Targets tab, click the **Skill Group** button, and click in the script editor. The Skill Group node is added to the script editor.

8. Double-click the Skill Group node to open the Skill Group Properties window.

9. In the Skill Group Properties window, on the Routing Target tab, in the Skill Group column, select an IPTA skill group.

10. Next, On the Targets tab, click the **Label** button, and click in the script editor. The Label node is added to the script editor.

11. Double-click the Label node to open the Label window.

12. In the Label window, on the Label tab, set the following:
a. Select the label type as **Configured**.

b. From the available labels select a label and click the **Add** button. Click OK.

13. Next, on the General tab click the **Line Connector** button, and configure the success and error paths for each node. This creates the routing path of the script.

14. Click the **Validate** button to check if the script is created properly. If there are any errors, fix them.

15. Click the **Save** button to save the script.

---

*A sample script*
Creating Extended Call Context (ECC) variables

ECC variables are used in Unified CCE scripts to facilitate and influence routing. ECC variables have a maximum length of 256 characters. Both Scalar and Array ECC variables are supported.

To create an ECC variable:

1. Click the Expanded Call Variable List in ICM Configuration Manager.
2. Type the name and length of the ECC variable. A maximum of 256 characters are allowed.
3. Click Save.

Preparing Unified SCCE for the integration

This section describes the following procedures:

1. Obtaining Cisco Interaction Manager licenses on page 36.
2. Installing Unified SCCE on page 37.

Obtaining Cisco Interaction Manager licenses

- To order licenses for your Cisco Interaction Manager deployment, contact the Cisco License team. You will need the licenses to set up the integrated system.
Installing Unified SCCE

- Ensure that Unified SCCE is installed and available for use. See the “System IPCC Enterprise Installation and Configuration Guide, Release 7.0(0)” document for help with installing and configuring the system. The document is available at:

Configuring Unified SCCE

In this section, we describe the process of preparing Unified SCCE for the integration with Unified WIM and Unified EIM. Configure the objects (in the order specified):

1. All-in-one server
2. Multichannel controller server
3. Agent desk settings
4. Agent teams
5. Agents
6. Skill groups
7. Call types
8. Dialed numbers
9. Network Interactive Voice Response (IVR)
10. Media routing domains (MRD)
11. Scripts

Configuring all-in-one servers

To configure an all-in-one server:

1. Type the URL https://Unified_SCCE_Server_Name/uiroot/default/ipccAdmin/loginAdmin.jsp in your browser.
2. In the Login window, type the Administrator desktop login name and password. Click the Login button.
3. In the Cisco IPCC Enterprise Web Administration window, browse to **IPCC Enterprise > System Management > Machine Management > Machines.**

![Cisco IPCC Enterprise Web Administration](image)

**Browse to the Machines node**

4. In the Machines section, click the machine name of the all-in-one server. Alternately, click **Create** to add a new all-in-one server.

5. In the Describe the IPCC Machine in your deployment window, view or edit the hostname and role of the machine. Click **Next.**

![Cisco IPCC Enterprise Web Administration](image)

**View the hostname and role of the machine**
6. In the Edit IPCC Network settings window, view or edit the network settings of the machine. Click **Next**.


View the network settings of the machine

View the call manager connectivity settings
8. In the IVR connectivity settings window, view or edit the IVR connectivity settings. Click **Next**.

9. In the Database settings window, view or edit the database settings. Click **Next**.
10. Click the **Finish** button to save the settings for the machine.

**Configuring multichannel controller server**

**To configure a multichannel controller server:**

1. Type the URL `https://Unified_SCCE_Server_Name/uiroot/default/ipccAdmin/loginAdmin.jsp` in your browser.
2. In the Login window, type the Administrator desktop login name and password. Click the **Login** button.
3. In the Cisco IPCC Enterprise Web Administration window, browse to **IPCC Enterprise > System Management > Machine Management > Machines**.

4. In the Machines section, click the machine name of the multichannel controller server. Alternately, click **Create** to add a multichannel controller server.

5. In the Describe the IPCC Machine in your deployment window, view or edit the hostname and role of the machine. Click **Next**.

View the hostname and role of the machine
6. In the Edit IPCC Network settings window, view or edit the network settings of the machine. Click **Next**.

   ![Edit IPCC Network settings](image)

   **Edit the network settings**

7. Click the **Finish** button to save the settings for the machine.

   ![Finish button](image)

   **Click the Finish button**

**Configuring agent desk settings**

**To configure an agent desk setting:**

1. Type the URL `https://unified_SCCE_Server_Name/uiroot/default/ipccAdmin/loginAdmin.jsp` in your browser.

2. In the Login window, type the Administrator desktop login name and password. Click the **Login** button.
3. In the Cisco IPCC Enterprise Web Administration window, browse to **IPCC Enterprise > Agent Management > Desk Settings**.

