Cisco TEO Training Guide for Core Adapter Content Authors

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Preface

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This training guide focuses on a single content authoring use case featuring Core Functions Adapter and Microsoft Windows Adapter objects. This guide provides steps to author two processes providing the steps and the concepts behind a single use case. This guide is an attempt to expand on the concepts of the individual features and provide the steps required to create a process to generate specific results. The goal is to educate users on how to think when developing processes.

This guide is for users whose responsibilities include defining objects, creating processes, and monitoring the results provided by TEO.

For the purposes of this training guide, some features may not be described as they are not necessary to execute the process.

Organization

This guide includes the following sections:

Chapter 1	Pinging a URL Process	Provides the steps to author a process pinging a website and generating an alert and incident.
Chapter 2	Triggering an Approval Process	Provides the steps to author a process which is triggered as a result from the *Pinging a URL* process
Chapter 3	Viewing TEO Objects	Provides information on view the properties of TEO objects.
Chapter 4	Defining TEO Objects	Provides overview of the type of components that can be defined and included in processes for execution.
Chapter 5	Monitoring Activities	Provides information on viewing the state and properties of TEO activities.

Chapter 6	Monitoring Processes	Provides information on viewing the state and properties of TEO processes and activities.
Chapter 7	Monitoring Tasks	Provides the information used to view the state of tasks.
Chapter 8	Monitoring Auditing Information	Provides information on the Core reports TEO provides and how to access the available auditing information.

Conventions

This guide uses the following conventions:

Convention	Indication
bold font	Commands and keywords and user-entered text appear in **bold** font.
italic font	Document titles, new or emphasized terms, and arguments for which you supply values are in *italic* font.
[ ]	Elements in square brackets are optional.
{x | y | z }	Required alternative keywords are grouped in braces and separated by vertical bars.
[x | y | z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
`courier` font	Terminal sessions and information the system displays appear in `courier` font.
< >	Nonprinting characters such as passwords are in angle brackets.
[ ]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.

Note Means *reader take note*.

Tip Means *the following information will help you solve a problem*.

Caution Means *reader be careful*. In this situation, you might perform an action that could result in equipment damage or loss of data.

Timesaver Means *the described action saves time*. You can save time by performing the action described in the paragraph.

Warning **Means *reader be warned*. In this situation, you might perform an action that could result in bodily injury.**

Product Documentation

Documentation Formats

Documentation is provided in the following electronic formats:

- Adobe® Acrobat® PDF files
- Online help

You must have Adobe® Reader® installed to read the PDF files. Adobe Reader installation programs for common operating systems are available for free download from the Adobe Web site at www.adobe.com.

Guides and Release Notes

You can download the TEO product documentation from Cisco.com. Release Notes can be found on Cisco.com and the product CD.

Online Help

Online help is available and can be accessed using the following methods:

- Click **Help** on any dialog box in the application to open the help topic in a pane to the right of the dialog box.
- In the Tidal Enterprise Orchestrator console:
  - Click the **Help Pane** icon on the toolbar to open the help topic in a pane to the right of the Results pane.
  - Click **Help** on the menu bar.

Open Source License Acknowledgements

Licenses and notices for open source software used in Tidal Enterprise Orchestrator can be found in the Open Source License Acknowledgements on Cisco.com. If you have any questions about the open source contained in this product, please email external-opensource-requests@cisco.com.

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html

Subscribe to the *What's New in Cisco Product Documentation* as a RSS feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS Version 2.0.

CHAPTER 1

Pinging a URL Process

The objects to be defined in this workflow will ping www.yahoo.com every one minute and will then raise an alert and/or incident after meeting a defined number of pings. If an alert and incident is created, then an email will be sent to a specified user indicating the number of pings that generated the alert. and incident. If the ping does not meet the defined threshold, then no further action will be taken by the process.

The following items will be created in this process and will be necessary for the process to run successfully:

- Category
- Schedule Trigger
- URL Ping Activity
- Condition Block Logic Component
- Variable Condition
- Create Alert Activity
- Condition Branch Logic Component
- Create Incident activity
- Email Activity

The following sections provide information on creating the *Pinging a URL* process:

Defining the URL Ping Process Properties

Use the following steps to define the general process options for this process. The steps in this section do not include the definition for every field in the object. Only those steps necessary to perform the function for this process. For additional information, refer to the *Cisco Tidal Enterprise Orchestrator Reference Guide* and/or the relevant adapter guide.

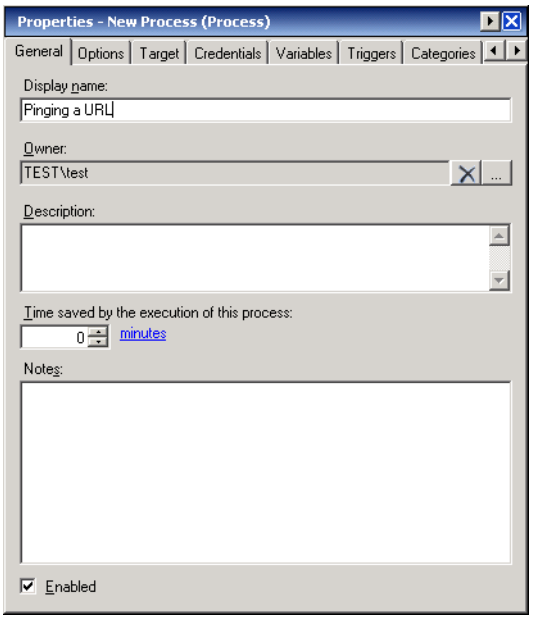
To define the general process properties:

Step 1 On the Definitions—Processes view, right-click and choose **New > Process**.

The Process Editor launches.

On the Properties pane, the General tab displays by default.

Figure 1-1 New Process Properties—General Tab

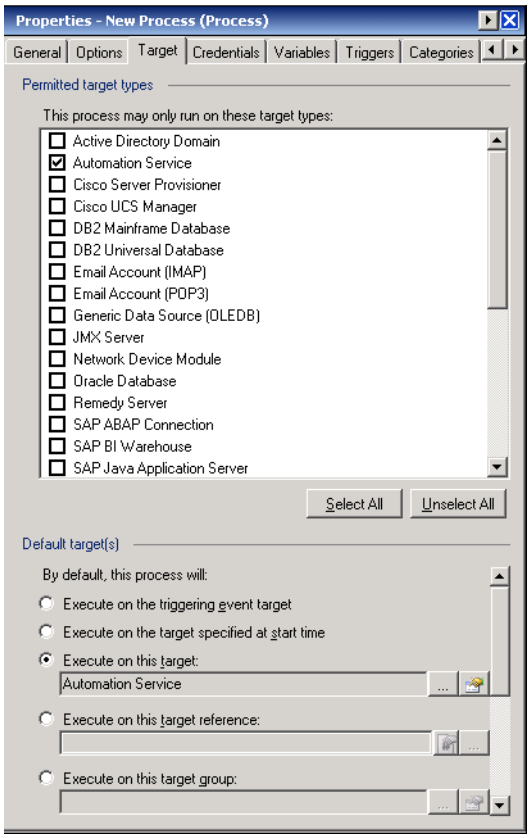


Step 2 On the General tab, in the Display Name field, enter **Pinging a URL**. This will become the name of the process.

Step 3 Click the **Target** tab to specify which target or target group the process should execute against.

Note The target or target group specified on this page can also be used to execute any activity added to the process.

Figure 1-2 New Process Properties—Target Tab



Step 4 Under Permitted Target types, check the Windows Computer check box to indicate that all Windows Computer target types should be available process execution. The default target checked is Automation Service.

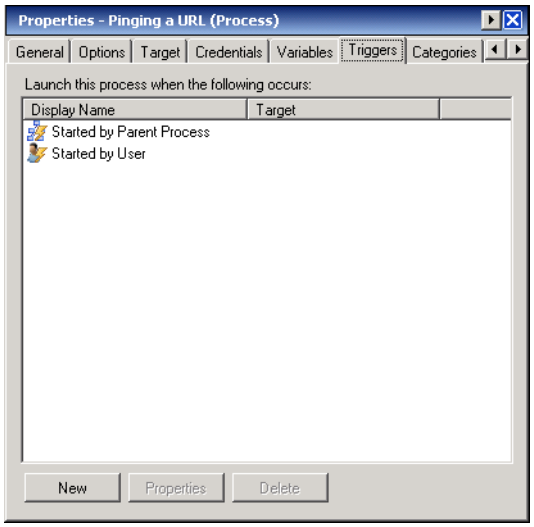
Note If all the target types are checked by default, click **Unselect All** to uncheck the selected target types availability for the process, and then perform Step 4.

Step 5 Under Default Targets, select the **Execute on this target** radio button, and then click **Browse** to launch the Select Targets dialog box to select a specific target on which to execute the process.

The targets that display in the Select Targets dialog box are targets already defined in TEO.

Step 6 Click the **Save** tool to save the target specification properties and then click the **Triggers** tab to continue.

Figure 1-3 New Process Properties—Triggers Tab



Adding a Schedule Trigger to the Process

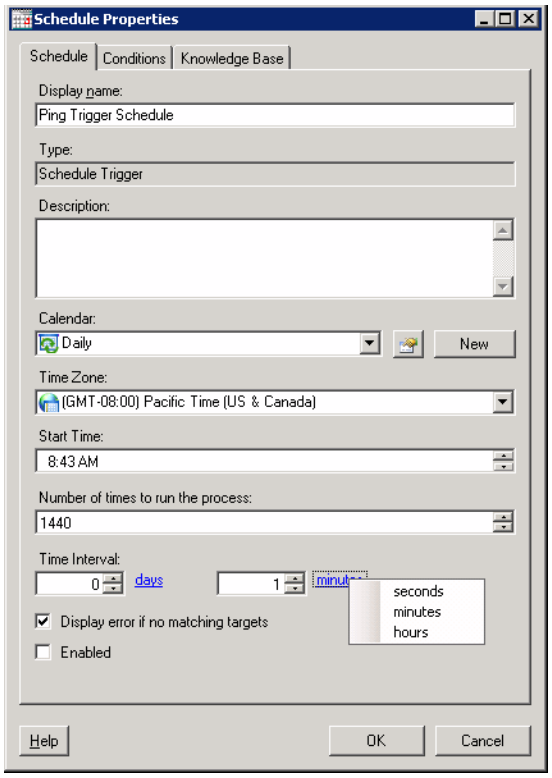
This process requires a trigger to determine the threshold for the number of pings hitting the Yahoo website before triggering the process execution. For the process, the Schedule trigger will be required, but will not be enabled upon initial creation.

To add a trigger:

Step 1 On the Triggers tab, click **New > Schedule**. to specify the dates and times to be used when the process executes.

Step 2 The Schedule Properties dialog displays.

Figure 1-4 Schedule Properties Dialog Box—Schedule Tab



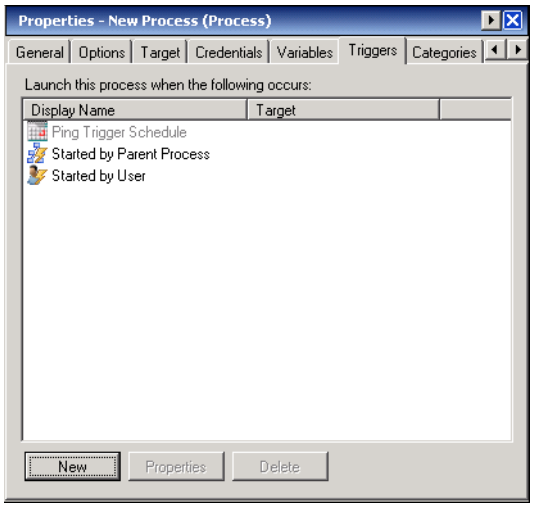
Step 3 On the Schedule tab, specify the following information for this trigger:

Field	Description
Display Name	Enter **Ping Trigger Schedule** as the name for the schedule.
Description	Enter the following description for the schedule trigger: "*Threshold trigger for pinging yahoo.*"
Start Time	Enter or choose the time when this schedule should begin. This process uses the default time provided.
Number of times to run the process	Enter **1440** as the value for how often the process is to run. The number *1440* equals the number of minutes that occur in a 24-hour period.
Time Interval	Choose the time to wait between the subsequent process executions. This value is used only if the number of times to run the process is greater than one. This process uses the default time provided.
Enabled	For the purposes of this process, uncheck this check box to disable the trigger, because this training will require to run the process ad hoc for testing.

Step 4 Click **OK** to complete the procedure.

The new Schedule trigger displays in the Trigger property page.

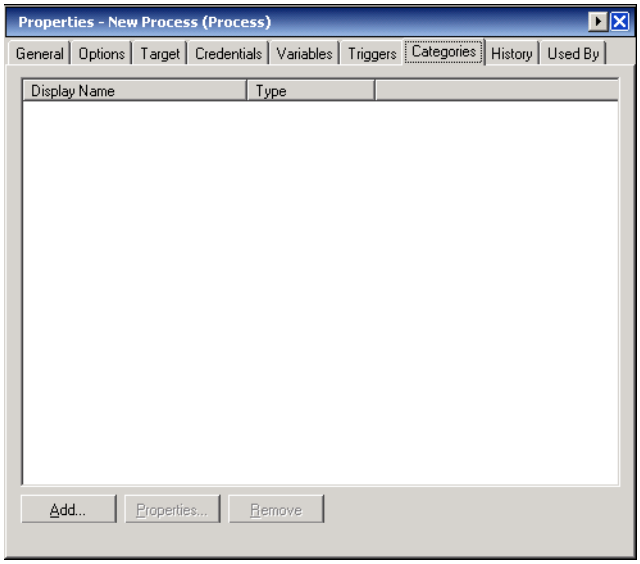
Figure 1-5 Process Properties Dialog Box—Completed Trigger Tab



Step 5 Click the **Save** tool to save the changes.

Step 6 Click the **Categories** tab to continue.

Figure 1-6 New Process Properties—Categories Tab



Assigning a Category to Process

Use the Categories tab to assign the process to a category so that it'll be easier to organize the processes in this training in TEO.

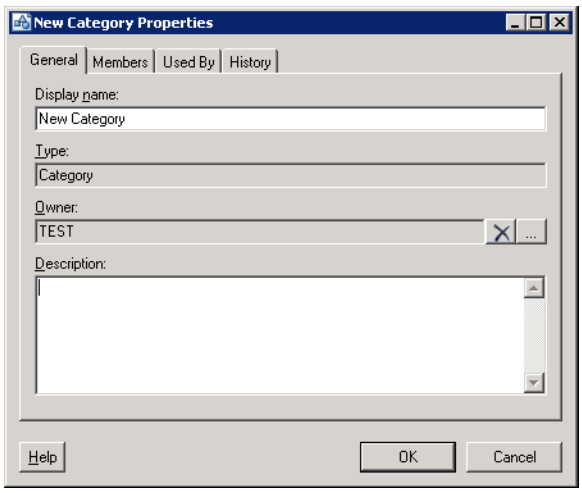
To assign a category:

Step 1 On the Categories tab, click **Add** to launch the Select Categories dialog box.

Step 2 Click **New > Category**.

The New Category Properties dialog box displays.

Figure 1-7 New Category Properties—General Tab



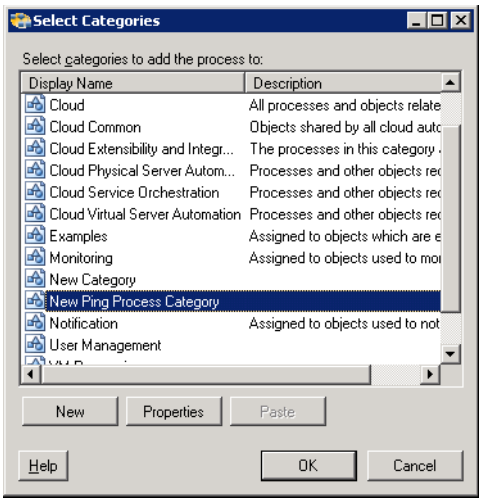
Step 3 On the General tab, enter the following information, as necessary:

Field	Description
Display name	Enter **New Ping Process Category** as the name of the category.
Description	Enter a description of the category.

Step 4 Click **OK** to complete the category.

Step 5 The **New Ping Process Category** is displayed in the Select Category dialog box and is selected by default.

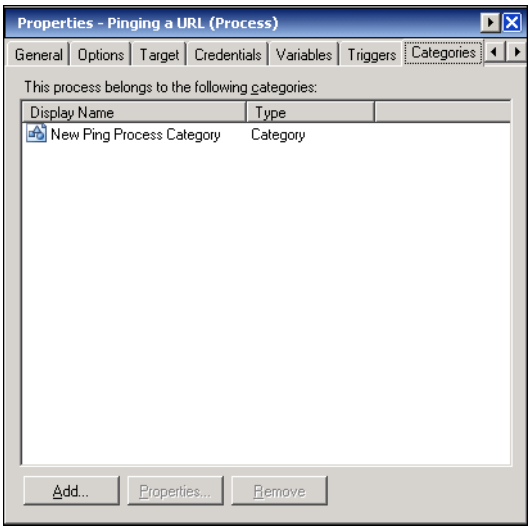
Figure 1-8 Select Categories Dialog Box



Step 6 Click **OK** to continue.

Step 7 The new category is displayed on the Category tab.

Figure 1-9 Process Properties—Completed Categories Tab



Step 8 Click the **Save** tool to save the changes.

Constructing the Pinging a URL Process Workflow

In the next section, the user will begin constructing the process workflow by defining the various objects required to execute the URL Ping process accurately and generate the desired information.

The objects to be added in this process include the following:

- URL Ping Activity
- Condition Block Logic Component
- Variable Condition
- Create Alert Activity
- Create Incident Activity
- Condition Branch Logic Component
- Email Activity

The steps in this section will not include defining every field in the object. Only those steps necessary to perform the function for this process. For additional information, refer to the *Cisco Tidal Enterprise Orchestrator Reference Guide* and/or the relevant adapter guide.

Defining the URL Ping activity

The workflow should begin with the URL Ping activity in order to ping the Yahoo website. This activity will set the foundation for the remaining configuration of the process workflow.

To define the URL Ping activity:

Step 1 On the Toolbox pane, under Web Service, choose the **URL Ping** activity, then drag and drop the activity onto the Workflow pane.

The URL Ping activity property pages display.

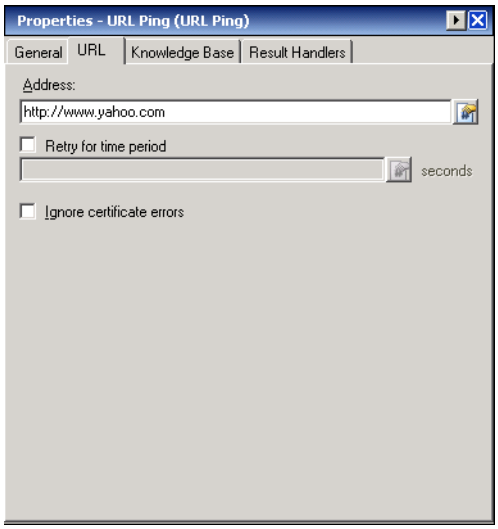
Step 2 Click the **URL** tab to enter the website to be pinged by the activity.

Note The Required Value icon displayed on a tab or page indicates that the field is required and is either missing a value or contains an invalid value.

Step 3 On the URL tab, in the Address field, enter the fully qualified URI for the yahoo web address:

http://www.yahoo.com

Figure 1-10 URL Ping Properties Page—URL Tab



Step 4 Click the **Save** tool to save the changes.

Adding the URL Ping Conditions

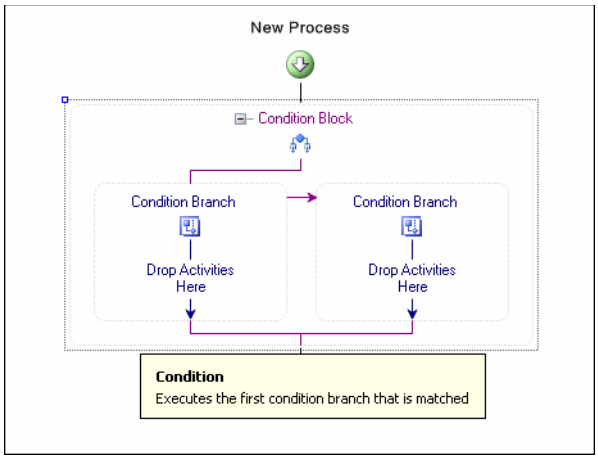
The next step in constructing this process is defining the conditions on which the URL Ping activity should execute, and the actions that should launch upon process execution.

Use the Condition Block component to execute two or more condition branches. It checks conditions for each of the branches in order from left to right and executes the first condition branch whose condition is *true*.

To define a Condition Block:

Step 1 On the Toolbox—Logic pane, choose **Condition** and drag and drop the component onto the Workflow pane.

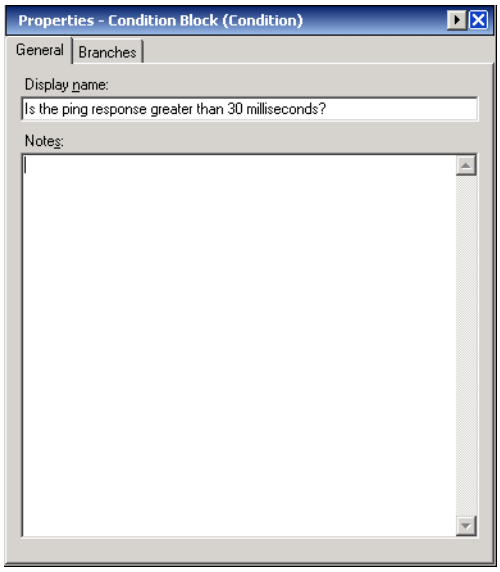
Figure 1-11 Condition Block Component in Workflow Pane



The Condition Block property page displays.

Step 2 On the General tab, in the Name field, enter **Is the ping response greater than 30 milliseconds?**, and click the **Save** tool to save the changes.

Figure 1-12 Condition Block Property Page—Is the ping response greater than 30 milliseconds?



Configuring the Yes Condition for the Response Time

The information in this condition branch tells TEO how to proceed based on if the response time to the URL ping is more than 30 milliseconds. If the response time is more than 30 milliseconds, then an alert will be created and an email notification will be sent.

Use the following steps to configure the condition branch if the response time to the URL ping is *Yes*.

Step 1 On the Workflow plane, select the left Condition Branch.

The Condition Branch property page displays.

Step 2 In the Display Name field, enter **Yes**.

Step 3 Under Conditions, click **New > Variable Condition**.

The Variable Condition properties display in the Conditions properties pane.

Step 4 In the text field, click the **Reference** tool to launch the Insert Variable Reference dialog box.

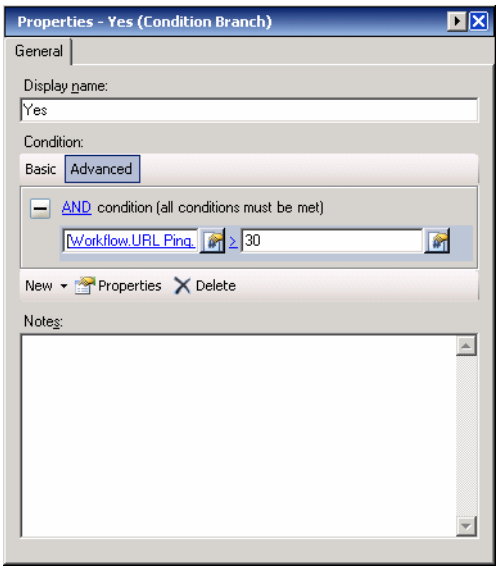
Step 5 Expand **Workflow > URL Ping**, and then select **Response Time**.

Response Time displays in the text field.

Step 6 Click the default Operators option to select the **Greater than > or equal to** [>=] operator.

Step 7 In the Value field, enter **30**, and then click the **Save** tool to save the condition changes.

Figure 1-13 Condition Branch Properties Pane—Yes Variable Condition



The details in this Variable condition indicates that an alert is required if the response time is greater than or equal 30 milliseconds to use as a condition.

Creating a Response Time Alert

Use the Create Alert activity to create an alert to reflect potential problems that a user may want to investigate and possibly diagnose the problem.

To define a create alert activity:

Step 1 On the Toolbox pane, under Tasks - IT Records, choose **Create Alert** and drag and drop the activity on the Workflow Pane under the Yes Condition Branch.

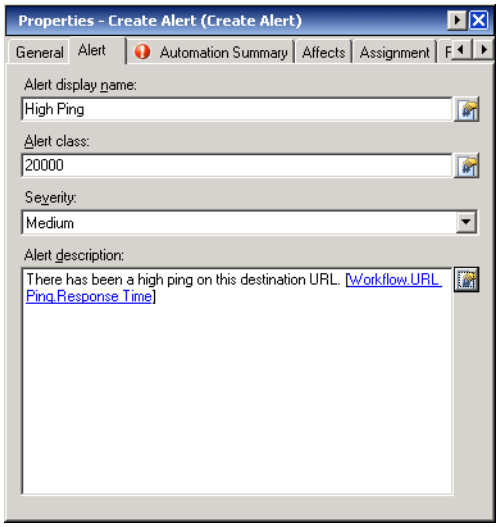
The Create Alert property page displays.

Step 2 Click the **Alert** tab to enter the criteria for the alert.

Field	Description
Alert display name	Enter High Ping as the display name of the alert.
Alert class	Enter **20000** as the value for the class of the alert.
Severity	The severity of the alert can remain at the default of *Medium* indicating that it is an interruption to the work of individual employees, but does not impact any critical business processes.
Alert description	Enter **There has been a high ping on the destination www.yahoo.com.** and then click the **Reference** tool to launch the Insert Variable Reference dialog box. On the Insert Variable Reference dialog box, expand Workflow >

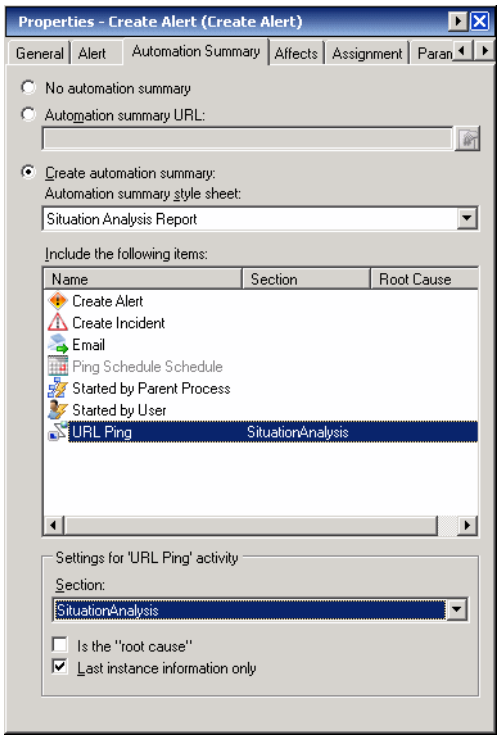
Note The Required Value icon displayed on a tab or page indicates that the field is required and is either missing a value or contains an invalid value.

