Cisco Unified Web and E-Mail Interaction Manager Administrator’s Guide to Routing and Workflows
For Unified Contact Center Enterprise and Hosted and Unified ICM

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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 center and customer service helpdesk 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 Administrator’s Guide to Routing and Workflows introduces you to routing and helps you understand how to set up service levels and queues for all types of activities. Workflows which route all email and other activities that are not realtime activities are also discussed in this guide.

Chat interactions occur in realtime and are handled slightly differently from other activities. For details about chat resources, refer to the Cisco Unified Web and E-Mail Interaction Manager Administrator’s Guide to Chat and Collaboration Resources.

**Document Conventions**

This guide uses the following typographical conventions.

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

**Acronyms and Initialisms**

The following acronyms and initialisms are used in this document:

- ACD: Automatic Call Distributor
- ARM: Agent Reporting and Management
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>
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<th>Use</th>
<th>To view</th>
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<tbody>
<tr>
<td>🔄 Help button</td>
<td>Topics in <em>Cisco Unified Web and E-Mail Interaction Manager Help</em>; 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>
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*Online help options*

Document Set

The Cisco Unified Web and E-Mail Interaction Manager documentation is available in the `documents` folder on the product CD. The latest versions of all Cisco documentation can be found online at [http://www.cisco.com](http://www.cisco.com)

All Unified WIM documentation can be found online at
In particular, Release Notes for these products can be found at
For general access to Cisco Voice and Unified Communications documentation, go to
The document set contains the following guides:
- Hardware and System Software Specification for Cisco Unified Web and E-Mail Interaction Manager
- Cisco Unified Web and E-Mail Interaction Manager Installation Guide
- Cisco Unified Web and E-Mail Interaction Manager Browser Settings Guide

User guides for agents and supervisors
- Cisco Unified Web and E-Mail Interaction Manager Agent’s Guide
- Cisco Unified Web and E-Mail Interaction Manager Supervisor’s Guide

User guides for Knowledge Base managers and authors
- Cisco Unified Web and E-Mail Interaction Manager Knowledge Base Author’s Guide

User guides for administrators
- Cisco Unified Web and E-Mail Interaction Manager Administrator’s Guide to Administration Console
- Cisco Unified Web and E-Mail Interaction Manager Administrator’s Guide to Routing and Workflows
- Cisco Unified Web and E-Mail Interaction Manager Administrator’s Guide to Chat and Collaboration Resources
- Cisco Unified Web and E-Mail Interaction Manager Administrator’s Guide to Email Resources
- Cisco Unified Web and E-Mail Interaction Manager Administrator’s Guide to Data Adapter
- Cisco Unified Web and E-Mail Interaction Manager Administrator’s Guide to Reports Console
- Cisco Unified Web and E-Mail Interaction Manager Administrator’s Guide to System Console
- Cisco Unified Web and E-Mail Interaction Manager Administrator’s Guide to Tools Console
1 Routing Basics

- Key Terms and Concepts
- Important Tasks
- Services for Queues and Workflows
- Settings for Queues and Workflows
- Elements of the User Interface
This chapter introduces key concepts related to routing and workflows, and provides information about business objects and settings that need to be configured before you can create workflows and set up your routing scheme.

**Key Terms and Concepts**

- **Queues**: Queues hold incoming customer service activities such as emails and chat sessions that are waiting to be assigned to agents. Email activities are routed to queues by workflows, and then either pushed to, or pulled by agents, depending on the configuration of the queue. Chat, blended collaboration, and call back activities are also routed to queues, but by the Agent Assignment Service or the External Agent Assignment service, and then either pushed to, or pulled by users depending on the role of the user. User access to queues is controlled using permissions. A department can have any number of queues. A single queue can hold multiple activity types like email, task, chat etc. For more details, see “Queues” on page 16.

- **Service levels**: In order to provide quality customer service, most organizations measure the performance of their customer service center against established service levels. Using service levels, administrators can set up response time expectations for different types of incoming customer service interactions like email, chat etc. Once defined, service levels are used in workflows to set the due date of activities. Routing decisions can also be made based on service levels. Service level performance reports are available in the Reports Console. For more details, see “Service Levels” on page 33.

- **Workflows**: Workflows provide a mechanism for applying a sequence of rules on activities. Flexible and easy to use, they allow administrators to define rules to modify business objects, automate the progression of activities through the system, raise alarms and send notifications about the status of activities, etc. There are four types of workflows:
  - Alarm workflows
  - General workflows
  - Inbound workflows
  - Outbound workflows
For more details, see “Workflows” on page 36.

**Important Tasks**

**For Queues**

Before you start configuring queues, make sure that the following objects are ready to be used in queues.

- MRDs (for integrated queues only)
- Script selectors (for integrated queues only)
- Users and user groups (for standalone queues only)
- Articles to be configured as quick links, quick responses, headers, footers, greetings, signatures, and bookmarks
The following objects are optional.

- Call variables (for integrated queues only)
- Application stings (for integrated queues only)
- Expanded call variables (for integrated queues only)

For Workflows

Before you start configuring workflows, make sure that the following objects are ready to be used in workflows.

- Queues
- Service levels
- Classifications
- Users and user groups
- Departments for transferring activities
- Custom rules
- Articles to be used in auto-acknowledgement, auto-reply, and auto-suggest nodes
- Macros to be used in the modify object and create object nodes
- Usage links to be used in the modify object and create object nodes

Services for Queues and Workflows

Make sure the following services in the System Console are configured properly and are in the running state. For details on setting up these services, see *Cisco Unified Web and E-Mail Interaction Manager Administrator’s Guide to System Console*.

- Workflow: Activity pushback
- Workflow: Alarm
- Workflow: Workflow cache
- Workflow: Workflow engine
- Agent Assignment Service (For chat)
- External Agent Assignment Service (EAAS) (For integrated chats, blended collaboration, callback, and delayed callback activities only)
- Listener service (For integrated chats, blended collaboration, callback, and delayed callback activities only. Not required for standalone chat activities.)
Settings for Queues and Workflows

Make sure that the following partition and department level settings are configured properly. For more information about settings, see Cisco Unified Web and E-mail Interaction Manager Administrator’s Guide to Administration Console.

Settings at the Partition Level

- Auto response number
- Auto response time (minutes)
- Batch expiry duration (minutes)
- Batch size
- Workflow engine service delay (seconds)
- Reassignment frequency
- Maximum queues for reassignment
- Alarm service delay

Settings at the Department Level

- Maximum activities to pull
- Activities to pull first
- Mail user max load
- Max load for all other activities
- Include original message for auto acknowledgement and auto reply
- Criteria for push based assignment
- Personalized activity assignment
- Service status for auto push back
- Expiry time auto push back (minutes)
- Activity type for auto push back
- Automatically save pull activity queue
- Chat user max load
- Chat - Override user max load setting for pull
Elements of the User Interface

The Administration Console user interface can be divided into five functional areas.

1. **Console toolbar**: The main toolbar of the console appears at the top of the screen. Each button on this toolbar allows you to perform a specific function. Some of these are: navigate to other consoles, send and receive internal messages, log out of the system, and access the online help for the Administration Console.

2. **Tree pane**: The Tree pane lists all the business objects in the application, allowing you to select the node (folder) that you wish to work in. When you select a folder, its first-level contents are displayed in the List pane.

   To expand all first and second level nodes with a single click, press SHIFT and click the plus [+] button next to the topmost node. The contents of all first and second level nodes are displayed in the Tree pane.

3. **List pane**: The List pane displays first-level contents of the folder selected in the Tree pane. You can view the name, description, date of creation, etc., of the displayed items. In this pane, you can create items or select existing ones to modify or delete them.

4. **Properties pane**: The Properties pane displays the contents of the business object selected in the List pane. In this pane, you can edit the properties of the selected item.

5. **Status bar**: The status bar is present at the bottom of every screen. It displays the following information: The user name with which the user has logged in the system, the language currently in use, and the status of the system (Loading, Ready, etcetera).
Queues

- About Queues
- Creating Queues
- Deleting Queues
- Assigning Permissions for Queues
- Changing the Status of Queues
- Routing Chats Transferred From Other Departments
About Queues

Queues hold incoming customer service activities such as emails and chat sessions that are waiting to be assigned to agents. There is no limit to the number of queues that can be created in a department. A single queue can hold multiple activity types like email, task, chat etc. Agent access to queues is controlled through permissions.

Assume that a sports goods company receives email queries that can be categorized into one of the following: Orders, Replacements, Billing details, or Shipment details. The administrator for that company can create four queues - Orders, Replacements, Billing, and Shipment, and using workflows, route each type of query to its respective queue. Agents with expertise in a particular area are given permissions to access the appropriate queue. In this example, an agent may have access to the Shipment queue, but not the Replacements one.

From queues, activities are routed to agents using one of two push methods, round-robin or load balancing. Standalone agents and integrated administrators can also be given permission to pull activities from queues.

Types of Queues

There are three types of queues:

- **Standalone queues**: This is a Cisco Interaction Manager type of queue. Routing of activities from this queue is done by Cisco Interaction Manager. There are two methods in which activities are routed by standalone queues:
  - **Load balanced**: Activities are routed from the queue to available agents, who have least number of activities in their inbox.
  - **Round robin**: Activities are routed from the queue to all agents alternatively, irrespective of the number of activities in their inbox. This option is not available for routing chat activities.

  If neither of the above methods are selected, agents will need permissions to pull activities from the queue.

- **Integrated queues**: This is a Unified CCE type of queue and the routing of activities from this queue is done by Unified CCE. This queue is mapped to a Unified CCE MRD and a script selector. When the MRD or script selector attributes are modified in Unified CCE, the modifications are automatically retrieved and synchronized in Cisco Interaction Manager when an administrator clicks the name of the queue in the list pane of the Administration Console. If the MRD or script selector is deleted from Unified CCE, the queue in Cisco Interaction Manager is unmapped when a user clicks the name of the queue in the Administration Console, and the administrator is shown a message saying that the queue has been unmapped.

- **NIPTA queues**: This is a Cisco Interaction Manager type of queue. It holds activities that are meant to be assigned to integrated agents, but are not assigned because Unified CCE is unable to pick an available agent. Activities from NIPTA queues are typically handled by agents who belong to a NIPTA user group, which maps to a NIPTA skill group in Unified CCE. When an agent from a NIPTA skill group is available for handling activities, Cisco Interaction Manager notifies Unified CCE about the availability of the integrated agent, and on confirmation from Unified CCE, assigns the activities from the NIPTA queue to the identified integrated agent.

  It is important to note that NIPTA queues cannot be created manually. They are created automatically when user group that maps to a NIPTA skill group is configured in Cisco Interaction Manager.
Queues Created by the System

**Exception Queue**

By default, an exception queue is created in every department. Activities are routed to the exception queue when:

- There are no active inbound workflows in the department.
- A workflow faces an error while processing activities.
- The queue used in a workflow is made inactive. All the activities coming to the inactive queue are routed to the exception queue.
- Emails are bounced back.
- A `new_task_failure` message is returned by ICM.

---

**Important:** The exception queue cannot be deleted or made inactive.

---

**Supervisory Queues**

By default, a supervisory queue is created for each MRD associated with either the email or the outbound media classes. This is a standalone queue in Cisco Interaction Manager. Administrators must use this supervisory queue as the end node of all outbound workflows that form supervisory loops for integrated users or user groups who are part of that MRD. Integrated users who are assigned the Supervisor or Administrator roles are automatically given permissions to the Supervisory queue. For more information about setting up supervisory loops, see Outbound Workflows on page 39.

**NIPTA queues**

A NIPTA queue is automatically created by the system when a user group that maps to a NIPTA skill group in Unified CCE is created in Cisco Interaction Manager.

---

**Creating Queues**

We recommend that you create different queues for each type of activity that is processed by the system. If the system is being used to handle email and chat type activities, create two independent queues, one for email, and one for chat, and configure permissions as required.

This section describes:

- Creating Standalone Queues on page 19
- Creating Integrated Queues on page 23

---

**Important:** NIPTA queues cannot be created manually. These queues are created automatically when a NIPTA skill group is configured in Cisco Interaction Manager.
Creating Standalone Queues

**To create a standalone queue:**

1. In the Tree pane, browse to Administration > Department > Department_Name > Workflow > Queues.
2. In the List pane toolbar, click the New button,
3. In the Properties pane, on the General tab, provide the following details.
   - **Name:** Type a name of the queue. This is required information. The following characters are not allowed in the name: < , . ? : > $ * 
   - **Description:** Type a brief description.
   - **Active:** When a queue is created, by default it is active. Select No to make it inactive. If you are using a queue in workflows or are intending to use it, it is advised that you do not make the queue inactive. If a queue is being used in workflows and it is made inactive, no new incoming activities are routed to the queue. All activities coming to an inactive queue are routed to the exception queue. Also, if the queue is being used in workflows, and agents have pull and transfer permissions on the queue, they can pull activities from, and transfer activities to inactive queues. If you want to restrict these actions, remove the pull and transfer permissions on the inactive queue.
   - **Type:** From the dropdown list, select Cisco Interaction Manager.
   - **External assignment:** This field is not in use. The default value in the field is No, and it should not be changed.
   - **Email push-routing method:** From the dropdown list, select the routing method you want to use. There are three options available:
     - **None:** Activities do not get assigned to any agent. They stay in the queue, and agents have to pull them from the queue.
     - **Load balanced:** Activities are routed from the queue, to available agents who have least number of activities in their inbox.
     - **Round robin:** Activities are routed from the queue to all agents alternatively, irrespective of the number of activities in their inbox.

**Important:** If you select the push-routing method for the queue as none, make sure that you give users pull and transfer permissions on the queue. If permissions are not assigned, users will not be able to work on activities coming in to the queue. For details, see “Assigning Permissions for Queues” on page 31.

- **Load balanced:** Activities are routed from the queue, to available agents who have least number of activities in their inbox.
- **Round robin:** Activities are routed from the queue to all agents alternatively, irrespective of the number of activities in their inbox.

**Important:** If you select the push-routing method as round robin or load balanced, you need to select the users to whom the activities are to be assigned. You can select users from the Relationships tab. For details, see Step 6.

- **Chat push routing method:** From the dropdown list, select the routing method you want to use. There are two options available:
None: Chats are not pushed from the queue to any users. Users have to explicitly pull chats from the queue to service them.

**Important:** If you select the push-routing method for the queue as none, make sure that you give users pull and transfer permissions on the queue. If permissions are not assigned, users will not be able to work on chats that come in to the queue. For details, see “Assigning Permissions for Queues” on page 31.

Load balanced: Chats get assigned to the user with the minimum number of open chat activities. In case there is a tie between two or more agents with the same number of chats, the user who has been waiting the longest, since any chat was assigned to him, gets priority over other users.

**Important:** If you select load balanced, make sure you select the users to whom chats are to be assigned. You can select users from the Relationships tab. For details, see Step 6.

- CTI link: Ignore this field as it is not in use.
- Default chat transfer queue: This field is enabled after a queue is saved. For details on setting this field, see “Routing Chats Transferred From Other Departments” on page 32.
- Media Routing domain: This field is enabled for integrated queues only.
- Maximum Task Limit: This field is enabled for integrated queues only.
- Routing Priority: This field is enabled for integrated queues only.
- Queue Priority: This field is enabled for integrated queues only.
- Script Selector: This field is enabled for integrated queues only.

4. Next, go to the Media tab, and select the headers, footers, signatures, greetings, quick links, and quick responses to be associated with the queue.
Chat - Quick links: From the available quick links, select the quick links to be associated with the queue.

Chat - Quick responses: From the available quick responses, select the quick responses to be associated with the queue.

Email: For each queue, you can configure the header, footer, signature, and greeting articles to be associated with the queue. The text of the selected articles is automatically added to the text editor in the Reply pane. Agents can choose to delete the text if they do not want to use it. Provide the following details.

**Important:** Before you configure headers, footers, greetings, and signatures, these articles must be created in the Knowledge Base Console. Each queue can have only one greeting, header, footer, and signature.

- **Greeting:** To select a greeting, click the Assistance button. In the Select Article window that appears, select a greeting article.
- **Header:** To select a header, click the Assistance button. In the Select Article window that appears, select a header article.
- **Footer:** To select a footer, click the Assistance button. In the Select Article window that appears, select a footer article.
- **Signature:** To select a signature, click the Assistance button. In the Select Article window that appears, select a signature article.
• **Include original message**: Enable this option to display the incoming message from the customer in the Reply pane. If this option is disabled, the incoming message is displayed in the Activity section of the Information pane. By default this option is enabled. Select No to disable it.