   ![Cisco IPCC Enterprise Web Administration](image)

   **Browse to Desk Settings node**

4. In the Desk Settings section, click the **DefaultDeskSettings** link to view the desk settings that apply to all configured agents. Alternately, create a new desk setting by clicking **Create**.

   ![Cisco IPCC Enterprise Web Administration](image)

   **View desk settings details**

**Configuring agent teams**

To configure an agent team:

1. Type the URL `https://unified_SCCE_server_Name/uioot/default/ipccAdmin/loginAdmin.jsp` in your browser.

2. In the Login window, type the Administrator desktop login name and password. Click the **Login** button.
3. In the Cisco IPCC Enterprise Web Administration window, browse to **IPCC Enterprise > Agent Management > Teams.**

![Cisco IPCC Enterprise Web Administration](image)

**Browse to Agent Teams node**

4. In the Agent Teams section, click the team name to view the details. Alternately, create a new team by clicking **Create.**

![Cisco IPCC Enterprise Web Administration](image)

**View agent team details**

### Configuring agents

**To configure an agent:**

1. Type the URL `https://unified_SCCE_Server_Name/uicroot/default/ipccAdmin/loginAdmin.jsp` in your browser.

2. In the Login window, type the Administrator desktop login name and password. Click the **Login** button.
3. In the Cisco IPCC Enterprise Web Administration window, browse to **IPCC Enterprise > Agent Management > Agents**.

![Cisco IPCC Enterprise Web Administration](image)

**Browse to Agents node**

4. In the Agents section, click the agent name to view the details. Alternately, create a new agent by clicking **Create**.

![Cisco IPCC Enterprise Web Administration](image)

**View agent details**
Configuring skill groups

A skill group is created in Unified CCE for mapping to user groups in Cisco Interaction Manager. You can create two types of skill groups:

- **Cisco Interaction Manager picks the agent (Non-IPTA):** For a Non-IPTA skill group, the skill group members (agents) are administered and managed in Cisco Interaction Manager. A Non-IPTA skill group is created for email routing in cases where a label is returned by Unified CCE to Cisco Interaction Manager. When a label is returned, Cisco Interaction Manager load balances the email activity to a group of agents defined in the user group (that maps to the Non-IPTA skill group) identified by the suffix of the label.

- **ICM-picks-the-agent (IPTA):** For an IPTA skill group, the skill group members (agents) are administered and managed in Unified CCE. An IPTA skill group (with associated skill group members) is used in ICM scripts to facilitate email routing through Unified CCE to the skill group.

**To configure a skill group:**

1. Type the URL `https://unified_SCCE_Server_Name/uiroot/default/ipccAdmin/loginAdmin.jsp` in your browser.
2. In the Login window, type the Administrator desktop login name and password. Click the Login button.
3. In the Cisco IPCC Enterprise Web Administration window, browse to **IPCC Enterprise > Agent Management > Skill Groups.**

Browse to **Skill Groups node**
4. In the Skill Groups section, click the skill group name to view the details. Alternately, create a new skill group by clicking **Create**.

**Configuring call types**

*To configure a call type:*

1. Type the URL `https://Unified_SCCE_Server_Name/uiroot/default/ipccAdmin/loginAdmin.jsp` in your browser.

2. In the Login window, type the Administrator desktop login name and password. Click the **Login** button.

3. In the Cisco IPCC Enterprise Web Administration window, browse to **IPCC Enterprise > Contact Management > Call Types**.

**Browse to Call Types node**
4. In the Call Type section that appears, click the call type name to view the details. Alternately, create a new call type by clicking **Create**.

![View call type details](image1)

**Configuring dialed numbers**

**To configure a dialed number:**

1. Type the URL `https://unified_SCCE_Server_Name/uiroot/default/ipccAdmin/loginAdmin.jsp` in your browser.
2. In the Login window, type the Administrator desktop login name and password. Click the **Login** button.
3. In the Cisco IPCC Enterprise Web Administration window, browse to **IPCC Enterprise > Contact Management > Dialed numbers**.

![Browse to Dialed Numbers node](image2)
4. In the Dialed numbers section, click the dialed number name to view the details. Alternately, create a new dialed number by clicking Create.

**Configuring Network Interactive Voice Responses**

To configure a network interactive voice response:

1. Type the URL `https://unified_SCCE_Server_Name/uiroot/default/ipccAdmin/loginAdmin.jsp` in your browser.
2. In the Login window, type the Administrator desktop login name and password. Click the Login button.
3. In the Cisco IPCC Enterprise Web Administration window, browse to IPCC Enterprise > IVR Management > Network IVR.
4. In the Network IVR section, view the pre configured Network IVRs. If required, edit them and click Save.
Configuring media routing domains

To configure a media routing domain:

1. Type the URL https://Unified_SCCE_Server_Name/uiroot/default/ipccAdmin/loginAdmin.jsp in your browser.

2. In the Login window, type the Administrator desktop login name and password. Click the Login button.

3. In the Cisco IPCC Enterprise Web Administration window, browse to IPCC Enterprise > Multichannel Management > Media routing domains.