Figure 1-14 Create Alert Properties Page—Completed Alert Tab



Step 3 Click the **Automation Summary** tab to specify the criteria to use to generate an automation summary when an alert or incident is created.

Figure 1-15 Create Alert Properties Page—Completed Automation Summary Tab



Step 4 On the Automation Summary tab, under Create automation summary > Include the following items, choose **URL Ping** to specify the section in the automation summary in which to output the data.

Step 5 Under Settings for URL Ping activity, from the Section drop-down list, select **Situation Analysis**.

Step 6 Click the **Assignment** tab to assign the task to a specific user. For the purposes of testing, assign the task to yourself.

Step 7 To the right of Assigned to, click **Add** to launch the Select Assignee dialog box.

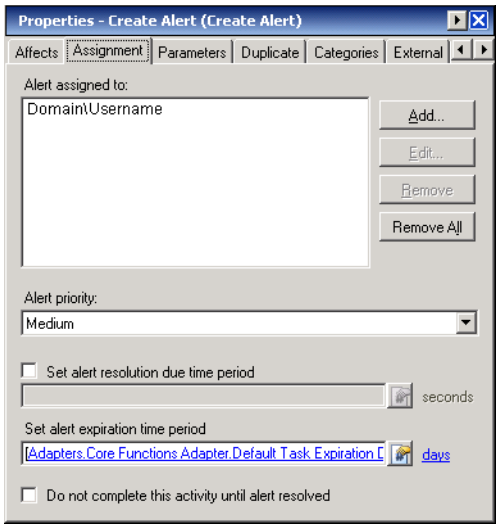
Step 8 Click **Browse** to the right of the Reference tool to launch the Select User or Group dialog box to search for the name of the user or group to be assigned.

Note For the purposes of this task, use your username.

Step 9 Click **OK** to close the dialog box.

The assignee is displayed on the Assignment property page.

Figure 1-16 Create Alert Properties Page—Completed Assignment Tab

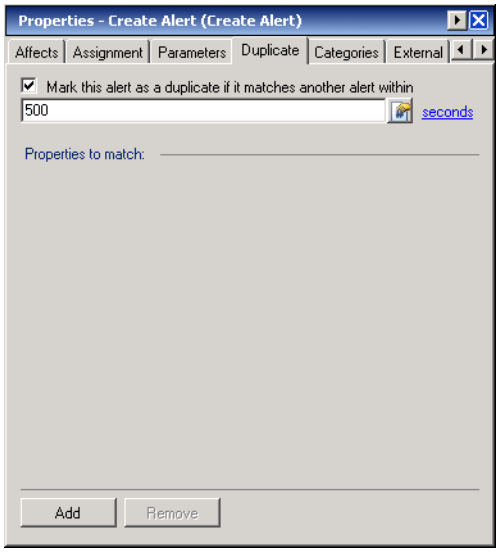


Step 10 Click the **Duplicate** tab to define the criteria used to search for previously submitted alerts.

Step 11 On the tab, check the **Mark this alert as a duplicate if matches another alert within** check box, and in the enabled text box, enter **500**.

This information indicates that if a new a alert is created within 500 seconds of this alert, then the alert should be marked as a duplicate and resolved.

Figure 1-17 Create Alert Properties Page—Completed Duplicate Tab



Step 12 Click the **Save** tool to complete the Create Alert activity definition.

Configuring a Duplicate Condition for Create Alert activity

This condition provides the variables to be query if an alert is a duplicate of the previously defined alert.

Step 1 On the Toolbox—Logic pane, choose **Condition Branch** and drag and drop the component onto the Workflow pane under the Create Alert activity.

A single condition branch displays in the Workflow pane and the Condition Branch property page displays to the right.

Step 2 On the General tab, in the Name field, enter **If not duplicate**.

Step 3 Under Condition, click **Advanced** to display the advanced properties pane.

Step 4 Click **New > Variable Condition** to display the variable condition property fields.

The Variable Condition properties display in the Conditions properties pane.

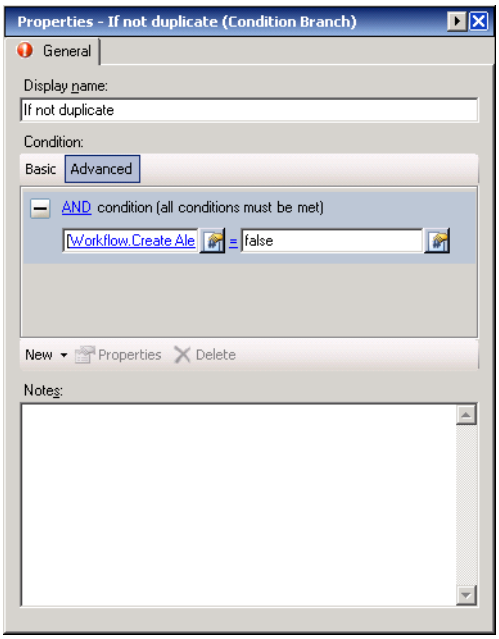
Step 5 In the text field, click the **Reference** tool to launch the Insert Variable Reference dialog box.

Step 6 Expand **Workflow > Create Alert > Task**, and then select **is Duplicate**.

The path to the is Duplicate property displays in the text field. The default Operators option can remain Equal [=].

Step 7 In the Value field, enter **False**, and then click the **Save** tool to save the condition changes.

Figure 1-18 Condition Branch Property Page—Completed If not duplicate Condition



The details in this Variable condition indicates that if the alert is not a duplicate, then an alert incident should be created. See Creating a Response Time Incident, page 1-17. If the alert occurred within 500 seconds of a previously submitted alert, then the new alert should be resolved.

Creating a Response Time Incident

A response time incident should be created if an alert is raised due to the high amount of pings created by the URL Ping activity. For this task, the Create Incident activity should primarily reference details to the previously defined Create Alert activity. See Creating a Response Time Alert, page 1-13.

To define a create incident activity:

Step 1 On the Toolbox pane, under Tasks - IT Records, choose **Create Incident** and drag and drop the activity onto the Workflow Pane under the *If not duplicate* Condition of the *Yes* Condition Branch.

The Create Incident property page displays.

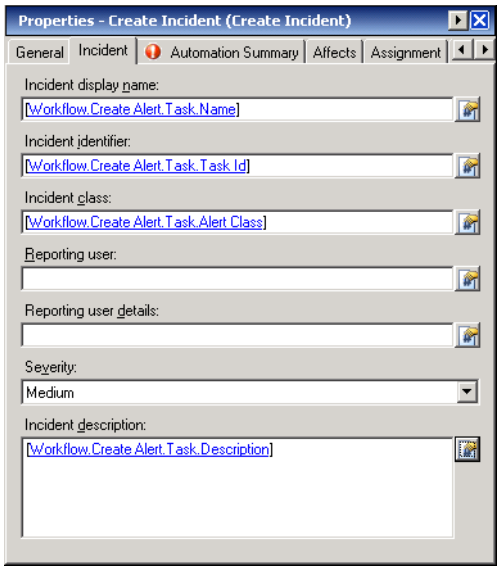
Step 2 Click the **Incident** tab to enter the criteria for the incident.

Note The Required Value icon displayed on a tab or page indicates that the field is required and is either missing a value or contains an invalid value.

Step 3 On the Incident tab, click the Reference tool to the right of the following fields to reference the fields as defined in the Create Alert activity from the Insert Variable Reference dialog box.

Field	Description
Incident display name	On the Insert Variable Reference dialog box, expand **Workflow > Create Alert > Task > Name** to be used as the incident display name.
Incident identifier	On the Insert Variable Reference dialog box, expand **Workflow > Create Alert > Task > Task ID** to be used as the incident ID.
Incident class	On the Insert Variable Reference dialog box, expand **Workflow > Create Alert > Task > Alert Class** to be used as the incident class.
Incident description	On the Insert Variable Reference dialog box, expand **Workflow > Create Alert > Task > Description** to be used as the incident description.

Figure 1-19 Create Incident Properties Page—Completed Incident Tab

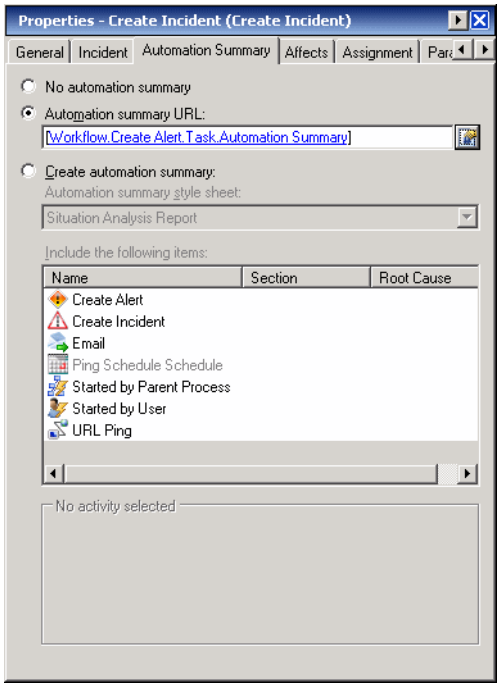


Step 4 Click the **Automation Summary** tab to reference the automation summary generated by the Create Alert activity.

Step 5 On the Automation Summary tab, select the **Automation Summary URL** radio button, and then click the **Reference** tool to launch the Insert Variable Reference dialog box.

Step 6 On the Insert Variable Reference dialog box, expand **Workflow > Create Alert > Task > Automation Summary** to reference the automation summary generated by the Create Alert activity.

Figure 1-20 Create Incident Properties Page—Completed Automation Summary Tab



The path referencing the automation summary generated by the Create Alert activity displays in the Automation Summary URL field.

Step 7 Click the **Assignment** tab to assign the task to a specific user. For the purposes of testing, assign the task to yourself.

Step 8 To the right of Assigned to, click **Add** to launch the Select Assignee dialog box.

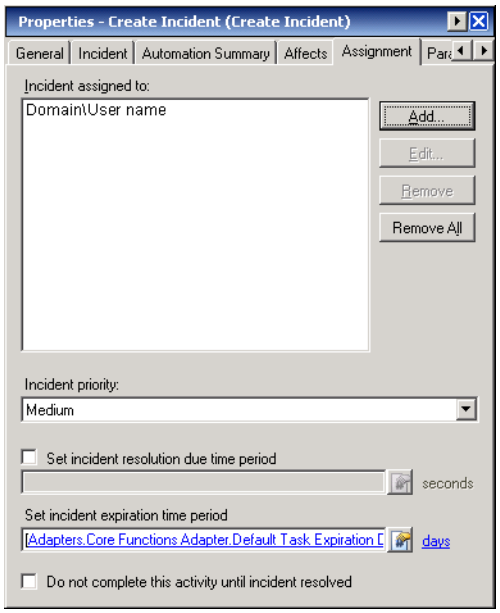
Step 9 Click **Browse** to the right of the Reference tool to launch the Select User or Group dialog box to search for the name of the user or group to be assigned.

Note For the purposes of this task, use your username.

Step 10 Click **OK** to close the dialog box.

The assignee is displayed on the Assignment property page.

Figure 1-21 Create Incident Properties Page—Completed Assignment Tab



Step 11 Click the **Related** tab to add the previously defined Create Alert activity to the list of alerts that should be modified or resolved whenever the incident is modified or resolved.

Step 12 On the Related tab, under Alerts that originated this incident, click **Add** to launch the Select Alerts to Add dialog box.

Step 13 Click the **Reference** tool to launch the Insert Variable Reference dialog box.

Step 14 On the Insert Variable Reference dialog box, expand **Workflow > Create Alert > Task > Task ID** to add to the list.

Step 15 Click **OK** to close the dialog box.

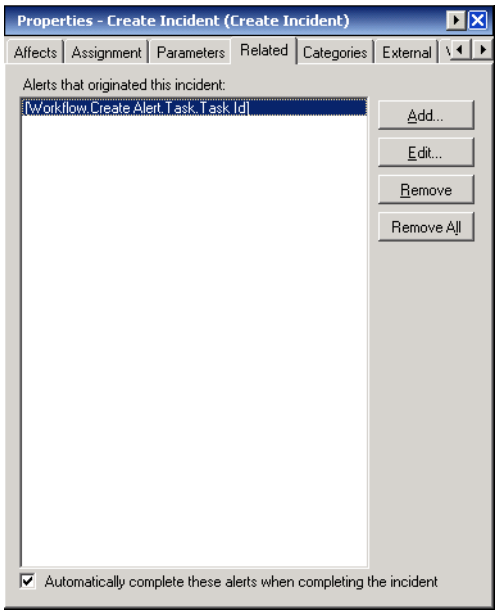
The path to the Alert task ID displays in the Alert ID field on the Select Alerts to Add dialog box.

Step 16 Click **OK** to close the dialog box.

The path to the Alert task ID displays in the list.

Step 17 Click the **Save** tool to complete the Create Incident activity definition.

Figure 1-22 Create Incident Properties Page—Completed Related Tab



Creating an Email Notification

After an alert or incident has been created, an email notification using the Email activity should be sent to inform the user of the issue. Use the following steps to specify the information required for sending the email notification.

To define the Email activity:

Step 1 On the Toolbox pane, under Email Activities, select the **Email** activity, then drag and drop the activity onto the Workflow pane under the Create Incident activity on the Yes Condition Branch.

The Email property page display.

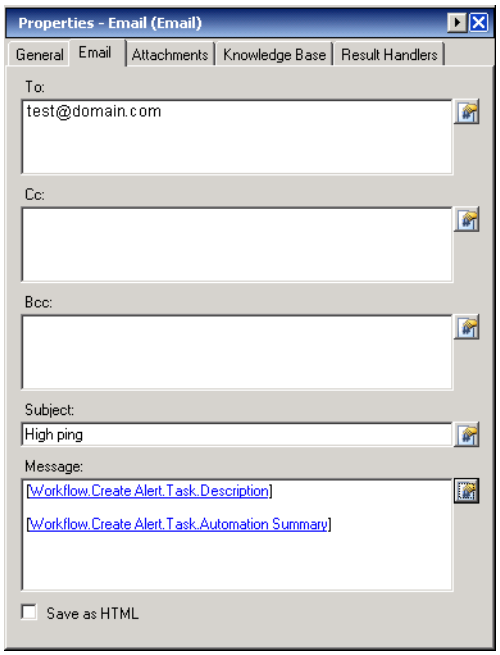
Step 2 Click the **Email** tab to continue.

Note The Required Value icon displayed on a tab or page indicates that the field is required and is either missing a value or contains an invalid value.

Step 3 On the Email tab, specify the properties used to generate the email.

Field	Description
To	Enter your email address of the primary recipient(s) of the email.
Subject	Subject heading of the email
Message	Content of the message in the body of the email.

Figure 1-23 Email Properties Page—Completed Email Tab



Step 4 Click the **Save** tool to save the activity definition.

Configuring the No Condition for the Response Time

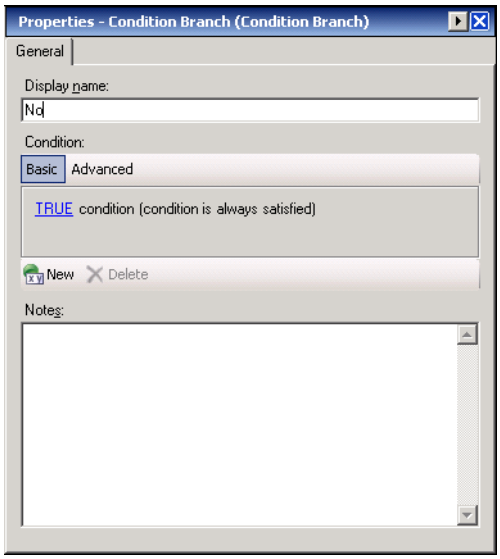
To complete the construction of the URL Ping process, a No condition must be configured. This finalizes the conditional scenarios of what should occur after the process is executed.

To define the No condition:

Step 1 On the Workflow plane, select the right **Condition Branch**.

Step 2 On the Condition Branch property page, in the Display Name field, enter **No**.

Figure 1-24 Condition Branch Properties Pane—No Variable Condition

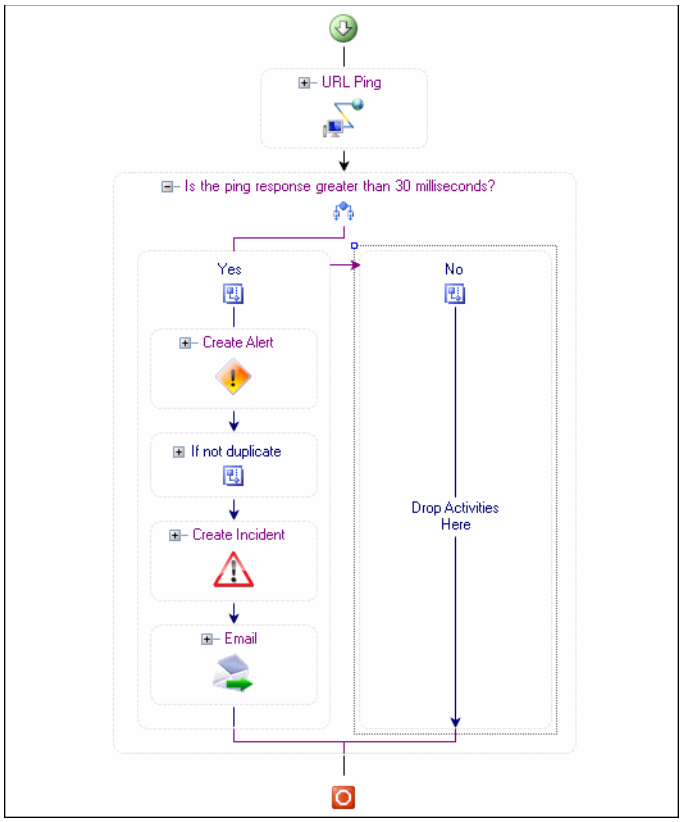


Step 3 Click the **Save** tool to save the condition changes.

Complete Pinging a URL Process Workflow

This graphic displays how the process should display in the Workflow pane after completion.

Figure 1-25 Workflow Pane—Completed Pinging a URL Process



Viewing the Pinging the URL Process Results

This section provides the basic steps for viewing the results of process and activity instances of the objects defined in this chapter. This includes the basic steps for viewing the information. For additional information on viewing information, refer to the following sections.

Viewing the Process Instance Properties

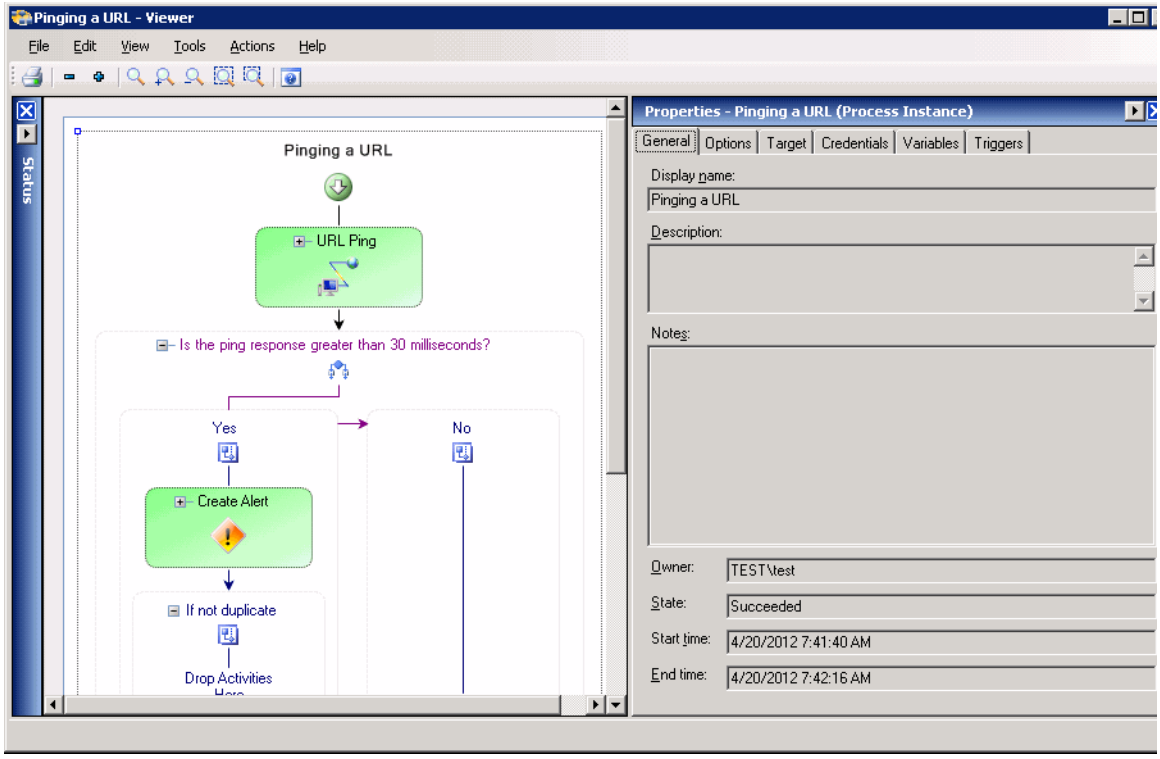
The Process Instance Properties pane is located on the right side of the Process Viewer and displays the properties for the selected process instance. The information displayed on the Process Viewer is display-only.

Step 1 Operations—Activity Views, click **View Started** to display the processes that were started during the specified time frame.

Step 2 On the Results pane, select the appropriate process instance, right-click and choose **Observe**.

The Process Viewer displays.

Figure 1-26 Process Viewer—Process Instance Properties Pane



The Process Instance Properties pane displays to the right.

Step 3 Click the appropriate display-only tab to review the process properties.

Property Page	Description
General	Displays general information about the process
Options	Display any execution and storage options defined about the process
Target	Indicates the target or target group used to execute the process
Credentials	Indicates which runtime was used for executing the process
Variables	Displays the variable values used to pass a value between executions of a process or between steps within a single process
Triggers	Indicates how the process was executed, either manually by a user or computer, or by a trigger

Viewing URL Ping Response Time

In addition to activity instances and results can be viewed from the Operations Workspace, the information is also viewable from the Process Viewer. Use the following steps to view the URL ping results from the Process Viewer. Refer to Chapter 5, "Monitoring Activities" and Chapter 6, "Monitoring Processes" for information on viewing the results on the Operations Workspace.

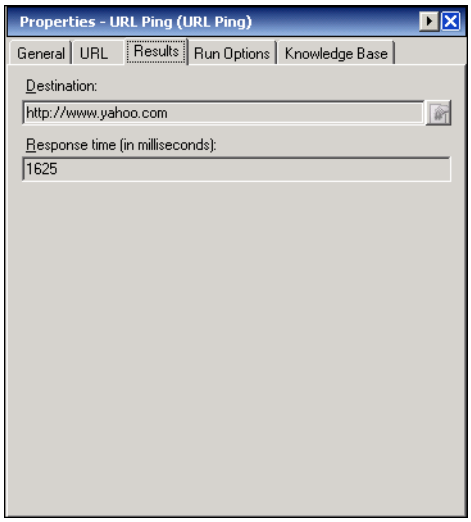
To view URL Ping results:

Step 1 On the Workflow pane, click the URL Ping activity.

The URL Ping Properties display-only dialog box displays.

Step 2 Click the **Results** tab to view the results of the response time for the URL specified in the activity properties.

Figure 1-27 URL Ping Instance Properties Page—Results Tab



The following information is displayed:

Field	Description
Destination	URL for the web address pinged (www.yahoo.com)
Response time (in milliseconds)	Time taken for the site to respond to the ping (1625)

Viewing Automation Summary Detail for Create Alert Activity

In the Create Alerts activity that was defined for the *Pinging a URL* process, automation summary properties were defined to provide an analysis for the high ping alert generated by the URL activity. The automation summary provides summary details of the diagnostic and state information captured while performing the URL ping analysis. Use the following steps to view the automation summary report from the Process Viewer. Refer to Chapter 5, "Monitoring Activities" and Chapter 6, "Monitoring Processes" for information on viewing the results on the Operations Workspace.

To view the automation summary report:

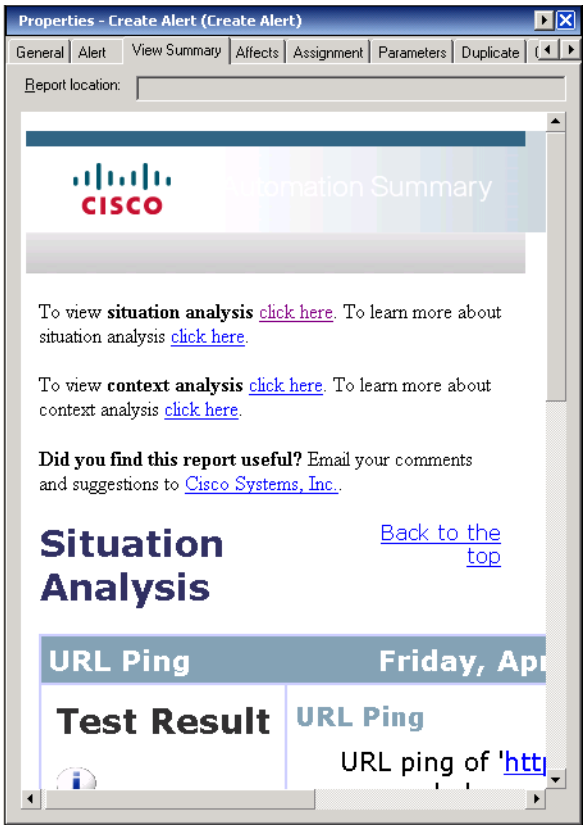
Step 1 On the Workflow pane, click the **Create Alert** activity.

The Create Alert Properties display.

Step 2 Click the **View Summary** display-only tab to view the situation analysis of the response time for the URL Ping activity.

The Automation Summary report displays.

Figure 1-28 Create Alert Activity Instance Properties Page—View Summary Tab



The following information is displayed:

Field	Description
Report location	*Display-only.* File path for the automation summary
Situation Analysis	After TEO puts all data points in context to identify a situation that requires action, it performs deep analysis based on the type of situation identified. During situation analysis, TEO captures volatile state and diagnostic information that may otherwise be difficult or impossible to capture manually. The *Situation Analysis* section displays below the overview information. Click the link in the upper portion of the summary to navigate directly to the *Situation Analysis* section or simply scroll to the section.
Context Analysis	TEO analyzes all data points in context with each other to identify a situation that may require action. This information can be viewed in the *Context Analysis* section of the summary. The *Context Analysis* displays the symptom and possible causes.