5. Next, go to the Bookmarks tab and select the articles to be associated with the queue. The bookmarked articles are available to agents in the Reply pane for quick access.

6. Next, go to the Relationships tab and assign users and user groups to whom activities are to be assigned from this queue.

---

**Important**: The Relationships tab is enabled only if you select one of the following push-routing methods: Round robin or Load balanced.

- In the Route email to users section, select users from the available users list. In the selected users list, specify when activities are to be routed to users. The options available are:
  - **Always**: While routing activities, the availability of agents is not checked and activities are assigned to both available and unavailable agents.
  - **Only when available**: Activities are routed to agents only when they are available.
In the Route email to user groups section, select user groups from the available user groups list. In the selected user groups list, specify when the activities are to be routed to users in the user group. The options available are:

- **Always**: While routing activities, the availability of agents is not checked and activities are assigned to both available and unavailable agents.
- **Only when Available**: Activities are routed to agents only when they are available.

In the Route chat to users section, select users from the available users list. Chats are routed to agents only when they are available for handling chats.

In the Route chat to user groups section, select user groups from the available user groups list. Chats are routed to agents only when they are available for handling chats.

7. Go to the Permissions tab and assign permissions to users and user groups. For details on assigning permissions, see “Assigning Permissions for Queues” on page 31.

8. Click the Save button.

---

**Creating Integrated Queues**

### Before Creating Integrated Queues

While sending new activity requests from a queue to Unified CCE, EAAS sends call variables, ECC variables, and Application Strings to Unified CCE as task context. If you need to pass other attributes of the activity as call variables, ECC variables, or Application Strings 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.

By default, the following activity attributes are sent to Unified CCE as ECC variables.

- For email activities: activity_id
- For chat activities: activity_id, customer_name
- For callback and delayed callback activities: activity_id, customer_name, cmb_param, cti_strategy
- For blended collaboration activities: activity_id, customer_name, cmb_param, cti_strategy

By default, the following activity attributes are sent to Unified CCE as Application Strings.

- For callback, delayed callback, and blended collaboration activities: customer_phone_number

**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.

   ```
   sp_help egpl_casemgmt_activity
   ```
2. Identify the activity attributes for which you want to create call variables and note down the exact names of the activity attributes (column_name) for your reference. Also, note the case of the attributes, as call variables are case sensitive and need to match the case of the attributes.