4. In the Media routing domains section, click the MRD name to view the details. Alternately, create a new MRD by clicking Create.

Browse to MRD node

View MRD details
**Configuring scripts**

For details on configuring a script see, “Configuring scripts” on page 33.

**Installing Cisco Interaction Manager and the integration**

To install Cisco Interaction Manager and the integration with Unified CCE:

1. Ensure that Microsoft SQL 2000 Service Pack 4 is installed and running on the machine on which you will be installing the Cisco Interaction Manager database.

2. From the Cisco Interaction Manager Environment CD, copy the BEA folder to a local directory on the Cisco Interaction Manager application server, and the JRE_1.6 folder to the user desktop.

3. From the BEA folder inside the local directory, open the folder WebLogic Server 9.2 MP2, and double-click the .exe file within it. This launches the installation process for WebLogic 9.2 MP2 on the application server. Refer to WebLogicServerInstallGuide.pdf inside the BEA\documentation folder for steps to install and configure BEA WebLogic 9.2 MP2.

4. In distributed-server installations, install Sun JDK 1.5.0_10 on the machine where the services server is installed. The installation program for JDK is included in the Environment folder of the installation package.

5. Install Cisco Interaction Manager. Refer to Cisco Unified Web and E-Mail Interaction Manager Installation Guide for Unified CCE for a detailed list of deployment options and installation steps corresponding to each deployment.

   The document also guides you through the procedure of setting up the integration. See the section “Integrating Unified WIM and Unified EIM with Unified CCE.”

6. From the Windows Services panel, start the Cisco Interaction Manager Service, and wait for 2–3 minutes before launching the URL to allow all the application services to start.

7. On the user desktops, install JRE version 1.6.0_04, 1.6.0_05, 1.6.0_06, or 1.6.0_07.

8. Configure the browser on user desktops according to the procedures detailed in the Cisco Unified Web and E-Mail Interaction Manager Browser Settings Guide.

**Configuring objects in Cisco Interaction Manager**

This section describes the following procedures:

1. “Configuring variables in Cisco Interaction Manager” on page 53

2. “Verifying mapping of objects in the Administration Console” on page 53.

3. “Setting up knowledge base articles for Unified EIM” on page 56.

4. “Setting up business objects in the Administration Console” on page 58.

5. “Setting up services in the System Console” on page 62.
Configuring variables in Cisco Interaction Manager

While sending new activity requests from a queue to Unified CCE, EAAS sends call variables to Unified CCE as task context. By default, the activity_id is sent to Unified CCE as CallVariable1.

If you need to pass on other attributes of the activity as call variables or ECC variables to Unified CCE, you need to configure them in Cisco Interaction Manager. These variables can then be used in Unified CCE scripts to configure conditions. For details, see the ICM scripts documentation. If you plan to configure these variables as ECC variables in Cisco Interaction Manager, you need to first create the ECC variables in Unified CCE. For details, see the ICM documentation.

To configure variables in Cisco Interaction Manager:

Perform all these tasks on the Cisco Interaction Manager Active database.

1. Run the following query on the egpl_casemgmt_activity table to get all the activity attributes available in the table.
   ```sql
   sp_help egpl_casemgmt_activity
   ```
2. Identify the activity attributes for which you want to create the call variables and note down the exact names of the activity attribute (column_name) for your reference.
3. Run the following query on the egicm_call_variable table to identify the call variable IDs that are already in use.
   ```sql
   select call_variable_id from egicm_call_variable
   ```
   Run the following query on the egicm_call_variable table to add the new call variables.
   ```sql
   Insert into EGICM_CALL_VARIABLE VALUES (Call_Variable_ID, 'Call_Variable_Name', 'Call_Variable_Description')
   ```
Where:
- Call_Variable_ID: The ID of the call variable. Make sure that you do not use the call variable IDs that are already in use.
- Call_Variable_Name: This name should match the exact name of the activity attribute you got from the egpl_casemgmt_activity table in step 2.
- Call_Variable_Description: The description of the call variable. This is optional information.

For example, the query will look like:
```sql
Insert into egicm_call_variable values (1003,'subject','Subject of the email')
```
Now, you can use these newly added variables as call variables and ECC variables in queues.

Verifying mapping of objects in the Administration Console

To verify that Unified CCE objects have been mapped correctly in the Cisco Interaction Manager Administration Console:

2. Log in as the partition administrator (user name and password that were configured during the installation of Cisco Interaction Manager).