Tip Automation Summary reports can be accessed from the Operations—Task Views by right-clicking on the task and choosing **View Automation Summary**. The automation summary is launched in the TEO Web Console.

Viewing Alerts Generated by URL Ping Response

A high ping alert was generated by the *Pinging a URL* process when the number of pings per minute reached a certain threshold. The High Ping alert can be viewed or modified in the Tasks Views on the Operations Workspace.

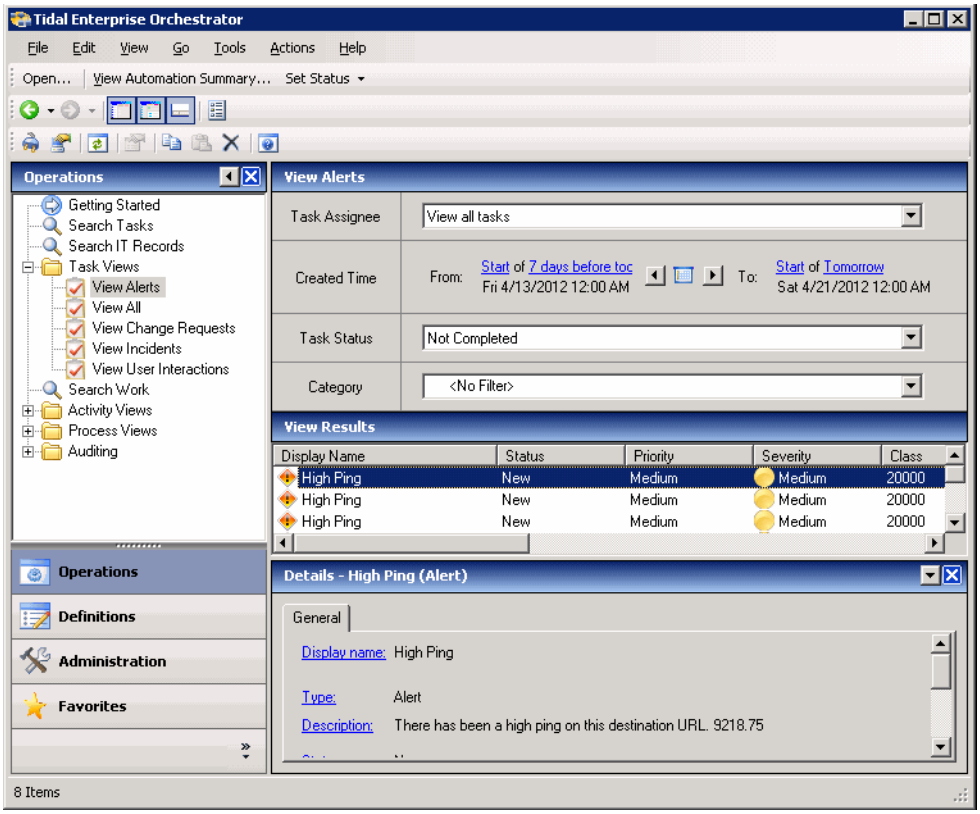
Use the following steps to view the task properties for the High Ping alert. See Chapter 7, "Monitoring Tasks" for additional information about the properties displayed in the task.

To view the alert task properties:

Step 1 On the appropriate Operations—Task View, click **View Alerts**.

Step 2 The Results pane displays all the high ping alerts generated during the specified time period.

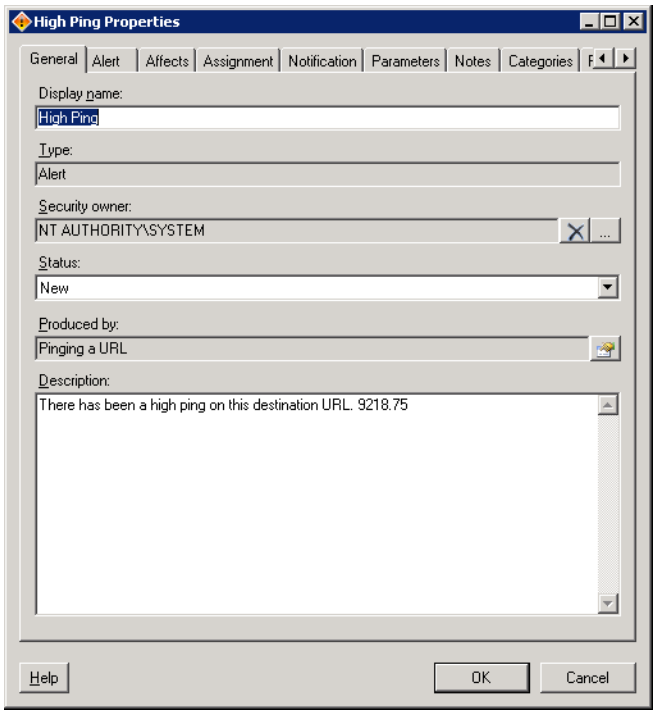
Figure 1-29 Operations Works—View Alerts



Step 3 To view the details of the alert, highlight the appropriate alert, right-click and choose **Properties**.

The High Ping Properties dialog box displays.

Figure 1-30 High Ping Alert Properties



Step 4 Click the appropriate tab to view or modify the properties of the High Ping alert.

Tab	Description
General	Displays the basic information for the task including the name of the user who submitted the task and the current status of the task.
Alert	Displays the properties of the selected task.
Affects	Displays the organizations and configuration item elements of the alert.
Assignment	Displays the assignment properties for the task.
Notification	Displays the recipients to be notified about the task.
Parameters	Displays the parameters included in the task.
Notes	Displays any notes related to the task in the text box.
Categories	Displays the categories in which the tasks are assigned.
Related	Displays any tasks assigned to the task as a related or duplicated task.
External	Displays the external incident information to support the synchronization between TEO and the system the customer is using.
History	Displays the history of actions taken against the task.

Step 5 Click **OK** to close the dialog box.

Viewing Incidents Generated by High Ping Alert

When a high ping alert was generated by the *Pinging a URL* process when the number of pings per minute reached a certain threshold, then a high ping incident is also created. The High Ping incident is created from the properties defined in the Create Incident activity. The High Ping incident can be viewed or modified in the Tasks Views on the Operations Workspace.

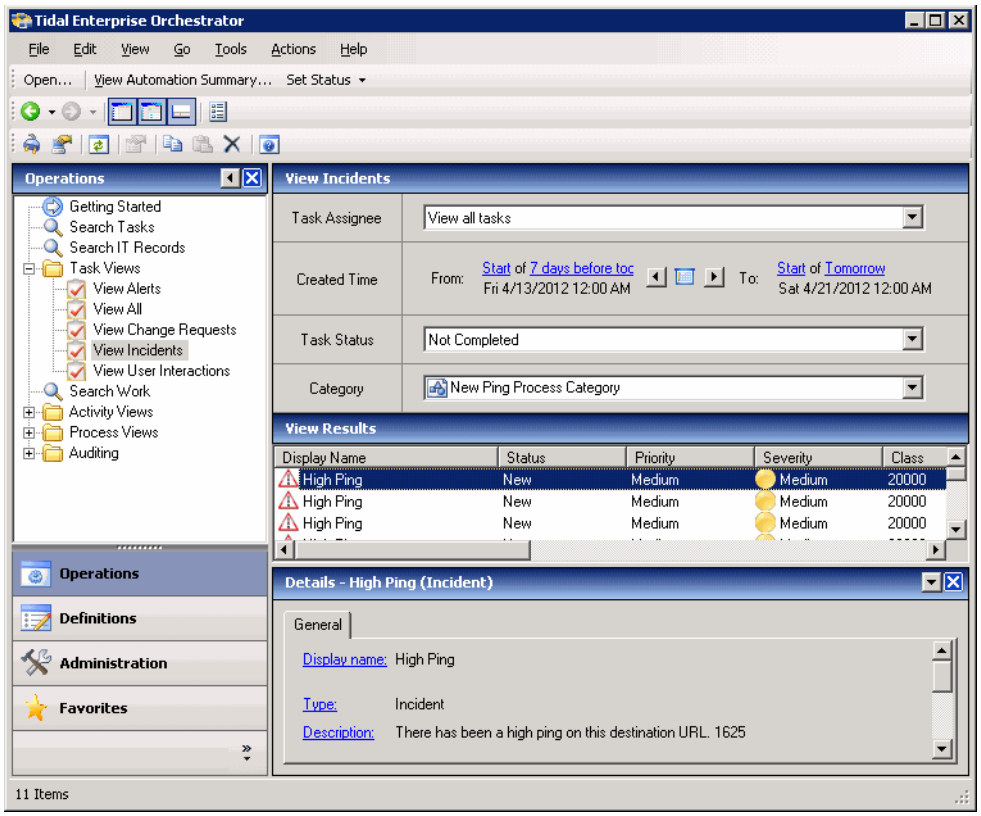
Use the following steps to view the task properties for the High Ping incident. See Chapter 7, "Monitoring Tasks" for additional information about the properties displayed in the task.

To view the incident task properties:

Step 1 On the appropriate Operations—Task View, click **View Incidents**.

Step 2 The Results pane displays all the high ping alerts generated during the specified time period.

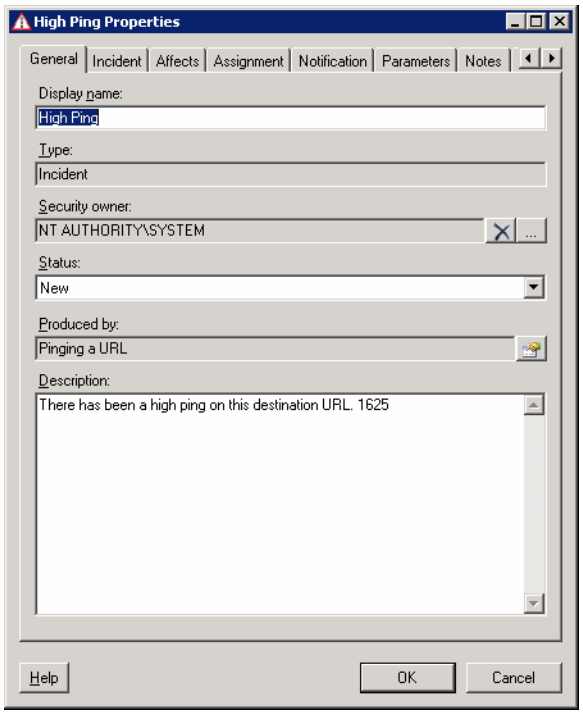
Figure 1-31 Operations Works—View Incidents



Step 3 To view the details of the incident, highlight the appropriate incident, right-click and choose **Properties**.

The High Ping Properties dialog box displays.

Figure 1-32 High Ping Incident Properties



Step 4 Click the appropriate tab to view or modify the properties of the High Ping incidents.

Tab	Description
General	Displays the basic information for the task including the name of the user who submitted the task and the current status of the task.
Incident	Displays the properties of the selected task.
Affects	Displays the organizations and configuration item elements of the incident.
Assignment	Displays the assignment properties for the task.
Notification	Displays the recipients to be notified about the task.
Parameters	Displays the parameters included in the task.
Notes	Displays any notes related to the task in the text box.
Categories	Displays the categories in which the tasks are assigned.
Related	Displays any tasks assigned to the task as a related or duplicated task.
External	Displays the external incident information to support the synchronization between TEO and the system the customer is using.
History	Displays the history of actions taken against the task.

Step 5 Click **OK** to close the dialog box.

CHAPTER 2

Triggering an Approval Process

This process is launched after the *Pinging a URL* process triggers an approval task asking whether to enable or disable the "Yahoo Server" target. Write a process that triggers off of the above process and generates a User Approval form (to yourself again) to approve the disable/re-enable of the windows target "Yahoo Server". (If that windows target does not exist, create it and point it at some windows machine). After approval passes, you should automate the disable/re-enable.

The following items should be previously defined for this process to run successfully:

- Two defined Windows Computer Targets—One target will be used for process execution. The other target will be used for successfully executing the PowerShell script and the display name should be *YahooServer*.
- Microsoft Windows PowerShell installed
- New Ping Process Category

The following items will be created in this process and will be necessary for the process to run successfully:

- Task Incident Created Trigger
- Create Approval Activity
- Condition Block Logic Component
- Execute PowerShell Script Activity
- Update Incident Activity
- Condition Branch Logic Component
- Create Incident activity
- Email Activity

The following sections provide information on creating a process:

Defining the Approval Trigger Process Properties

Use the following steps to define the general process options for this process. The steps in this section do not include the definition for every field in the object. Only those steps necessary to perform the function for this process. For additional information, refer to the *Cisco Tidal Enterprise Orchestrator Reference Guide* and/or the relevant adapter guide.

To define the general process options:

Step 1 On the Definitions—Processes view, right-click and choose **New > Process**.

The Process Editor launches.

On the Properties pane, the General tab displays by default.

Step 2 On the General tab, in the Display Name field, enter **Triggering an Approval**. This will be the name of the process.

Step 3 Click the **Target** tab to specify which target or target group the process should execute against.

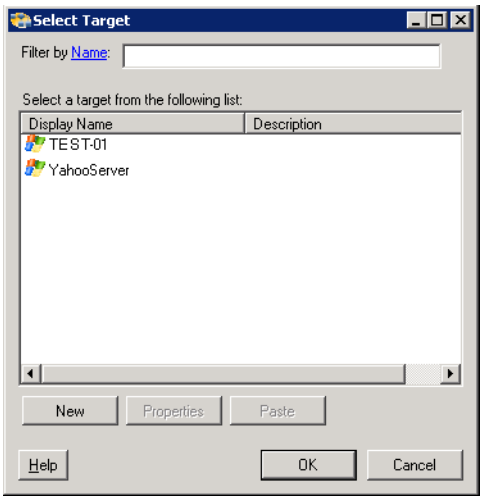
Note The target or target group specified on this page can also be used to execute any activity added to the process.

Step 4 Under Permitted Target types, check the Windows Computer check box to indicate that all Windows Computer target types should be available process execution. The default target checked is Automation Service.

Note If all the target types are checked by default, click **Unselect All** to uncheck the selected target types availability for the process, and then perform Step 4.

Step 5 Under Default Targets, select the **Execute on this target** radio button, and then click **Browse** to launch the Select Targets dialog box to select a specific Windows Computer target on which to execute the process.

Figure 2-1 Select Targets Dialog Box



The targets that display in the Select Targets dialog box are targets already defined in TEO. If the Windows Computer target is displayed, click **New** to create a new target. See Defining a Windows Computer Target, page 2-3.

Step 6 Select the appropriate Windows Computer target to execute the process against. The Windows Computer target with the *YahooServer* display name will be used later in the process.

Step 7 Click the **Save** tool to save the target specification properties and then click the **Triggers** tab to continue.

Defining a Windows Computer Target

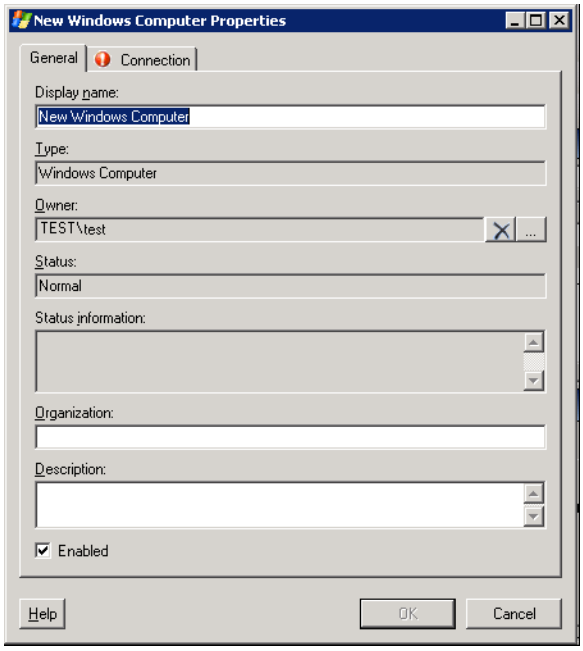
Use the Windows Computer target to specify the connection information for the Windows computer used for processes to run against.

If Windows 2008 is used as the target, then the Windows firewall settings need to be adjusted in order to allow Windows Management Instrumentation (WMI) to pass through.

Step 1 On the Definitions—Targets workspace, right-click and choose **New** > **Windows Computer**.

The New Windows Computer Properties dialog box displays.

Figure 2-2 New Windows Computer Properties Dialog Box—General Tab



Step 2 On the General tab, enter the appropriate general information:

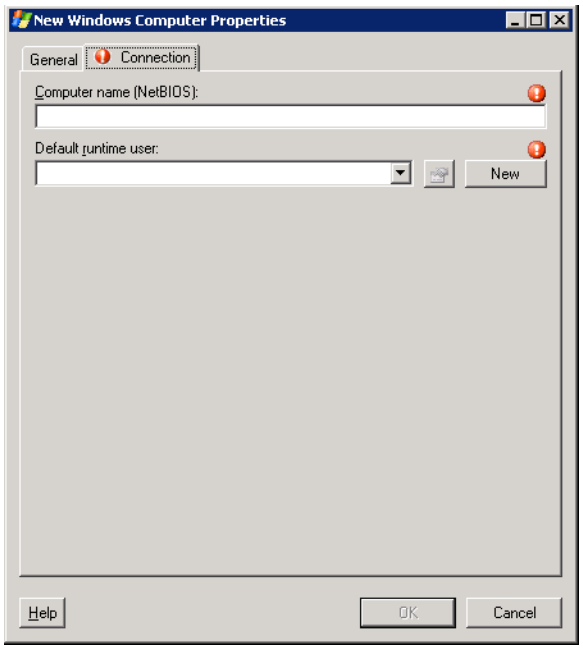
Field	Description
Display Name	Name of the target
Type	*Display-only.* Type of target

Field	Description
Owner	User name of the owner of the category. This is typically the person who created the category. Click **Browse** to launch the Select User or Group dialog box to change the owner.
Status	Status of the target • Unknown—Status of the target unknown • Normal—No known problems with this target • Unreachable—TEO is experiencing problems connecting to the target and executing activities • Disabled—Target is disabled and is not available for activity execution
Status Information	Detailed information regarding the target status and the reasons for target being unreachable
Organization	Name of the company which supports the target
Description	Brief description of the target
Enabled	Check the check box to enable the target. The check box is checked by default which makes it available immediately upon creation. If you uncheck the check box, the target is disabled and will be unavailable for execution.

Step 3 Click the **Connection** tab to continue.

Note The Required Value icon displayed on a tab or page indicates that the field is required and is either missing a value or contains an invalid value.

Figure 2-3 New Windows Computer Properties Dialog Box—Connection Tab



Step 4 On the Connection tab, enter the appropriate target information to specify the connection information for the Windows computer target.

Field	Description
Computer Name (NetBIOS)	The name of the computer • Local computer name • .DNS name • NetBIOS name • IP address
Default runtime user	Select the default runtime user account that contains the credentials to connect to the target. **Note** To view the properties for the selected runtime user, click the **Properties** tool. To create a new runtime user account, click **New > Windows User** to create a new Windows user account. For additional information, see the Cisco TEO Adapter Guide for Microsoft Windows.

Step 5 Click **OK** to close the dialog box.

Adding a Task Incident Created Trigger to the Process

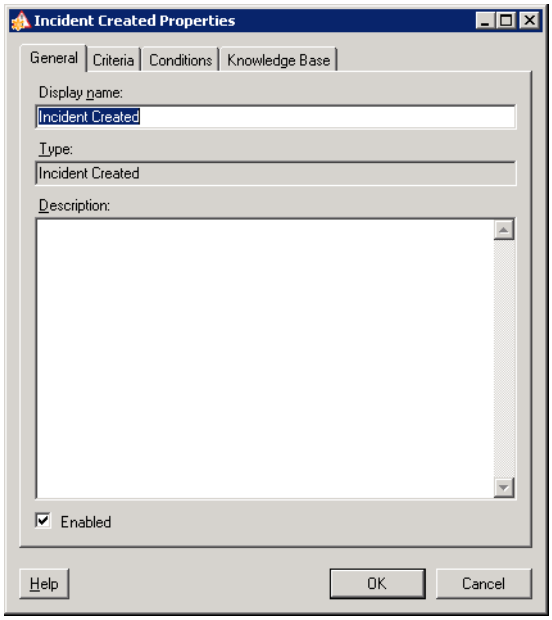
This process requires a trigger which launches when a Create Incident task is created because the number of pings hitting the *Yahoo.com* website reached a specified threshold.

To add a trigger:

Step 1 On the Triggers tab, click **New > Task > Incident > Incident Created** to specify the criteria to be used to launch the Triggering an Approval process.

The Incident Created Properties dialog box displays.

Figure 2-4 Incident Created Properties Dialog Box—General Tab



Step 2 Click the **Criteria** tab to continue.

Note The Required Value icon displayed on a tab or page indicates that the field is required and is either missing a value or contains an invalid value.

The information that will be used as criteria on this tab will reference task name and class properties from the Create Incident activity from the *Pinging a URL* activity.

Step 3 On the Criteria tab, click **Add** to display the list of property fields to be used as criteria for the trigger.

Step 4 After the Properties pane displays, enter the following information:

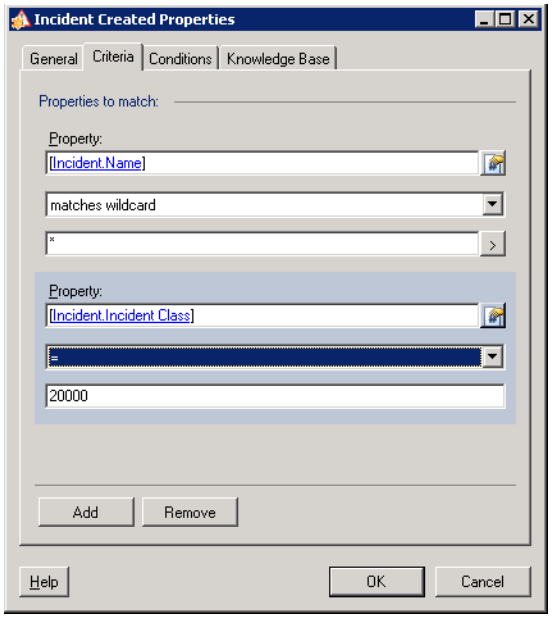
Field	Description
Property	Click the **Reference** tool to launch the Insert Variable Reference dialog box. Expand **Incident**, choose **Name**, and then click **OK**.
Operators	From the drop-down list, select **matches wildcard**.
Value	Enter **asterisk (*)** as the wildcard.

Step 5 Click **Add** again to define the criteria to match to the incident name that was previously selected.

Step 6 On this Properties pane, enter the following information:

Field	Description
Property	Click the **Reference** tool to launch the Insert Variable Reference dialog box. Expand **Incident**, choose **Incident Class**, and then click **OK**.
Operators	From the drop-down list, select the **Equal (=)** operator.
Value	Enter **20000 (*)** as the value for this property. This number should match the class property of the Create Incident activity in the Pinging a URL process.

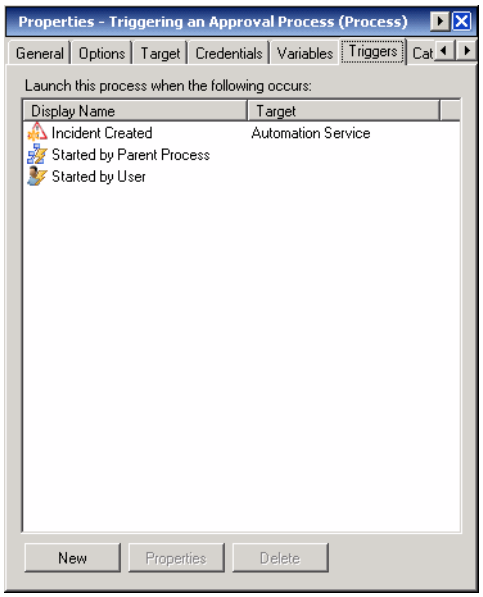
Figure 2-5 Incident Created Properties Dialog Box—Criteria Tab



Step 7 Click **OK** to complete the trigger definition.

The new trigger displays in the Trigger property page.

Figure 2-6 Process Properties Dialog Box—Completed Trigger Tab



Step 8 Click the **Save** tool to save the changes.

Step 9 Click the **Categories** tab to assign the New Ping Process Category to this process.

Assigning a Category to Process

Use the Categories tab to assign this process to the *New Ping Process Category* previously defined in the *Pinging a URL* process. This makes it easier to organize the processes that are created in TEO.

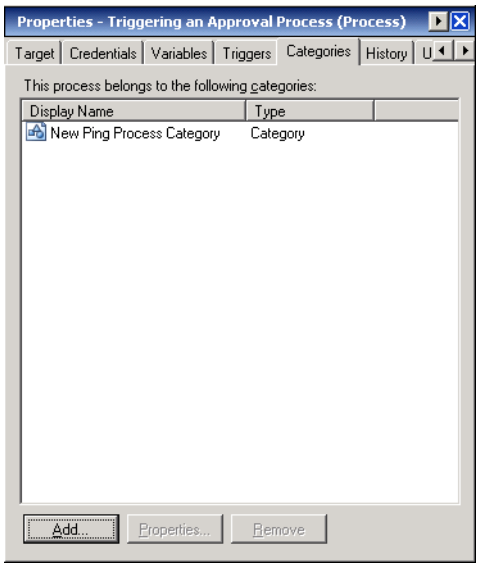
To assign a category:

Step 1 On the Categories tab, click **Add** to launch the Select Categories dialog box.

Step 2 Highlight the New Ping Process Category, and then click **OK**.

The new category is displayed on the Category tab.

Figure 2-7 Process Properties—Completed Categories Tab



Step 3 Click the **Save** tool to save the changes.

Constructing the Triggering an Approval Process Workflow

In the next section, the user will begin constructing the process workflow by defining the objects required to execute the Approval process after it has been triggered. The objects in this workflow executes based on whether the approver cycles the "YahooServer"

The objects to be added in this process include the following:

- Create Approval Activity
- Condition Block Logic Component
- Two Execute PowerShell Script Activities
- Update Incident Activity

The steps in this section will not include defining every field in the activity. Only those steps necessary to perform the function for this process.

Defining a Create Approval Request Activity

The workflow should begin with the Create Approval Request activity which is triggered by the Incident task created in the *Pinging a URL* activity. This activity will set the foundation for the remaining execution of the process workflow based on the user response.

To create an approval request:

Step 1 On the Toolbox pane, under Tasks - User Interactions, choose **Create Approval Request** and drag and drop the activity onto the Workflow pane.

The Create Approval Request property page displays.