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
   ```

4. 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 (including case, as call variables names are case sensitive) of the activity attribute you got from the `egpl_casemgmt_activity` table in Step 2. Call variables have a maximum length of 40 characters.
   - `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, ECC variables, and Application Strings in queues.

**Creating Integrated Queues**

Create queues from Cisco Interaction Manager and map them to media routing domains in Unified CCE. We recommend that you create separate queues for each type of activity processed by the system.

The system allows you to change standalone queues into integrated queues, except under the following conditions:

- When there are open activities in a standalone queue.
- When standalone users and user groups have permissions on a standalone queue.
- When a standalone queue is set as the default chat transfer queue for the department.
- When a standalone queue is used in a workflow.

Once a standalone queue is saved as an integrated queue, it cannot be changed back to a standalone queue.

**To create an integrated queue:**

1. In the Tree pane, browse to Administration > Department > Department_Name > Workflow > Queues.
2. In the List pane toolbar, click the New button,
3. In the Properties pane, on the General tab, provide the following details.
   - `Name`: Type a name of the queue. This is required information. The following characters are not allowed in the name: < , ? : > $ * \\
   - `Description`: Type a brief description.
Queues

- **Active:** When a queue is created, by default it is active. Select **No** to make it inactive. If you are using a queue in workflows or are intending to use it, do not make the queue inactive. If a queue is being used in workflows and it is made inactive, no new incoming activities are routed to the queue. All activities coming to an inactive queue are routed to the exception queue. Also, if the queue is being used in workflows, and agents have pull and transfer permissions on the queue, they can pull activities from, and transfer activities to inactive queues. If you want to restrict these actions, remove the pull and transfer permissions on the inactive queue.

- **Type:** From the dropdown list, select **Unified CCE**.

- **External assignment:** This field is not in use. The default value in the field is **No**, and it should not be changed.

- **Email push routing method:** This field is enabled for standalone queues only.

- **Chat push routing method:** This field is enabled for standalone queues only.

- **CTI link:** Ignore this field as it is not in use.

- **Default chat transfer queue:** This field is enabled for standalone queues only.

- **Media Routing Domain:** Select the MRD to which the queue should map. One MRD can be mapped to only one queue. The list of MRDs is dynamically retrieved from Unified CCE. While creating queues for outbound emails, make sure you select the MRD created for outbound emails. Similarly, while creating queues for inbound emails, make sure you select the MRD created for inbound emails.

- **Maximum Task Limit:** This is the maximum number of activities or tasks that can reside within the MRD at any point. It is also referred to as the Unified CCE queue depth or the Maximum calls per queue. The value in this field is set automatically based on the selected MRD and it cannot be changed.

- **Routing Priority:** Select the routing priority for activities waiting in the queue. The value chosen here determines the order in which activities are retrieved from the queue, and which new activity requests are sent for routing to Unified CCE. The options available are:
  - **Due date:** New activity request with the nearest due date is sent to Unified CCE.
  - **Longest waiting:** New activity request with the longest wait time is sent to Unified CCE.

- **Queue Priority:** Select the priority of the queue. While sending new activity requests from a queue, the priority of a queue is checked. If more than one queue has the same priority, than the queues are considered in alphabetic order. The EAAS instance (see Cisco Unified Web and E-Mail Interaction Manager Administrator's Guide to System Console for more information) retrieves activities from the highest priority queues first, and the lowest priority queues last. The queue priority can be:
  - **Low**
  - **Medium**
  - **High**
Script Selector: From the dropdown list, select a script selector associated with the MRD to which the queue is mapped. It is the keyword that identifies the ICM routing script that is executed in Unified CCE on the activity originating from this queue. An MRD can have multiple script selectors associated with it, but you can select only one script selector for a queue.

4. Next, go to the Media tab, and select the headers, footers, quick links, and quick responses to be associated with the queue.

Important: This feature is not available for callback and delayed callback activities.

Chat - Quick links: From the available quick links, select the quick links to be associated with the queue.
Chat - Quick responses: From the available quick responses, select the quick responses to be associated with the queue.

![Select quick responses]

Email: For each queue, you can configure the header, footer, signature, and greeting articles to be associated with the queue. The text of the selected articles is automatically added to the text editor in the Reply pane. Agents can choose to delete the text if they do not want to use it. Provide the following details.

Important: You must create the headers, footers, greetings, and signatures articles in the Knowledge Base Console. Each queue can have only one greeting, header, footer, and signature associated with it.

- Greeting: To select a greeting, click the Assistance button. In the Select Article window that appears, select a greeting article.
- Header: To select a header, click the Assistance button. In the Select Article window that appears, select a header article.
- Footer: To select a footer, click the Assistance button. In the Select Article window that appears, select a footer article.
- Signature: To select a signature, click the Assistance button. In the Select Article window that appears, select a signature article.
- Include original message: Enable this option to display the incoming message from the customer in the Reply pane. If this option is disabled, the incoming message is displayed in the Activity section of the Information pane. By default this option is enabled. Select No to disable it.

5. Next, go to the Bookmarks tab and select the articles to be associated with the queue. The bookmarked articles are available to the agents in the Reply pane for quick access.
6. Skip the Relationships tab as this tab is enabled for standalone queues only.

7. Skip the Permissions tabs as this tab is enabled for standalone queues only. For integrated queues, permissions are assigned automatically and they cannot be changed. For details on permissions, see “Assigning Permissions for Queues” on page 31.

8. Go to the Call Variables tab. This tab displays the call variables that map to specific attributes of an activity (e.g., activity_id, activity_subject). For every integrated queue, select the call variables (Call Variable 1 through 10) to be passed along with activity requests originating from this queue. The selected call variables can then be used in Unified CCE scripts to facilitate and influence routing. For more information about configuring these variables, see “To configure variables in Cisco Interaction Manager:” on page 23.

9. Go to the Application Strings tab. This tab displays the application string that map to specific attributes of an activity (e.g., activity_id, activity_subject). For integrated queues for blended collaboration, callback, and delayed callback type of activities, select the variables that can be passed as application strings. By default, the customer phone number (customer_phone_number) is passed as an application string to Unified CCE. The selected application strings can then be used in Unified CCE scripts to facilitate and influence routing. For more information about configuring these variables, see “To configure variables in Cisco Interaction Manager:” on page 23.
10. Go to the Expanded Call Variables tab. This tab displays the ECC variables that map to specific attributes of an activity (e.g., activity_id, activity_subject). For every integrated queue, select the Expanded Caller Context (ECC) variables. The selected ECC variables can then be used in Unified CCE scripts to facilitate and influence routing. Both Scalar and Array ECC variables are supported. For more information about configuring these variables, see “To configure variables in Cisco Interaction Manager:” on page 23.

ECC variables must be created in Unified CCE before they are used to map object attributes in Unified WIM and Unified EIM, as the mapping must be registered in Unified CCE before the variables are sent with requests to Unified CCE.

By default, the following activity attributes are sent to Unified CCE as ECC variables.

- For email activities: activity_id
- For chat activities: activity_id, customer_name
- For callback and delayed callback activities: activity_id, customer_name, cmb_param, cti_strategy
- For blended collaboration activities: activity_id, customer_name, cmb_param, cti_strategy

Important: This tab should be configured for blended collaboration, callback, and delayed callback type of queues only.

Important: When you associate ECC variables with a queue, or remove the association, you need to restart the EAAS service instance. For details, see the Cisco Unified Web and E-Mail Interaction Manager Administrator’s Guide to System Console.

11. Go to the Concurrent Task Limit tab. For integrated queues for email and chat activities, set the maximum number of tasks that a given agent can handle. Only the agents who belong to the skill group associated with the Unified CCE MRD selected in the General tab are displayed here. This value is also known as the maximum concurrent task limit for an agent. If more than one queue is mapped to the same MRD, then the
highest value assigned to the agent for any of those queues will apply for the concurrent task limit. The Concurrent Task Limit for a user cannot be greater then maximum task limit of the queue. The maximum task limit of a queue can be viewed from the Maximum Task Limit field on the General tab.

**Important:** This tab is available for integrated chat and integrated email types of queues only.

12. Click the Save button.

### Deleting Queues

You can only delete queues for which you have delete permissions. You cannot delete queues that have open activities, or queues that are being used in workflows or chat entry points.

An important thing to note is that NIPTA queues cannot be deleted manually. These queues are deleted automatically when a NIPTA skill group is deleted or when the mapping between a NIPTA skill group and a user group is removed from Cisco Interaction Manager.

**To delete a queue:**

1. In the Tree pane, browse to Administration > Department > Department_Name > Workflow > Queues.
2. In the List pane, select the queue you want to delete. You can select multiple queues.
3. In the List pane toolbar, click the Delete button.

**Important:** The Delete button is enabled only if you have permission to delete a queue.
Assigning Permissions for Queues

Permissions can be assigned for standalone queues only. For integrated queues, permissions are assigned automatically and cannot be changed.

Additional Information about Permissions to Pull and Transfer Activities

1. Typically, mapped agents do not have permission to pull activities from mapped or standalone queues or agents. But, mapped agents with the default administrator role can pull activities from mapped queues, any supervisory queue for the MRD to which they belong, and the Exception queue. They cannot pull from any other standalone queue.

2. Mapped agents can transfer activities to mapped queues, but cannot transfer activities to mapped agents, standalone agents, or standalone queues.

3. Standalone agents cannot be given permission to pull activities from or transfer activities to mapped agents or mapped queues.

4. Standalone agents can be given permission to pull activities from, and transfer activities to, both standalone queues and standalone agents.

To assign permissions for a queue:

1. In the Tree pane, browse to Administration > Department > Department_Name > Workflow > Queues.

2. In the List pane, select a queue.

3. In the Properties pane, go to the Permissions tab and assign permissions to users and user groups. Permissions can be given only to users and user groups who have the appropriate actions assigned to them. If actions are not assigned to users, then the permissions options against their name appear disabled. You can assign the following permissions to users and user groups.

   - **Own**: To own a queue. A user who has own permission on a queue can give permissions to other users.
   - **View**: To view a queue.
   - **Edit**: To edit a queue.
   - **Delete**: To delete a queue.
   - **Transfer activities**: To transfer activities to a queue.
   - **Pull activities**: To pull activities from a queue.

4. Click the Save button.
Changing the Status of Queues

When a queue is created, by default it is active. If you are using a queue in workflows or are intending to use it, do not make the queue inactive. If a queue used in workflows is made inactive, no new incoming activities are routed to the queue. All activities coming to the inactive queue are routed to the exception queue.

If the queue used in workflows, and agents have pull and transfer permissions on the queue, they can pull activities from, and transfer activities to inactive queues. If you want to restrict these actions, remove the pull and transfer permissions for the inactive queue.

Queues used in chat entry points cannot be made inactive.

To change the status of a queue:

1. In the Tree pane, browse to Administration > Department > Department_Name > Workflow > Queues.
2. In the List pane, select a queue.
3. In the Properties pane, on the General tab, change the value in the Active field to make the queue active or inactive.
4. Click the Save button.

Routing Chats Transferred From Other Departments

By default, a chat transfer queue, named Default_Chat_Transfer_Queue_Department_Name, is created in each department. All chats transferred from other departments are routed to this queue. A department can have only one queue as the default chat transfer queue and this queue cannot be deleted until another queue is configured to be the default chat transfer queue.

Important: This feature is available for standalone queues only.

To select a queue for routing chats transferred from other departments:

1. In the Tree pane, browse to Department > Department_Name > Workflow > Queues.
2. In the List pane, select a queue.
3. In the Properties pane, on the General tab, locate the Default chat transfer queue field and select Yes. All the chats transferred from other departments get routed to this queue. If a department already has a queue configured for routing chats transferred from other departments, then a message appears, asking to confirm that you want to change the default queue.
4. Click the Save button. Once you save a queue, the Default chat transfer queue option becomes disabled. If you need to change the default queue, you can select another queue as default and this queue gets de-selected automatically.
Service Levels

- About Service Levels
- Creating Service Levels
- Deleting Service Levels
This chapter will help you configure service levels.

### About Service Levels

Service levels allow you to set up response time expectations for incoming customer service interactions. Service levels can be defined for cases and all activities other than chat activities. Once defined, they are used in workflows to influence activity routing. Service level performance reports are available in the Reports Console.

### Creating Service Levels

**To create a service level:**

1. In the Tree pane, browse to Administration > Department > Department_Name > Workflow > Service Levels.
2. In the List pane toolbar, click the New button.
3. In the Properties pane, on the General tab, provide the following details.
   - **Name:** Type the name of the service level.
   - **Description:** Provide a brief description.

4. Next, go to the Durations tab and specify the service level for various types of work units. They are:
   - **Case:** Specify the service level in minutes or business hours.
   - **Email:** Specify the service level in minutes or business hours.
   - **Phone:** Specify the service level in seconds, minutes, or business hours.
   - **Task:** Specify the service level in minutes or business hours.

If there are any custom activity types created in the system, they are also available in this list and you can set service levels for them.
5. Click the **Save** button.

## Deleting Service Levels

> **Important:** Before deleting a service level, make sure that it is not used in any workflow.

**To delete a service level:**

1. In the Tree pane, browse to *Administration > Department > Department_Name > Workflow > Service Levels*.

2. In the List pane, select the service level you want to delete.

3. In the List pane toolbar, click the **Delete** button.

4. Click the **Yes** button when the system prompts you to confirm the deletion.
Workflows

- About Workflows
- Creating Workflows
- Copying Workflows
- Deleting Workflows
- Configuring Nodes
- Customizing the Workflow Editor
About Workflows

Workflows provide a mechanism for applying a sequence of rules on activities. Flexible and easy to use, they allow administrators to define rules to modify business objects, automate the progression of activities through the system, raise alarms and send notifications about the status of activities, etc.

Visually, a workflow is defined as a set of interconnected nodes created with the help of the Workflow Editor. Each node contains definitions of a list of rules that are applied as an activity passes through that node. Each rule consists of a set of conditions along with the set of actions to be performed when the conditions evaluate to true or false.

After applying the rules on activities, workflows route standalone email and other non-chat activities to users and queues. They also process integrated email activities, but cannot route them to integrated agents. Integrated email activities are routed to integrated email queues. For here, Unified CCE processes these activities and routes them to integrated agents. Also note that workflows cannot route activities to NIPTA queues.

Workflows do not process or route the following activities:

- Standalone chat activities
- Integrated chat activities
- Blended collaboration activities
- Callback activities
- Delayed callback activities

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**Important:** The Basic edition of Unified WIM and Unified EIM does not include the ability to add custom rules, create outbound and general workflows, or manage tasks with workflows.

Types of Workflows

There are four types of workflows:

- Alarm workflows
- General workflows
- Inbound workflows
- Outbound workflows

Alarm Workflows

Configure alarm workflows to process activities in the system and perform actions such as notifications, escalations, reassignments, etc. depending on the specified conditions. Alarm workflows are typically used to provide customer service based on customer value.

Additional workflows can be configured to work on activities processed by the alarm workflows.

Alarm workflows can be run on:

- Standalone users and user groups
Stand-alone queues
Integrated queues used for routing emails

Each department comes with a default alarm workflow. It is:

**Exception Queue Alarm Workflow:** A workflow configured to send notifications when activities are routed to the exception queue because of workflow errors encountered while processing activities. This workflow is active by default and it runs every 12 hours to check if there are any activities with the substatus “Workflow-Error” in the exception queue. If any such activities are found, a notification email with the list of activity IDs is sent. The notification email is sent to the address specified in the “To address: for Notification for services” setting. This is the default configuration of the workflow; however it can be changed to meet your business needs. Although the workflow can be deleted, it is recommended that you do not delete it. If you do not wish to use the workflow, make it inactive.

For some sample workflows, see “Sample Alarm Workflows” on page 112.

**General Workflows**

General workflows are meant to be used mainly for handling activities that are not created through a customer interaction channel like email. Most often, these are tasks type activities, or other custom activity types. This workflow acts on activities that are in the Ready for General Workflow status.

Activities from general workflows can be routed to:

- Integrated queues used for routing emails (only emails should be routed to these queues)
- Standalone users
- Standalone queues
- Other general workflows
- Other departments

**Inbound Workflows**

Inbound workflows define rules for all emails coming into the system. Some special inbound workflows also route activities transferred from other departments.

Activities from inbound workflows can be routed to:

- Integrated queues used for routing emails
- Standalone users
- Standalone queues
- Other inbound workflows
- Other departments

Each department comes with three default inbound workflows. You can also create your own workflows. The three default workflows are as follows:

1. **Start Workflow - Standard:** The first workflow that acts on all new, incoming activities. This workflow is ignored for activities transferred from other departments.
The system provided workflow creates a new case for activities that do not have a case, and for activities which already have cases, it associates the activities with the existing cases. If the existing case is closed, the workflow reopening the case and assigns the activity to the reopened case. Then, the workflow checks if the incoming activities are bounce backs, and routes such activities to the Exception queue. This is the default behavior of the workflow and it can be changed to meet your business needs; however it cannot be made inactive.

2. **Start Workflow - Transfer**: This workflow is responsible for processing activities transferred from other departments. Users from other departments can transfer activities only to the departments that have active transfer workflows.

   The system provides a blank transfer workflow. You can modify the workflow according to your business requirements.

3. **Finish Workflow**: This workflow applies on activities only if no user-defined inbound workflow has been applied to the activity. For example, if you have configured three aliases in your department and you have configured inbound workflow for only one alias, the activities from that alias are handled by the configured inbound workflow. Activities from the other two alias are handled by the finish workflow.

   The system provides a blank finish workflow. You can modify the workflow according to your requirements. You can choose not to use the finish workflow.

For some sample workflows, see “Sample Inbound Workflows” on page 74.

### Outbound Workflows

An outbound workflow identifies the set of rules that are applied on activities generated when email responses are sent out. The outbound workflow is primarily used to review and enforce the quality of outbound email responses.

Outbound workflows are applied on outbound email responses generated by a configured set of users or user groups. They can also be configured to apply on responses to activities that belong to certain queues. However, outbound workflows are not applicable to emails forwarded and redirected from the system.

### Outbound Email Review Workflows

To ensure high quality replies to email inquiries, customer service managers may wish to review the content of replies before they are sent out to customers. The outbound email review workflow can be used to set up a supervisory loop that addresses this need. A supervisory loop allows you to route a reply from an agent to another user – a supervisor - based on pre-determined conditions, before the reply leaves the system. The supervisor can then accept the reply, sending the email to the customer, or reject it, returning it to the original agent for revision. During this process, supervisors can edit replies, modify attachments, and provide feedback to the agent using notes. Activities that are generated as part of the supervisory loop are not included in activity reports.

Some important things to note about outbound email review workflows are:

- The start node of an outbound email review workflow must be a user or a user group. No other start nodes are supported.
- The end node of an outbound email review workflow must be a queue. No other end nodes are supported.
- You cannot configure multi-level supervision. Once a supervisor approves an email, the email is sent out of the system. If another outbound workflow is configured for the supervisor, the email is processed by all the nodes, but it is not routed to another queue. The email is sent out to the customer.
These additional points must be noted while configuring the supervisory loop for integrated agents:

- Supervisory loops for integrated users or user groups should not include any standalone users or user groups.
- The end node must be the supervisory queue created by the system for the MRD with which the user or user group selected in the started node is associated.

For details on creating workflows, and workflow nodes, see:

- “Creating Workflows” on page 42
- “Configuring Nodes” on page 44

For some sample workflows, see “Sample Outbound Workflows” on page 107.