3. Select the Administration Console.

4. Under Partition, browse to Settings. Locate the Application Instance communication setting. Verify that it is set to the value chosen at the time of running the Unified CCE integration wizard.

Verify that Application Instance setting is correctly configured
5. Now locate the **MR Connection Port** communication setting. Enter the connection port for the External Agent Assignment service (EAAS) to listen to connections from the MR PIM via the MR interface. The value needs to match the value entered at the time of configuring MR PIM, which is configured during the Unified CCE installation. This is an important setting to ensure that activities are routed correctly through Unified CCE.

Configure **MR Connection Port** setting

6. Under the appropriate department, click the **User > Users** node in the Administration tree, to verify that all users which were selected at the time of running the integration wizard, are displayed.

Review mapped users
7. Under the appropriate department, click the **User > Groups** node in the Administration tree to verify that all skill groups, which were selected at the time of running the integration wizard, are displayed.

8. Under the appropriate department, click the **Workflow > Queues** node in the Administration tree, and verify that all MRDs which were selected at the time of running the Unified CCE integration wizard, are displayed. Also verify that for all the non-IPTA skill groups that were imported using the Unified CCE integration wizard, the corresponding queues have been automatically created by under the **Queues** node.

---

**Setting up knowledge base articles for Unified EIM**

The knowledge base (KB) consists of articles organized into folders. It includes certain standard folders to hold articles meant for specific use in emails, such as headers, greetings, signatures, and footers. Folders for articles of other types are created by KB managers and authors.

*See Cisco Unified Web and E-Mail Interaction Manager Knowledge Base Console User’s Guide* for the details of the procedures mentioned in this section.
To set up KB articles for Unified EIM:

1. Launch the URL: http://Cisco_Interaction_Manager_Served_Default_Partition.
2. Log in as the partition administrator.
3. Open the Knowledge Base Console.
4. In the Knowledge Base tree, browse to Department > Shared > Standard > Email. Create an article in each of the sub-nodes to set up one option each for a header, greeting, signature, and footer that can be used in responses to incoming activities in the department. Set up macros for the articles to make it easy to insert them into other articles or email responses.

Create a header, greeting, signature, and footer

5. Browse to the Department > Shared folder. Create a folder for auto-acknowledgements.

Create a folder for auto-acknowledgements
6. In the newly created folder, create an article for use in auto-acknowledgement emails. Use macros to insert the header, greeting, signature, and footer created earlier. These macros expand to the actual content at runtime.

Create a KB article to use in auto-acknowledgement emails

This article will be used later in a workflow (see page 60).

Setting up business objects in the Administration Console

See Cisco Unified Web and E-Mail Interaction Manager Administration Console User’s Guide for the details of the procedures mentioned in this section.

Unified EIM objects

To set up Unified EIM business objects in the Administration Console:

2. Log in as the partition administrator.
3. Open the Administration Console.
4. In the Administration tree, browse to the **Email > Aliases** node. Create an alias to serve as the entry point for emails into the system.

![Create an email alias](image)

5. Next, browse to the **Workflow > Queues** node to create an email queue.

**Important:** Skip this step if you intend to use only queues mapped to MRDs.
6. Then browse to the **Workflow > Workflows > Inbound** node to create an inbound workflow for this alias. The workflow will route incoming emails. Add the alias created in step 4 to the **Start** node. Add a queue mapped to MRD or the queue created in step 5 to the **Queue** node. Select the auto-acknowledgement KB article created earlier (see page 58) for the auto-acknowledgement node.

**Unified WIM objects**

See *Cisco Unified Web and E-Mail Interaction Manager Administration Console User’s Guide* for the details of the procedures mentioned in this section.

**To set up Unified WIM business objects in the Administration Console:**

2. Log in as the partition administrator.
3. Open the Administration Console.
4. Go to Partition > Settings > Partition. In the Partition Setting Group, locate the Applet host setting (a security setting). Change its value from the IP address used to the fully qualified domain name (FQDN) of the primary web server.

Configure Applet host setting

5. Next, browse to the Workflow > Queues node and create a chat queue.

Important: Skip this step if you intend to use only queues mapped to MRDs.

6. Browse to the Chat > Templates node. Create a new template set, and provide default messages for different states associated with a chat session, e.g., abandon, exit, error, and so on.

Create a customer template set for chat
7. Browse to the Chat > Entry points node. Create new entry points by assigning the appropriate templates. To route chat activities that enter from this entry point, use an auto-configured queue or the queue created in step 4. Make the entry points active.

![Image of Properties pane for Default Entry Point]

A sample entry point for chat activities

In the Properties pane, click the Show HTML button. The code used to generate a chat hyperlink to that entry point is displayed. Copy this link code into a Notepad file. Edit the code as explained in the Administration Console Help.