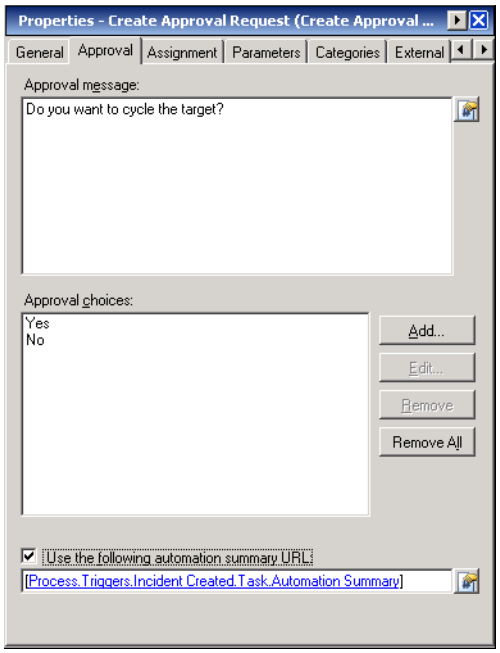
Step 2 Click the **Approval** tab to specify to the approving assignee the choices and related message associated with the task.

Note The Required Value icon displayed on a tab or page indicates that the field is required and is either missing a value or contains an invalid value.

Step 3 On the Approval tab, enter the criteria for the approval request.

Field	Description
Approval message	Enter **Do you want to cycle the target?** as the message that informs the approver what is being requested.
Approval choices	The choices for this message are *Yes* and *No*. Click **Add** to launch the Select Approval Choice dialog box and enter **Yes**. Click **OK**. Click **Add** again and in the dialog box, enter **No**.
Use the following automation summary URL	Check this check box and click the **Reference** tool to launch the Insert Variable Reference dialog box. Expand **Process > Triggers > Incident Created > Task** and select **Automation Summary**.

Figure 2-8 Create Approval Request Properties Page—Completed Approval Tab

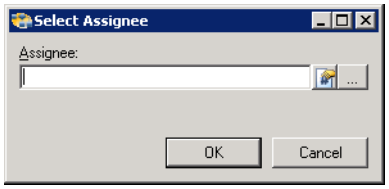


Step 4 Click the **Save** tool to save the changes.

Step 5 Click the **Assignment** tab to assign the appropriate user who will approve or disapprove this task.

Step 6 On the Assignment tab, click Add to launch the Select Assignee dialog box.

Figure 2-9 Select Assignee Dialog Box



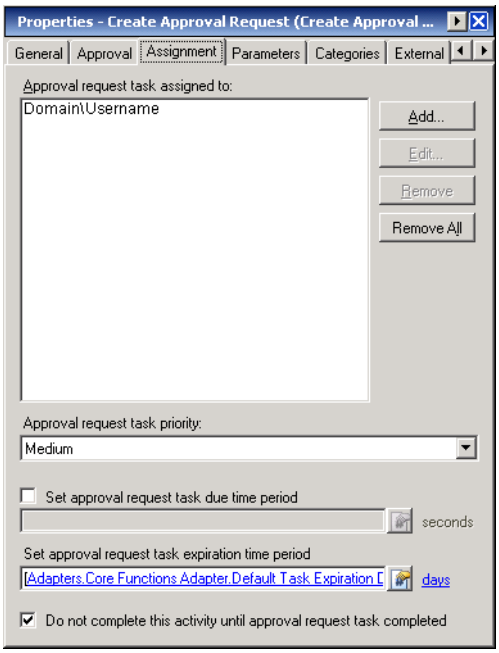
Step 7 In the Assignee field, enter the domain\username of the user to be assigned.

Step 8 To query the name of the user or group to be assigned, click **Browse** to the right of the Reference tool to launch the Select User or Group dialog box to query the name of the user or group to be assigned.

Step 9 After defining the appropriate assignee, click **OK**.

The assignee is displayed on the Assignment property page.

Figure 2-10 Create Approval Request Properties Page—Completed Assignment Tab



Step 10 Click the **Save** tool to save the changes.

Adding the Create Approval Request Conditions

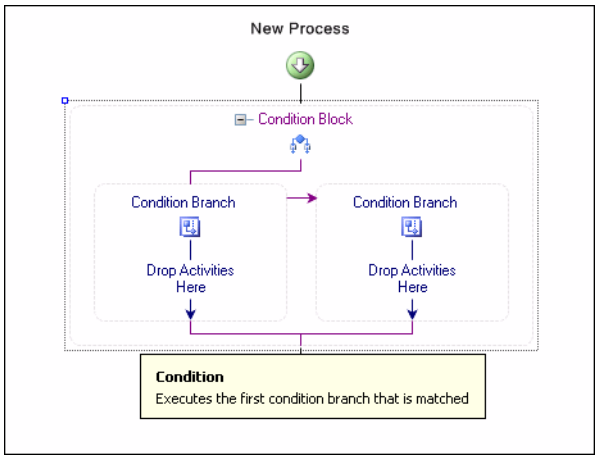
The next step in constructing this process is defining the conditions on which the Create Approval Request activity should execute, and the actions that should launch upon process execution.

Use the Condition Block component to execute the Yes and No condition branches which determine the the next stage of the process after the approver makes a selection. It checks conditions for each of the branches in order from left to right and executes the first condition branch whose condition is *true*.

To define a Condition Block:

Step 1 On the Toolbox—Logic pane, choose **Condition** and drag and drop the component onto the Workflow pane.

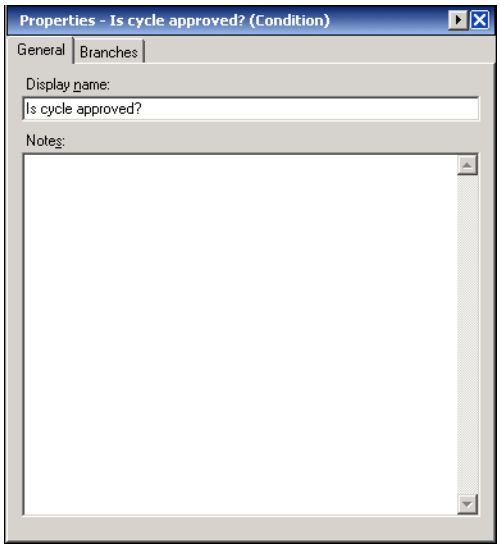
Figure 2-11 Condition Block Component in Workflow Pane



The Condition Block property page displays.

Step 2 On the General tab, in the Name field, enter **Is cycle approved?**, and click the **Save** tool to save the changes.

Figure 2-12 Condition Block Property Page—Is the cycle approved?



Configuring the Yes Condition for the Approval Trigger

The information in this condition branch tells TEO how to proceed based on if the cycle is approved. If the cycle is approved, then "Yahoo Server" Windows Computer target is disabled/enabled and the originating incident from the *Pinging a Url* activity is closed.

Use the following steps to configure the condition branch if the approval response is *Yes*.

Step 1 On the Workflow plane, select the left Condition Branch.

The Condition Branch property page displays.

Step 2 In the Display Name field, enter **Yes**.

Step 3 Click the **Save** tool to save the condition changes.

Disabling the YahooServer Windows Computer Target

The steps in this section assume that a Windows Computer target with the display name, YahooServer, has been defined. If a Windows Computer target is not defined, see Defining a Windows Computer Target, page 2-3 for additional information.

Use the Execute Windows PowerShell Script activity to specify a Windows PowerShell script and the target directory on which to execute.

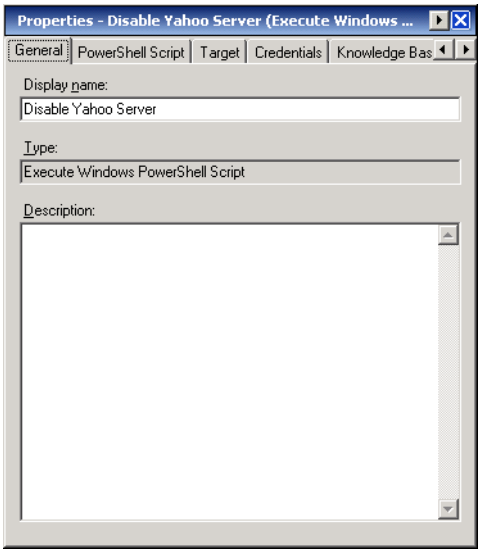
To define the Execute Windows PowerShell Script activity:

Step 1 On the Toolbox pane, under Windows Activities, choose **Execute Windows PowerShell** and drag and drop the activity onto the Workflow pane under the *Yes* Condition Branch.

The Execute Windows PowerShell Script property page displays.

Step 2 In the Display name field, enter **Disable YahooServer**.

Figure 2-13 Execute Windows PowerShell Script Properties Page—General Tab



Step 3 Click the **PowerShell Script** tab to continue.

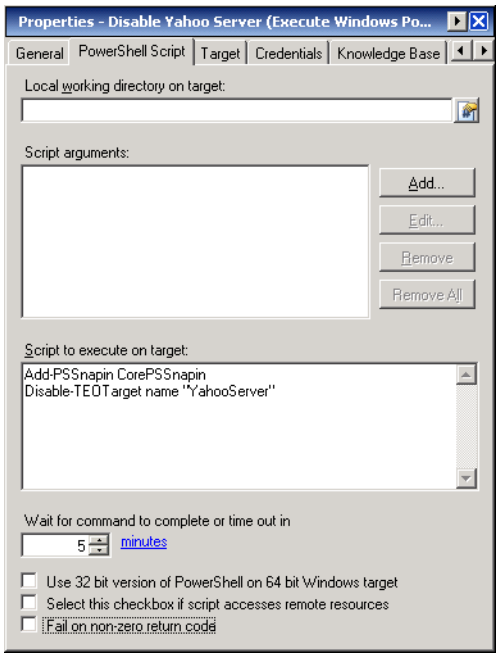
Note The Required Value icon displayed on a tab or page indicates that the field is required and is either missing a value or contains an invalid value.

Step 4 On the PowerShell Script tab, in the Script to execute on target box, enter the following command:

Add-PSSnapin CorePSSnapin

Disable-TEOTarget name "YahooServer"

Figure 2-14 Execute Windows PowerShell Script Properties Page—PowerShell Script Tab



Step 5 Click the **Save** tool to complete the activity definition.

Defining the Sleep Activity

Place a Sleep activity in the Workflow pane to require a pause in the execution of the objects in the process.

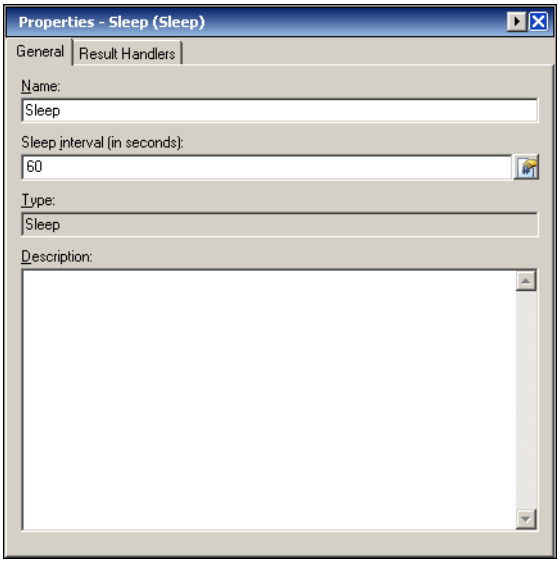
To define the Sleep activity:

Step 1 On the Toolbox pane, under Core Activities, choose the **Sleep** activity, then drag and drop the activity onto the Workflow pane under the *Execute Windows PowerShell Script* activity of the *Yes* Condition Branch.

The Sleep property page displays.

In the Sleep interval (in seconds) field, enter **30** as the number of seconds the process execution should pause before continuing.

Figure 2-15 Sleep Properties Page—General Tab



Step 2 Click the **Save** tool to complete the activity definition.

Enabling the YahooServer Windows Computer Target

After the Sleep activity pauses the execution, the next step requires the Windows Computer target with the *YahooServer* display name to be enabled using another Execute Windows PowerShell Script activity.

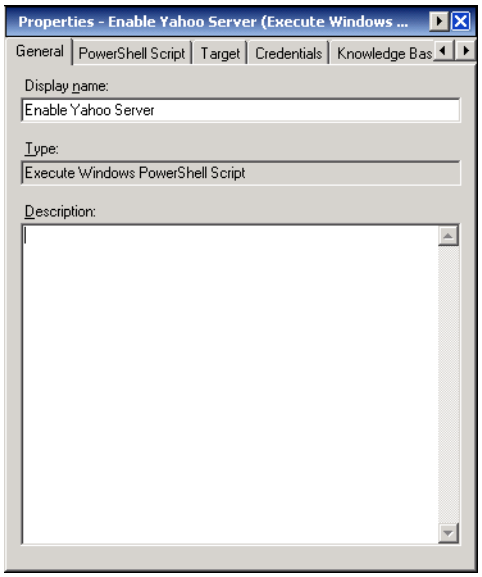
To define the Execute Windows PowerShell Script activity:

Step 1 On the Toolbox pane, under Windows Activities, choose **Execute Windows PowerShell Script**, and drag and drop the activity onto the Workflow pane under the *Sleep* activity of the *Yes* Condition Branch.

The Execute Windows PowerShell Script property page displays.

On the General tab, in the Display Name, enter **Enable YahooServer**.

Figure 2-16 Execute Windows PowerShell Script Properties Page—General Tab



Step 2 Click the **PowerShell Script** tab to continue.

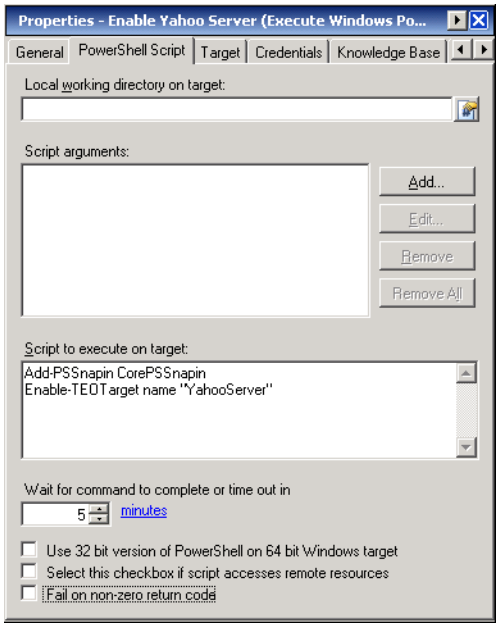
Note The Required Value icon displayed on a tab or page indicates that the field is required and is either missing a value or contains an invalid value.

Step 3 On the PowerShell Script tab, in the Script to execute on target box, enter the following command:

Add-PSSnapin CorePSSnapin

Enable-TEOTarget name "YahooServer"

Figure 2-17 Execute Windows PowerShell Script Properties Page—PowerShell Script Tab



Step 4 Click the **Save** tool to complete the activity definition.

Configuring the No Condition for the Approval Triggering

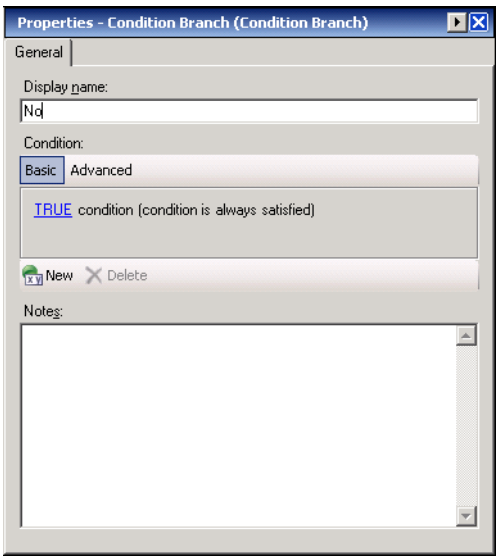
To complete the construction of the URL Ping process, a No condition must be configured. This finalizes the conditional scenarios of what should occur after the process is executed.

To define the No condition:

Step 1 On the Workflow plane, select the right **Condition Branch**.

Step 2 On the Condition Branch property page, in the Display Name field, enter **No**.

Figure 2-18 Condition Branch Properties Pane—No Variable Condition



Step 3 Click the **Save** tool to save the condition changes.

Closing the Response Time Incident

A response time incident is created when an alert is raised due to the high amount of pings created by the URL Ping activity in the *Pinging a URL* process. After the *YahooServer* target is cycled by the Execute Windows PowerShell Script activities. This task will use an Update Incident activity to close the incident that was created in the *Pinging a URL* process. This activity will execute regardless of the approver response.

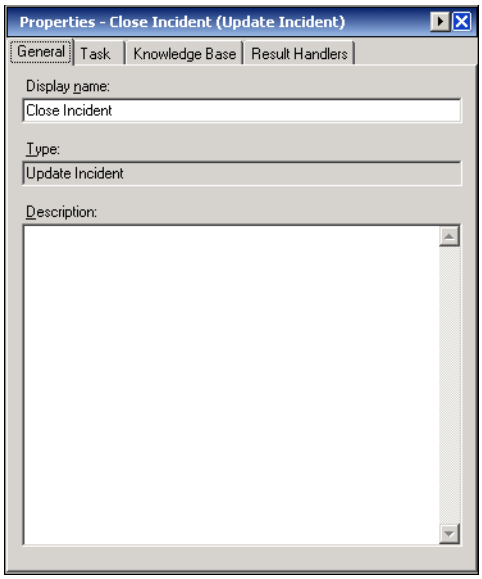
To define an update incident activity:

Step 1 On the Toolbox pane, under Tasks - IT Records, choose **Update Incident** and drag and drop the activity onto the Workflow Pane under the *Sleep* activity of the *Is cycle approved?* Condition Block.

The Update Incident property page displays.

On the General tab, in the Display Name field, enter Close Incident.

Figure 2-19 Update Incident Properties Page—General Tab



Step 2 Click the **Task** tab to enter the criteria to be used to close the incident.

Note The Required Value icon displayed on a tab or page indicates that the field is required and is either missing a value or contains an invalid value.

Step 3 On the Task tab, to the right of the Task ID field, click the **Reference** tool to launch the Insert Variable Reference dialog box.

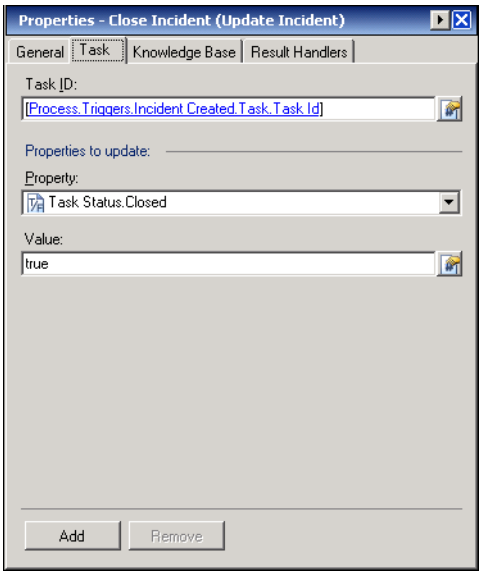
Step 4 From the Insert Variable Reference dialog box, expand **Process > Triggers > Incident Created > Task** and then choose **Task ID** for the incident ID to be updated.

Step 5 Click **OK** to close the dialog box and return to the Task tab.

Step 6 Under Properties to Update, from the Property drop-down list, select **Task Status.Closed**.

Step 7 In the Value field, enter **True**.

Figure 2-20 Update Incident Properties Page—Completed Task Tab

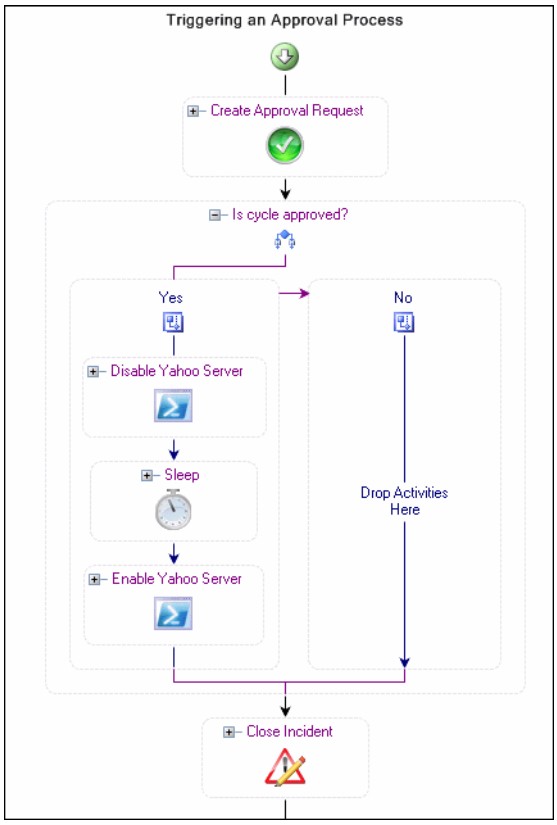


Step 8 Click the **Save** tool to complete the activity definition.

Example - Complete Triggering an Approval Process Workflow

This graphic displays how the process should display in the Workflow pane after completion.

Figure 2-21 Workflow Pane—Completed Triggering an Approval Process



Viewing the Triggering an Approval Process Results

This section provides the basic steps for viewing the results of process and activity instances of the objects defined in this chapter. This includes the basic steps for viewing the information.

Resolving the Approval Trigger

The following steps are required when the approver responds to the assigned Approval Request determining whether the *YahooServer* Windows Computer target should be cycled. The *Triggering an Approval* process completes executing after a response to the task has been submitted.

To approve the request:

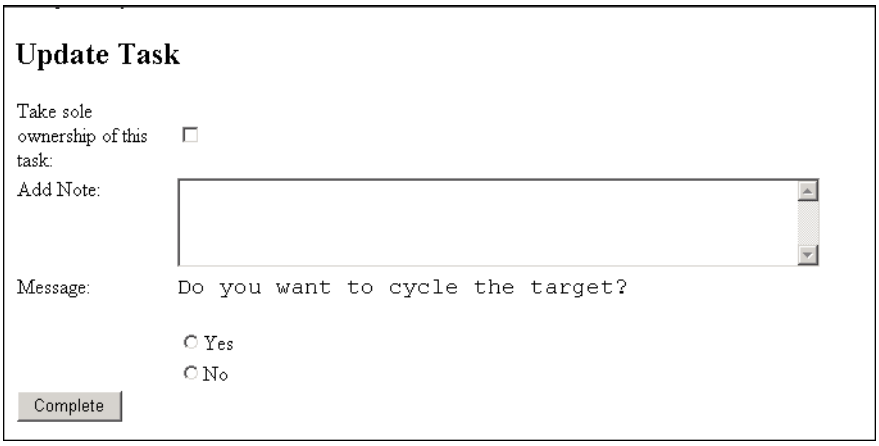
Step 1 On the appropriate Operations—Task View, highlight the Create Approval Request task, right-click and choose **Select Choice**.

The TEO Web Console launches and displays the Create Approval Request details.

Figure 2-22 Web Console—Create Approval Request Page

Step 2 Scroll to the Update Task section.

Figure 2-23 Web Console—Create Approval Request Page—Update Task



Step 3 To the right of Message, select the **Yes** radio button, and click **Complete**.

The Web Console updates the response to *Yes*.

Step 4 Click **Exit** to close the Web Console and the approver is returned to the TEO Console.

Viewing the Process Instance Properties

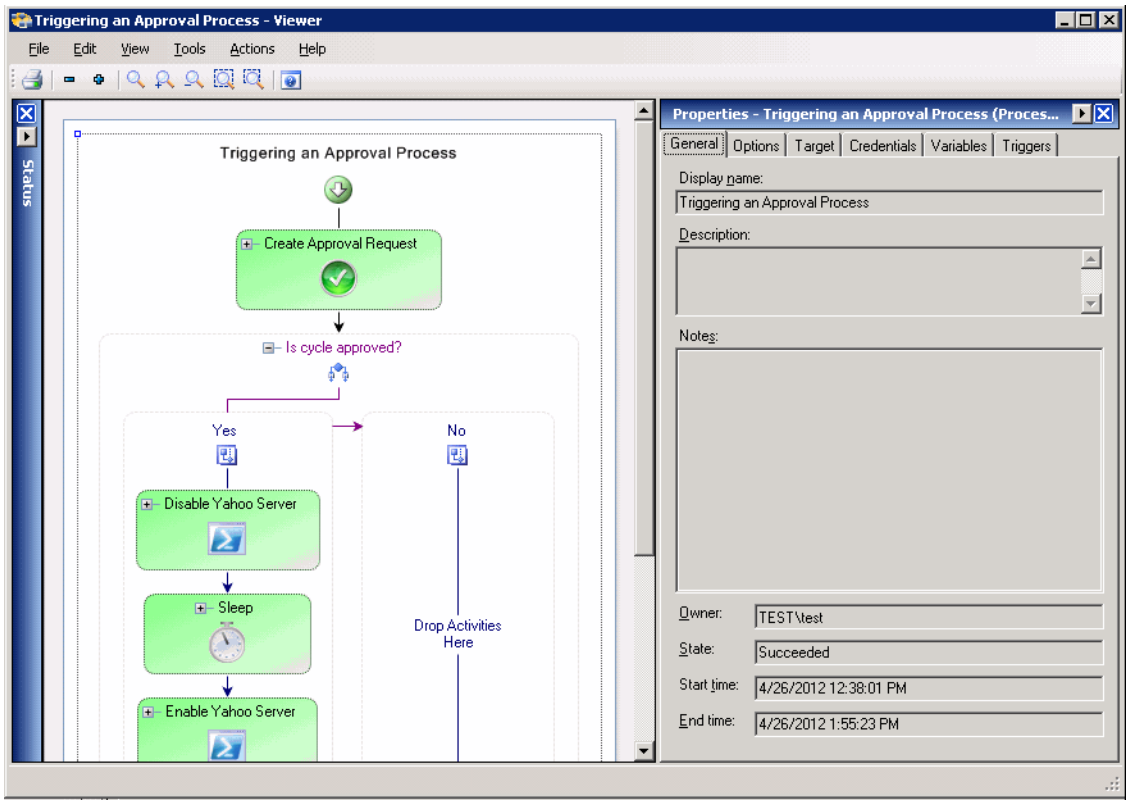
The Process Instance Properties pane is located on the right side of the Process Viewer and displays the properties for the selected process instance. The information displayed on the Process Viewer is display-only.

Step 1 Operations—Activity Views, click **View Started** to display the processes that were started during the specified time frame.

Step 2 On the Results pane, select the appropriate process instance, right-click and choose **Observe**.

The Process Viewer displays.

Figure 2-24 Process Viewer—Process Instance Properties Pane



The Process Instance Properties pane displays to the right.

Step 3 Click the appropriate display-only tab to review the process properties.