**Workflow Editor**

The visual Workflow Editor makes it easy to create workflows via a palette of nodes. Each node performs a specific function. For example, the Service Level node allows service levels to be set at that point of the workflow. Placing nodes on the workflow canvas and linking them with connectors creates a system workflow. The Diagram tab in the property sheet of a workflow opens the Workflow Editor.
The following table lists the available workflow nodes.

<table>
<thead>
<tr>
<th>Node</th>
<th>Related information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto-acknowledge</td>
<td>For details, see “Configuring the Auto-Acknowledgement Node” on page 54.</td>
</tr>
<tr>
<td>Alarm</td>
<td>For details, see “Configuring the Alarm Node” on page 67.</td>
</tr>
<tr>
<td>Auto-reply</td>
<td>For details, see “Configuring the Auto-Reply Node” on page 53.</td>
</tr>
<tr>
<td>Auto-suggest</td>
<td>For details, see “Configuring the Auto-Suggest Node” on page 55.</td>
</tr>
<tr>
<td>Branch</td>
<td>For details, see “Configuring the Branch Node” on page 70.</td>
</tr>
<tr>
<td>Classification</td>
<td>For details, see “Configuring the Classification Node” on page 57.</td>
</tr>
<tr>
<td>Create object</td>
<td>For details, see “Configuring the Create Object Node” on page 63.</td>
</tr>
<tr>
<td>Completion</td>
<td>For details, see “Configuring the Completion Node” on page 60.</td>
</tr>
<tr>
<td>Custom</td>
<td>For details, see “Configuring the Custom Rule Node” on page 69.</td>
</tr>
<tr>
<td>Department</td>
<td>For details, see “Configuring the Department Node” on page 59.</td>
</tr>
<tr>
<td>Modify object</td>
<td>For details, see “Configuring the Modify Object Node” on page 61.</td>
</tr>
<tr>
<td>Queue</td>
<td>For details, see “Configuring the Queue Node” on page 58.</td>
</tr>
<tr>
<td>Service level</td>
<td>For details, see “Configuring the Service Level Node” on page 65.</td>
</tr>
<tr>
<td>Start</td>
<td>For details, see the following:</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>“Configuring the Start Node in Inbound Workflows” on page 44</td>
</tr>
<tr>
<td></td>
<td>“Configuring the Start Node in Standard Start Workflow” on page 45</td>
</tr>
<tr>
<td></td>
<td>“Configuring the Start Node in the Standard Transfer Workflow” on page 47</td>
</tr>
<tr>
<td></td>
<td>“Configuring the Start Node in the Standard Finish Workflow” on page 48</td>
</tr>
<tr>
<td></td>
<td>“Configuring the Start Node for Alarm Workflows” on page 49</td>
</tr>
<tr>
<td></td>
<td>“Configuring the Start Node in Outbound Workflows” on page 51</td>
</tr>
<tr>
<td></td>
<td>“Configuring the Start Node in General Workflows” on page 52</td>
</tr>
<tr>
<td>User</td>
<td>For details, see “Configuring the User Node” on page 58.</td>
</tr>
<tr>
<td>Workflow</td>
<td>For details, see “Configuring the Workflow Node” on page 60.</td>
</tr>
</tbody>
</table>

*List of nodes available in the Workflow Editor*
Creating Workflows

To create a workflow:

1. In the Tree pane, browse to Administration > Department > Department_Name > Workflow > Workflows > Workflow Type.

2. In the List pane toolbar, click the New button.

3. In the Properties pane, on the General tab, provide the following details.
   - Name: Type the name of the workflow.
   - Description: Provide a brief description.
   - Active: From the dropdown list, select Yes to make the workflow active.

   **Important:** To apply a workflow on activities, you have to make the status active.

4. Next, go to the Diagrams tab, and configure the workflow using the various nodes available in the Workflow Editor toolbar.
   a. First, add the nodes in the Workflow Editor. To add a node, click a node button in the Workflow Editor toolbar, and then click in the Workflow Editor. The node is added in the Workflow Editor and a window for configuring the node properties opens. For more details on setting up all the nodes, see “Configuring Nodes” on page 44.

      For nine nodes, you can also add a copy of the nodes created in other workflows or the same workflow. To add a copy of a node, click the arrow next to the node button in the Workflow Editor toolbar, and select the option to add a copy of the node.

   b. After adding nodes, you need to connect them to determine the flow of the workflow. All nodes should be connected to each other. A connector from one node can only point to one other node, but multiple connectors can point towards the same node. In the Workflow Editor toolbar, click the Connect nodes in workflow button. Then, click on the node and without releasing the mouse button, click on the second node. A connector appears between the two nodes, indicating the flow of the workflow.
c. After you have created the workflow you can use the auto layout option to arrange the nodes neatly. In the Workflow Editor toolbar, click the Autolayout nodes on canvas button. All the nodes in the workflow are arranged systematically.

5. Click the Save button.

6. Click the Validate button to validate the workflow. A workflow is validated only if it is in active state. If you have not completed creating the workflow and want to save whatever is done, you can do that by keeping the workflow inactive.

### Copying Workflows

Copy workflows to reuse existing workflows, and to test workflows. Users with the Create Workflow action can copy workflows. The copied workflow is named as “Copy of Workflow_Name” and saved as an inactive workflow, without a start node. In the copied workflow, add the start node, evaluate the end nodes to see if they need to be changed, and when the workflow is ready, make it active. The time taken by the copying process varies based on the size of the workflow, and the user cannot work in the application during this time.

Workflows cannot be copied across departments and the following three standard inbound workflows are not available for copying: Start Workflow – Transfer, Start Workflow – Standard, and Finish Workflow.

**To copy a workflow:**

1. In the Tree pane, browse to Administration > Departments > Department_Name > Workflow > Workflows > Workflow_Type.
2. In the list pane, select the workflow you want to copy.
3. In the List pane toolbar, click the Copy button.
4. A message appears notifying that based on the size of the workflow, the copy process might take some time, and the user would not be able to use the application during the process. In the message, click Yes to create a copy of the workflow.

After a copy of the workflow is created, a message is displayed that tells the name of the copied workflow. In the copied workflow, add the start node, evaluate the end nodes to see if they need to be changed, and when the workflow is ready, make it active.
Deleting Workflows

Important: Before deleting a workflow, ensure that it is not in use.

To delete a workflow:
1. In the Tree pane, browse to Administration > Departments > Department_Name > Workflow > Workflows > Workflow Type.
2. In the list pane, select the workflow you want to delete.
3. In the List pane toolbar, click the Delete button.

Configuring Nodes

This section describes how to configure the various nodes in workflows.

Configuring the Start Node in Inbound Workflows

A start node is the starting point of a workflow and no workflow can be created without a start node. An inbound workflow can have two types of start points - Alias and Workflow. All emails coming to an alias, specified as the starting point of an inbound workflow, are routed by that workflow. You can add more than one aliases as the start point of a workflow, but one alias can be a start point of only one inbound workflow. After saving a workflow, if you add the workflow as an end node in another workflow, then the second workflow becomes the start point of the first workflow. This means, that the activities routed by the second workflow are processed by the first workflow. An inbound workflow can have both aliases and workflows as the start point.

A workflow can have only one start node.

The start node

To configure the start node in an inbound workflow:
1. In the Tree pane, browse to Administration > Departments > Department_Name > Workflow > Workflows > Inbound.
2. In the List pane, select an inbound workflow or create a new one.
3. In the Properties pane, on the Diagram tab, add the Start node in the Workflow Editor.
4. In the Add Start Node window, in the Start Points tab, select the email alias to be set as the start point for this workflow. All emails coming to the selected alias are routed by this inbound workflow. You can add more than one aliases as the start point of a workflow, but one alias can be a start point of only one inbound workflow.
Select an alias as the start point

The Workflows tab is enabled only after a workflow is saved. After saving the workflow, if you add the workflow as an end node in another workflow, then that workflow is listed in the Workflows tab. This means, that the activities routed by the other workflow are processed by this workflow. An inbound workflow can have both aliases and workflows as the start point.

View the workflows

5. Click the OK button to close the window.

Configuring the Start Node in Standard Start Workflow

A start node is the starting point of a workflow and no workflow can be created without a start node. In the start node of a standard start workflow, you make the important decision of creating or not creating cases for each incoming activity. By default, the node is configured to create a new case for activities that do not have a case and for activities which already have a case, associates the activity with the existing case. If the existing case is already closed, the workflow reopens the case and assigns the activity to the reopened case. This is the default configuration of the node and it can be changed to meet your business needs.

A workflow can have only one start node.
To configure the start node in the standard start workflow:

1. In the Tree pane, browse to Administration > Departments > Department_Name > Workflow > Workflows > Inbound.

2. In the List pane select Start Workflow - Standard.

3. In the Properties pane, on the Diagram tab, add the Start node in the Workflow Editor.

4. In the Add Start Node window, select one of the following options.
   - Always create a new case for the activity: If you select this options, all options, except for the option to associate cases for activities that have existing cases, in the window are disabled.
   - Do not create a new case for the activity: If you select this option, all other options in the window are disabled.
   - Create a new case or assign to current case under the following conditions: If you select this option, you can further specify the conditions when a case is to be created.
     - Specify what is to be done when an activity has no case assigned to it. The following options are available:
       - Create a new case
       - Do not create a new case
     - Next, specify what is to be done when an activity has an existing case and the case is open. The following options are available:
       - Always associate this activity to open case
       - Always create new case
       - If the existing case has been open for more than \( n \) number of days, then create a new case else associate to old case: You can specify the number of days to be considered for this option.
     - Now, specify what is to be done when an activity has an existing case and that case is closed. The following options are available:
       - Always reopen the case and assign the activity to the case
       - Always create new case
       - If the existing case has been closed for more than \( n \) number of days, then create a new case else associate to the old case. You can specify the number of days to be considered for this option.
Set the start node for a standard start workflow

5. Lastly, you can associate two cases, if a new case was created for the activity that has an existing case. In the Add Start Node window, select the **If a new case was created for the activity that has an existing case, then associate the two cases** option.

6. Click the **OK** button to close the window.

Configuring the Start Node in the Standard Transfer Workflow

A start node is the starting point of a workflow and no workflow can be created without a start node. For the start node of a transfer workflow, you do not need to configure any properties. All the activities that are transferred from other departments form the start point of the transfer workflow.

A workflow can have only one start node.

To configure the start node in the standard transfer workflow:

1. In the Tree pane, browse to **Administration > Departments > Department_Name > Workflow > Workflows > Inbound**.
2. In the List pane select **Start Workflow - Transfer**.
3. In the Properties pane, on the Diagram tab, add the **Start** node in the Workflow Editor.
4. In the Add Start Node window you will see a message that the transfer of activities from other departments is controlled by permissions. No additional properties need to be set for this node of the workflow.

![Add Start Node window](image)

*Set the start node for a standard transfer workflow*

5. Click the **OK** button to close the window.

### Configuring the Start Node in the Standard Finish Workflow

A start node is the starting point of a workflow and no workflow can be created without a start node. No properties need to be set for the start node of a finish workflow. The start node of the standard finish workflow picks up all the incoming activities that are not processed by any other custom inbound workflow. Activities are routed to the finish workflow only after they are processed by the Standard - Start Workflow.

A workflow can have only one start node.

![Start node](image)

*The start node*

**To configure the start node in a standard finish workflow:**

1. In the Tree pane, browse to Administration > Departments > Department_Name > Workflow > Workflows > Inbound.
2. In the List pane select **Finish workflow**.
3. In the Properties pane, on the Diagram tab, add the **Start** node in the Workflow Editor.
4. In the Add Start Node window you will see a message that the workflow will run only after the start workflow has processed the activity. No additional properties need to be set for this node of the workflow.

![Add Start Node window](image)

*Set the start node for a standard finish workflow*

5. Click the **OK** button to close the window.
Configuring the Start Node for Alarm Workflows

A start node is the starting point of a workflow and no workflow can be created without a start node. In the start node of the alarm workflow, specify the objects you want to monitor. You can select from queues, users, and user groups. Along with the objects, you have to specify the schedule when the alarm workflow should run. You can run the alarm workflow only once or multiple times. Additionally, you can specify the end date and start date of the scheduled alarm workflow.

A workflow can have only one start node.

The start node

To configure a start node for an alarm node:

1. In the Tree pane, browse to Administration > Departments > Department_Name > Workflow > Workflows > Alarm.
2. In the List pane, select an alarm workflow or create a new one.
3. In the Properties pane, on the Diagram tab, add the Start node in the Workflow Editor.
4. In the Add Start Node window, on the Objects tab, select from the list of users, queues, and user groups.

Select queue, users, and user groups

5. Next, in the Add Start Node window, on the Schedule tab, set the schedule for the alarm workflow. The following options need to be set:
   - Specify the time or times that the workflow should be run: By default The workflow should be run once at Time Date is selected. You can select from one of the following options.
     - The workflow should be run once at Time Date
     - This workflow should be run multiple times
   - Specify the duration of the recurring workflow: Set the start date for the workflow. For the end date, select from one of the following options.
     - No end date
     - End after n occurrences
- End by the specified date

○ Specify the recurrence pattern of the workflow: Select one of the following options.

- **Daily**: Set the workflow to run:
  - Every \( n \) day
  - Every weekday

- **Weekly**: Set the workflow to recur every \( n \) weeks on the days of the week

- **Monthly**: Set the workflow to run:
  - Day \( n \) of every \( n \) month
  - The first, second, third, fourth, or last Day of every \( n \) month

- **Yearly**: Set the workflow to run:
  - Every Month Date
  - Every first, second, third, fourth, or last Day of Month

○ On the day that the workflow runs, run the workflow: Select one of the following options.

- Once at the specified time
- Every \( n \) hours starting at the specified time and ending at the specified time

6. Click the **OK** button to close the window.
Configuring the Start Node in Outbound Workflows

A start node is the starting point of a workflow and no workflow can be created without a start node. The start point of an outbound workflow can be a queue, a user, or a user group. You can select multiple objects as the start point of the same workflow. Also, every workflow has a unique object as its start point. For example, the same user cannot be a start point of two outbound workflows.

A workflow can have only one start node.

To configure a start node in an outbound workflow:

1. In the Tree pane, browse to Administration > Departments > Department_Name > Workflow > Workflows > Outbound.
2. In the List pane, select an outbound workflow or create a new one.
3. In the Properties pane, on the Diagram tab, add the Start node in the Workflow Editor.
4. In the Add Start Node window, on the Start Points tab, select from the list of users, queues, and user groups. Note that if you are creating a supervisory loop, the start node must be a user or user group.

The Workflows tab is enabled only after the workflow is saved. After saving the workflow, if you add this workflow as an end node in another workflow, then that workflow is listed in the Workflows tab. This means, that the activities routed by the other workflow are processed by this workflow.
5. Click the **OK** button to close the window.

**Configuring the Start Node in General Workflows**

A start node is the starting point of a workflow and no workflow can be created without a start node. In the start node of a general workflow configure the activity types and sub types that should be handled by the general workflow.

A workflow can have only one start node.

![Start Node Image]

**The start node**

**To configure a start node in a general workflow:**

1. In the Tree pane, browse to Administration > Departments > Department_Name > Workflow > Workflows > General.
2. In the List pane select a general workflow or create a new one.
3. In the Properties pane, on the Diagram tab, add the **Start** node in the Workflow Editor.
4. In the Add Start Node window, on the Criteria tab, select an activity type and subtype. You can create a single general workflow that handles all activity types. To set that, select the **Any** option for activity type and subtype. If you select this option, you cannot create any other general workflow for the department. Likewise, you can create a single general workflow for all the activity subtypes of an activity type. To set that, in the **Activity type** field, select an activity type, and in the **Activity Subtype** field select **Any**. If you select this option, the activity type will not be available for adding in any other general workflow.

![Add Start Node Window]

**Set criteria for a general workflow**

The Workflows tab is enabled only after the workflow is saved. A general workflow can be used as an end node in other general workflows or in inbound workflows. All workflows where this workflow is used as the end node, are displayed in the Workflow tab.
5. Click the **OK** button to close the window.

### Configuring the Auto-Reply Node

Use this node to automatically send auto-replies to incoming emails. Auto-replies are emails, made up of knowledge base articles, that are automatically sent to customers when conditions set in the auto-reply node are met. Before configuring an auto-reply node, create the content for the auto-replies in the form of articles in the Knowledge Base Console. Then, configure the conditions under which auto-replies are to be sent to customers. You can configure a set of rules, and for each rule, configure a different auto-reply.

In a workflow, if you have configured both an auto-acknowledgement and an auto-reply, and both of them qualify to be sent, only the auto-reply is sent to the customer. No auto-acknowledgement is sent.

![The auto-reply node](image)

**To configure an auto-reply node:**

1. In the Properties pane, on the Diagram tab, add the **Auto-reply** node in the Workflow Editor.
2. In the Auto-Reply Rule Configuration window, provide the following details.
   a. In the **Name** field, provide a name for the node.
   b. In the **Rule Name** field, provide a name for the rule and press the Enter Key. Select the rule name to configure the rule properties.
   c. Select one of the following options:
      - **This rule is always true**
      - **This rule is true under the following conditions**

      If you have selected the **This rule is true under the following conditions** option, configure the conditions when the rule is true. For a list of objects available for configuring the conditions, see “Appendix: Reference Information” on page 123.
   d. Next, select the articles to be sent as an auto-reply if the conditions configured in the rule are met. Click the **Select Article** button and from the Select Article window select articles for auto-reply. You can select multiple articles and configure the order in which they should appear in the reply. When the auto-reply is sent, all the selected articles are combined together in the order they are selected and sent out as one email.
Likewise, you can create multiple rules.

e. If you have created more than one rule, use the **Move Up** and **Move Down** button to change the order of the rules.

f. Lastly, you can also send an auto-reply if no rules are found to be true. Select the **If no TRUE rule is found, then send this article** option, and select the articles to be sent as auto-reply. Click the **Select Article** button, and from the Select Article window, select articles for auto-reply.

![Auto-Reply Rule Configuration](image)

*Set the auto-reply node*

3. Click the **OK** button to close the window.

### Configuring the Auto-Acknowledgement Node

Use this node to automatically send acknowledgements for incoming emails. Auto-acknowledgement are emails that are sent to customers when conditions set in the auto-acknowledgement node are met. Create the content for these auto-acknowledgements in the form of articles in the Knowledge Base Console. Then, configure the conditions under which auto-acknowledgments are to be sent to customers. You can configure a set of rules, and for each rule, configure a different auto-acknowledgement.

In a workflow, if you have configured both an auto-acknowledgement and an auto-reply, and both of them qualify to be sent, then only the auto-reply is sent to the customer and the auto-acknowledgement is discarded.

![The auto-acknowledgement node](image)

*The auto-acknowledgement node*

**To configure an auto-acknowledgement node:**

1. In the Properties pane, on the Diagram tab, add the **Auto-acknowledgement** node in the Workflow Editor.

2. In the Auto Acknowledgement Rule Configuration window, provide the following details.
   a. In the **Name** field, provide a name for the node.
   b. In the **Rule Name** filed, provide a name for the rule and press the Enter Key. Select the rule name to configure the rule properties.
c. Select one of the following options:
   - **This rule is always true**
   - **This rule is true under the following conditions**

If you have selected the **This rule is true under the following conditions** option, configure the conditions when the rule is true. For a list of objects available for configuring the conditions, see “Appendix: Reference Information” on page 123.

d. Next, select the articles to be sent as an auto-acknowledgement if the conditions configured in the rule are met. Click the **Select Article** button and from the Select Article window select articles for auto-acknowledgement. You can select multiple articles and configure the order in which they should appear in the reply. When the auto-acknowledgement is sent, all the selected articles are combined together in the order they are selected and sent out as one email.

Likewise, you can create multiple rules.

e. If you have created more than one rule, use the **Move Up** and **Move Down** button to change the order of the rules.

f. Lastly, you can also send an auto-acknowledgement if no rules are found true. Select the **If no TRUE rule is found, then send this article** option, and select the articles to be sent as auto-acknowledgement. Click the **Select Article** button, and from the Select Article window, select articles for auto-acknowledgement.

![Auto Acknowledgement Rule Configuration](image)

*Set the auto-acknowledgment node*

3. Click the **OK** button to close the window.

**Configuring the Auto-Suggest Node**

This node allows you to automatically suggest responses to agents. Agents can view the suggested responses and pick the best response to send to the customer. Create the content for these responses in the form of articles in the Knowledge Base Console. Then, configure the conditions under which responses should be suggested to agents. You can configure a set of rules, and for each rule, configure a different set of suggested responses. If the conditions set in all the rules are met, all the responses are suggested, and the agent can pick the best response.
Agents can view the suggested replies from the Suggested response option available in the Reply pane of the Agent Console.

The auto-suggest node

To configure an auto-suggest node:

1. In the Properties pane, on the Diagram tab, add the Auto-suggest node in the Workflow Editor.

2. In the Auto Suggest Rule Configuration window, provide the following details.
   a. In the Name field, provide a name for the node.
   b. In the Rule Name filed, provide a name for the rule and press the Enter Key. Select the rule name to configure the rule properties.
   c. On the Condition tab, select one of the following options:
      - This rule is always true
      - This rule is true under the following conditions
         If you have selected the This rule is true under the following conditions option, configure the conditions when the rule is true. For a list of objects available for configuring the conditions, see “Appendix: Reference Information” on page 123.
   d. Next, go the True tab and select the articles to be suggested to agents if the conditions configured in the rule are met. You can select multiple articles and configure the order in which they should appear in the reply.
   e. Next, go the False tab and select the articles to be suggested to agents if the conditions configured in the rule are not met. You can select multiple articles and configure the order in which they should appear in the reply. The False tab is enabled only if you have selected the This rule is true under the following conditions option on the Condition tab. It is optional to configure the False tab.
   f. If you have created more than one rule, use the Move Up and Move Down button to change the order of rules.

3. Click the OK button to close the window.
Configuring the Classification Node

Use this node to automatically assign categories and resolution codes to activities processed by the workflow. Create these classifications from the Administration Console. Then, configure the conditions under which classifications should be assigned to activities. You can configure a set of rules, and for each rule, configure a different set of classifications to be assigned to activities.

The classification node

**To configure a classification node:**

1. In the Properties pane, on the Diagram tab, add the Classification node in the Workflow Editor.
2. In the Classification Rule Configuration window, provide the following details.
   a. In the Name field, provide a name for the node.
   b. In the Rule Name filed, provide a name for the rule and press the Enter Key. Select the rule name to configure the rule properties.
   c. On the Condition tab, select one of the following options:
      - This rule is always true
      - This rule is true under the following conditions
        If you have selected the This rule is true under the following conditions option, configure the conditions when the rule is true. For a list of objects available for configuring the conditions, see “Appendix: Reference Information” on page 123.
   d. Next, go the True tab and select the categories or resolution codes to be assigned to activities when the conditions configured in the rule are met.
   e. Next, go the False tab and select the categories or resolution codes to be assigned to activities when the conditions configured in the rule are not met. The False tab is enabled only if you have selected the This rule is true under the following conditions option on the Condition tab.
      Likewise, you can create multiple rules.
   f. If you have created more than one rule, use the Move Up and Move Down button to change the order of the rules.

Set the classification node
3. Click the **OK** button to close the window.

## Configuring the User Node

Use this node to route activities to agents. After the activity is processed by a workflow, it can be routed to a standalone agent in the department, a standalone agent from another department (foreign user), or a customer's preferred agent. In the case of alarm workflows, it can also be routed to the agent's manager. The user node is a terminating node of a workflow and you cannot add any nodes after it. This node is not available as an end-node in outbound workflows.

![The user node]

### To configure a user node:

1. In the Properties pane, on the Diagram tab, add the **User** node in the Workflow Editor.

2. In the Select User window, do the following.
   - Select the **Route to the user that is the customer’s preferred agent** option to route activities to the customer’s preferred agent. If the preferred agent is not logged in, the activity is assigned to some other agent.
   - Select the **Route to the manager of the user** option to route activities to the manager of a user. This option is only available in the User node of alarm workflows.
   - Select the **Route to the user that is selected below** option and select a user from the list of available users. Only standalone agents are available in this list.

![Set the user node]

3. Click the **OK** button to close the window.

## Configuring the Queue Node

In this node, specify the queue to which activities should get routed after they are processed by a workflow. Only the following queues should be used in workflows - Standalone queues and Integrated queues configured for emails. Activities from standalone queues are routed to standalone agents based on the routing method defined in the queue. Activities from integrated queues are routed to Unified CCE for further processing. After processing the activity, Unified CCE routes the activities to integrated agents who are logged in Cisco Interaction Manager.
and who are available in Unified CCE. Queue node is a terminating node of a workflow and you cannot add any nodes after it.

To configure a queue node:
1. In the Properties pane, on the Diagram tab, add the **Queue** node in the Workflow Editor.
2. In the Select Queue window, select a queue. Both standalone and integrated queues are available in the list of queues; however NIPTA queues are not available.
3. Click the **OK** button to close the window.

**Configuring the Department Node**

Use this node to route activities to other departments. Activities can be routed only to departments that are shared with the current department, and that have active transfer workflows. Only such departments are available in the department list. The department node is a terminating node of a workflow and you cannot add any nodes after it. This node is not available in outbound workflows.

To configure a department node:
1. In the Properties pane, on the Diagram tab, add the **Department** node in the Workflow Editor.
2. In the Select Transfer Department window, select a department to which you want to transfer activities from this workflow. Only the departments that are shared with the current department, and that have an active Start Workflow - Transfer workflow, are available in this list.

![Select Transfer Department window](image)

*Set the department node*

3. Click the OK button to close the window.

**Configuring the Completion Node**

This node allows you to complete activities automatically. When activities reach this node, the status of the activities is changed to “Completed”. Use this node only when you are sure that no additional work needs to be done, and the activity can be completed automatically, without being viewed by any agent. No properties need to be set for this node of the workflow.

![Completion node](image)

*The completion node*

**To configure a completion node:**

1. In the Properties pane, on the Diagram tab, add the Completion node in the Workflow Editor.
2. In the Add Set Completion Node window you will see a message that activities will be marked as completed when they reach this node of the workflow. No additional properties need to be set.

![Add Set Completion Node window](image)

*Set the completion node*

3. Click the OK button to close the window.

**Configuring the Workflow Node**

Use this node to specify the workflow to which activities should get routed after they have been processed by the current workflow. Only workflows of the same type are available for routing activities, except for inbound
workflows, where you can route activities to both inbound and general workflows. Workflow node is a terminating node of a workflow and you cannot add any nodes after it.

The workflow node

To configure a workflow node:
1. In the Properties pane, on the Diagram tab, add the Workflow node in the Workflow Editor.
2. In the Select Workflow window, select the workflow to which activities should get routed after they have been processed by the current workflow. Only active workflows are available in this list.

Set the workflow node

3. Click the OK button to close the window.

Configuring the Modify Object Node

Use this node to modify properties of the following objects - activities, cases, customers, emails, tasks, and custom activities.

The modify object node

To configure a modify object node:
1. In the Properties pane, on the Diagram tab, add the Modify Object node in the Workflow Editor.
2. In the Modify Object Rule Configuration window, provide the following details.
   a. In the Name field, provide a name for the node.
   b. In the Rule Name filed, provide a name for the rule and press the Enter Key. Select the rule name to configure the rule properties.
   c. On the Condition tab, select one of the following options:
      - This rule is always true
      - This rule is true under the following conditions
If you have selected the **This rule is true under the following conditions** option, configure the conditions when the rule is true. For a list of objects available for configuring the conditions, see “Appendix: Reference Information” on page 123.

Set conditions for the modify object node

d. Next, go to the True tab and select the object you want to modify, and specify the values for the attributes that are to be modified. Through this node you can modify the following attributes of the objects:

- **Activity**: Activity priority, assigned to, description, due date, due date time, queue, subject
- **Case**: Description, due date, due date time, owner, severity, solution description.
- **Email**: Content, subject
- **Task**: Content
- **Customer - common**: Entitlements, how referred, industry, level, marketing segment, preferred agent
- **Customer - individual**: Date of birth, employment status, first name, middle name, last name, gender, job title, marital status
- **Customer - group**: Customer name, group type, no. of members, region
- **Customer - organization**: Customer name, no. of employees, region, sector type

There are four ways in which you can provide values for these attributes. They are:

- **Macro**: The macro specified here is expanded and the value of the macro is assigned as the value for the attribute.
- **Link**: The data usage link specified here is executed and the value of the link is assigned as the value for the attribute.
- **Constant**: The value specified here is assigned directly as the value for the attribute.
- **Pattern:** The pattern specified here is searched for in the body of the activity. The value immediately following the pattern, till the end of the line, is assigned as the value for the attribute.

Configure the properties of the object to be modified

e. Next, go to the False tab and select the object to be modified if the conditions configured in the rule are not met. The False tab is enabled only if you have selected the **This rule is true under the following conditions** option on the Condition tab. It is optional to configure the False tab.

   Likewise, you can create multiple rules.

f. If you have created more than one rule, use the **Move Up** and **Move Down** button to change the order of the rules.

3. Click the **OK** button to close the window.

**Configuring the Create Object Node**

Use this node to create new email, task, or custom type activities. Configure the various properties, such as the subject, priority, content, etc. of the new activity. The activity can belong to the same case to which the activity being processed belongs, or you can create a new case.

![The create object node](image)

**To configure a create object node:**

1. In the Properties pane, on the Diagram tab, add the **Create Object** node in the Workflow Editor.

2. In the Create Object Rule Configuration window, provide the following details.
   a. In the **Name** field, provide a name for the node.
   b. In the **Rule Name** field, provide a name for the rule and press the Enter Key. Select the rule name to configure the rule properties.
c. On the Condition tab, select one of the following options:
   - **This rule is always true**
   - **This rule is true under the following conditions**

   If you have selected the **This rule is true under the following conditions** option, configure the conditions when the rule is true. For a list of objects available for configuring the conditions, see “Appendix: Reference Information” on page 123.

   ![Set conditions for the create object node](image.png)

   **d. Next, go to the True tab and select the type of activity you want to create, and set the various attributes of the activity.**

   For emails, you can specify the following attributes. Some of them are required attributes.
   - **Activity Priority:** You can assign a priority from 1-7, where 1 is the highest priority and 7 is the lowest priority.
   - **Due date**
   - **Due date time**
   - **Subject:** Required
   - **Description**
   - **To email address:** Required
   - **From email address:** Required
   - **Content**
   - **Case:** Required
   - **Customer:** Required
   - **Activity substatus:** Required

   For tasks, you can specify the following attributes. Some of them are required attributes.
   - **Activity Priority:** You can assign a priority from 1-7, where 1 is the highest priority and 7 is the lowest priority.
   - **Due date**
   - **Due date time**
There are four ways in which you can provide the values for these attributes. They are:

- **Macro**: The macro specified here is expanded and the value of the macro is assigned as the value for the attribute.
- **Link**: The data usage link specified here is executed and the value of the link is assigned as the value for the attribute.
- **Constant**: The value specified here is assigned directly as the value for the attribute.
- **Pattern**: The pattern specified here is searched for in the body of the activity. The value immediately following the pattern, till the end of the line, is assigned as the value for the attribute.

Next, go to the False tab and select the type of activity to be created, if the conditions configured in the rule are not met. The False tab is enabled only if you have selected the **This rule is true under the following conditions** option on the Condition tab. It is optional to configure the False tab.

Likewise, you can create multiple rules.

If you have created more than one rule, use the **Move Up** and **Move Down** button to change the order of the rules.

3. Click the **OK** button to close the window.

### Configuring the Service Level Node

Use this node to automatically set service levels for activities. Service levels allow you to set up response time expectations for various tasks, emails, and custom activities being processed by the workflow. Create the service
levels from the Service Levels node in the Administration Console. Then, configure the conditions when a
service level should be set for an activity or case. You can configure a set of rules, and for each rule, configure
a different service level.

To configure a service level node:

1. In the Properties pane, on the Diagram tab, add the Service Level node in the Workflow Editor.

2. In the Service Level Rule Configuration window, provide the following details.
   a. In the Name field, provide a name for the node.
   b. In the Rule Name field, provide a name for the rule and press the Enter Key. Select the rule name to
      configure the rule properties.
   c. Select one of the following options:
      * This rule is always true
      * This rule is true under the following conditions

      If you have selected the This rule is true under the following conditions option, configure the
      conditions when the rule is true. For a list of objects available for configuring the conditions, see
      “Appendix: Reference Information” on page 123.
   d. Next, select the service levels to be set for activities and cases, if the conditions configured in the rule
      are met.

      Likewise, you can create multiple rules.
   e. If you have created more than one rule, use the Move Up and Move Down button to change the order
      of rules.
   f. Lastly, you can also set service levels if no rules are found to be true. Set the following:
      * Select the If no TRUE rule is found, then set activity service level option, and select a service
        level from the dropdown list.
      * Select the If no TRUE rule is found, then set case service level option, and select a service level
        from the dropdown list.
3. Click the **OK** button to close the window.

**Configuring the Alarm Node**

Using this node, you can set up alarms if certain conditions are met. You can monitor some specific attributes of cases and activities, and you can send internal and external notifications if the conditions are met. For activity alarm rules, you can also filter activities based on a defined criteria. The filtered activities can then be further processed by the alarm workflow.

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**Important:** Filters should be configured only for workflows set up for standalone users, user groups, and queues.

An alarm workflow can have only one alarm node and it should be the second node in the workflow that is the node following the start node.

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*The alarm node*

**To configure an alarm node:**

1. In the Tree pane, browse to **Administration > Departments > Department_Name > Workflow > Workflows > Alarm.**
2. In the List pane, select an alarm workflow.
3. In the Properties pane, on the Diagram tab, add the **Alarm** node in the Workflow Editor.
4. In the Alarm Rule Configuration window, provide the following details.
   a. In the **Name** field, provide a name for the node.
   b. Next, on the Condition tab, configure the conditions under which the rule is true. Only the following objects are available in the alarm node - Activity and Case, and you can set conditions for only one object in one alarm node. Another important thing to note is that you cannot set conditions using only the “Count” and “Percentage” attributes. You must select another attribute with these two attributes to be able to save the node. For a list of objects available for setting alarm conditions, see “Appendix: Reference Information” on page 123.
c. Next, on the True tab, configure the action to be performed when the alarm conditions are met. You can do one of the following:

- Send notifications to users. This option is available in alarm rules configured for both cases and activities. Set up internal messages or emails to be sent when an alert condition is met. Specify the following - users to whom you want to send a message (you can send messages to internal user accounts or external email addresses.); the subject of the message; the content of the message.

Configure conditions for the alarm node

Configure a notification for the alarm node
Filter activities, based on a defined criteria. This option is available only in alarm rules configured for activities. Set up the criteria of activities to be further processed by this workflow. Filters should be configured only in alarm workflows set up for standalone users, user groups, and queues.

5. Click the OK button to close the window.

Configuring the Custom Rule Node

Custom rules allow you to implement flexible business logic and process activities by using information from external sources. Activity and customer context is passed to the custom rule in the form of RuleContext object.

By default, two sample custom rules are available in the system:

- AlphaCustomRule.java
- BetaCustomRule.java

Before you can use custom rules in workflows, you need to create and compile them.

The Custom node

Creating Custom Rules

See the two sample rules – AlphaCustomRule.java and BetaCustomRule.java, to understand how custom rules are written. You must take care of the following items while creating custom rules. Every custom rule should:

- Extend the CustomRule class.
- Have a default constructor.
- Implement the public int applyRule(RuleContext oContext) method.

**To create a custom rule:**
- Create and add the custom rules to the following location on the file server:
  \`Cisco_Home\lib\ext\customclasses\routing\rules\`.

### Compiling Custom Rules

After you have created the custom rules, you need to compile them to be able to use them in workflows.

**To compile a custom rule:**
Perform the following tasks on the file server:

1. Add the following to the class path of the file server machine:
   \`Drive_Name\JDK_Home\bin;Cisco_Home\lib\int\platform\egpl_platform_server.jar\`

2. Add your custom rules to the following location:
   \`Cisco_Home\eService\lib\ext\customclasses\routing\rules\`

3. From the command prompt, run the following command to compile the java file.
   \`Drive_Name>javac Cisco_Home\lib\ext\customclasses\routing\rules\Custom_Rule.java\`
   The class file is created at: \`Cisco_Home\lib\ext\customclasses\routing\rules\`. Now, you can use the custom rule in workflows.

### Configuring the Custom Rule Node

**To configure a custom rule node:**

1. In the Properties pane, on the Diagram tab, add the Custom Rule node in the Workflow Editor.
2. In the Select Custom Rule window, select a custom rule.
3. Click the OK button to close the window.

### Configuring the Branch Node

Branch node is a decision point where you decide what kind of work is to be routed to which resource. Using rules, you can automatically route work to the resources capable of handling it. Activities can be routed to users, queues, departments, or another workflow. You can create various rules in which you can specify the conditions when a particular type of work should be routed to a specified resource. You can configure the system in a way that when one set of conditions are met the work is routed to one resource, and when another set of conditions are met the work is routed to a different resource. Like this you can configure different sets of conditions and for each set of met conditions, a different resource. For example, your system handles three types of queries - orders, enquiries, and support, and you want to automatically route each type of work to a different queue. Using the branch node, you can set rules and automatically route the work to the appropriate queues.
In the Branch node, along with the rules, you have to also define the resources to which the work is to be routed. So, before configuring the Branch node you have to first add the nodes to the Workflow Editor, to which you want to route the work.

The branch node

To configure a branch node:

1. In the Properties pane, on the Diagram tab, add the **Branch** node in the Workflow Editor.

2. In the Branch Rule Configuration window, provide the following details.
   a. In the **Name** field, provide a name for the node.
   b. In the **Rule Name** field, provide a name for the rule and press the Enter Key. Select the rule name to configure the rule properties.
   c. Select one of the following options:
      - **This rule is always true**
      - **This rule is true under the following conditions**
      
        If you have selected the **This rule is true under the following conditions** option, configure the conditions when the rule is true.
   
   d. Next, select the target node. Click the **Select Target** button and from the Select Target window select the target node. You can choose from the following nodes:
      - Queue
      - Workflow
      - Department
      - Completion
      - Auto-acknowledgement
      - Auto-reply
      - Auto-suggest
      - Branch
      - Category
      - Create object
      - Modify object
      - Service level
      - Custom
      - User

Likewise, you can create multiple rules.
e. If you have created more than one rule, use the Move Up and Move Down button to change the order of rules.

f. Lastly, you can also select a target node if no rules are found true. Select the If no TRUE rule is found, then route to this target option, and select the target node. Click the Select Target button and from the Select Target window select the target node.

![Branch Rule Configuration](image)

Configure the branch node

3. Click the OK button to close the window.

Once you have configured the rules in the branch node, the branch node and target nodes are automatically connected by arrows. Green arrows are added pointing to targets for true conditions. And, a red arrow is added pointing to the target for activities when no true rule is found. These arrows cannot be added or removed manually.

**Customizing the Workflow Editor**

From the Tools Console, you can customize the following Workflow Editor screens:

- **Administration Console - Workflows - Alarm - Activity Condition screen**: You cannot remove or change the order of the attributes selected by default. You can add new attributes.

- **Administration Console - Workflows - Alarm - Case Condition screen**: You cannot remove or change the order of the attributes selected by default. You can add new attributes.

- **Administration Console - Workflows - Condition screen**: You can remove the attributes selected by default, or add new ones.

- **Administration Console - Workflows - Create Object - True or False screen**: You can remove the attributes selected by default, or add new ones.

- **Administration Console - Workflows - Modify Object - True or False screen**: You can remove the attributes selected by default, or add new ones.

**To customize the screens:**

4. In the Tree pane, browse to Tools > Departments > Department_Name > Business Objects > Attribute Settings > Screen.
5. In the List pane, select from the following screens:
   - Administration Console - Workflows - Alarm - Activity Condition screen
   - Administration Console - Workflows - Alarm - Case Condition screen
   - Administration Console - Workflows - Condition screen
   - Administration Console - Workflows - Modify Object - True or False screen
   - Administration Console - Workflows - Create Object - True or False screen

   The Properties pane refreshes to show the properties of the selected screen.

6. In the Properties pane, go to the Attributes tab and make the required changes.

7. Click the Save button.
Sample Inbound Workflows

- Processing Inquiries at a Hotel
- Processing Mortgage Requests at a Bank
- Processing Orders at a Publishing House
- Processing Inquiries at a Phone Company