Setting up services in the System Console

Service processes are managed at the system level as shared resources across partitions. Service instances are managed within partitions.

See Cisco Unified Web and E-Mail Interaction Manager System Console User’s Guide for the details of the procedures mentioned in this section.

Unified EIM services

This section helps you set up processes and instances for the following services:

- **Retriever**: Gets incoming emails from configured aliases and parses them.
- **Workflow Engine**: Applies workflows on emails to automate their routing and handling.
- **Dispatcher**: Sends outgoing emails out of the system.
- **External Agent Assignment Service (EAAS)**: Identifies new activities that arrive into an external assignment queue, and routes requests for each of these activities to Unified CCE for routing to take place through Unified CCE.
- **Listener**: Assigns activities to target agents or user groups (skill groups) identified by Unified CCE, and reports the status of both the activity and the agent to Unified CCE throughout the life cycle of the given activity.
To set up Unified EIM services in the System Console:

1. Open a new browser window, and launch the URL: http://Cisco_Interaction_Manager_Server/system. Log in as the system administrator (user name and password that were configured during the installation of Cisco Interaction Manager).

2. Select the System Console.

3. Browse to the Partitions > Partition > Services > Retriever node. Click the Retriever instance to use in the partition, and select the email alias that you had created earlier in the Administration Console (see page 59).

Associate a Retriever instance with the email alias created earlier
4. Restart the Retriever process and instance based on the notification message that appears. Browse to **Shared Resource > Services > Retriever**, and stop and start the Retriever process for the system.

5. Navigate back to the **Partitions > Partition > Services > Retriever** node. Stop and start the Retriever instance.
6. Browse to **Shared Resource > Services > Workflow > Workflow Engine** and verify that the Workflow Engine process is running. If the process is in a stopped state, start the process by clicking the **Run** button.

Verify that the Workflow Engine process is running

7. Browse to **Partitions > Partition > Services > Workflow > Workflow Engine** and start the Workflow Engine instance.

Start the Workflow Engine instance
8. Browse to **Shared Resource > Services > Email > Dispatcher** and verify that the Dispatcher process is running. If the process is in a stopped state, start the process by clicking the **Run** button.

**Verify that the Dispatcher process is running**

9. Browse to **Partitions > Partition > Services > Email > Dispatcher** and start the Dispatcher instance.

**Start the Dispatcher instance**
10. Browse to **Shared Resource > Services > Listener > Listener** and verify that the Listener process is running. If the process is in a stopped state, start the process by clicking the **Run** button.

Verify that the Listener process is running

11. Browse to **Partitions > Partition > Services > Listener > Listener**. Configure the Listener instance by providing the primary CTI server IP address and port number, and the secondary CTI server IP address and port number (optional) in the format, **CTI Server IP address: port number**.

Configure and start the Listener instance
12. Browse to **Shared Resource > Services > EAAS > EAAS** and verify that the EAAS process is running. If the process is in a stopped state, start the process by clicking the **Run** button.

   ![Tree: System][1]  
   ![List: EAAS][2]  
   ![Properties: EAAS][3]  
   ![Properties: EAAS-Instance][4]  

   **Verify that the EAAS process is running**

13. Browse to **Partitions > Partition > Services > EAAS > EAAS** and start the EAAS instance.

   ![Tree: System][1]  
   ![List: EAAS][2]  

   **Start the EAAS instance**

Unified EIM is now ready for use. To verify, log in as an agent, supervisor, or administrator and perform basic tasks.

**Unified WIM services**

This section helps you set up processes and instances for the following service:

- **Agent Assignment**: Routes chats to agents.

**To set up Unified WIM services in the System Console:**

1. Open a new browser window, and launch the URL: `http://Cisco_Interaction_Manager_Server/system`. 
2. Log in as the system administrator.

3. Browse to **Shared Resource > Services > Chat > Agent Assignment** and verify that the Agent Assignment process is running. If the process is in a stopped state, start the process by clicking the **Run** button.

4. Browse to **Partitions > Partition > Services > Chat > Agent Assignment** and start the Agent Assignment service instance.

**Setting up web links for chat**

**To create a chat link on your web site:**

- Open the code view of the host web page and add the edited link code (see page 62) from the entry point properties at the appropriate point. You may need to ask your web master to perform this task.

Unified WIM is now ready for use. To verify, log in as an agent or supervisor, and perform basic tasks.
Related documentation

Refer to the following Cisco Interaction Manager User’s Guides (for the Unified CCE integration) for more information about configuring and using Cisco Interaction Manager.