Property Page	Description
General	Displays general information about the process
Options	Display any execution and storage options defined about the process
Target	Indicates the target or target group used to execute the process
Credentials	Indicates which runtime was used for executing the process

Property Page	Description
Variables	Displays the variable values used to pass a value between executions of a process or between steps within a single process
Triggers	Indicates how the process was executed, either manually by a user or computer, or by a trigger

Viewing Automation Summary Detail for Create Approval Request Activity

In the Create Approval Request activity, the link to the automation summary generated by the Incident which triggers the Create Approval Request is included in the Task definition The automation summary provides summary details of the diagnostic and state information captured while performing the URL ping analysis. Use the following steps to view the automation summary report from the Process Viewer. Refer to Chapter 5, "Monitoring Activities" and Chapter 6, "Monitoring Processes" for information on viewing the results on the Operations Workspace.

To view the automation summary report:

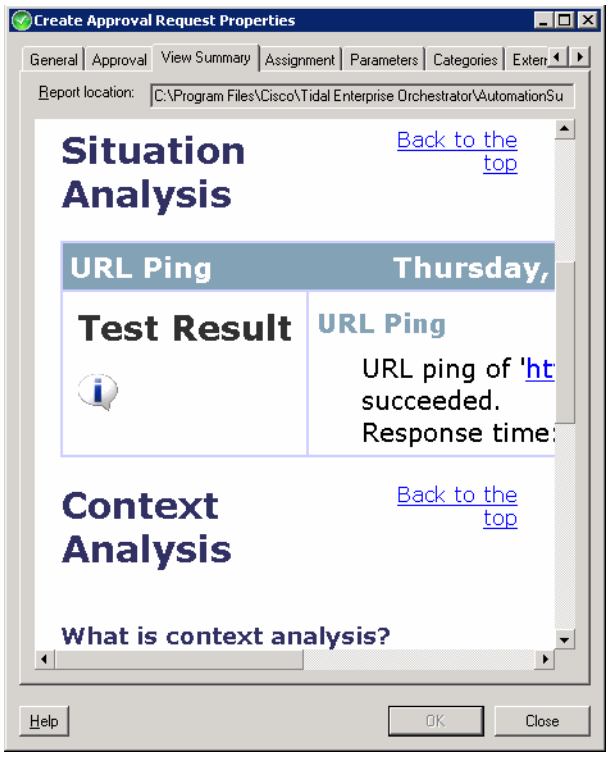
Step 1 On the Workflow pane, click the **Create Approval Request** activity.

The Create Approval Request Properties display.

Step 2 Click the **View Summary** display-only tab to view the situation analysis of the response time for the URL Ping activity which triggered the incident requiring approval.

The Automation Summary report displays.

Figure 2-25 Create Approval Request Activity Instance Properties Page—View Summary Tab



The following information is displayed:

Field	Description
Report location	*Display-only.* File path for the automation summary
Situation Analysis	After TEO puts all data points in context to identify a situation that requires action, it performs deep analysis based on the type of situation identified. During situation analysis, TEO captures volatile state and diagnostic information that may otherwise be difficult or impossible to capture manually. The *Situation Analysis* section displays below the overview information. Click the link in the upper portion of the summary to navigate directly to the *Situation Analysis* section or simply scroll to the section.
Context Analysis	TEO analyzes all data points in context with each other to identify a situation that may require action. This information can be viewed in the *Context Analysis* section of the summary. The *Context Analysis* displays the symptom and possible causes.

Tip Automation Summary reports can be accessed from the Operations—Task Views by right-clicking on the task and choosing **View Automation Summary**. The automation summary is launched in the TEO Web Console.

Viewing Executed Windows PowerShell YahooServer Script Output

When the Execute Windows PowerShell Script activities are launched, the results of the activity is displayed in the activity instance property page. The Output display-only tab displays the successful results of the Execute Windows PowerShell Script activity. Use the following steps to view the output for both the *Disable YahooServer* and *Enable YahooServer* activities included in the *Triggering an Approval* process.

To view the output:

Step 1 On the Operations workspace, click the Activity Views folder.

Step 2 Highlight the appropriate **YahooServer** activity instance, right-click and choose **Properties**.

The YahooServer Properties dialog box displays.

Step 3 Click the **Output** tab to display the results generated by the activity.

Figure 2-26 Disable YahooServer Instance Properties Page—Output Tab

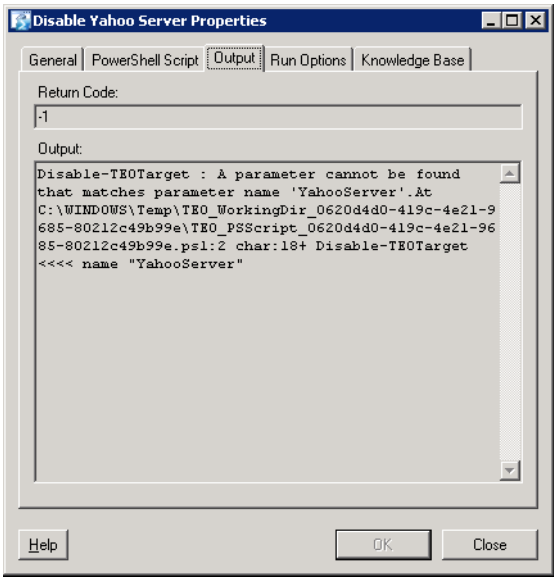
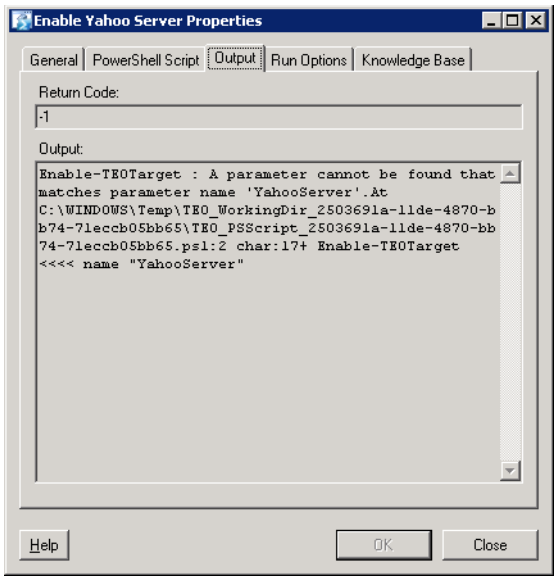


Figure 2-27 Enable YahooServer Instance Properties Page—Output Tab



The following information is displayed:

Column	Description
Return Code	Number for the return code
Output	Information returned from the activity

Viewing Closed Incidents Generated by Approval Request

After the high ping alert was generated by the *Pinging a URL* process when the number of pings per minute reached a certain threshold, a high ping incident was also created. The High Ping incident is then closed by the Update Incident activity from the *Triggering an Approval* process. The closed High Ping incident status can be viewed or modified in the Tasks Views on the Operations Workspace.

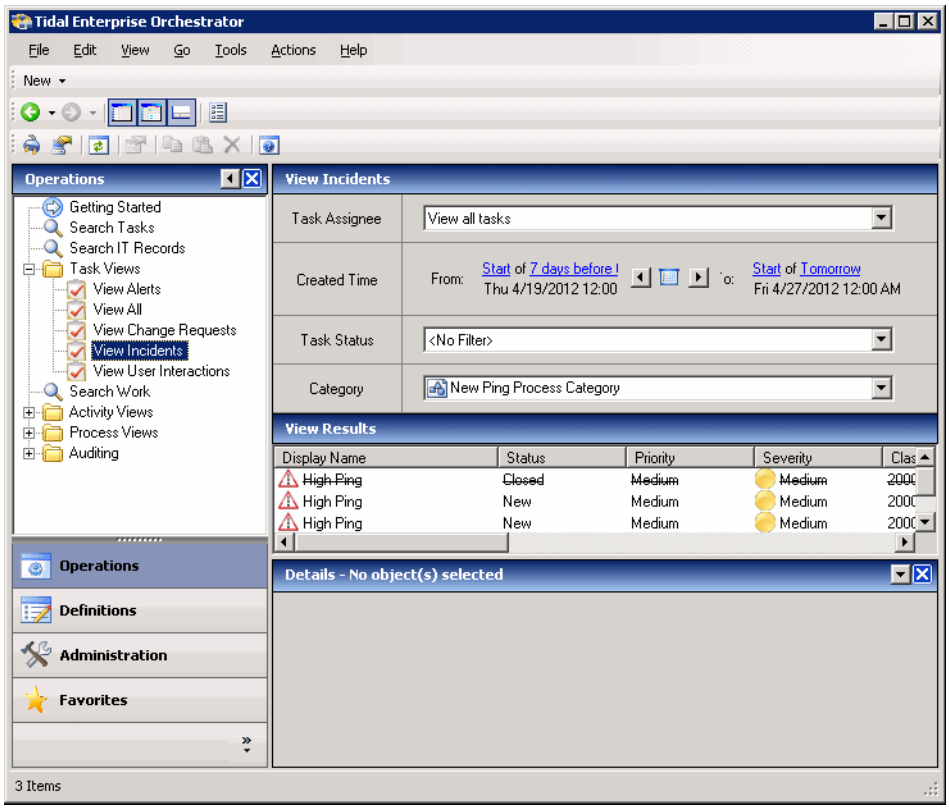
Use the following steps to view the task properties for the High Ping incident. See Chapter 7, "Monitoring Tasks" for additional information on viewing the properties displayed in the task.

To view the incident task properties:

Step 1 On the appropriate Operations—Task View, click **View Incidents**.

Step 2 The Results pane displays all the high ping alerts generated during the specified time period.

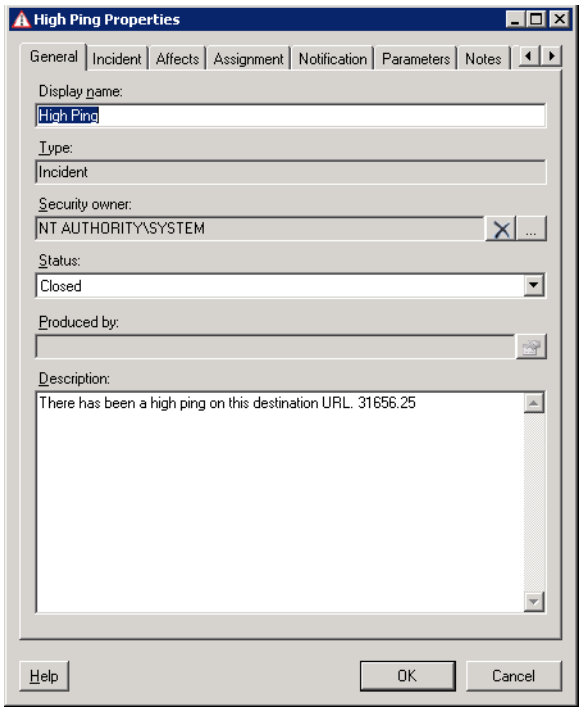
Figure 2-28 Operations Works—View Incidents



Step 3 To view the details of the incident, highlight the appropriate incident, right-click and choose **Properties**.

The High Ping Properties dialog box displays. On the General tab, please note that the status of the task is *Closed*.

Figure 2-29 High Ping Incident Properties



Step 4 Click the appropriate tab to view or modify the properties of the High Ping incidents.

Tab	Description
General	Displays the basic information for the task including the name of the user who submitted the task and the current status of the task.
Incident	Displays the properties of the selected task.
Affects	Displays the organizations and configuration item elements of the incident.
Assignment	Displays the assignment properties for the task.
Notification	Displays the recipients to be notified about the task.
Parameters	Displays the parameters included in the task.
Notes	Displays any notes related to the task in the text box.
Categories	Displays the categories in which the tasks are assigned.
Related	Displays any tasks assigned to the task as a related or duplicated task.
External	Displays the external incident information to support the synchronization between TEO and the system the customer is using.
History	Displays the history of actions taken against the task.

Step 5 Click **OK** to close the dialog box.

CHAPTER 3

Viewing TEO Objects

The Definitions workspace displays the various components that are used in defining and executing processes. This chapter provides the steps to be used to display the defined properties of the TEO objects. The property pages may display as display-only if the user does not have the appropriate security rights to modify the object definition. For information on defining any of the objects provided in this chapter, see the *Cisco Tidal Enterprise Orchestrator*.

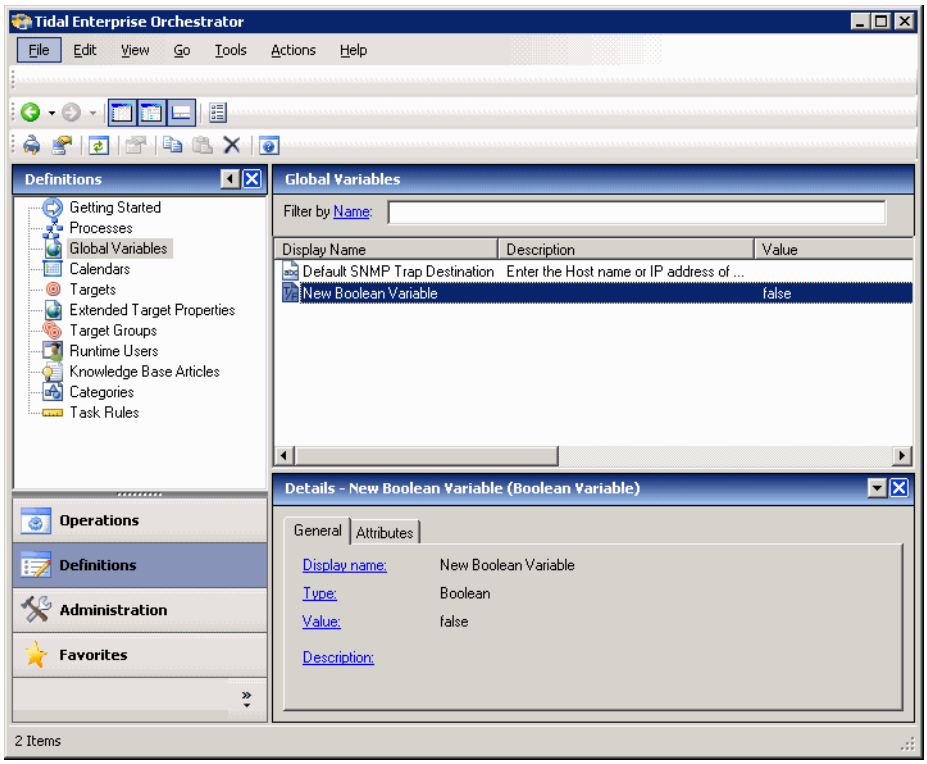
Use the following sections to review the defined objects in TEO:

Global Variables

Global variables are used to reference information that is used on a regular basis to avoid having to specify the same information in several instances.

The variables feature provides a storage area for information that is used on a regular basis to avoid having to specify the same information in several instances. Data stored in a variable can be altered to affect process execution behavior.

Figure 3-1 Definitions—Global Variables



Variable Descriptions

The following table provides a listing variable types supported by the product.

Variable	Description
Boolean	Indicates whether a set of elements should be *true* or *false*
Hidden String	Holds data that must be protected from other TEO users and from auditing operations performed by TEO
Identity	Represents the value of a user identity
Numeric	Single whole or decimal number (positive and negative)
String	Defines a variable containing a string of text
Table	Stores a set of records in a table format

Viewing Global Variable Properties

To view global variable properties:

Step 1 On the Definitions—Global Variables view, highlight the appropriate variable, right-click and choose **Properties**.

The Properties dialog box displays.

Click the appropriate tab to review the properties of the variable.

Tab	Description
General	Displays the general properties of the variable
Value	Values assigned to the variable
Used By	Displays the objects referenced by the variable
History	Displays the history of the changes made to the variable

Step 2 Click **OK** to close the dialog box.

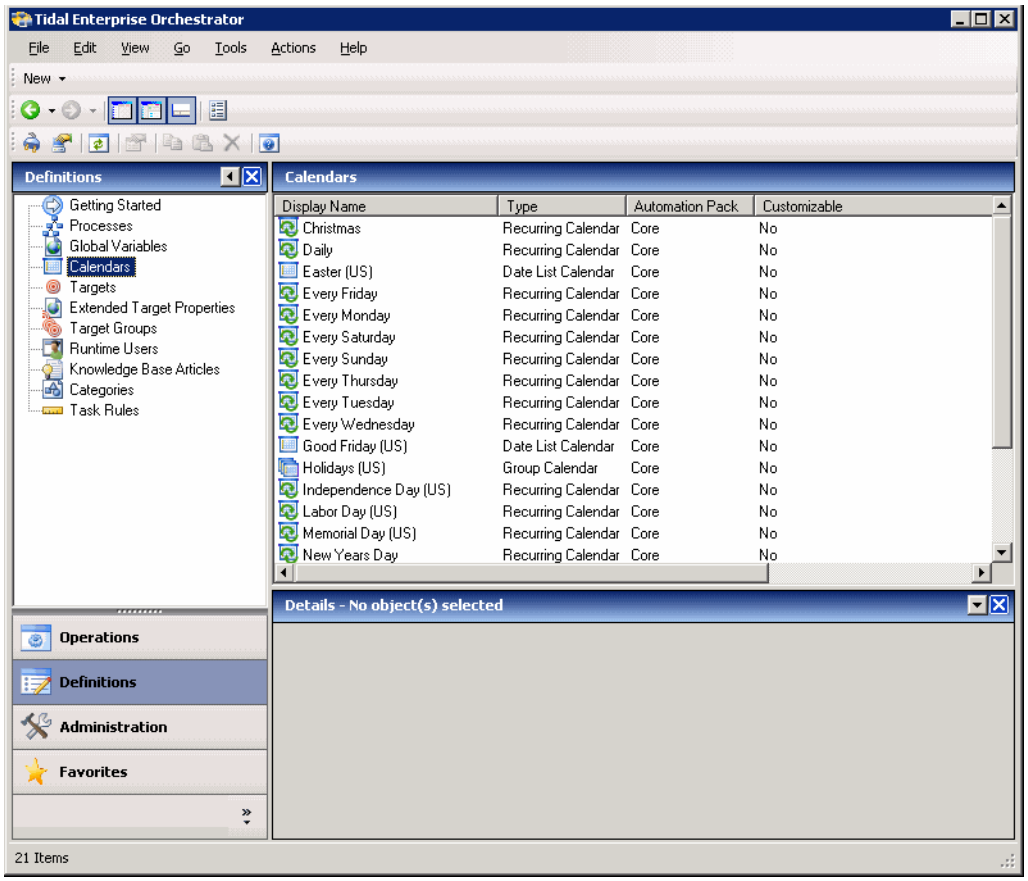
Calendars

Tidal Enterprise Orchestrator ships with some pre-defined calendars for the most commonly use schedule scenarios. The calendars feature can specify when the process will execute according to a schedule, time, or condition.

When defining a process, users can specify when a process will execute. One option is to execute the process based on a schedule. For example, users can define a calendar for Saturdays. When defining a process that you want to run on Saturdays, you reference the *Saturday* calendar. This feature simplifies:

- Re-using calendar definitions across processes
- Building complex calendars from other calendars
- Viewing the processes that run based on a specific calendar

Figure 3-2 Definitions—Calendars



Calendar Descriptions

The following table describes the calendars available for defining.

Calendar	Description
Date List	Contains an explicit list of dates which can be assigned to a process. The processes to which this calendar is assigned will execute on the specified dates in the calendar.
Group	Specify a collection of other defined calendars that are to be included or excluded in a group calendar.
Recurring	Specify the start and end date for a recurring calendar and the number of days in the recurrence cycle. The time period and duration indicates when the process repeats execution.

Viewing Calendar Properties

To view calendar properties

Step 1 On the Definitions—Calendars view, highlight the appropriate calendar, right-click and choose **Properties**.

The Calendar Properties dialog box displays.

Step 2 Click the appropriate tab to review the properties of the calendar.

Tab	Description
General	Displays the general information for the calendar
Calendar-specific Tab	Displays the properties of the specific calendar type (Recurrence, Dates, Calendars)
Preview	Displays the list of dates that are included in the calendar. The calendar highlighting the dates displays on the right side of the page.
Used By	Displays the objects that reference the calendar
History	Displays the history of the changes to the calendar

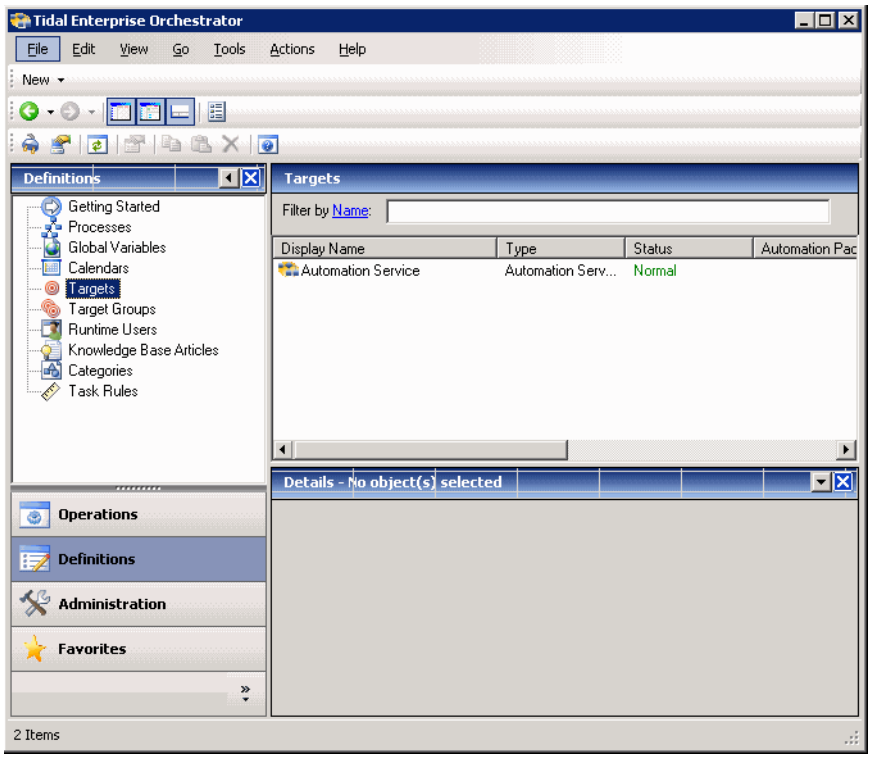
Step 3 Click **OK** to close the dialog box.

Targets

The Targets feature defines specific environments where activities, triggers and processes can be executed. You can define a target to run a process or activity on a specific computer, database connection, or application server.

Using targets simplifies specifying where certain processes, activities, or triggers will run. The target can be defined once and reused in several processes. The targets created depend on the adapters that are installed. You can create a target for a specific Windows computer or Active Directory domain.

Figure 3-3 Definitions—Targets



Target Descriptions

The following table provides a listing of the targets that are associated with the product. It is important to note that not all targets can be created manually because they will be discovered automatically based on the information specified by other targets.

For additional information on defining a target not included in this chapter, please refer to the associated adapter guide.

Target	Description
Active Directory Domain	Connection information for an Active Directory domain target See *Cisco TEO Adapter Guide for Microsoft Active Directory.*
Cisco UCS Manager	Specify the connection information used to connect to the Cisco UCS Manager instance See *Cisco TEO Adapter Guide for Cisco UCS Software Adapter.*
DB2 Database	Connection target information for a DB2 database See *Cisco TEO Adapter Guide for IBM DB2 Database.*

Target	Description
Email Account (IMAP)	Specify the connection information to the IMAP email server See *Cisco TEO Adapter Guide for Email*.
Email Account (POP3)	Specify the connection information to the POP3 email server See *Cisco TEO Adapter Guide for Email.*
Generic Data Source (OLEDB)	Specify the connection information for a data source such as an Excel spreadsheet or a database not supported by other target types See *Cisco TEO Adapter Guide for Microsoft (OLEDB) Generic Data Source (OLEDB) Database*.
Oracle Database	Specify the connection information for an Oracle database See *Cisco TEO Adapter Guide for Oracle Database*.
Remedy Server	Specify the connection information to a Remedy server which is used for processes to run against See *Cisco TEO Adapter Guide for BMC Remedy.*
SAP BI Warehouse	Represent the connection to an SAP BI Warehouse server See *Cisco TEO Adapter Guide for SAP ABAP.*
SAP System	SAP System wizard to specify the connection and logon information for the SAP system See *Cisco TEO Getting Started Guide for SAP.*
SCOM Management Server	Specify the information about the SCOM management server See *Cisco TEO Adapter Guide for Microsoft SCOM*.
SNMP (Device) Agent	configure the host and operation and notification settings for accessing an SNMP agent. See *Cisco TEO Adapter Guide for SNMP.*
SNMP (Device) Manager	configure the host and security settings for sending traps to a SNMP server. See *Cisco TEO Adapter Guide for SNMP.*
SQL Server Database	Specify the connection information for a SQL server database See *Cisco TEO Adapter Guide for Microsoft SQL Server Database*.
Terminal	Specify the connection information used to access the device used for processes to run against See *Cisco TEO Adapter Guide for Terminal Adapter.*
Unix/Linux System	Specify the connection information used to access the device used for processes to run against See *Cisco TEO Adapter Guide for Terminal Adapter.*

Target	Description
VMware ESX Server	Specify the connection information to an ESX/ESXi server See *Cisco TEO Adapter Guide for VMware*.
VMware Virtual Center Server	Specify the connection information to the virtual center server See *Cisco TEO Adapter Guide for VMware*.
Windows Computer	Specify the connection information for the Windows computer See *Cisco TEO Adapter Guide for Microsoft Windows*.

Viewing Target Properties

View, create, and manage targets. A target is where a process will be executed.

To view target properties:

Step 1 On the Definitions—Targets view, highlight the appropriate target, right-click and choose **Properties**.

The Properties dialog box displays.

Step 2 Click the appropriate tab to review the target properties.

Tab	Description
General	Displays the general information about the target
Connection	Displays the connection properties for the defined target
Member Of	Displays the target groups to which the target belongs. This tab will remain blank until added to a target group.
Extended Properties	Displays the list of all extended target properties defined for a specific target type. This tab will remain blank until an extended target property is defined for the target type.
Used By	Display the objects which reference the target. This tab will remain blank until the target is used by an object.
History	Display the history of actions taken against the target. This tab remains blank until after the initial target creation.