Processing Inquiries at a Hotel

This workflow demonstrates how to manage emails inquiries coming to a hotel. First, an auto-acknowledgement is sent to customers and activities are auto-classified. Next, data is automatically extracted from the email body and saved as part of the activity attributes. Then, the workflow starts routing activities. First, emails with general inquiries are routed to the general inquiries queue. A service level is set for the rest of the emails, and they are further processed. Emails from existing customers are routed to the existing customers queue and emails from upset customers, which require special handling, are sent to the supervisor. Then, based on what the email is about, it is routed to one of the following queues - reservations, technical issues, website feedback, complaints. If the email does not qualify to be routed to any of these queues, it is routed to the other emails queue.

Before creating any workflow, you need to create some objects which can then be used in the workflow. For this workflow, you need to create the following objects.

‣ From the Administration Console:
  o Aliases
  o A service level named - 8 hours SLA
  o Five categories, with the following names - Technical problem, Website feedback, Reservation, and General inquiry
  o Seven queues, with the following names - General inquiries, Complaints, Technical issues, Reservations, Website feedback, Other emails, and Existing customers queue
  o A user, with the name “Supervisor”

‣ From the Knowledge Base Console:
  o An auto-acknowledgment article

‣ From the Tools Console:
  o Ten custom activity attributes, with the following names - Air ticket number, Cancellation number, Departure date, Number of guests, Phone number, Reservation number, Room description, Room rate, Special request, and Currency type. For details on creating and adding these attributes in the screens, see the section “Customizing the Workflow Editor” on page 72 and the Cisco Unified Web and E-Mail Interaction Manager Administrator’s Guide to Tools Console.
Important: Nodes are not necessarily configured in the order in which they appear in the workflow. For example, before configuring the Branch node, you need to first configure the nodes that need to be used in the rules in the Branch node. To help you better understand the workflow, the nodes in the sample workflow figure are numbered in the order in which they are to be configured.

Sample workflow for routing activities in a hotel

To create the workflow:

1. In the Start node, select aliases from which emails should be processed by this workflow.

2. Now, configure the auto-acknowledgement to be sent to customers. In the Auto-acknowledgement node (named as Send auto-acknowledgement), create a rule which is always true and send an auto-acknowledgement to customers. Connect the Start node with this node.

3. Next, assign classifications to the activities. In the Classification node (named as Assign classifications), create the following rules.
a. Technical problem: Check the email content for the word “technical problem”. If the condition is met, assign the “Technical problem” category to the activity.

Assign the Technical problem category to activities

b. Website feedback: Check the email content for the word “website feedback.” If the condition is met, assign the “Website feedback” category to the activity.

Assign the Website feedback category to activities

c. Reservation rate questions: Check the email content for the word “rate” or “price.” If the condition is met, assign the “Reservation” category to the activity.

Assign the Reservation category to activities
d. General inquiries: Check the email content for the word “inquiry” or “question”. If the condition is met, assign the “General inquiry” category to the activity.

Assign the General inquiry category to activities

Connect the Auto-acknowledgement node (named as Send auto-acknowledgement) with this node.

4. Now, extract data from the incoming emails and save the data in custom activity attributes. In the Modify object node (named as Extract data from email), create a rule which is always true. In the True tab, use patterns to extract the following information from the email and update the activity information – Air ticket number, Cancellation number, Departure date, Number of guests, Phone number, Reservation number, Room description, Room rate, Special request, and Currency type. Connect the Classification node (named as Assign classifications) with this node.

Extract information from email and save it in custom activity attributes

5. Next, you need to select a queue to which the general inquiry emails should be routed. In the Queue node (named as General inquiries), select the “General inquiries” queue.
6. Next, configure the SLA for emails (other than general inquiry emails) coming in to the alias. In the **Service level** node (named as Set SLA), create a rule which is always true and set the activity service level as “8 hours SLA.”

7. Now, route the general inquiry emails to the general inquiry queue and route the rest of the emails to the service level node to set the service levels. In the **Branch** node (named as Route activities - Level one), create the following rule. In this node, we will use the nodes configured in steps 5 and 6.

   - Check emails for the word “inquiries”. If the condition is met, route the activity to the **Queue** node (named as General inquiries). If the condition is not met, route the activity to the **Service level** node (named as Set SLA).

   The node is automatically connected to the General inquiries and Set SLA nodes.

8. In the **Queue** node (named as Reservations), select the “Reservations” queue.
9. In the **Queue** node (named as Technical issues), select the “Technical issues” queue.
10. In the **Queue** node (named as Website Feedback), select the “Website Feedback” queue.
11. In the **Queue** node (named as Complaints), select the “Complaints” queue.
12. In the **Queue** node (named as Other emails), select the “Other emails” queue.
13. Now, create rules to route activities to queues. In the **Branch** node (named as Route activities - Level three), create the following rules. In this node, we will use the nodes configured in steps 8-12.
a. Reservations: Check the email content for the word “reservations.” If the condition is met, route the activity to the “Reservations” queue.

Route activities to the Reservations queue

b. Complaint: Check the email content for the word “complaint.” If the condition is met, route the activity to the “Complaints” queue.

Route activities to the Complaints queue

c. Technical issues: Check the email content for the words “technical issue.” If the condition is met, route the activity to the “Technical issues” queue.

Route activities to the Technical issues queue
d. Website feedback: Check the email content for the words “website” or “web site” and “feedback.” If the condition is met, route the activity to the “Website Feedback” queue.

![Route activities to the Website Feedback queue](image)

Route activities to the Website Feedback queue

e. If none of the rules configured in this node are true, route activities to the “Other emails” queue.

The Route activities - Level three node is automatically connected to the queue nodes used in the various conditions.

14. In the User node (named as Supervisor), select the “Supervisor” user.

15. In the Queue node (named as Existing customers), select the “Existing customers” queue.

16. Next, route activities for existing cases to the queue for existing customers, and route activities from upset customers to the supervisor. Route the rest of the activities to the “Route activities - Level three” node, from where activities are routed to various queues. In the Branch node (named as Route activities - Level two), create following rules. In this node, we will use the nodes configured in steps 14 and 15.

a. Existing customers: Check case type of activities. If the case type is “Existing”, route the activities to the Queue node (named as Existing customers).

![Route activities to queue for existing customers](image)

Route activities to queue for existing customers
b. Upset customers: Check the email content for the words angry, lawsuit, upset, intolerable, or hate. If the condition is met, route the activity to the User node (named as Supervisor).

c. If none of the rules configured in this node are true, route activities to the Branch node (named as Route activities - Level three).

The Route activities - Level three node is automatically connected to the user and queue nodes used in the various conditions. Connect the SLA node (named as Set SLA) with this node.

### Processing Mortgage Requests at a Bank

This workflow demonstrates how to manage mortgage queries coming in a bank. First, an SLA is set and activities are auto-classified. Next, activities are routed for further processing. Emails from new customers are routed to the modify object node, where data is automatically extracted from the email body and it is saved as part of the case and customer attributes. An auto-reply is sent to the new customers, and after routing the activities to the “Mortgage queries” queue, the activity is automatically completed. Emails from existing customers, who are pre-qualified for loan, are sent to the supervisor, and emails about closing costs and mortgage from existing customers are routed to the “Mortgage queries” queue. All other activities are routed to the “General inquiries” queue.

Before creating any workflow, you need to create some objects which are then used in the workflow. For this workflow, you need to create the following objects.

- **From the Administration Console:**
  - Aliases
  - Two service levels, with the following names - 4 hours SLA and 8 hours SLA
  - Two categories, with the following names - Mortgage queries and Other inquiries
  - Two queues, with the following names - General inquiries and Mortgage queries
  - A user, with the name “Supervisor”

- **From the Knowledge Base Console:**
  - An auto-acknowledgment article
An auto-reply article
Three auto-suggestion articles

From the Tools Console:

- One custom customer attribute, with the name “US state”. For details on creating and adding the attribute in the screens, see the section “Customizing the Workflow Editor” on page 72 and the Cisco Unified Web and E-Mail Interaction Manager Administrator’s Guide to Tools Console.
- Six custom case attributes, with the following names - US state, Account number, Price range, Down payment, Own a home, and Reference number. For details on creating and adding these attributes in the screens, see the section “Customizing the Workflow Editor” on page 72 and the Cisco Unified Web and E-Mail Interaction Manager Administrator’s Guide to Tools Console.

**Important:** Nodes are not necessarily configured in the order in which they appear in the workflow. For example, before configuring the Branch node, you need to first configure the nodes that need to be used in the rules in the Branch node. To help you better understand the workflow, the nodes in the sample workflow figure are numbered in the order in which they are to be configured.

Sample workflow for handling mortgage requests at a bank

**To create the workflow:**

1. In the **Start** node, select aliases to which all the mortgage queries and requests come.
2. Next, set the service level for mortgage inquiries and general inquiries coming to the alias. In the **Service level** node (named as Set SLA), check the email content for the word “mortgage”. If the condition is met, set the SLA for the case and activity to four hours. If the condition is not met, set the SLA for the case and activity to eight hours. Connect the **Start** node with this node.

   ![Service Level Rule Configuration](image)

   *Set the SLA for activities*

3. Now, assign classifications to the incoming emails. In the **Classifications** node (named as Assign classifications), configure the following rule.

   - Mortgage queries: Check the email content for the word “mortgage”. If the condition is met, assign the “Mortgage queries” category. If the condition is not met, assign the “Other inquiries” category.

   ![Classification Rule Configuration](image)

   *Assign the Mortgage queries or General inquiries category to activities*

   Connect the **Service level** node (named as Set SLA) with this node.

4. Now, extract data from the incoming emails and save the data in custom case and customer attributes. In the **Modify object** node (named Webform - Extract Information from email and store), configure the following three rules.
a. Customer details: Set the rule to be always true. In the True tab, use patterns to extract the first name, last name, and state information from a web form and update the customer information.

Extract information from email and save it in customer attributes

b. Mortgage details: Set the rule to be always true. In the True tab, use patterns to extract various fields from a web form and update case details. Note that some of the case attributes are custom attributes created from the Tools Console.

Extract information from email and save it in custom case attributes
Also use this rule to set the priority of activities.

Set the priority of activities

c. Change subject of emails: Set the rule to be always true. In the True tab, use an article macro to add activity subject, the US state name, and the text “Mortgage Information” to the email subject.

Change the subject of emails

Sample text for the email subject

5. Now, select the auto-reply to be sent to customers. In the Auto-reply node (named as Auto-reply - mortgage information), configure the following rule.
   o Current mortgage rates for US states: Configure the following conditions for the rule.
- Email content contains “mortgage”, AND
- Email content contains “state:"

If the conditions are met, send an auto-reply to the customer. The auto-reply has to be created in the form of an article (named as Current Mortgage Rates) from the Knowledge Base Console.

Send auto-replies to customers

Connect the **Modify object** node (Webform - Extract Information from email and store) with this node.

6. Next, assign the activity to the Mortgage queries queue. In the **Modify object** node (named as Assign activities to the Mortgage queries queue), create a rule which is always true. In the True tab, set the queue of the activity as ”Mortgages queries”. Connect the **Auto-reply** node (named as Mortgage Info Request - Auto Answer) with this node.

Route activities to the Mortgage queries queue

7. Add the **Completion** node to the workflow editor and connect the **Modify object** node (named as Assign activities to the Mortgage queries Queue) to this node.

8. In the **Queue** node (named as General inquiries), select the “General inquiries” queue.

9. In the **Queue** node (named as Mortgage queries), select the “Mortgages queries” queue.

10. In the **User** node (named as Supervisor), select the “Supervisor” user.
11. Now, route activities to the various queues and users. In the **Branch** node (named as Route activities - level two), create the following three rules. In this node, we will use the nodes configured in steps 8-10.

   a. Prequalified customers: Configure a rule which checks the email content for the words “prequalify”, or “prequalified”, and “mortgage”. If the condition is met, route the activity to the “Supervisor” user.

   ![Branch Rule Configuration](image1)

   **Route emails from prequalified customers to the supervisor**

   b. Mortgage queries: Configure following conditions for the rule.

   - Email content contains “mortgage”, OR
   - Email content contains “closing cost”, OR
   - Email content contains “closing costs”

   If the conditions are met, route the activity to the “Mortgage queries” queue.

   ![Branch Rule Configuration](image2)

   **Route emails about mortgage and closing costs to the Mortgage queries queue**

   c. If none of the rules configured in this node are true, route the activity to the “General” queue.

   The Route activities - Level two node is automatically connected to the user and queue nodes used in the various conditions.
12. Next, create an auto-acknowledgement for non-mortgage inquiries. In the **Auto-acknowledgement** node (named as General auto-acknowledgement), set the rule to be always true and send an auto-acknowledgement to customers. Connect this node with the **Queue** node (named as General inquiries).

![Auto Acknowledgement Rule Configuration](image1.png)

**Send auto-acknowledgements to customers**

13. Now, select the articles to be suggested as potential replies to agents for emails on closing costs. In the **Auto-suggest** node (named as Suggest response for closing cost queries), check if the email content contains words “closing cost” or “closing costs”. If the email content contains these words, suggest three articles to agents, which they can use to respond to customer queries. Connect this node with the **Branch** node (named as Route activities - level two).

![Auto Suggest Rule Configuration](image2.png)

**Suggest articles as potential replies to agents**

14. Now, route activities to various nodes for further processing. In the **Branch** node (named as Route activities - level one), create the following three rules. In this node, we will use the nodes configured in steps 4, 12, and 13.

a. **Web form email mortgage request**: Configure the following conditions for the rule.
   - Email content contains “webform: YES”, AND
   - Email content contains “mortgage”, AND
   - Case type is “New”
If the conditions are met, route the activity to the **Modify object** node (named as Webform - Extract information from email and store).

![Branch Rule Configuration](image)

**Route emails to the Modify object node**

b. Web form mortgage existing case: Configure the following conditions for the rule.
   - Email content contains “webform: YES”, AND
   - Email content contains “mortgage“, AND
   - Case type is “Existing”

If the conditions are met, route the activity to the **Auto-suggest** node (named as Suggest response for closing cost queries).

![Branch Rule Configuration](image)

**Route emails to the Auto-suggest node**
c. Free form email mortgage request: Configure a rule which checks email content for the word “mortgage”. If the condition is met, route the activity to the **Auto-suggest** node (named as Mortgage Info Request - Suggest Response).

![Route emails to the Auto-suggest node](image)

d. If none of the rules configured in this node are true, route the activity to the **Auto-acknowledgement** node (named as General auto-acknowledgement).

The Route activities - Level one node is automatically connected to the nodes used in the various conditions. Connect the Assign classifications node with this node.

### Processing Orders at a Publishing House

This workflow demonstrates how to manage orders at a publishing house. Route emails from the Canada customers to the Canadian branch for further processing, from UK customers to the UK branch, and from US customers to the US branch. For all these type of customers, an auto-reply is sent for refund and order status queries and activities are automatically completed. All other emails from the three type of customers are routed to their respective queues: Canada - other queries, UK - other queries, and US - other queries. For emails from customers who received wrong books, an auto-reply is sent to the customer and the activities are automatically completed.

Before creating any workflow, you need to create some objects which are then used in the workflow. For this workflow, you need to create the following objects.

- **From the Administration Console:**
  - Aliases
  - Four queues, with the following names - Other emails, UK - other queries, US - other queries, and Canada - other queries.

- **From the Knowledge Base Console:**
  - Seven KB articles for auto-replies
To create the workflow:

1. In the Start node, select aliases.

2. Now, select the auto-reply to be sent to the Canada customers who have questions about refunds. In the Auto-reply node (named as Canada - auto-reply for refund queries), create a rule which is always true and send an auto-reply to customers.
3. Now, select the auto-reply to be sent to the Canada customers who have questions about order status. In the **Auto-reply** node (named as Canada - auto-reply for order status queries), create a rule which is always true and send an auto-reply to customers.

![Auto-reply Rule Configuration](image)

Send an auto-reply to the Canada customers to answer order status queries

4. In the **Queue** node (named as Canada - other queries), select the “Canada - other queries” queue.

5. Now, route activities to queues and auto reply nodes. In the **Branch** node (named as Canadian branch), create the following rules. In this node, we will use the nodes configured in steps 2 - 4.

   a. Refund emails: Configure the following conditions for the rule.
      - Case type is “New”, AND
      - Email content contains the text “refund”, OR
      - Email content contains the text “Refund confirmation”

      If the conditions are met, route the activity to the **Auto-reply** node (named as Canada - auto-reply for refund queries).

   ![Branch Rule Configuration](image)

   Route order status emails to the auto-reply node for order status queries

   b. Order status emails: Configure the following conditions for the rule.
      - Case type is “New”, AND
      - Email content contains the text “order status”, OR
      - Email content contains the text “where is my stuff”, OR
      - Email content contains the text “yet to receive”, OR
- Email subject contains the text “order status"

If the conditions are met, route the activity to the **Auto-reply** node (named as Canada - auto-reply for order status queries).

![Branch Rule Configuration](image)

*Route order status query emails to the auto-reply node for order status*

c. If none of the rules configured in this node are true, route the activity to the “Canada - other queries” queue.

The Canadian branch node is automatically connected to the queue and auto-reply nodes used in the various conditions.

6. Now, select the auto-reply to be sent to the US customers who have questions about refunds. In the **Auto-reply** node (named as US - auto-reply for refund queries), create a rule which is always true and send an auto-reply to customers.

![Auto Reply Rule Configuration](image)

*Send an auto-reply to the US customers to answer refund queries*
7. Now, select the auto-reply to be sent to the US customers who have questions about order status. In the **Auto-reply** node (named as US - auto-reply for order status queries), create a rule which is always true and send an auto-reply to customers.

![Auto-reply Rule Configuration](image)

**Send an auto-reply to the US customers to answer order status queries**

8. In the **Queue** node (named as Canada - other queries), select the “Canada - other queries” queue.

9. Now, route activities to queues and auto reply nodes. In the **Branch** node (named as US branch), create the following rules. In this node, we will use the nodes configured in steps 6, - 8.

   a. **Refund emails:** Configure the following conditions for the rule.
      - Case type is “New”, AND
      - Email content contains the text “refund”, OR
      - Email content contains the text “Refund confirmation”

      If the conditions are met, route the activity to the **Auto-reply** node (named as US - auto-reply for refund queries).

   ![Branch Rule Configuration](image)

   **Route refund query emails to the auto-reply node for refunds**

   b. **Order status emails:** Configure the following conditions for the rule.
      - Case type is “New”, AND
      - Email content contains the text “order status”, OR
      - Email content contains the text “where is my stuff”, OR
Email content contains the text “yet to receive”, OR
Email subject contains the text “order status”

If the conditions are met, route the activity to the **Auto-reply** node (named as US - auto-reply for order status queries).

10. Now, select the auto-reply to be sent to the UK customers who have questions about refunds. In the **Auto-reply** node (named as UK - auto-reply for refund queries), create a rule which is always true and send an auto-reply to customers.

---

**Route order status emails to the auto-reply node for order status queries**

**c.** If none of the rules configured in this node are true, route the activity to the “US - other queries” queue. The US branch node is automatically connected to the queue and auto-reply nodes used in the various conditions.

---

**Send an auto-reply to the UK customers to answer refund queries**
11. Now, select the auto-reply to be sent to the UK customers who have questions about order status. In the **Auto-reply** node (named as UK - auto-reply for order status queries), create a rule which is always true and send an auto-reply to customers.

![Auto Reply Rule Configuration](image)

Send an auto-reply to the UK customers to answer order status queries

12. In the **Queue** node (named as UK - other queries), select the “UK - other queries” queue.

13. Now, route activities to queues and auto reply nodes. In the **Branch** node (named as UK branch), create the following rules. In this node, we will use the nodes configured in steps 10 - 12.

   a. Refund emails: Configure the following conditions for the rule.
      - Case type is “New”, AND
      - Email content contains the text “refund”, OR
      - Email content contains the text “Refund confirmation”

      If the conditions are met, route the activity to the **Auto-reply** node (named as UK - auto-reply for refund queries).

   ![Branch Rule Configuration](image)

   Route refund query emails to the auto-reply node for refunds

   b. Order status emails: Configure the following conditions for the rule.
      - Case type is “New”, AND
      - Email content contains the text “order status”, OR
      - Email content contains the text “where is my stuff”, OR
      - Email content contains the text “yet to receive”, OR
- Email subject contains the text “order status”

If the conditions are met, route the activity to the **Auto-reply** node (named as UK - auto-reply for order status queries).