- *Cisco Unified Web and E-Mail Interaction Manager Administration Console User’s Guide* helps administrators set up and manage business objects.
- *Cisco Unified Web and E-Mail Interaction Manager System Console User’s Guide* helps system administrators set up and manage services, loggers, and system monitors.
- *Cisco Unified Web and E-Mail Interaction Manager Tools Console User’s Guide* helps business analysts extend the system by adding custom attributes. The Tools Console also enables administrators to configure screens and views for users and groups.
- *Cisco Unified Web and E-Mail Interaction Manager Reports Console User’s Guide* helps managers and supervisors to set up and run reports to analyze various aspects of the system.
- *Cisco Unified Web and E-Mail Interaction Manager Knowledge Base Console User’s Guide* helps knowledge base (KB) managers and authors to create and publish KB articles.

Configuring objects for outbound activities

Cisco Interaction Manager allows agents to create outbound activities. To enable this functionality, you need to configure some objects in Unified CCE and Cisco Interaction Manager.

![Important: Outbound activities are not supported in systems integrated with Unified SCCE.]

Configuring objects in Unified CCE

In Unified CCE, you need to:

- Create a media class
- Create an MRD
- Update the application path list
- Create an IPTA skill group
- Create a NIPTA skill group
To configure objects in Unified CCE:

1. Create a media class with the name `CIM_OUTBOUND`. Note that the names of media classes are case sensitive. If you want to use some other name for the media class, you need to update the `Cisco_Home\config\ipcc\egicm_media_class_mappings.properties` file with the new name. Open the file in a text editor and locate `CIM_OUTBOUND`. Replace it with the name of the media class. After updating the properties file, restart Cisco Interaction Manager.

For details on creating a media class, see “Configuring media classes” on page 13.

2. Create an interruptible MRD. For details on creating an MRD, see “Configuring media routing domains (MRDs)” on page 14. While creating the MRD, make sure you select the **Interruptible** option.

3. Add the MRD created in Step 2 to the application path list. For more details, see “Configuring application path” on page 24.

4. For the MRD created in Step 2, create an IPTA skill group and a NIPTA skill group. While creating the IPTA skill group, make sure you associate the IPTA agents with the skill group. For details on creating skill groups, see “Configuring skill groups” on page 28.

Configuring objects in Cisco Interaction Manager

In Cisco Interaction Manager, you need to create:

- A user group and map it to the NIPTA skill group
- A user group and map it to the IPTA skill group
- A queue and map it to the MRD

To configure objects in Cisco Interaction Manager:

1. In the Administration Console, in the Tree pane, browse to Administration > Departments > Department_Name > User > Groups. Create two user groups and map the IPTA and NIPTA skill groups created in “Configuring objects in Unified CCE” on page 70 (in Step 4) with the two user groups. Make sure you associate the NIPTA agents with the user groups mapped to NIPTA skill groups. For details, see the Cisco Unified Web and E-Mail Interaction Manager Administration Console User’s Guide.

2. In the Administration Console, in the Tree pane, browse to Administration > Departments > Department_Name > Workflow > Queues. Create a queue and map the MRD created in “Configuring objects in Unified CCE” on page 70 (in Step 2) with the queue. Also, configure the concurrent task limit of the agents. For details, see the Cisco Unified Web and E-Mail Interaction Manager Administration Console User’s Guide.
Configuring web server

- Configuring Internet Information Services
- Configuring pool thread limit
This chapter will assist you in understanding how to configure and maintain your Unified WIM and Unified EIM web servers.

**Configuring Internet Information Services**

This procedure helps eliminate 503 errors on the web server.

**To configure Internet Information Services (IIS) on the web server:**

1. On the web server, go to Start menu > Administrative Tools > Internet Information Services (IIS) Manager.

2. In the navigation tree, go to Application Pools > DefaultAppPool. Right-click the node and select Properties.

   ![Internet Information Services (IIS) Manager](image)

   *Open the DefaultAppPool node*

3. In the DefaultAppPool Properties window, on the Recycle tab, clear the following options:
   - Recycle worker process (in minutes)
4. On the Performance tab, clear the following options:
   - **Shutdown worker process after being idle for**
   - **Limit the kernel request queue**

5. On the Health tab, clear the following options:
   - **Enable pinging**
   - **Enable rapid fail protection**
Click **Apply**. Then click **OK** to close the window.

![Image of AppPool Properties window]

*Clear the Enable pinging and Enable rapid fail protection options*

---

**Configuring pool thread limit**

This procedure increases the capacity of IIS to handle concurrent requests.

**To configure pool thread limit:**

1. On the machine where the web server associated with the primary application server is installed, go to **Start** menu > **Run**.

2. Type: **Regedit**

   Press the Enter key.

3. In the Registry Editor window, navigate to **HKEY_LOCAL_MACHINE** > **System** > **CurrentControlSet** > **Services** > **InetInfo** > **Parameters**.

![Image of Registry Editor window]

*Navigate to InetInfo parameters*
4. Go to Edit menu > New > DWORD Value.