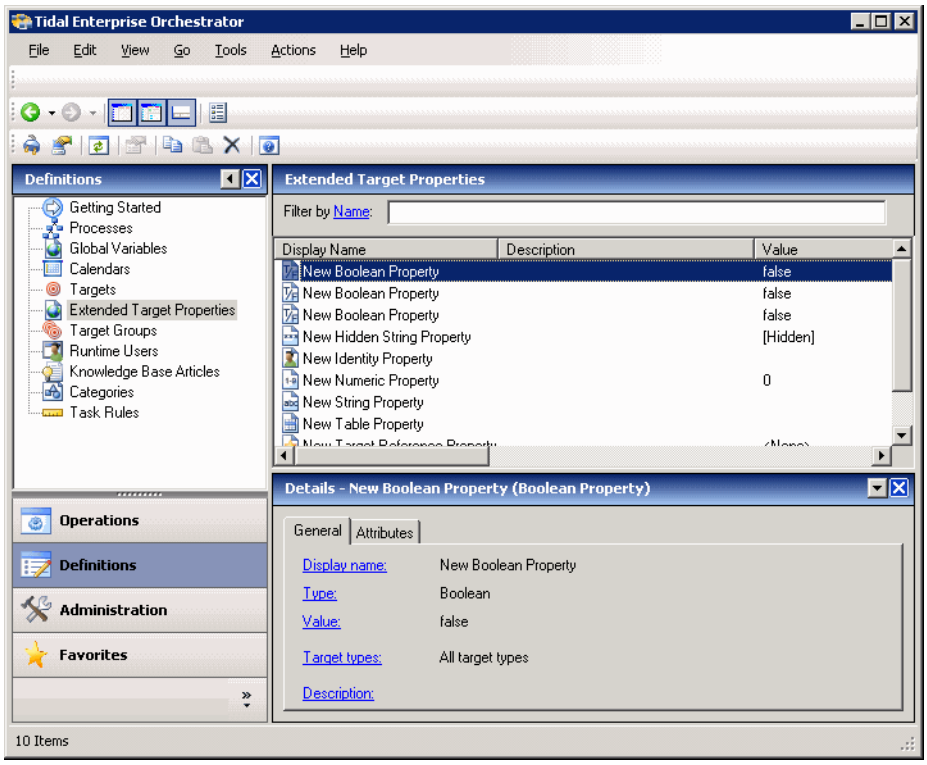
Step 3 Click **OK** to close the dialog box.

Extended Target Properties

Extended target properties allow users to define a specific target property value and provides flexibility for others to set or access the values to be used to customize process behavior.

Target properties also provides the ability to store data that is collected during the process execution against a target. For example, a networking process might gather configuration data about each device on a daily basis, then other workflows which run ad-hoc might consume that information. A target property can be used to store this collected data which is associated with some targets.

Figure 3-4 Definitions—Extended Target Properties



Extended Target Property Descriptions

The following table provides a listing target property types supported by the product. Target properties are available for defining from within the Definitions—Extended Target Properties view.

For information on defining extended target properties, see the appropriate section included later in this chapter.

Target Property	Description
Boolean	Indicates whether a set of elements should be *true* or *false*
Hidden String	Holds data that must be protected from other TEO users and from auditing operations performed by TEO
Identity	Represents the value of a user identity
Numeric	Single whole or decimal number (positive and negative)

Target Property	Description
String	Defines a target property containing a string of text
Table	Stores a set of records in a table format
Target Reference	Assigns a reference from one target to another target

Viewing Extended Targets Properties

To view extended target properties:

Step 1 On the Definitions—Extended Target Properties view, highlight the appropriate target property, right-click and choose **Properties**.

The Properties dialog box displays.

Step 2 Click the appropriate tab to review.

Tab	Description
General	Displays general information about the item including the name, type, value, and a description of the extended target
Values	Displays the specific values assigned to cells and rows of a table target property
Target Types	Displays the target types which apply to the target property
Target Values	Displays the specific targets and related values assigned to the target property
Used By	Displays the objects referenced by the target property
History	Displays when the target property was created or modified. The column also displays audit log entries that are relevant to the target property

Step 3 Review the properties and click **OK** to close the dialog box.

Target Groups

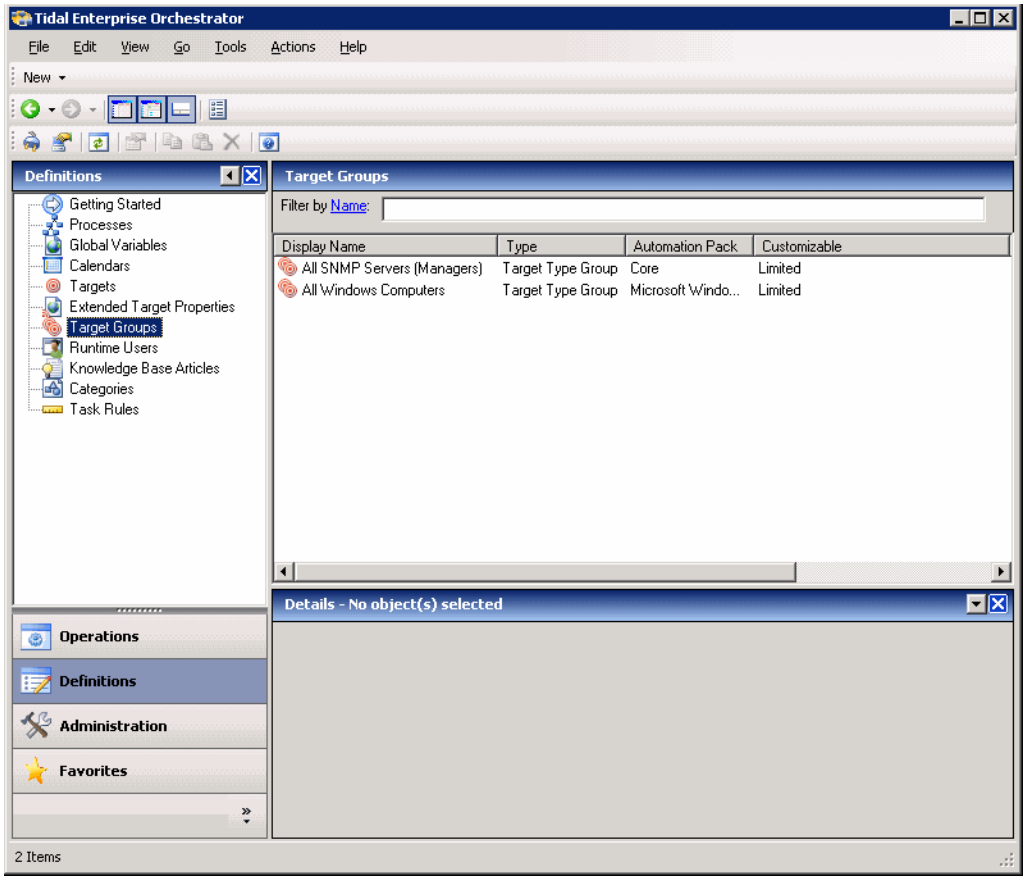
The Target Groups feature enable users to define specific environments or groups of environments that are appropriate for the processes that execute on them. You can define a target group that includes a collection of targets on which to execute processes at the same time.

When you create a process, you must specify where you want the process to run. You can specify that the process runs on a specific target group. If you specify to execute the process on a target group, you can further specify to run the process on all the objects that are included in the target group or run the process on a specific object within the target group.

Using target groups simplifies specifying where certain processes will run. The target group can be defined once and reused in several processes. For example, you may have a database maintenance process that is scheduled to run every month on all database servers. Instead of scheduling the process multiple times to run on each database server, you can create a target group that includes all the database servers and schedule the process to run on all the servers at the same time.

The target groups that can be created depend on the adapters that are installed. You can create a target group for an Active Directory Organizational Unit, Active Directory Group, Target Type Group, or a Virtual Group that can contain any target that has been created in Enterprise Orchestrator.

Figure 3-5 Definitions—Target Groups



Target Groups Descriptions

The following table provides a listing of the target groups that are associated with the product.

Target Group	Description
Active Directory Group	Specifies the targets in a group within an Active Directory domain. See *Cisco TEO Adapter Guide for Microsoft Active Directory.*
Active Directory OU	Specifies targets that belong to an organizational unit or container within an Active Directory domain. See *Cisco TEO Adapter Guide for Microsoft Active Directory.*
Target Type Group	Contains TEO targets of a specified type that satisfy an optional criteria type of target to be included
Virtual Groups	Target group includes a collection of any defined target

Viewing Target Group Properties

To view target group properties:

Step 1 On the Definitions workspace, highlight the appropriate target group definition, right-click and choose **Properties**.

The Properties dialog displays.

Step 2 Click the appropriate tab to review the properties.

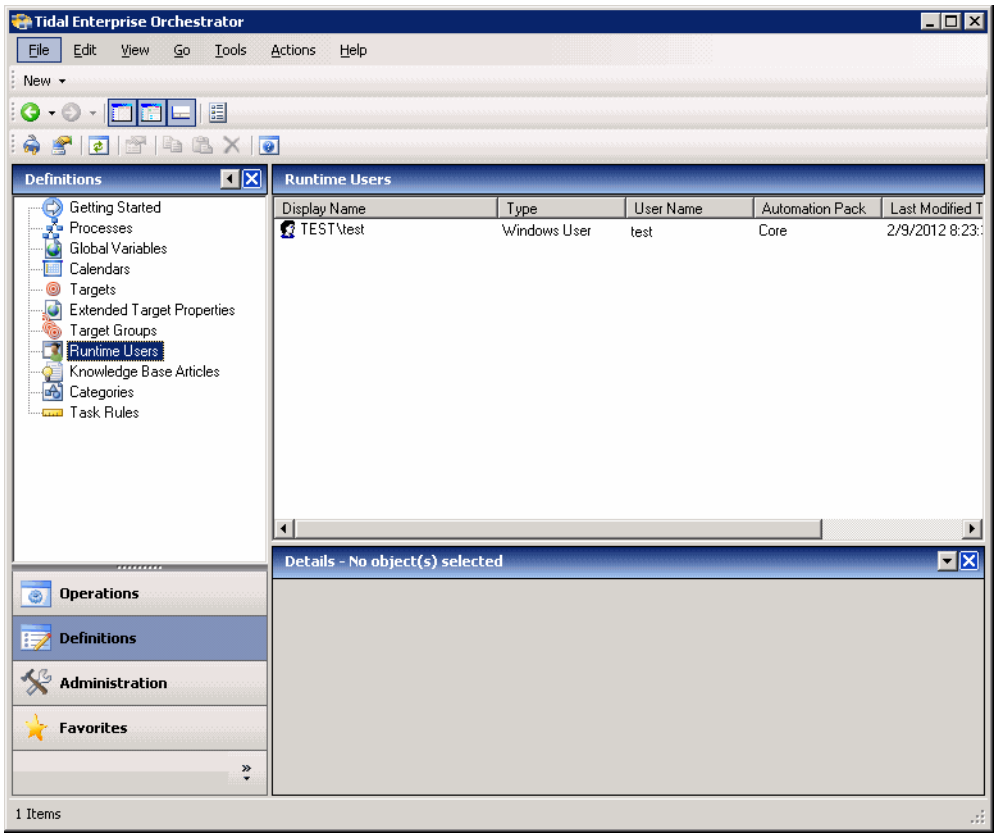
Tab	Description
General	Displays general information about the target group
Criteria	For Target Type Group only, the tab displays specific type of target and define the criteria based on the target properties
Members	Displays the target members included with the target group
Used by	Displays the objects that reference the target group
History	Displays when the target group was created or modified. The column also displays audit log entries that are relevant to the target group.

Step 3 Click **OK** to close the dialog.

Runtime Users

Many operating system and application activities require credentials for proper execution. The Runtime Users feature is used to create a runtime user record to store the information about the user security context and to pass this information to the adapters for activity execution, event monitoring and some target operations (such as availability monitoring and discovery). This runtime user can be used for database targets when needing database authentication.

Figure 3-6 Definitions—Runtime Users



Runtime User Accounts

The following table provides a listing of the runtime users that are available in the product. For additional information on defining a runtime user not included in this chapter, please refer to the associated adapter guide.

Runtime User	Description
Public-key Authenticated Admin Runtime User	Specify the credentials required to allow public key authentication and an administrative password to perform privileged operations. See *Cisco TEO Adapter Guide for Terminal Adapter Guide*.
Runtime Admin User	Specify the user administrative credentials required to access a Cisco IOS Device. See *Cisco TEO Adapter Guide for Terminal Adapter Guide*.
Runtime User	Specify the credentials for a generic runtime user record consisting of a user name and password pair. See *Cisco Tidal Enterprise Orchestrator*.
SAP User	Specify the credentials for a SAP user. See *Cisco TEO Getting Started Guide for Incident Analysis for SAP*.
SNMP User	Specify the credentials for a SNMP runtime user. See *Cisco TEO Adapter Guide for SNMP*.
Server Provisioner User	Specifies the user credentials for the user account that connects to the Tidal Server Provisioner target See *Cisco TEO Adapter Guide for Tidal Server Provisioner*.
Windows User	Specify the credentials for a Windows user. See *Cisco TEO Adapter Guide for Microsoft Windows*.

Viewing Runtime User Properties

To view runtime user properties:

Step 1 On the Definitions—Runtime Users view, highlight the appropriate the runtime user, right-click and choose **Properties**.

The Properties dialog box displays.

Step 2 Click the appropriate tab to review the properties:

Tab	Description
General	Displays general credential information about the runtime user
Used by	Displays the objects that reference the runtime user
History	Displays when the runtime user was created or modified. The column also displays audit log entries that are relevant to the runtime user.

Step 3 Click **OK** to close the dialog box.

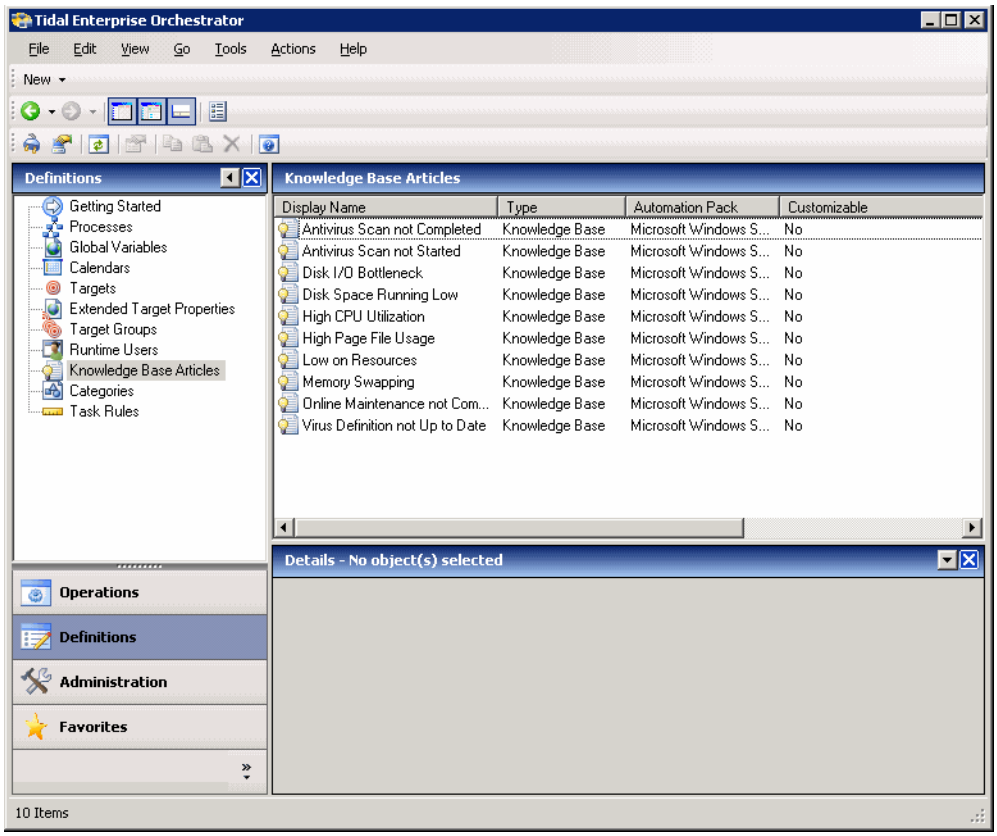
Knowledge Base Articles

The knowledge base articles provide information to help understand the results of an activity, including a summary of what has occurred, the possible cause of the result, and suggested actions to take to resolve issues with an activity.

Knowledge base articles are referenced by specific activities and can be viewed in the following locations in TEO:

- Operations Workspace—When viewing activity instance properties, users can view the display-only properties of the associated knowledge base articles by selecting the Knowledge Base tab.
- Process Editor—Users can reference a knowledge base article to an activity when defining the activity properties in the Process Editor.
- Automation Summary—All referenced knowledge base articles will display on the automation summary.

Figure 3-7 Definitions—Knowledge Base Articles



Viewing Knowledge Base Articles

To view the properties of the knowledge base article:

Step 1 On the Definitions—Knowledge Base Article view, highlight the appropriate knowledge base article, right-click and choose **Properties**.

The Properties dialog box displays.

Step 2 Click the appropriate tab to review the properties:

Tab	Description
General	Displays general credential information about the knowledge base article
Used by	Displays the objects that reference the knowledge base article
History	Displays when the knowledge base article was created or modified. The column also displays audit log entries that are relevant to the knowledge base article.

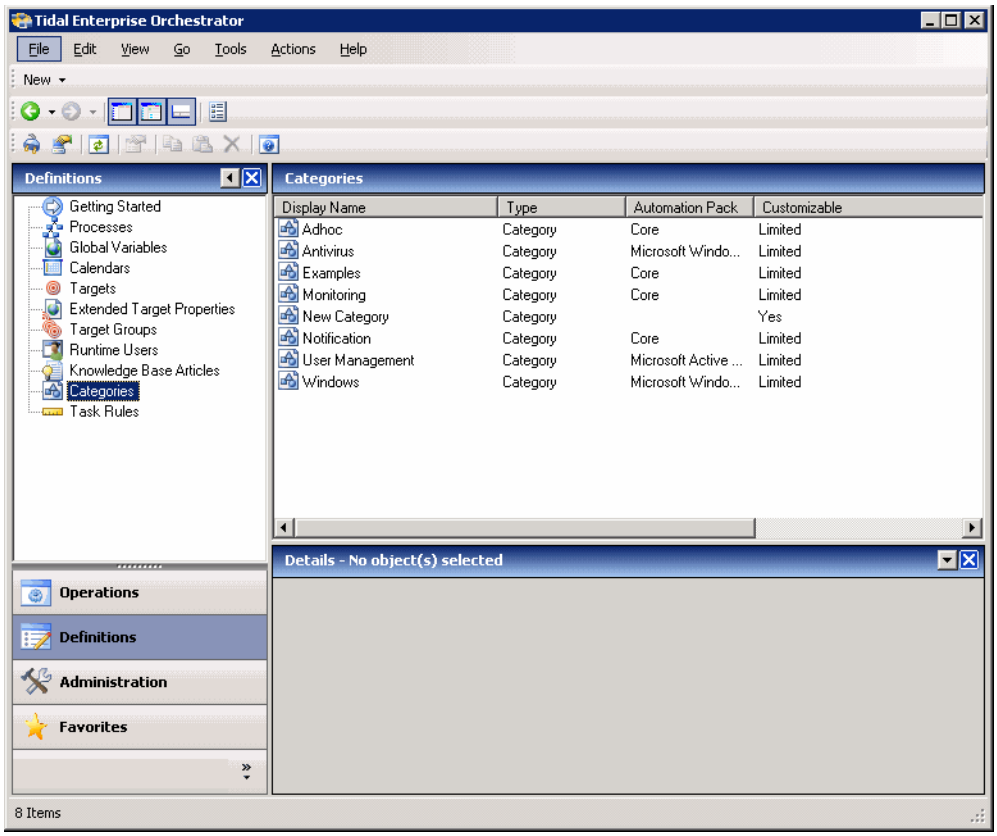
Step 3 Click **OK** to close the dialog box.

Categories

The Categories feature provides a way to organize your processes based on your organizational or functional requirements. When creating a process, you can assign the process to a category. You can also add other categories to a category to create a hierarchy.

Categories can be used to organize your processes based on your business-specific requirements. Use the Definitions—Categories view to create a new category and add members to the category. Users can also add members to a category when defining a process.

Figure 3-8 Definitions—Categories View



Viewing Category Properties

To view category properties:

Step 1 On the Definitions—Categories view, highlight the appropriate category, right-click and choose **Properties**.

The Properties dialog box displays.

Step 2 Click the appropriate tab to review the properties:

Tab	Description
General	Displays general information about the category
Members	Displays the members included in the category
Used by	Displays the objects that reference the category
History	Displays when the category was created or modified. The column also displays audit log entries that are relevant to the category.

Step 3 Click **OK** to close the dialog box.

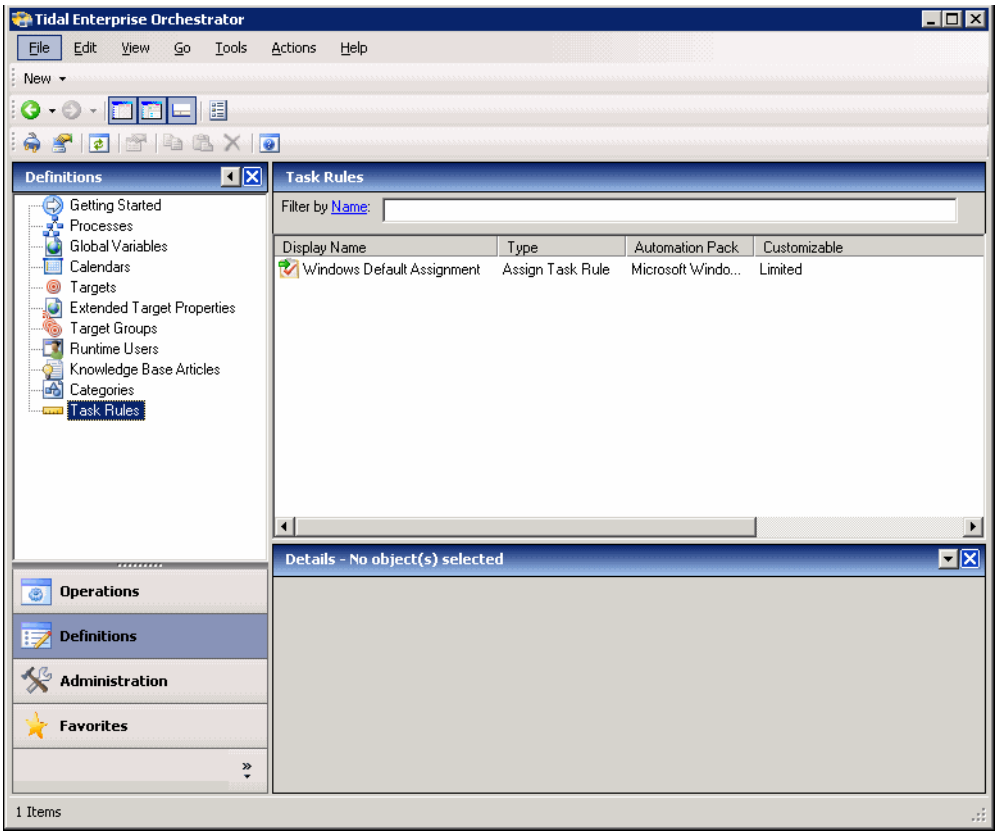
Task Rules

Task rules are used to manage task assignment and notifications for various customer-specific tasks. By enforcing a task rule, one change can affect tasks created by multiple processes. By default, the ability to create task rules is not applicable to everyone as only users with administrative rights can create task rules from this view in TEO. The permission to create or modify a task rule on the Definitions—Task Rules view is not available to all users. However, the security settings can change, if necessary, by the TEO administrator.

The Definitions—Task Rules view displays all task rules have been configured to assign, notify, or update tasks based on specific settings. The display can be filtered to display task rules by properties such as, name, description, and automation pack. The user can determine which task rule view to display.

The broad responsibilities of task rules are to streamline process creation and ease task administration by providing a mechanism to perform routine activities on tasks, such as notification and assignments, on newly-created tasks. Task rules are created and displayed in an ordered list on the Definitions—Task Rules view.

Figure 3-9 Definitions Workspace—Task Rules



Task Rules Descriptions

This table provides the different task rule types:

Task Rules	Description
Assign Task Rule	Assigns users to the task
Notify Task Rule	Adds an entry to the notification list of a task
Update Task Rule	Specifies the properties to update in a task

Viewing Task Rule Properties

To view task rule properties:

Step 1 On the Definitions—Task Rule Views, highlight the appropriate task rule, right-click and choose **Properties**.

The Properties dialog box displays.

Step 2 Click the appropriate tab to review the properties:

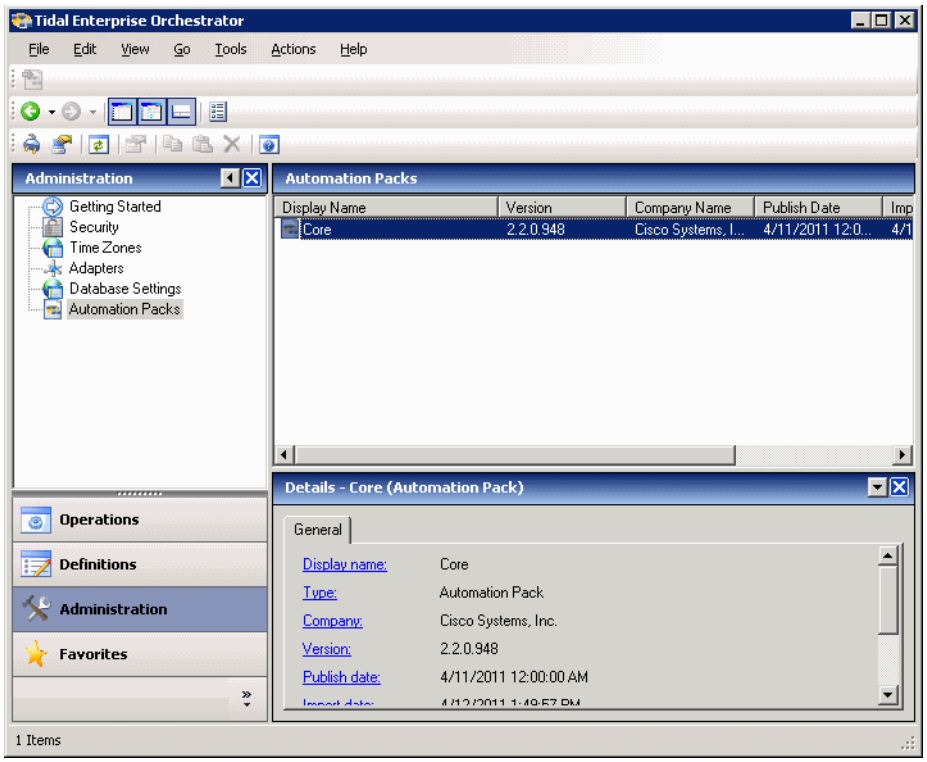
Tab	Description
General	Displays general information about the task rule
Task Type	Displays the task types to be executed by the rule
Task Rule-specific tab	Displays the defined properties of the task rule
Conditions	Displays the conditions on when the task rule action should be taken.
History	Displays when the task rule was created or modified. The column also displays audit log entries that are relevant to the task rule.

Step 3 Click **OK** to close the dialog box.

Automation Packs

Automation packs can encompasses everything related to representation, storage, import, packaging and management of content within TEO. Tidal automation pack files are a collection of TEO configuration objects, such as processes, variables, categories, targets, target groups, and more, all stored in one file.