```
<table>
<thead>
<tr>
<th>Object</th>
<th>Module</th>
<th>Operator</th>
<th>Value</th>
<th>Boolean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email</td>
<td>Case Type</td>
<td>=</td>
<td>new</td>
<td>AND</td>
</tr>
<tr>
<td>Email</td>
<td>Content</td>
<td>Contains</td>
<td>contains</td>
<td>OR</td>
</tr>
<tr>
<td>Email</td>
<td>Content</td>
<td>Contains</td>
<td>contains</td>
<td>OR</td>
</tr>
<tr>
<td>Email</td>
<td>Subject</td>
<td>Contains</td>
<td>contains</td>
<td>OR</td>
</tr>
</tbody>
</table>
```

If the rule is TRUE, route to this target: [UK - auto-reply to ...]

Route order status emails to the auto-reply node for order status queries

c. If none of the rules configured in this node are true, route the activity to the “UK - other queries” queue.

The UK branch node is automatically connected to the queue and auto-reply nodes used in the various conditions.

14. Now, select the auto-reply to be sent to customers who have received wrong books. In the **Auto-reply** node (named as Auto-reply: Wrong book), create a rule which is always true and send an auto-reply to customers.

```
<table>
<thead>
<tr>
<th>Object</th>
<th>Module</th>
<th>Operator</th>
<th>Value</th>
<th>Boolean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email</td>
<td>Case Type</td>
<td>=</td>
<td>new</td>
<td>AND</td>
</tr>
</tbody>
</table>
```

If the rule is TRUE, then send this article: [Wrong book auto-reply]

Send an auto-reply to customers who have received wrong books

15. In the **Queue** node (named as Other emails), select the “Other emails” queue.

16. Now, route emails from customers who have received the wrong book to the Auto-reply node, and emails from UK, US, and Canada customers, to their respective branch nodes for further processing. And, if the emails do not qualify to be routed to these nodes, route them to the “Other emails” queue. In the **Branch** node (named as Route activities) create the following rules. In this node, we will use the nodes configured in steps 5, 9, 13, 14, and 15.

a. Wrong book: Configure the following conditions for the rule.
   - Email subject contains “wrong edition”, OR
• Email subject contains “wrong book”, OR
• Email content contains “wrong edition”, OR
• Email content contains “wrong book”

If the conditions are met, route the activity to the **Auto-reply** node (named as Wrong Book).

![Branch Rule Configuration](image)

**Send wrong books emails to the auto-reply node**

b. Canadian branch: Configure a rule which checks if the “to email address” is “books_ca@company.com”. If the condition is met, route the activity to the **Branch** node (Canadian Branch).

![Branch Rule Configuration](image)

**Send emails from the Canada customers to the Canadian branch node**
c. US branch: Configure a rule which checks if the “to email address” is “books_us@company.com”. If the condition is met, route the activity to the Branch node (US branch).

Send emails from the US customers to the US branch node

![Branch Rule Configuration](image)

d. UK branch: Configure a rule which checks if the “to email address” is “books_uk@company.com”. If the condition is met, route the activity to the Branch node (UK branch).

Send emails from the UK customers to the UK branch node

![Branch Rule Configuration](image)

e. If none of the rules configured in this node are true, route activities to the “Other emails” queue.

The Route activities node is automatically connected to the branch and queue nodes used in the various conditions.

17. Add the **Completion** node to the workflow editor. Connect the following nodes to this node: Auto-reply: Wrong book, Canada - auto-reply for refund queries, Canada - auto-reply for order status queries, US - auto-reply for refund queries, US - auto-reply for order status queries, UK - auto-reply for refund queries, and UK - auto-reply for order status queries.

**Processing Inquiries at a Phone Company**

This workflow demonstrates how to manage emails coming in a phone company. First, an auto-acknowledgement is sent to customers and a service level is set for the emails. Then, data is automatically extracted from emails and it is saved as part of the case and customer attributes. Then, the workflow starts
routing activities. First, emails about landline services are routed to the landline service queue. Emails about mobile services are routed to the mobile service queue. Computer generated emails and emails about any other topic are routed to their respective queues.

Before creating any workflow, you need to create some objects which are then used in the workflow. For this workflow, you need to create the following objects.

- From the Administration Console:
  - Aliases
  - Three service levels named - 8 hours SLA, 24 hours SLA, and 48 hours SLA
  - Four queues, with the following names - Landline service, Mobile service, Computer generated email - no reply needed, Unknown

- From the Knowledge Base Console:
  - An auto-acknowledgment article. Set the article macro as auto_ack_mobile.

- From the Tools Console:
  - One custom case attribute, with the name “Tracking number”. For details on creating and adding the attributes in the screens, see the section “Customizing the Workflow Editor” on page 72 and the Cisco Unified Web and E-Mail Interaction Manager Administrator's Guide to Tools Console.

---

**Important:** Nodes are not necessarily configured in the order in which they appear in the workflow. For example, before configuring the Branch node, you need to first configure the nodes that need to be used in the rules in the Branch node. To help you better understand the workflow, the nodes in the sample workflow figure are numbered in the order in which they are to be configured.

---

**To create the workflow:**

1. In the Start node, select aliases.
2. In the Create object node (named as Auto-acknowledgement), create the following rules.
   a. Landline service: Check if the subject of an email contains “Landline service”. If the condition is met, create a new email activity with the following attributes.
      i. Set the subject using the macro “activity_subject”.

ii. Set the “from” and “to” email addresses.
iii. Set the content using the “auto_ack_landline” article macro.
iv. Set the case and customer as “current”.
v. Set the activity substatus as “Ready for outbound workflow”.

b. Mobile service: Check if the subject of the email contains “Mobile service”. If the condition is met, create a new email activity with the following attributes.

i. Set the subject using the macro “activity_subject”.
ii. Set the “from” and “to” email addresses.
iii. Set the content using the “auto_ack_mobile” article macro.
iv. Set the case and customer as “current”.
v. Set the activity substatus as “Ready for outbound workflow”.

Connect the **Start** node with this node.
3. In the **Service Level** node (named as Assign SLA), configure the following rules.

   a. Landline service SLA: Check if the subject of the email contains “Landline service”. If the condition is met, set the activity service level as “24 hours SLA”.

   ![Service Level Rule Configuration](image1)

   b. Mobile service SLA: Check if the subject of the email contains “Mobile service”. If the condition is met, set the activity service level as “8 hours SLA”.

   ![Service Level Rule Configuration](image2)

   c. If none of the rules configured in this node are true, set the activity service level as “48 hours SLA”.

   Connect the **Create object** node (named as Auto-acknowledgement) with this node.

4. In the **Modify object** node (named as Set Fields), configure the following rules.

   a. Set tracking number: Configure the following conditions for the rule.

      - Email content contains “Tracking number:”, OR
      - Email content contains “Rebate ID:”, AND
      - Case type is “New”
If the conditions are met, set the value in the “Tracking number” field (custom field) using the pattern “Tracking number:”

![Image of Modify Object Rule Configuration with settings for tracking number]

b. Set customer name: Configure the following conditions for the rule.
   - Email content contains “First name:”, AND
   - Email content contains “Last name:”, AND
   - Case type is “New”

![Image of Modify Object Rule Configuration with settings for customer name]

If the conditions are met, set the value in the “First name” and “Last name” fields using the patterns “First name:” and “Last name:” respectively.

![Image of Modify Object Rule Configuration with settings for customer and service level]

Connect the **Service Level** node (named as Assign SLA) with this node.
5. In the **Queue** node (named as Landline service), select the “Landline service” queue.

6. In the **Queue** node (named as Mobile service), select the “Mobile service” queue.

7. In the **Queue** node (named as Computer generated email - no reply needed), select the “Computer generated email - no reply needed” queue.

8. In the **Queue** node (named as Unknown), select the “Unknown” queue.

9. In the **Branch** node (named as Distribute emails), create the following rules. In this node, we will use the nodes configured in steps 5–8.

   a. Landline service emails: Configure following conditions for the rule.
      - To email address is “landlineservice@company.com”, AND
      - Email content does not contain “auto-ack”, OR
      - Email content does not contain “auto-reply"

      If the conditions are met, route the activity to the “Landline service” queue.

   ![Branch Rule Configuration](image)

   b. Mobile service emails: Configure the following conditions for the rule.
      - The To email address is “mobileservice@company.com”, AND
      - Email content does not contain “auto-ack”, OR
      - Email content does not contain “auto-reply"

      If the conditions are met, route the activity to the “Mobile service” queue.

   ![Branch Rule Configuration](image)

   c. No reply needed: Configure following conditions for the rule.
      - Email content contains “auto-ack”, OR
      - Email content contains “auto-reply”
If the conditions are met, route the activity to the “Computer generate email - no reply needed” queue.

d. If none of the rules configured in this node are true, route the activity to the “Unknown” queue.

The Distribute emails node is automatically connected to the queue nodes used in the various conditions. Connect the Modify object node (named as Set Fields) with the Branch node (named as Distribute emails).
Sample Outbound Workflows

- Reviewing Outgoing Emails From Trainee Agents
- Reviewing Outgoing Emails From Integrated Agents
- Changing Subject of Outgoing Emails
Reviewing Outgoing Emails From Trainee Agents

This workflow routes all outbound emails created by users in the user group Trainee, that have the word Urgent in the subject, to a queue named Supervision. Supervisors can then pull the emails from the queue and accept or reject the response after reviewing it.

Before creating any workflow, you need to create some objects which are then used in the workflow. For this workflow, you need to create the following objects.

- From the Administration Console:
  - A user group named Trainees.
  - A queue named Supervision. Always create a separate queue to which activities that meet the required criteria are routed. Supervisors can then pull activities from this queue.

**Important:** Nodes are not necessarily configured in the order in which they appear in the workflow. For example, before configuring the Branch node, you need to first configure the nodes that need to be used in the rules in the Branch node. To help you better understand the workflow, the nodes in the sample workflow figure are numbered in the order in which they are to be configured.

---

To create the workflow:

1. In the **Start** node, select the “Trainees” user group.
2. In the **Queue** node (named as Supervision), select the “Supervision” queue.
3. In the **Branch** node (named as Review ‘Urgent’), check the activity subject for the word “Urgent”. If the condition is met, route the activity to the “Supervision” queue. This node is automatically connected to the **Queue** node. Connect the **Start** node with the **Branch** node.

![Configure the branch rule](image)

**Reviewing Outgoing Emails From Integrated Agents**

This workflow routes all high priority outbound emails created by integrated users or user groups to the supervision queue. Supervisors can then pull the emails from the queue and accept or reject the response after reviewing it.

Before creating any workflow, you need to create some objects which are then used in the workflow. For this workflow, you need to create the following objects.

- From the Administration Console:
  - Integrated users or user groups that are mapped to an email or outbound MRD.
  - A queue mapped to the MRD to which the integrated users or user groups belong. When you create this queue, the supervision queue to be used in the workflow will get created automatically.
Important: Nodes are not necessarily configured in the order in which they appear in the workflow. For example, before configuring the Branch node, you need to first configure the nodes that need to be used in the rules in the Branch node. To help you better understand the workflow, the nodes in the sample workflow figure are numbered in the order in which they are to be configured.

Sample outbound email review workflow for integrated agents

To create the workflow:

1. In the Start node select the integrated users or user groups and set a schedule. Select only the users or user groups that belong to email or outbound MRDs.

2. In the Queue node select the supervision queue created for the MRD to which the users and user groups selected in the Start node belong.

3. In the Branch node (named as Review high priority emails) check if the activity priority is set from 1 - 4. If the condition is met, route the activity to the supervision queue. This node is automatically connected to the Queue node. Connect the Start node with the Branch node.

Check the priority of the activity

Changing Subject of Outgoing Emails

Create an outbound workflow to change the subject of outgoing emails that are about closing costs.

Before creating any workflow, you need to create some objects which are then used in the workflow. For this workflow, you need to create the following objects.
From the Administration Console:
- A custom business object macro for the postal address data “State”.
- A queue named “Mortgages”.

From the Knowledge Base Console:
- An article to be used in the email subject. Set the article macro as `newsubject`.

To create the workflow:

1. In the **Start** node, select the “Mortgages” queue.

2. In the **Modify object** node (named as Check Closing Cost Reply), check the email content for the text “closing costs”. If the condition is met, use an article macro to modify the subject of the email.

3. Connect the Start node with the **Modify object** node.
Sample Alarm Workflows

- Monitoring Activities About to be Due in One Hour
- Monitoring Activities About to be Due in One Hour and Activities Aged 10 Hours
- Monitoring Activities Overdue by One Hour or More Than One Hour
- Monitoring Activities Overdue by Five Days
- Monitoring Activities That Are With an Agent for More Than Two Days
- Monitoring the Overflow of Queues
Monitoring Activities About to be Due in One Hour

Create a workflow to check for activities that are about to be due in an hour, and notify the supervisor of the same.

To create the workflow:
1. In the Start node, select the queues to be monitored and set the schedule.
2. In the Alarm node (named as One hour before overdue), do the following.
   a. In the Condition tab, set the following conditions:
      i. Activity is going to be due in an hour, AND
      ii. Activity status is not “Completed”.
   b. In the True tab, create a notification to be sent to supervisors, if the conditions are met.
      i. Set the To email addresses.
      ii. Set the subject as “There are activities due in one hour”.
      iii. Create the content of the email.
3. Connect the **Start** node with the **Alarm** node.

## Monitoring Activities About to be Due in One Hour and Activities Aged 10 Hours

Create a workflow to check for activities that are due in an hour or activities whose age is 10 hours. If any such activities are found, a notification is sent to the supervisor. Then the priority of the inbound activities is changed and the activities are routed to the supervisor. All the other activities are routed to the “Activities need attention” queue.

Before creating any workflow, you need to create some objects which are then used in the workflow. For this workflow, you need to create the following object.

- From the Administration Console:
  - A user, with the name “Supervisor”.
  - A queue, with the name “Activities need attention”
A sample workflow for monitoring activities that are about to be due in one hour and activities aged 10 hours

To create the workflow:

1. In the Start node, select the objects to be monitored and set the schedule.
2. In the Alarm node (named as Activities about to be due or activities aged 10 hours), do the following.
   a. On the Condition tab, set the following conditions.
      i. Activity is going to be due in less than one hour, OR
      ii. Activity age is more than 10 hours.
   b. On the True tab, set the To address, subject, and content of the notification to be sent.

   Connect the Start node with this node.
3. In the Modify object node (named as Change priority), set a rule which is always true. In the True tab, change the priority of the activity to “Two”.

Important: Nodes are not necessarily configured in the order in which they appear in the workflow. For example, before configuring the Branch node, you need to first configure the nodes that need to be used in the rules in the Branch node. To help you better understand the workflow, the nodes in the sample workflow figure are numbered in the order in which they are to be configured.
4. In the **Queue** node (named as Activities need attention), select the “Activities need attention” queue.