5. Change the name of the new registry value that gets created to PoolThreadLimit.

6. Right-click PoolThreadLimit and select Modify.

7. In the Edit DWORD Value window, set properties as following:
   - Value data: ffffffff
   - Base: Hexadecimal

   **Important:** Make sure you have typed “f” eight times.

8. Restart the server.
Managing application servers

- Configuring WebLogic
- Routine maintenance tasks
This chapter will assist you in understanding how to configure and maintain your Unified WIM and Unified EIM application servers.

**Configuring WebLogic**

This procedure increases the application’s capacity to handle concurrent requests from users. Perform these tasks on the primary application server and all secondary application servers, if any.

**To configure the size of HTTP request queues for the application server:**

1. Open `Cisco_Home\config\weblogic\config_Primary_Application_Server.xml`.
2. Locate the following set of lines:
   ```xml
   <execute-queue>
     <name>default</name>
     <thread-count>50</thread-count>
     <threads-increase>1</threads-increase>
   </execute-queue>
   ```

   To ensure that an adequate number of threads have been allocated to the `default` pool, set the number of worker threads for WebLogic to at least 60% of the number of concurrent users. For example, if you have 100 concurrent users, set `ThreadCount` to 60; and if you have 150 users, set `ThreadCount` to 90.

3. Locate the following set of lines:
   ```xml
   <execute-queue>
     <name>eGainPushletQueue</name>
     <thread-count>50</thread-count>
     <threads-increase>1</threads-increase>
   </execute-queue>
   ```

   Allocate an adequate number of threads to the pushlet queue. It should be 120% of the number of concurrent users.

4. Locate the following line:
   ```xml
   </web-server>
   ```

   After the line, add the following line:
   ```xml
   <accept-backlog>100</accept-backlog>
   ```

   The lines should look like:
   ```xml
   </web-server>
   <accept-backlog>100</accept-backlog>
   ```

5. Locate the following line:
   ```xml
   </web-server-log>
   ```

   After the line, add the following line:
   ```xml
   <keep-alive-secs>120</keep-alive-secs>
   ```
The lines should look like:

```xml
<web-server-log
  <keep-alive-secs>120</keep-alive-secs>
</web-server-log>
```

6. Locate the following set of lines:

```xml
<execute-queue>
  <name>eGainLive</name>
  <thread-count>50</thread-count>
  <threads-increase>1</threads-increase>
</execute-queue>
```

Allocate an adequate number of threads to chat queues. It should be 120% of the number of concurrent chat sessions.

**Important:** Skip this step if your installation does not include Unified WIM.

Repeat these tasks on all secondary application servers, if any.

**Routine maintenance tasks**

**Creating backup copies**

- Back up the `Cisco_Home` folder regularly. Exclude the `log` folder under `Cisco_Home` from the backup.

**Archiving**

- Purge archived activities to free up the disk space occupied by attachments of archived activities.
- Schedule archive jobs to run during your off-peak hours to avoid database performance bottlenecks.

**Applying Microsoft security patches and service packs**

Microsoft releases security patches and service packs to plug vulnerabilities in the operating system and various programs.

- Apply these patches after confirming their impact on the application.
Managing databases

- Best practices for configuring databases
- Routine maintenance tasks
This chapter will assist you in understanding how to configure and maintain your Unified WIM and Unified EIM databases.

**Best practices for configuring databases**

**Installation and settings**

**Active database**
- While installing the application, ensure that data and log files of the active database reside on a disk volume with a good amount of free disk space.
- Set the active database properties as follows:
  - Properties of Datafile: Automatically grow file by 400-700 MB
  - Maximum file size set to unrestricted file growth

**Other databases**
- Other system databases (master, model, msdb, TEMPDB) should also be installed on a disk volume with a good amount of free disk space because TEMPDB may sometimes grow due to application requirements. Care needs to be taken during MSSQL installation that the data files are pointed to other location rather than the system volume.

**Transaction logs**
- Set the transaction log properties as follows:
  - Properties of Datafile: Automatically grow file by 10%
  - Maximum file size set to unrestricted file growth

**Optimal configuration settings**

<table>
<thead>
<tr>
<th>Database configuration setting</th>
<th>Recommended value</th>
</tr>
</thead>
<tbody>
<tr>
<td>auto_close</td>
<td>off</td>
</tr>
<tr>
<td>auto_create_statistics</td>
<td>on</td>
</tr>
<tr>
<td>auto_update_statistics</td>
<td>on</td>
</tr>
<tr>
<td>auto_shrink</td>
<td>off</td>
</tr>
<tr>
<td>read_only</td>
<td>off</td>
</tr>
</tbody>
</table>
Configuring anti-virus protection

Anti-virus protection is necessary, but enabling all files for virus scan may cause performance issues.

- Exclude .mdf, .ldf, .ndf, and .dat files from virus scan.