Figure 3-10 Administration—Automation Packs View



Viewing Automation Pack Properties

To view automation pack properties:

Step 1 On the Administration—Automation Packs view, highlight the appropriate automation pack, and right-click and choose **Properties**.

The Automation Pack Properties dialog box displays.

Step 2 Click the appropriate tab to review the properties

Tab	Description
General	Displays general information about the automation pack
Objects	Displays the list of objects contained in the automation pack
Dependencies	Displays the list of automation packs and adapters referenced by the objects in the automation pack
History	Displays when the automation pack was created or modified. The column also displays audit log entries that are relevant to the automation pack.

CHAPTER 4

Defining TEO Objects

This section provides general steps that can be used to define the objects TEO provides for developing processes for execution. The Definitions workspace displays the majority of the components that are used in defining and executing processes. The Process Editor contains certain components that are only accessible and developed within the Process Editor. The Administration workspace contains the tools required to develop automation packs for importing and exporting.

For more specific steps, refer to the relevant adapter guide or the *Cisco Tidal Enterprise Orchestrator Reference Guide*.

These sections provide details on the following objects:

Defining Global Variables

Variables can be used as a reference value used for multiple objects. They can also be used to store or pass a value between executions of a process or between steps within a single process.

Use the following steps to define a global variable. The property pages displayed depend on the type of global variable selected.

To define a global variable:

Step 1 On the Definitions—Global Variables view, right-click and choose *one* of the following global variables.

Variable	Description
Boolean	Indicates whether a set of elements should be *true* or *false*
Hidden String	Holds data that must be protected from other TEO users and from auditing operations performed by TEO
Identity	Represents the value of a user identity
Numeric	Single whole or decimal number (positive and negative)
String	Defines a variable containing a string of text
Table	Stores a set of records in a table format

The New [Name] Variable Wizard launches.

Note The Required Value icon displayed on a tab or page indicates that the field is required and is either missing a value or contains an invalid value.

Step 2 On the General Information panel, specify the appropriate information, and click **Next**.

The [Name] Variable Value panel displays.

Step 3 On the Variable Value panel, specify the appropriate value for the variable, and click **Next**.

The Completing the New [Name] Variable Wizard panel displays.

Step 4 Click **Finish** to complete the procedure.

Defining Process Variables

Process variables can be used as a reference value to store or pass a value between executions of a process or between steps within a single process. Process variables can also be used to collect input parameters from the user or parent process.

Use the following steps to define a process variable. The property pages displayed depend on the type of variable selected.

To define a process variable:

Step 1 On the Variables tab, click **New > [Variable]**.

The [Variable] Properties dialog box displays.

Note The Required Value icon displayed on a tab or page indicates that the field is required and is either missing a value or contains an invalid value.

Step 2 On the General property page, complete the following fields, as necessary:

Field	Description
Display name	Name assigned to the variable
Data type	*Display-only.* Data type used to specify the variable value
Variable type	Type of variable: • Definition—Definition scoped variables are available to all instances of a process. • Input—Input variables can and must be specified by the parent process. • Output—An output variable is available only to a given process instance. • Local—Local scoped variables are available only to a given process instance. **Note** For additional information on the process variable types, see Process Variable Types, page 4-4.
Default value	Value assigned to the variable (e.g. *true*, *false*)
Description	Brief description of the variable

Note Each variable has an associated property page, see the appropriate sections for information on defining the individual properties. Refer to the *Cisco Tidal Enterprise Orchestrator Reference Guide*.

Step 3 Click **OK** to close the dialog box.

Process Variable Types

The following table describes the type of variable available that may be available to a process.

Variable Type	Description
Definition	Definition scoped variables are available to all instances of a process. There is only one value shared by all instances of the same process definition and that value persists from one execution of a process to the next. If the value of a definition scoped variable is altered by a process instance, then all other process instances will see the new value.
Input	Input variables can and must be specified by the parent process. An input variable is available only to a process instance. The process instance gets its own copy of the input variable. This type of variable must be specified before a process instance can be started. An input variable must be unique within all process instance variables and process definition variables for a process.
Output	An output variable is available only to a given process instance. Its value is preserved after successful termination of a process. An output variable must be modified by the activities within a process. Unlike other process instance variables, the values of output variables are stored after the process instance terminates successfully and are available to be read by the parent process.
Local	Local scoped variables are available only to a given process instance. They will not persist across process instances. They cannot be written or read by a parent process.

Creating an Extended Target Property

Extended target properties allow users to define a specific target property value and provides flexibility for others to set or access the values to be used to customize process behavior.

To create a target property:

Step 1 On the Definitions—Extended Target Properties view, right-click and choose **New > [Target Name] Property**.

The New [Target Name] Property Wizard launches.

Step 2 On the General Information panel, specify the following information:

Field	Description
Display name	Name assigned to the target property
Description	Brief description of the property

Step 3 Click **Next** to continue.

The Target Types panel displays.

Step 4 On Target Types panel, determine which target types will apply to the extended target property.

Option	Description
Applies only to targets of the following types	Select this radio button to indicate the target property should apply to specific target types in the product. Check the check box to the left of the target types to indicate that the selected target type should be applied to the extended target property. **Note** Click **Select All** to select all the available target types. Click **Unselect All** to uncheck the target types check boxes and remove them from the extended target property.
Applies to all targets	Select this radio button to indicate that the all target types in TEO will be applied to the extended target property. This includes target types that may be added in future.

Step 5 Click **Next** to continue.

The Default Property Value panel displays.

Step 6 On the Default Property Value panel, specify the default value for the Boolean target property to be assigned to the selected target types.

Field	Description
Default Value	Value assigned to the target property (e.g., true, false)

Step 7 Click **Next** to continue.

The Completing the New [Target Property] Wizard displays.

Step 8 Click **Finish** to complete the procedure.

Creating a Calendar

The Date List calendar contains an explicit list of dates. The processes to which this calendar definition is assigned will execute on the specified dates in the calendar. You may want to use this type of calendar for processes that run on specific days of a specific month.

To create a date list calendar:

Step 1 On the Definitions—Calendars view, right-click and choose **New > [Calendar Name]**.

The New [Calendar] Properties dialog box displays.

Step 2 On the General tab, enter the following information, as necessary:

Field	Description
Display name	Name of the calendar
Type	*Display-only.* Type of object
Owner	The owner of the object. This is typically the creator of the object. Click **Browse** to launch the Select User or Group dialog box and change the owner.
Description	Brief description of the calendar

Step 3 Click the calendar-specific tab to choose the appropriate date(s) on the calendar for when the activity will execute.

Step 4 Click the **Preview** tab to display the list of dates that are included in the calendar.

Step 5 Click **OK** to close the dialog box.

Defining Targets

Tidal Enterprise Orchestrator provides several types of targets on which processes and activities can execute against. Use the following steps to define a target. The property pages displayed depend on the type of target selected.

To define a target

Step 1 On the Definitions workspace, right-click **Targets**, and choose **New > [Target]**.

The [Target] Properties dialog box displays.

Note The Required Value icon displayed on a tab or page indicates that the field is required and is either missing a value or contains an invalid value.

Step 2 On the General tab, enter the appropriate general information:

Field	Description
Display Name	Name of the target
Type	*Display-only.* Type of target
Owner	User name of the owner of the category. This is typically the person who created the category. Click **Browse** to launch the Select User or Group dialog box to change the owner.

Field	Description
Status	Status of the target • Unknown—Status of the target unknown • Normal—No known problems with this target • Unreachable—No known problems with this target • Disabled—Target is disabled and is not available for activity execution
Status Information	Detailed information regarding the target status and the reasons for target being unreachable
Organization	Name of the company which supports the target
Description	Brief description of the target

Step 3 Click the target-specific **Connection** tab, enter the appropriate target information.

Note See the appropriate adapter guide for information on defining the individual properties.

Step 4 Click **OK** to close the dialog box.

Creating a Target Type Group

A Target Group is configured to contain targets based on specific criteria, such as type, active domain, in order to run processes on multiple targets from a target type group.

To create a target group:

Step 1 In the Definitions—Target Groups view, right-click and choose **New > [Target Group]**.

The New [Target Group] Properties dialog displays.

Step 2 On the General tab, enter the following information, as necessary:

Field	Description
Display name	Name of the target group that displays in the product
Owner	User name of the owner of the category. This is typically the person who created the category. Click **Browse** to launch the Select User or Group dialog to change the owner
Description	Brief description of the target
Enabled	The check box is checked by default, which indicates the target group is available for execution. Check the check box to disable the object. If the check box is empty, the object is disabled and will be unavailable for execution.

Step 3 Click the **Criteria** tab to continue.

Note The Required Value icon displayed on a tab or page indicates that the field is required and is either missing a value or contains an invalid value.

Step 4 On the Criteria tab, from the Include targets of type drop-down list, select the appropriate target type to include in the group.

Step 5 To add criteria for the targets that match the criteria, click **Add**.

A new Property pane displays each time Add is clicked.

Step 6 On the Property pane, specify the following information, as necessary:

Field	Description
Text field	Choose the appropriate property to match within the target group. Click the **Reference** tool to select the variable from the Insert Variable Reference dialog box.
Operators	The displayed operators depend on the selected property. **Note** For information on the displayed operators, see Comparison Operators, page 10-3.
Value	Enter the appropriate value for the target group.

Step 7 Click the **Members** tab to review the members included in the target type group. Information on the Members tab will not populate until the target type is matched on the Criteria tab.

Step 8 Click the **Used By** tab to display the objects that directly reference the target group. This tab will remain blank until the target group is referenced by an object.

Step 9 Click the **History** tab to view the history of actions taken against the target group.

Step 10 Click **OK** to close the dialog box.

Defining Runtime Users

Runtime user records hold the security credentials that are assigned to processes and activities. This section provides instructions on creating a record for runtime users for different adapters.

Use the following steps to define a runtime user. The property pages displayed depend on the type of runtime user selected.

Step 1 On the Definitions—Runtime User view, right-click and choose **New > [Runtime User]** for the appropriate runtime user account.

Note Each runtime user has an associated property page. See the appropriate sections for information on defining the individual properties.

The [Runtime User] Properties dialog box displays.

Note The Required Value icon displayed on a tab or page indicates that the field is required and is either missing a value or contains an invalid value.

Step 2 On the General tab, enter the appropriate runtime user-specific information.

Step 3 The Used By tab displays objects which reference the runtime user. This tab will remain blank until the runtime user is used by an object.

Step 4 The History tab displays the history of actions taken against the runtime user. This tab remains blank until after the initial creation.

Step 5 Click **OK** to close the dialog box.

Creating a Knowledge Base Article

Knowledge base articles provide information to help understand the results of an activity, including a summary of what has occurred, the possible cause of the result, and suggested actions to take to resolve issues with an activity.

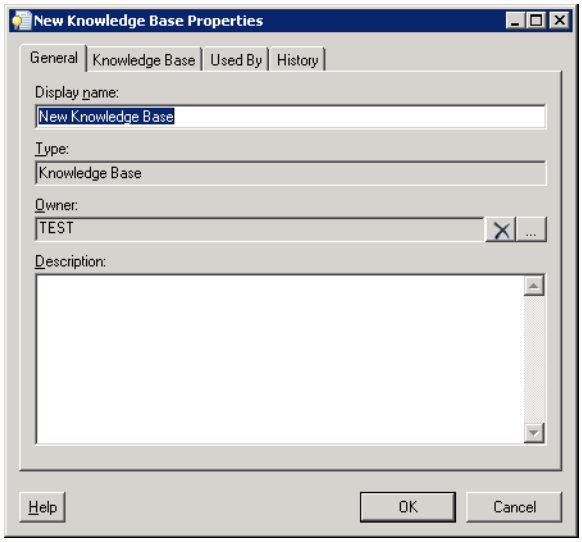
TEO ships with pre-defined knowledge base articles or you can create your own knowledge base articles to associate with activities in the process.

To create a knowledge base article

Step 1 On the Definitions—Knowledge Base view, right-click and choose **New > Knowledge Base**.

The New Knowledge Base Properties dialog box displays.

Figure 4-1 New Knowledge Base Properties—General Tab

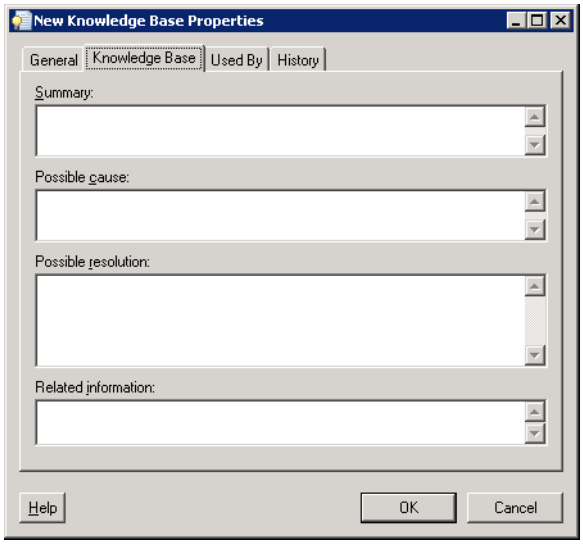


Step 2 On the General tab, enter the following information, as necessary:

Field	Description
Display name	Name of the knowledge base article
Type	*Display-only.* Type of object
Owner	The owner of the knowledge base article. This is typically the creator of the knowledge base article. Click **Browse** to launch the Select User or Group dialog box and change the owner.
Description	Brief description of the knowledge base article

Step 3 Click the **Knowledge Base** tab to continue.

Figure 4-2 New Knowledge Base Properties—Knowledge Base Tab



Step 4 On the Knowledge Base tab, enter the following knowledge base content. Enter as much information as possible to expedite the resolution.

Field	Description
Summary	A concise description of the issue
Possible cause	An explanation of the condition that may be causing the issue. You may enter multiple possible causes so that all possibilities are investigated
Possible resolution	List of actions that can be performed to attempt to resolve the issue manually
Related information	Additional information that may be relevant to the issue

Step 5 Click the **Used By** tab to display the objects which reference the knowledge base article. This tab will remain blank until the knowledge base article is used by an object.

Step 6 Click the **History** tab to display the history of actions taken against the knowledge base article. This tab remains blank until after the initial target creation.

Step 7 Click **OK** to close the dialog box.

Creating Categories

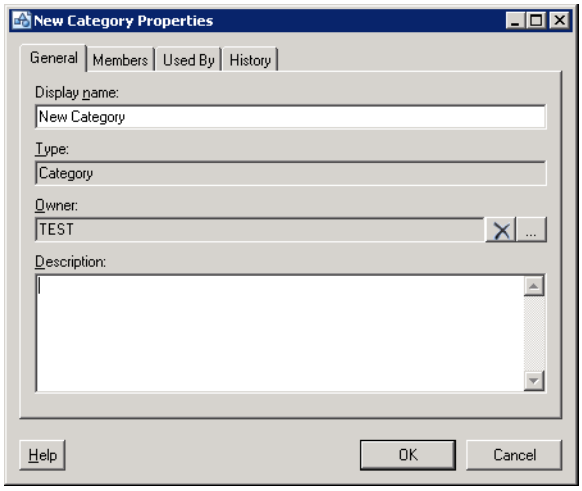
Categories can be used to organize your processes based on your business-specific requirements. Use the Definitions—Categories view to create a new category and add members to the category. Users can also add members to a category when defining a process.

To create a category:

Step 1 On the Definitions—Categories view, right-click and choose **New > Category**.

The New Category Properties dialog box displays.

Figure 4-3 New Category Properties—General Tab

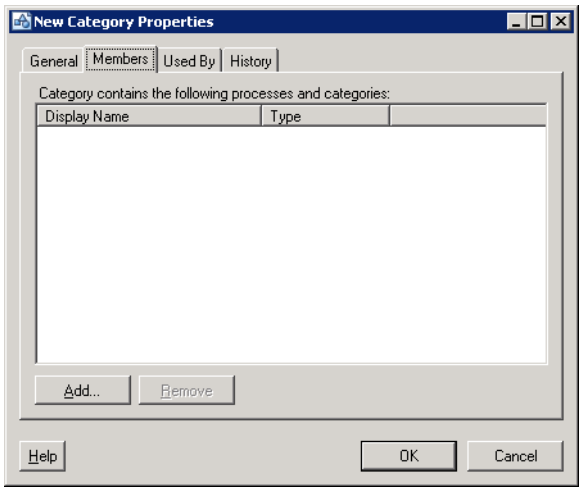


Step 2 On the General tab, enter the following information, as necessary:

Field	Description
Display name	Name of the category
Type	*Display-only.* Type of object
Owner	The owner of the object. This is typically the creator of the object. Click **Browse** to launch the Select User or Group dialog box and change the owner.
Description	Brief description of the category

Step 3 Click the **Members** tab to continue.

Figure 4-4 New Category Properties Dialog—Members Tab



Step 4 On the Members tab, review the existing category members.

Field	Description
Display Name	The name of the object that is the member of the category
Type	*Display-only.* Type of object (Process or Category)
Description	Brief description of the object

Step 5 To modify the list of members in the category, click one of the buttons:

Field	Description
Add	Click **Add** to launch the Add Objects to Categories dialog box. Select the appropriate objects and click **OK**.
Removed	Highlight a specific process and click this button to remove the object from the list.

Step 6 Click the **Used By** tab to display the objects which reference the category. This tab will remain blank until the category is used by an object.

Step 7 Click the **History** tab to view the history of actions taken against the category.

Step 8 Click **OK** to close the dialog box.

Creating a Task Rule

The broad responsibilities of task rules are to streamline process creation and ease task administration by providing a mechanism to perform routine activities on tasks, such as notification and assignments, on newly-created tasks.

Whenever a task is created, TEO goes through the settings and conditions of each task rule listed and enabled. If the conditions and settings in the rule are satisfied, then the task rule is executed. Task rules are executed according to the order in which they are displayed in the list.

To create a task rule:

Step 1 On the Definitions—Task Rules view, right-click, and choose **New > [Task Rule]**.

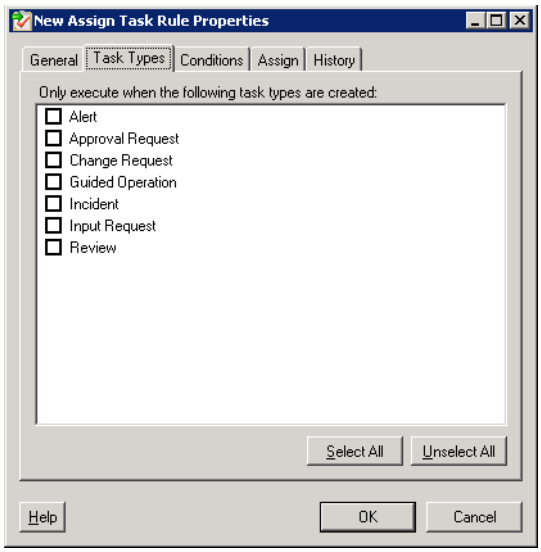
The New [Task Rule] Properties dialog box displays.

Step 2 On the General tab, enter the following information:

Field	Description
Display Name	Name of the task
Type	*Display only.* Shows the type of object
Trigger	*Display only.* Type of trigger associated with the task rule
Owner	User name of the owner of the task rule. This is typically the person who created the task rule. Click **Browse** to launch the Select User or Group dialog box to change the owner.
Description	A brief description of the task rule
Enabled	The check box is checked by default. The checked box indicates the task rule is available for execution. Uncheck the check box to disable the task rule. If the check box is unchecked, the object is disabled and will be unavailable for execution.

Step 3 Click the **Task Types** to continue.

Figure 4-5 New Assign Task Rule Properties Dialog Box—Task Types Tab



Step 4 Click the **Task Types** tab to select the task types to be executed by the rule.

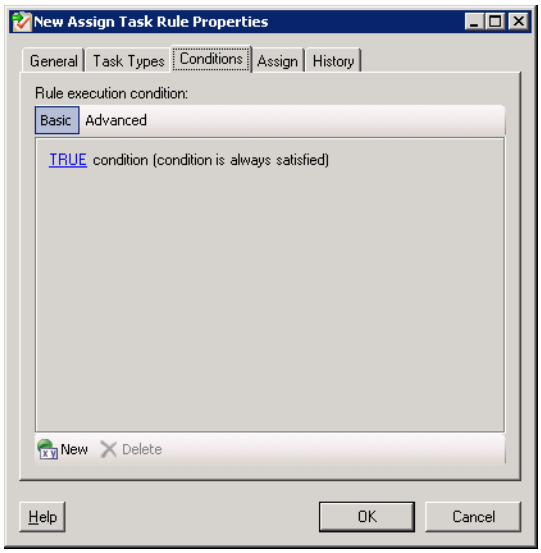
Task Type	Description
Alert	Alerts reflect potential problems that a user may want to investigate and possibly diagnose the problem
Approval Request	Specifies the message and choices for the assignee who is approving the task
Guided Operation	Details the steps a user takes to complete an assigned task
Incident	Task requires an operator to take action in order to resolve an issue
Input Request	Task requires input from an individual or group
Review	Task assigns a document for review

Step 5 To add or remove a task type from the rule, check the check box to the left of the task type.

Step 6 Click the **Conditions** tab to continue.

Note The Required Value icon displayed on a tab or page indicates that the field is required and is either missing a value or contains an invalid value.

Figure 4-6 New Rule Properties Dialog Box—Conditions Tab



Step 7 On the Conditions tab, click the appropriate panel to indicate the type of condition equation to be used to trigger the task rule.

Panel	Description
Basic	Creates simple conditions using variables to match to operator criteria. See Adding Basic Conditions to an Object, page 4-22.
Advanced	Creates a TEO-based condition. • Compound Condition—Compiles other conditions (time condition, prior process instance condition, variable condition, or another compound condition) into a single condition. The Compound Condition is created by the addition of another True/False option in the Advanced Panel. • Prior Process Instance Condition—Determines that when a process has occurred within a specific time interval, the condition will evaluate to false. If no process instance is selected, then the trigger will search for all process instances. • Time Condition—Specify a condition based on a defined calendar. • Variable Condition—Specify a variable to be used as the condition under which the variable should evaluate as true. See Adding Advanced Conditions to an Object, page 4-23.

Step 8 Click the **[Task Rule]** tab to specify the assignees, properties to update, or notifiers.

Step 9 Click the **History** tab to display the history of actions taken against the task rule. This tab remains blank until after the initial task rule creation.

Step 10 Click **OK** to close the dialog box.

Creating Tasks

The ability to create tasks is not applicable to everyone as only users with administrative rights can create tasks from this view in TEO. The permission to create or modify a task in the Operations—Task view is not available to all users.

Tasks Overview

The following table displays the tasks that are provided by TEO.

Tasks	Description
Alert	Alerts reflect potential problems that a user may want to investigate and possibly diagnose the problem
Approval Request	Specifies the message and choices for the assignee who is approving the task
Change Request	Requests a modification to the configuration of an object or system
Guided Operation	Details the steps a user takes to complete an assigned task
Incident	Task requires an operator to take action in order to resolve an issue
Input Request	Task requires input from an individual or group
Review	Task assigns a document for review

Creating a Task from Task View

When creating a task in the Operations—Tasks Views, the task dialog box contains property pages that are specific to the selected task as well as property pages that are common to all the tasks.

Use the following steps to define a task in the Operations—Tasks Views. Refer to the appropriate section for instructions on completing the task property pages.

To create a task:

Step 1 On the Operations—Tasks Views, use *one* of the following methods:

- On the toolbar, choose **New > [Selected Task]**.

  -or-

- From the Actions menu, choose **New > [Selected Task]**.

The [Task Name] Properties dialog box displays.

Step 2 On the General tab, enter the following information:

Field	Description
Display Name	Name of the task
Types	*Display only.* Shows the type of task

Field	Description
Status	Choose the appropriate status of the task. The statuses displayed depend on the currently open task.
Produced by	Name of the process which generated the task. **Note** Click the **Properties** tool to show the display-only view of the process.
Description	Description of the task

Step 3 Click the task-specific tab to enter the appropriate information for the task. Refer to the appropriate section for instructions on creating the task.

Note The Required Value icon displayed on a tab or page indicates that the field is required and is either missing a value or contains an invalid value.

Step 4 Click the **Assignment** tab to modify the general assignment properties for the task.

Field	Description
Assigned to	User name(s) assigned to the task • Add—Click **Add** to launch the Select User or Group dialog box to choose the name of the person to assign to the task • Remove—Choose the user name and click this button to remove the user from list.
Priority	Indicates the priority of the task • Low • Medium (Default) • High
Due date	Check the check box and choose appropriate date the task should be completed from the drop-down calendar.
Expiration date	Choose the appropriate date the alert should expire from the drop-down calendar.

Step 5 Click the **Notification** tab to specify the recipients to be notified about the task.

Button	Description
Add	Click this button to launch the Add Notification Recipient Dialog Box to enter the appropriate recipient and click **Ok** to add the recipient.
Modify	Highlight the appropriate recipient in the list to be modified.

Button	Description
Remove	Highlight the appropriate recipient and click this button to remove the recipient from the list.
Remove All	Click this button to remove all specified recipients from the list.

Step 6 Click the **Parameters** tab to define parameters for a specific task.

Field	Description
Parameter	Enter the appropriate parameter
Add	Adds new row for parameter to be added
Remove	Removes selected parameter from task

Step 7 Click the **Notes** tab to enter any notes related to the task in the text box.

Step 8 Click the **Categories** tab to assign a task to a category or modify an existing assigned category.

Tasks belong to the following categories:

Column	Description
Display Name	The name of the category
Description	A description of the category
Type	Type of category

Step 9 Use the following buttons to modify the list of categories:

Field	Description
Add	Click this button to launch the Select Categories dialog box and select the category to which the process is to be assigned.
Properties	Click this button to view or modify the properties of category.
Remove	Click this button to remove a category from the list.

Step 10 Click the **Related** tab to assign or modify an existing related task.

Field	Description
This task is a duplicate of the following task	*Display Only.* Shows any duplicated tasks. Click the **Delete** tool to remove the selected task from the field. This action does not delete the task from the system. Click this button to launch the Select Tasks dialog box and select the task to add to the duplicate task field.

Information about the tasks related to the selected task display in the following:

Field	Description
Display Name	Name of the task
Description	Description of the task
Type	Type of task

Step 11 Use the following buttons to modify the list of tasks:

Field	Description
Add	Launches the Select Tasks dialog box and select the task to add to the Related task list. After the task has been added to the list, it will no longer be displayed in the Select Tasks dialog box.
Properties	Click this button to view or modify the properties of task.
Remove	Click this button to remove a task from the list.

Step 12 Click the **External** tab to specify the external incident information to support the synchronization between TEO and the system that the customer is using.

Field	Description
External System	Name or IP address for the incident management server
External ID	ID of the incident which corresponds to the TEO incident

Step 13 Click the **History** tab to display the history of actions taken against the task. This tab remains blank until after the initial task creation.