5. In the **Branch rule** node (named as Route activities), create the following rule. In this node, we will use the nodes configured in steps 3 and 4.

   - Check if the Activity Mode is “Inbound.” If the condition is met, route the activity to the **Modify object** node (named as Change priority). If the condition is not met, route the activity to the “Activities need attention” queue.

The Route activities node is automatically connected to the **Modify object** and **Queue** nodes used in the various conditions. Connect the **Alarm** node (named as Activities about to be due or activities aged 10 hours) to the **Branch** node (named as Route activities).

6. In the **User** node (named as Supervisor), select the “supervisor” user and connect the **Modify object** node (named as Change priority) to this node.
Monitoring Activities Overdue by One Hour or More Than One Hour

Create a workflow to check for activities that are overdue by an hour. If any such activities are found, a notification is sent to the supervisor with the list of overdue activities.

Before creating any workflow, you need to create some objects which are then used in the workflow. For this workflow, you need to create the following object.

- From the Administration Console:
  - Create a data usage link. Set the usage link macro as `list_activities_1plus_hours_overdue`

To create the workflow:

1. In the **Start** node, select queues and set the schedule.
2. In the **Alarm** node (named as 1 Hr Plus Overdue), do the following.
   a. In the Condition tab, set the following conditions:
      i. Activity is overdue by one hour or more than one hour, AND
      ii. Activity status is not “Completed”.
   b. From the True tab, set the notification to be sent, if the conditions are met.
      i. Set the “to” email address.
      ii. Set the subject as “These Activities are 1 Plus Hours Overdue”.
      iii. Set the content using the “list_activities_1plus_hours_overdue” data usage link macro, which lists the activities that are overdue.
The content of the macro used in the notification is displayed in the following figure.

Sample macro

3. Connect the **Start** node with the **Alarm** node.

**Monitoring Activities Overdue by Five Days**

Create a workflow to check for activities that are overdue by five days. If any such activities are found, send an email to customers that they will be contacted soon, and assign the activity to the customer’s preferred agent.
To create the workflow:

1. In the **Start** node, select queues and set the schedule.

2. In the **Alarm** node (named as GA 5 days overdue), set the following conditions.
   a. Activity is overdue by five days or more than five days, AND
   b. Activity status is not “Completed”.

   ![Alarm Rule Configuration](image)

   *Set the alarm conditions*

   c. On the True tab, create the notification to be sent when the condition is met. Set the following attributes.
      i. Set the To email addresses.
      ii. Set the subject as “Activities need attention”.
      iii. Create the content of the notification.

   Connect the **Start** node with this node.

3. In the **Create object** node (named as Notify Customer Not Forgotten), set a rule which is always true. In the True tab, create a new email activity with following attributes.
   a. Set the subject using the business object macro, `activity_id`.
   b. Set the “to email address” using the business object macro, `email_address`.
   c. Set the “from” email address.
   d. Set the content using business macros - `contact_person_first_name` and `activity_subject`.

   ![Select Content](image)

   *Set the email content*

   e. Set the case and customer as “Current”.
   f. Set the activity substatus as “Ready for outbound workflow”.
Connect the **Alarm** node (named as GA 5 days overdue) with this node.

4. In the **User** node (named as Preferred agent) select the option to route activities to the customer’s preferred agent. Connect the **Create object** node (named as Notify Customer Not Forgotten) with this node.

### Monitoring Activities That Are With an Agent for More Than Two Days

Create a workflow to check for activities that are with an agent for two days and notify the administrator of the same.

To create the workflow:

1. In the **Start** node, select queues and set the schedule.
2. In the **Alarm** node (named as 2 days plus age), do the following.
   a. On the condition tab, set a condition to check if the activity age is two days or more than two days.
b. On the True tab, create the notification to be sent when the condition is met. Set the following attributes.
   i. Set the To email addresses.
   ii. Set the subject as “Activities need attention”.
   iii. Create the content of the notification.

3. Connect the Start node with the Alarm node.

**Monitoring the Overflow of Queues**

Create a workflow to monitor queues to check if there are more than 30 activities in a queue for more than five minute. If any such activities are found, send a notification to the supervisor.

**To create the workflow:**

1. In the Start node, select the queues and set the schedule.
2. In the Alarm node (named as Overflow Queue), do the following.
   a. In the Condition tab, set the following conditions:
      i. Activity count is more than or equal to 30, AND
      ii. Activity age is more than or equal to five minute.
b. Set the notification to be sent, if the condition is met. In the True tab, create a notification with the following attributes.
   i. Set the To email address.
   ii. Set the subject as “Overflow of Queue”.
   iii. Create the content of the notification.

3. Connect the **Start** node with the **Alarm** node.
Appendix: Reference Information

- Objects Available for Setting Conditions in Rule Nodes
- Objects Available for Setting Conditions in the Alarm Node
This chapter lists the objects available for setting conditions in various workflow nodes.

## Objects Available for Setting Conditions in Rule Nodes

### Activity

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Values</th>
<th>Operators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity mode</td>
<td>Inbound, Outbound, None</td>
<td>==, !=</td>
</tr>
<tr>
<td>Activity priority</td>
<td>1 to 7</td>
<td>==, !=, &lt;, &gt;, &lt;=, =&gt;</td>
</tr>
<tr>
<td>Activity subtype</td>
<td>Email - General, Email - Webform, Email - secure, Email - Permanently undeliverable, Email - Temporary undeliverable, Email - Reply, Email - Forward, Email - Compose, Email - Auto reply, Email - Auto acknowledgement, Email - Group reply, Email - Redirect, Email - Undispatch, Email - Supervisory accept, Email - Supervisory reject, Email - Supervisory reattempt, Email - Transcript, Phone - General, Task - General</td>
<td>==, !=</td>
</tr>
<tr>
<td>Activity type</td>
<td>Email, Task</td>
<td>==, !=</td>
</tr>
<tr>
<td>Case type</td>
<td>None, Existing, New</td>
<td>==, !=</td>
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<tr>
<td>Contact person ID</td>
<td>—</td>
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</tr>
<tr>
<td>Contact point ID</td>
<td>—</td>
<td>==, !=, &lt;, &gt;, &lt;=, =&gt;</td>
</tr>
<tr>
<td>Customer ID</td>
<td>—</td>
<td>==, !=, &lt;, &gt;, &lt;=, =&gt;</td>
</tr>
<tr>
<td>Description</td>
<td>—</td>
<td>Contains, Not contains, Matches, Not matches, Begins with, Not begins with</td>
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<tr>
<td>Language</td>
<td>English</td>
<td>==, !=</td>
</tr>
<tr>
<td>Last action reason</td>
<td>Assigned by system, Forwarded, Redirected, Replied, Save draft, Assigned for supervision, Rejected, Waiting for approval, Save draft to supervise, Sent</td>
<td>==, !=</td>
</tr>
<tr>
<td>Subject</td>
<td>—</td>
<td>Contains, Not contains, Matches, Not matches, Begins with, Not begins with</td>
</tr>
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## Case

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Values</th>
<th>Operators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>—</td>
<td>Contains, Not contains, Matches, Not matches, Begins with, Not begins with</td>
</tr>
<tr>
<td>Severity</td>
<td>Urgent, High, Medium, Low</td>
<td>==, !=</td>
</tr>
<tr>
<td>Solution description</td>
<td>—</td>
<td>Contains, Not contains, Matches, Not matches, Begins with, Not begins with</td>
</tr>
<tr>
<td>Subject</td>
<td>—</td>
<td>Contains, Not contains, Matches, Not matches, Begins with, Not begins with</td>
</tr>
</tbody>
</table>

## Customer - Common

<table>
<thead>
<tr>
<th>Attributes</th>
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<tbody>
<tr>
<td>Entitlements</td>
<td>—</td>
<td>Contains, Not contains, Matches, Not matches, Begins with, Not begins with</td>
</tr>
<tr>
<td>How referred</td>
<td>Website, Customer, Partner, Reseller</td>
<td>==, !=</td>
</tr>
<tr>
<td>Industry</td>
<td>Finance, Health care, Telecom</td>
<td>==, !=</td>
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<tr>
<td>Level</td>
<td>Gold, Platinum, Premium, Silver, Standard</td>
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<td>Marketing Segment</td>
<td>—</td>
<td>Contains, Not contains, Matches, Not matches, Begins with, Not begins with</td>
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<tr>
<td>Preferred agent</td>
<td>User names</td>
<td>==, !=</td>
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## Customer - Group

<table>
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<th>Values</th>
<th>Operators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer name</td>
<td>—</td>
<td>Contains, Not contains, Matches, Not matches, Begins with, Not begins with</td>
</tr>
<tr>
<td>Group type</td>
<td>Association, Club, Household, Joint account, Membership, other</td>
<td>==, !=</td>
</tr>
<tr>
<td>No. of members</td>
<td>—</td>
<td>==, !=, &lt;, &gt;, &lt;=, &gt;=</td>
</tr>
<tr>
<td>Region</td>
<td>Asia Pacific, Europe, United States</td>
<td>==, !=</td>
</tr>
</tbody>
</table>
## Customer - Individual

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Values</th>
<th>Operators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of birth</td>
<td>Date</td>
<td>==, !=, &lt;, &gt;, &lt;=, &gt;=</td>
</tr>
<tr>
<td>Employment status</td>
<td>Part time, Full time, Temporary, Contract, Intern, Unemployed</td>
<td>==, !=</td>
</tr>
<tr>
<td>First name</td>
<td>—</td>
<td>Contains, Not contains, Matches, Not matches, Begins with, Not begins with</td>
</tr>
<tr>
<td>Gender</td>
<td>Male, Female</td>
<td>==, !=</td>
</tr>
<tr>
<td>Job title</td>
<td>—</td>
<td>Contains, Not contains, Matches, Not matches, Begins with, Not begins with</td>
</tr>
<tr>
<td>Last name</td>
<td>—</td>
<td>Contains, Not contains, Matches, Not matches, Begins with, Not begins with</td>
</tr>
<tr>
<td>Marital status</td>
<td>Married, Single, Separated, Divorced, Widowed</td>
<td>==, !=</td>
</tr>
<tr>
<td>Middle name</td>
<td>—</td>
<td>Contains, Not contains, Matches, Not matches, Begins with, Not begins with</td>
</tr>
</tbody>
</table>

## Customer - Organization

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Values</th>
<th>Operators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer name</td>
<td>—</td>
<td>Contains, Not contains, Matches, Not matches, Begins with, Not begins with</td>
</tr>
<tr>
<td>No. of employees</td>
<td>—</td>
<td>==, !=, &lt;, &gt;, &lt;=, &gt;=</td>
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<td>Region</td>
<td>Asia Pacific, Europe, United States</td>
<td>==, !=</td>
</tr>
<tr>
<td>Sector type</td>
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## Email

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Values</th>
<th>Operators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bcc email address</td>
<td>—</td>
<td>Contains, Not contains, Matches, Not matches, Begins with, Not begins with</td>
</tr>
<tr>
<td>cc email address</td>
<td>—</td>
<td>Contains, Not contains, Matches, Not matches, Begins with, Not begins with</td>
</tr>
<tr>
<td>Content</td>
<td>—</td>
<td>Contains, Not contains, Matches, Not matches, Begins with, Not begins with</td>
</tr>
<tr>
<td>Content type</td>
<td>.htm, .txt</td>
<td>==, !=</td>
</tr>
</tbody>
</table>
### Attributes

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Values</th>
<th>Operators</th>
</tr>
</thead>
<tbody>
<tr>
<td>From email address</td>
<td>—</td>
<td>Contains, Not contains, Matches, Not matches, Begins with, Not begins with</td>
</tr>
<tr>
<td>Header</td>
<td>—</td>
<td>Contains, Not contains, Matches, Not matches, Begins with, Not begins with</td>
</tr>
<tr>
<td>Subject</td>
<td>—</td>
<td>Contains, Not contains, Matches, Not matches, Begins with, Not begins with</td>
</tr>
<tr>
<td>To email address</td>
<td>—</td>
<td>Contains, Not contains, Matches, Not matches, Begins with, Not begins with</td>
</tr>
<tr>
<td>To or cc email address</td>
<td>—</td>
<td>Contains, Not contains, Matches, Not matches, Begins with, Not begins with</td>
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### Task

<table>
<thead>
<tr>
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<th>Values</th>
<th>Operators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>—</td>
<td>Contains, Not contains, Matches, Not matches, Begins with, Not begins with</td>
</tr>
</tbody>
</table>

### Queue

Available only in outbound workflows and alarm workflows.

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Values</th>
<th>Operators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Queue name</td>
<td>—</td>
<td>Contains, Not contains, Matches, Not matches, Begins with, Not begins with</td>
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</table>

### User

Available only in outbound workflows and general workflows.

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Values</th>
<th>Operators</th>
</tr>
</thead>
<tbody>
<tr>
<td>First name</td>
<td>—</td>
<td>Contains, Not contains, Matches, Not matches, Begins with, Not begins with</td>
</tr>
<tr>
<td>Last name</td>
<td>—</td>
<td>Contains, Not contains, Matches, Not matches, Begins with, Not begins with</td>
</tr>
<tr>
<td>Manager</td>
<td>Manager names</td>
<td>==, !=</td>
</tr>
<tr>
<td>User name</td>
<td>—</td>
<td>Contains, Not contains, Matches, Not matches, Begins with, Not begins with</td>
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</table>
## Objects Available for Setting Conditions in the Alarm Node

### Case

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Values</th>
<th>Operators</th>
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</thead>
<tbody>
<tr>
<td>Age days</td>
<td></td>
<td>==, !=, &lt;, &gt;, &lt;=, &gt;=</td>
</tr>
<tr>
<td>Age hours</td>
<td></td>
<td>==, !=, &lt;, &gt;, &lt;=, &gt;=</td>
</tr>
<tr>
<td>Age minutes</td>
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<td>==, !=, &lt;, &gt;, &lt;=, &gt;=</td>
</tr>
<tr>
<td>Case status</td>
<td>Closed, Open, Ready for closure</td>
<td>==, !=</td>
</tr>
<tr>
<td>Count</td>
<td></td>
<td>==, !=, &lt;, &gt;, &lt;=, &gt;=</td>
</tr>
<tr>
<td>Count over due</td>
<td></td>
<td>==, !=, &lt;, &gt;, &lt;=, &gt;=</td>
</tr>
<tr>
<td>Days after due</td>
<td></td>
<td>==, !=, &lt;, &gt;, &lt;=, &gt;=</td>
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<tr>
<td>Days till due</td>
<td></td>
<td>==, !=, &lt;, &gt;, &lt;=, &gt;=</td>
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<tr>
<td>Hours after due</td>
<td></td>
<td>==, !=, &lt;, &gt;, &lt;=, &gt;=</td>
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<tr>
<td>Hours till due</td>
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<tr>
<td>Minutes after due</td>
<td></td>
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<tr>
<td>Minutes till due</td>
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<td>Percentage</td>
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</tr>
<tr>
<td>Percentage over due</td>
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</table>

### Activity

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Values</th>
<th>Operators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity status</td>
<td>Assigned, Assignment, Completed, New, Pre-completion, preworkflow, workflow</td>
<td>==, !=</td>
</tr>
<tr>
<td>Activity substatus</td>
<td>Assigned - New, Assigned - Pending, Assigned - Wrap up, Assigned - Error, Assigned - In progress, Assigned - Ready for internal assignment, Assigned - Ready for external assignment, Assignment - Error, Assignment - In progress, Assignment - Scheduled,</td>
<td>==, !=</td>
</tr>
<tr>
<td>Age days</td>
<td></td>
<td>==, !=, &lt;, &gt;, &lt;=, &gt;=</td>
</tr>
<tr>
<td>Age hours</td>
<td></td>
<td>==, !=, &lt;, &gt;, &lt;=, &gt;=</td>
</tr>
<tr>
<td>Age minutes</td>
<td></td>
<td>==, !=, &lt;, &gt;, &lt;=, &gt;=</td>
</tr>
<tr>
<td>Attributes</td>
<td>Values</td>
<td>Operators</td>
</tr>
<tr>
<td>-----------------------</td>
<td>------------------------------------------------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>Count</td>
<td>—</td>
<td>==, !=, &lt;, &gt;, &lt;=, &gt;=</td>
</tr>
<tr>
<td>Count over due</td>
<td>—</td>
<td>==, !=, &lt;, &gt;, &lt;=, &gt;=</td>
</tr>
<tr>
<td>Days after due</td>
<td>—</td>
<td>==, !=, &lt;, &gt;, &lt;=, &gt;=</td>
</tr>
<tr>
<td>Days till due</td>
<td>—</td>
<td>==, !=, &lt;, &gt;, &lt;=, &gt;=</td>
</tr>
<tr>
<td>Hours after due</td>
<td>—</td>
<td>==, !=, &lt;, &gt;, &lt;=, &gt;=</td>
</tr>
<tr>
<td>Hours till due</td>
<td>—</td>
<td>==, !=, &lt;, &gt;, &lt;=, &gt;=</td>
</tr>
<tr>
<td>Last action reason</td>
<td>Assigned by system, Forwarded, Redirected, Replied, Save draft, Assigned for supervision, Rejected, Waiting for approval, Save draft to supervise, Sent</td>
<td>==, !=</td>
</tr>
<tr>
<td>Minutes after due</td>
<td>—</td>
<td>==, !=, &lt;, &gt;, &lt;=, &gt;=</td>
</tr>
<tr>
<td>Minutes till due</td>
<td>—</td>
<td>==, !=, &lt;, &gt;, &lt;=, &gt;=</td>
</tr>
<tr>
<td>Percentage</td>
<td>—</td>
<td>==, !=, &lt;, &gt;, &lt;=, &gt;=</td>
</tr>
<tr>
<td>Percentage over due</td>
<td>—</td>
<td>==, !=, &lt;, &gt;, &lt;=, &gt;=</td>
</tr>
</tbody>
</table>