Routine maintenance tasks

Rebuilding indexes

Rebuilding of indexes enhances database performance.

- Run rebuild index jobs on a weekly basis during off peak hours.

Optimizing database file space

At times, the transaction log may grow considerably, especially if the recovery model of the database is set to “Full.” Although the active portion of transaction logs is committed after checkpoint or truncated after transaction log backups, the free space within the transaction log file may not be released to the operating system. This could lead to disk space crunch.

- Run a space optimization job every day during off peak hours to release the free space within the transaction logs back to the operating system.

Performing disk defragmentation

- Weekly defragmentation is recommended. Note that it requires downtime.

Creating backup copies

Backups are critical in case of hardware failure. The following backup policy ensures that you won’t lose more than one hour of data. SQL supports full recovery model and hence this policy is strongly recommended. When
the recovery mode is set to full it is necessary to backup transactional logs periodically. Otherwise it may lead to a disk space issue because of transaction logs growing indefinitely.

- Perform a weekly complete backup, daily differential backup, and hourly transactional log backups.

Archiving

Regular archiving helps to keep the size of the database manageable. The maximum size of the database should be kept under 20 GB in most cases.

- Schedule archive jobs to run during your off-peak hours to avoid database performance bottlenecks.
- Purge archived activities to create more available disk space.

Applying Microsoft security patches and service packs

Microsoft releases security patches and service packs to plug vulnerabilities in the operating system and various programs.

- Apply these patches after confirming their impact on the application.
Managing Windows servers

- Best practices for configuring Windows servers
- Routine maintenance tasks
- Performance tuning considerations
This chapter will assist you in understanding how to configure and maintain your Unified WIM and Unified EIM servers.

**Best practices for configuring Windows servers**

**Allocating adequate virtual memory**
- Virtual memory setting should be set to 1.5 times the physical memory. It is also recommended to distribute the virtual memory across disk volumes to avoid space crunch on system volume during run time.

**Setting up disk space**
- All the system volumes should have more than 10% of their actual space free for application and other operating system (OS) related activities at any given time.

**Configuring anti-virus protection**
- As email attachments are prone to virus attacks, set up scanning of email attachments on your mail exchange server.

**Routine maintenance tasks**

**Monitoring disk space**
- Monitor and free space on disk volumes from time to time by deleting the unnecessary files. Installation programs, application logs, user profiles, Dr. Watson logs, temp files are known to occupy the space unnecessarily. However, if it is not possible to free disk space further because of the size of the data, the administrator should plan archiving of old data or migration of the system to a larger capacity server.

**Applying Microsoft security patches and service packs**
- Microsoft releases security patches and service packs to plug vulnerabilities in the operating system and various programs.
- Apply these patches after confirming their impact on the application.
Performance tuning considerations

One of the first steps towards tuning an application is to determine evolving requirements, which is not easy as requirements are likely to vary across different types of users. Administrators, typically, want the system to be easily configurable for various user loads, security needs, and application uptime. Business managers tend to care about issues such as security considerations for critical data that is passed between various components within the application, response times, reliability, availability and scalability. For agents, response time is the most important factor that defines a finely tuned system.

Cisco Unified Web and E-Mail Interaction Manager Solutions Reference Network Design Guide helps you plan your configuration when you first set it up. In this section, we provide a quick overview of some of the factors that you should consider as the system grows.

Peak concurrent usage

The application will need to be tuned if there is a need to meet specific concurrent usage requirements. Concurrent usage includes usage by email and chat agents as well as chat sessions. The general guideline is that the greater the number of concurrent users, the likelier it is for the system to be stressed resulting in longer response times.

Email volume

The email volume that the application handles determines the amount of disk space used by the database, size of active and master databases, and the capacity of the database engine to provide optimal response times to data requests. Active usage of email attachments and Knowledge Base (KB) articles also affect disk space requirements.

Server configuration

It is a well known fact that the specifications for servers that run critical business application are constantly changing and, therefore, the application needs to account for such periodic changes. The server configuration and environment must be tailored to allow application to take advantage of it and vice versa. Therefore, if the server configuration is either downsized (less likely to occur) or increased (more likely), then the application needs to be tuned to the current server configuration. In addition, other applications that might be running on the same hardware also affect the tuning of the application.

Security requirements

Often security requirements dictate that the application data should be accessed in a secure way. For this reason secure sockets layer (SSL) mode of access to information is set up. Likewise, sharing and access to critical information such as customer data require that data is stored and retrieved in a secure way by extra access control and beyond.

Additional security requirements do lead to some delay in response times for users accessing the application. This should be clearly understood by administrators setting up SSL mode of access on web servers or trying to access information stored on remote and highly secure resources like remotely mounted file systems or disks.
See Cisco Unified Web and E-Mail Interaction Manager Installation Guide for information about how to set up the SSL mode of communication on the web server.