Step 14 Click **OK** to close the dialog box.

Creating a Condition

The conditions assigned to an object within a process specify when an action is to be taken based on an evaluation of conditions that have been defined.

Condition Descriptions

The following table provides a list of conditions that are associated with the product. For additional information on creating a condition, refer to the appropriate section.

Condition Type	Description
Compound Condition	Specifies when an action is to be taken based on an evaluation of conditions that have been defined.
Prior Process Instance	Indicates that when a process has occurred within a specific time interval, the condition will evaluate to *false*.
Time Condition	Specifies a condition based on a defined calendar.
Variable Condition	Specifies a variable to be used as the condition under which the variable should evaluate as *true*.

Comparison Operators

The following table contains operators that may display throughout TEO.

Operator	Description
contains	Iterates through the contents of the collection and determines if the specified item exists (if this is a string collection, this is case-insensitive)
contains (case-sensitive)	Iterates through the contents of the collection and determines if the specified item exists (same as above, but a case-insensitive version)
contains only	Iterates through the contents of the collection and determines if the only item in the collection is the specified item (if this is a string collection, this is case-insensitive)
contains only (case-sensitive)	Iterates through the contents of the collection and determines if the only item in the collection is the specified item (same as above, but a case-insensitive version)
does not match wildcard	Determines if the item does not match all items in the wildcard example
is empty	Determines if there are items in the collection or not
equals	Determines if the left side equals the right side (if this is a string comparison, this is case-insensitive)
not equals	Determines if the left side does not equal the right side
matches regular expression	Determines if the left side matches the regular expression specified on the right side
matches wildcard	Determines if the left side matches the wildcard specified on the right side
equals (case-sensitive)	Determines if the left side equals the right (this is the case-sensitive version of Equals for string)
less than [<]	Determines if a value is less than another value
more than [>]	Determines if a value is greater than another value

Operator	Description
equal [=]	Determines if a value is equal to another value
not equal [>]	Determines if a value is not equal to another value
greater than or equal [>=]	Determines if a value is greater than or equal to another value
less than or equal [<=]	Determines if a value is less than or equal to another value

Adding Basic Conditions to an Object

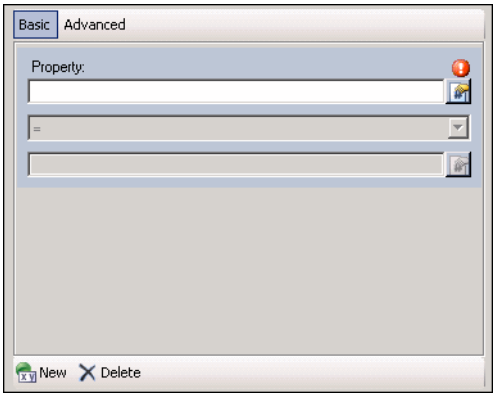
Use the Basic panel to create simple conditions using a variable to match to operator criteria.

To add a new condition to an object:

Step 1 On the [Object] property page or dialog box, click the **Conditions** tab.

The Conditions tab displays.

Figure 4-7 Conditions Tab—Basic Panel



Step 2 Under Conditions, click the **True/False** link to determine when the object should execute against the specified conditions.

Option	Description
TRUE	Default link option indicates the process is always executed when the event matching criteria in the trigger-specific page happens A single condition is listed by default and is set to *True*. If no other conditions are specified, this condition will remain and cannot be deleted by the user.
FALSE	Click this link to indicate the process is NEVER executed when the event happens.

Step 3 Click the appropriate button to modify the condition properties used to execute the object.

Button	Description
New	Click **New** to add a Properties pane to the condition.
Delete	Click **Delete** to remove the last Properties section in the list of properties.

Step 4 Each time the New button is clicked, a Properties section is displayed for the condition. The following table displays the fields for the Properties section.

Button	Description
Text field	Data for this field cannot be manually entered. Click the **Reference** tool to select a property variable to use as a condition.
Operators	Select the operator to be used to evaluate the variable expression. The displayed operators depend on the selected property. **Note** For information on the displayed operators, see Comparison Operators, page 4-21.
Value	Enter value for the property

Step 5 Click **OK** to save the object.

Adding Advanced Conditions to an Object

Use the Advanced panel to create a more complex condition. Users have the ability to define the properties of the conditions within the Advanced panel, as well as within the Properties dialog box.

The conditions specified on the Basic panel can also be configured on the Advanced pane, because they transition to simple TEO-level variable conditions. All other TEO conditions on the Advanced panel cannot transition to the Basic panel and will not display.

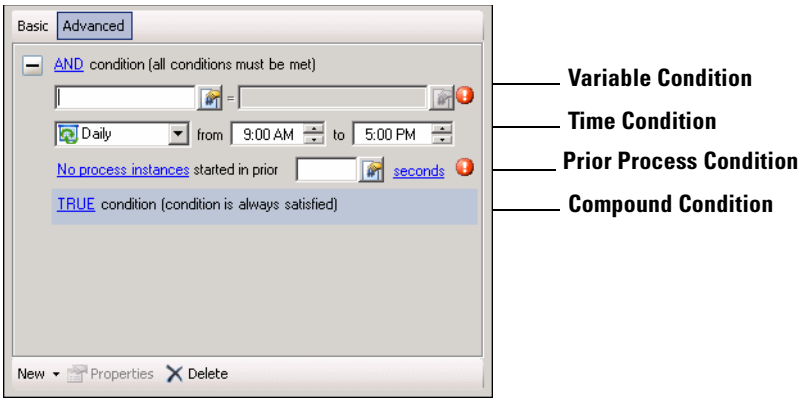
To add an advanced condition to an object:

Step 1 On the [Object] property page or dialog box, click the **Conditions** tab.

The Conditions tab displays.

Step 2 Click the **Advanced** panel to continue.

Figure 4-8 Conditions Tab—Advanced Panel



Step 3 Under Conditions, click the **True/False** link to determine when the object should execute against the specified conditions.

Option	Description
TRUE	Default link option indicates the process is always executed when the event matching criteria in the trigger-specific page happens A single condition is listed by default and is set to *True*. If no other conditions are specified, this condition will remain and cannot be deleted by the user.
FALSE	Click this link to indicate the process is NEVER executed when the event happens.

Step 4 Click the appropriate button to modify the condition properties used to execute the object.

Button	Description
New	Click **New > [Condition]** to add a single condition to Advanced panel. Repeat this step to add additional condition properties to the Conditions tab. • Compound Condition—Combines other conditions (time condition, prior process instance condition, variable condition, or another compound condition) into a single condition. The Compound Condition is created by the addition of another True/False option in the Advanced Panel. • Prior Process Instance Condition—Determines that when a process has occurred within a specific time interval, the condition will evaluate to false. If no process instance is selected, then the trigger will search for all process instances. • Time Condition—Specify a condition based on a defined calendar. • Variable Condition—Specify a variable to be used as the condition under which the variable should evaluate as *true*.

Button	Description
Properties	Click anywhere around the appropriate condition. After the area around the condition is shaded blue, click **Properties** to launch the condition properties dialog box. **Note** Condition properties can be modified on the tab or within the conditions properties dialog box.
Delete	Highlight the appropriate condition and then click **Delete** to remove the condition from the object.

After the first condition is added, the following operators are displayed. The operator is set to *AND* by default.

Operator	Description
AND condition (All conditions must be met)	Click this option if an action is to be taken only when all conditions in the list are *true*.
OR condition (One condition must be met)	Click this option if an action is to be taken when one condition in the list is *true*.

Step 5 Click **OK** to save the object.

Configuring Process Logic Components

Process logic components are components that are inserted into a process to support or configure the process logic and provide control over the process execution. Use the Logic pane to add components that support or define process logic.

Logic Component Descriptions

The following table describes the available logic components.

Field	Description
Completed	Specifies the status that signals the completion of an activity and terminates the process.
Condition Block	Executes two or more condition branches in a process.
Condition Branch	Creates a branch in the process and executes the branch only if the specified condition is met.
For Each	Used to add the activities to the process that should be executed one time for each item in the target source.
Parallel	Used to run two or more branches of a process simultaneously.
Sequence	Used to run one or more activities sequentially.

Field	Description
Start Point	Indicates the points within a process in which a user can start the process
While	Allows the process to execute a sequence of child activities (contained in the while loop activity) that continues as long as a specified condition is *true*.

Adding the Logic Component to a Process

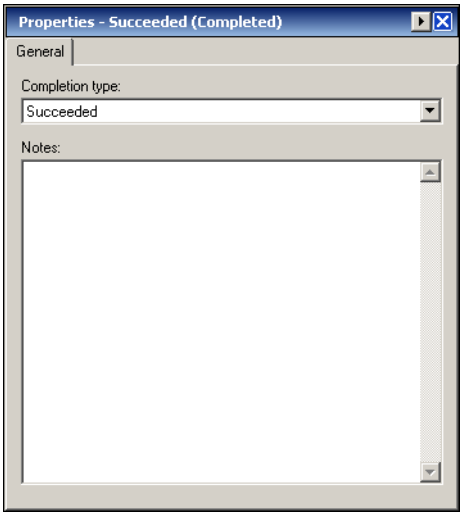
Use the following steps to add a logic component as a step in process execution

To add a logic component:

Step 1 On the Toolbox—Logic pane, choose **[Logic Component]** and drag and drop the component onto the Workflow pane.

The [Logic Component] property page displays.

Figure 4-9 Completed [Status] Property Page—General Tab



Step 2 On the General tab, specify the appropriate information for the component, such as notes and conditions.

Step 3 Click the **Save** tool to save the changes to the process.

Creating Automation Packs

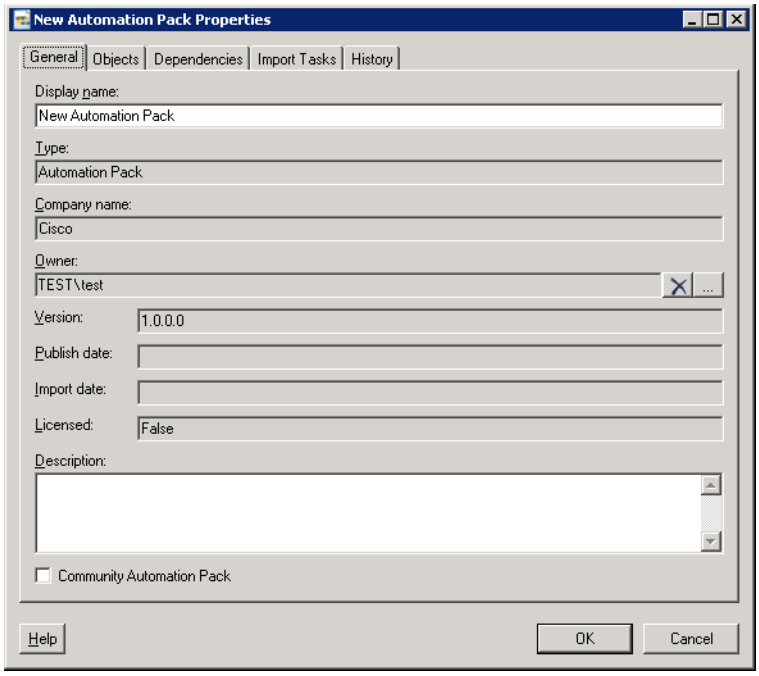
Tidal Automation Package (*.tap) files include processes and other defined objects for TEO. The defined automation packs included with the product are located in the install directory on the machine where the product was installed. Individual-created automation packs may be exported and re-imported on an as-needed basis.

Use the following steps to create an automation pack:

Step 1 On the Administration—Automation Pack view, right-click and choose **New > Automation Pack**.

The New Automation Pack Properties dialog box displays.

Figure 4-10 New Automation Pack Properties Dialog Box—General Tab



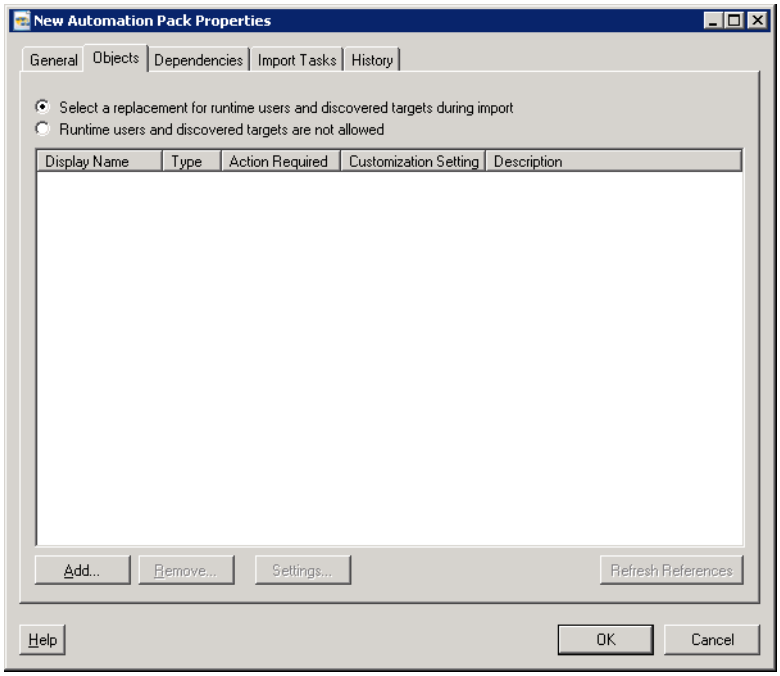
Step 2 On the General tab, enter the following information:

Column	Description
Display name	Name of the automation pack
Type	Type of object
Company name	Name of the company that releases the automation pack
Version	Version number of the automation pack
Publish date	Date the automation pack was exported to a file
Import Date	Date the automation pack was imported into the product
Owner	Owner of the automation pack. This is typically the creator of the automation pack.

Column	Description
Description	Brief description of the automation pack
Community Automation Pack	This check box is available only when creating new automation packs. Check this check box to indicate the TAP file is a community automation pack. This allows anyone the ability to modify and export the TAP. After the automation pack is created, the check box will no longer be available and the TAP file cannot be made private. If the check box remains unchecked, then the TAP file becomes private and can be modified and exported only by the author.

Step 3 Click the **Objects** to continue.

Figure 4-11 New Automation Pack Properties—Objects Tab



Step 4 On the Objects tab, use the following radio buttons to add objects to the automation pack.

Option	Description
Select a replacement for runtime users and discovered targets during import	Select this radio button to indicate that the runtime users and discovered targets will be replaced during the import process.
Runtime users and discovered targets are not allowed	Select this radio button to indicate users will not be able to save the automation pack until the object is removed from the automation pack. All the runtime users and discovered targets will be flagged with an action stating that the objects should be removed. **Note** To remove a runtime user or a discovered target, remove the object that references the items first before removing the object from the automation pack.
Add	Click this button to launch the Select Object dialog box and select an object from the list of exportable objects. Objects that already belong to an automation pack will be filtered from this dialog.
Remove	Highlight the object and then click this button to remove an object from the list.
Refresh References	Click this button to update the list of references associated with the object. **Note** The objects (except Runtime Users or Discovered Targets) in the automation pack will be stamped with the automation pack ID after the automation pack has been updated.

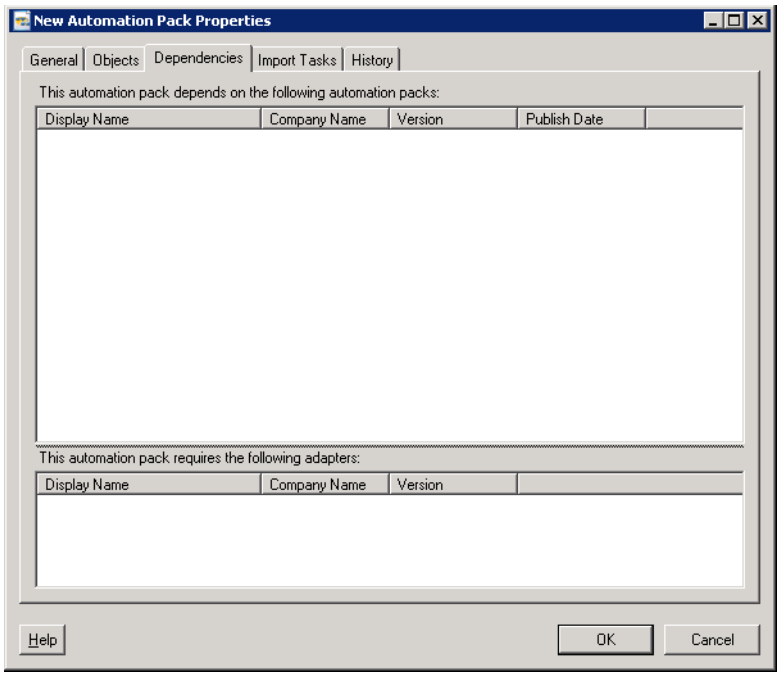
Step 5 Information about the objects are displayed in the following columns.

Columns	Description
Display Name	Name of the automation pack
Type	Object type
Action Required	Action required to successfully import or export the objects
Description	Brief description of the automation pack. Marketing information for the automation pack can be displayed as well as a hyperlink to marketing information.
Version	Version number of the product

Step 6 Click the **Dependencies** tab to continue.

The dependent automation pack and required adapter lists will be updated when the automation pack properties is first opened or when there is a change to the **Objects** page, such as adding or removing an object.

Figure 4-12 New Automation Pack Properties—Dependencies Tab



Step 7 Review the list of automation packs and adapter information referenced and required by the objects in the automation pack.

Automation Pack Dependencies	
Columns	**Description**
Display Name	Name of the automation pack
Company Name	Name of the company that released the automation pack
Version	Version number of the product
Publish Date	Date the automation pack was exported to a file
ID	Identification number of the automation pack
Description	Brief description of the automation pack. Marketing information for the automation pack can be displayed as well as a hyperlink to marketing information.
Required Adapters	
Display Name	Name of the adapter
Company name	Name of the company that licensed the product
Version	Version number of the product
Release date	The date and time the adapter is available in the product
Install date	The date and time the adapter was installed
Description	A brief overview of the adapter

Step 8 Click **OK** to close the dialog box.

CHAPTER 5

Monitoring Activities

The Operations—Activity Views workspace is used to monitor all defined activities that have started, been triggered to execute based on specific criteria, executed adhoc, or scheduled to execute. The Activity Views folder includes a set of predefined views that displays information about the status of activities within the processes.

Individuals should review information in the Activity Views folders when querying the properties and status of activity instances. Display-only process instance properties can be observed through the Activity views, but cannot be edited or started from these views. However, running process instances can be canceled from this view.

Use the following sections for information on navigating the Activity Views in the Operations workspace:

Viewing Activity Views Information

The Operations—Activity View folders display all activities that have been started, scheduled to start, started by a trigger, or started ad hoc. Each Activity view display can be filtered to display by the date/time of execution, category, or column view.

This section provides instructions on viewing the information displayed in the Activity Views. For additional information on defining or modifying activities, see the *Cisco Tidal Enterprise Orchestrator Reference Guide*.

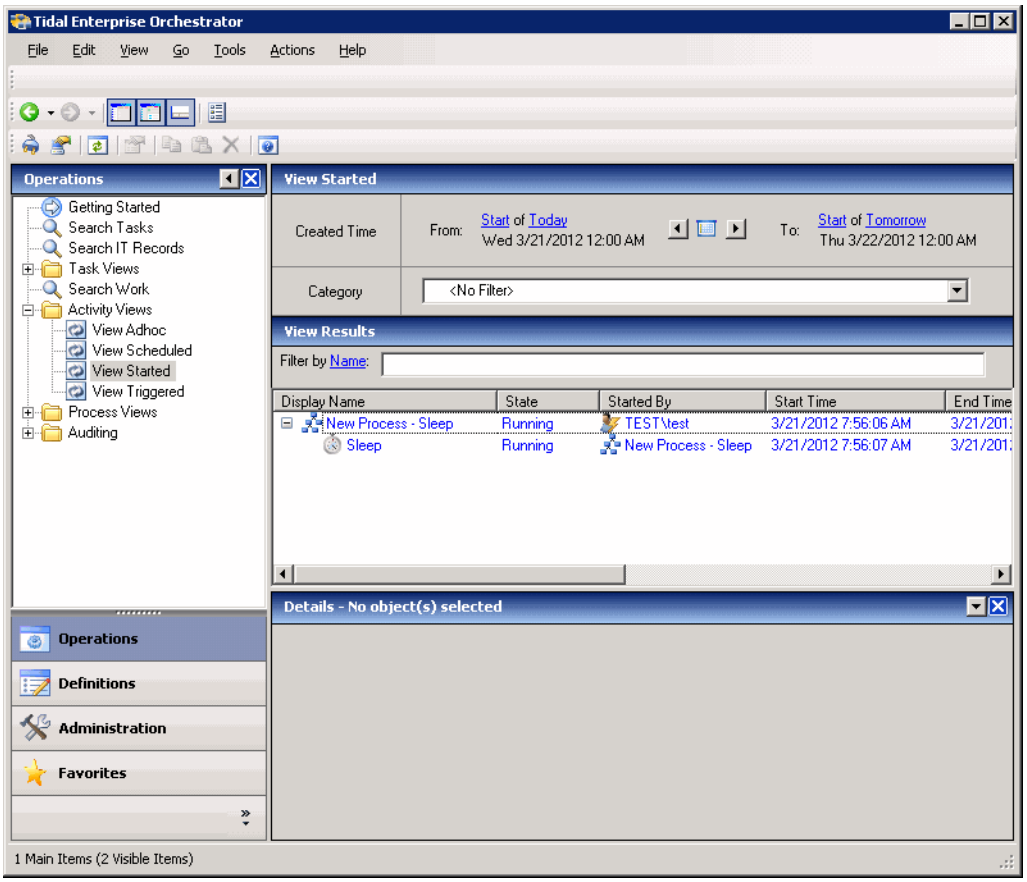
Displaying Activity Views

From this view, detailed information is provided about all the alerts, incidents, and other tasks that are assigned, in progress, or have been completed. Users with the appropriate security rights can create and modify tasks from this view.

To access the Activity View folders:

Step 1 On the Operations workspace, choose **Activity Views**.

Figure 5-1 Operations Workspace—Activity Views Folder



Step 2 To access detailed information about an activity view, expand the Activity Views folder, and choose *one* of the following items:

Views	Descriptions
View Adhoc	Displays all process or activity instances that were executed manually and are in progress, have successfully completed, or failed during the selected time period
View Scheduled	Displays all process or activity instances that are scheduled to execute during the selected time period
View Started	Displays all process or activity instances that are in progress, have successfully completed, or failed during the selected display time period
View Triggered	Displays all process or activity instances that were triggered for execution (manually or automatically) and are in progress, have successfully completed, or failed during the selected time period

Step 3 On the Activity Views Header, choose the appropriate filtering options to display.

Note For information on the modifying the time period, see Filtering the Activity View, page 5-5.

The selected view displays in the Results pane. Certain columns display information about a process or activity instance by default.

Column	Description
Display name	Name of the process instance or activity instance that is scheduled, in progress, or completed
State	Current status of the operations activity • Succeeded • Scheduled • Running • Missed • Canceled • Failed (Canceled) • Failed (Not Completed)
Started By	User ID of the person who initiated the activity instance
Start Time	Start time of the activity
End Time	End time of the activity as it completed or failed. If the instance is in progress, 1/1/0001 12:00:00 AM is displayed.
Duration	Amount of time taken for the activity to complete
Type	Type of activity
Executor	Target where the process or activity is executing

Column	Description
Categories	The category to which this process has been assigned if applicable
Error	Brief description of any error that occurred
ID	Unique ID assigned to the activity instance
Description	Brief description of the process activity
Owner	Owner of the activity. This is typically the user name of the person who created the activity.
Type Description	Brief description of the type associated with the activity
Time Saved	Time taken to execute the process manually
Money Saved	Cost of manual process execution

Status Indicators

The State column displays the status of the individual process and activity. The following indicators definitions display in the Results pane.

Status	Description
Succeeded	Process has completed successfully
Scheduled	Processed is scheduled to run
Running	Process is in progress
Missed	Scheduled time for process was missed
Canceled	Displays when the process is canceled
Failed (Not Completed)	Displays when the process has failed and did not complete the process execution
Failed (Canceled)	Displays when the process is canceled manually

Color Indicators

The default colors associated with the individual activities indicate the status of the process instances.

Color Indicator	Description
Blue	Process is in progress
Green	Process has completed successfully
Red	Process has failed and did not complete the process execution
Orange	Process has stopped

Filtering the Activity View

The filter options in the header determine the time period for which activities display in the Results pane.

Querying Activities by Start Time Period

The Start of menu to the left of To provides the starting time period options used to define which activities are displayed. To use the current time as the start of the time period in which the activities are displayed, do not make any changes to Time menu options.

To query by the start time:

Step 1 On the Activity Views header, to the right of From, click the **Start** hyperlink to display the start time options.

The Start Time drop-down list displays.

Figure 5-2 Start Time List

Step 2 Choose *one* of the following options to modify the start time to display activities:

Option	Description
Start	Default option uses the current time on the console
Back	Adjusts the number of hours that precede the current console time
Forward	Adjusts the number of hours ahead of the current console time

Figure 5-3 Back Sub-Menu

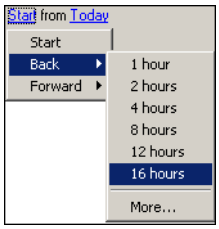
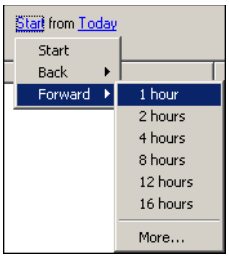


Figure 5-4 Forward Sub-Menu



The selected time displays on the Start Time hyperlink.

Querying Activities by the Date Range

Use the following instructions to modify the start and end date on the Activity Views header. The options are located to the right of both the From and To sections. To the far right of From, click **Today** hyperlink to display the start and end date options.

To query by the display date:

Step 1 On the Activity Views header, use *one* of the following methods:

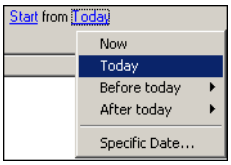
- To modify the start date, click the **Today** hyperlink to the far right of From, to display the start date options.

  -or-

- To modify the end date, click the **Tomorrow** hyperlink to the far right of To, to display the end date options.

The Date drop-down list displays.

Figure 5-5 Date Drop-down List



Step 2 Choose *one* of the following options to modify the display date:

Option	Description
Now	Displays activities beginning with the current Console date and time
Today	Displays activities on the current date beginning at 12:00 AM
Tomorrow	Displays activities beyond 24 hours after the current date and time

Option	Description
Before today	Adjusts the start date for activities to display before the current console date by a defined number of days
After Today	Adjusts the start date to follow the current console date

Figure 5-6 Before Today Sub-Menu

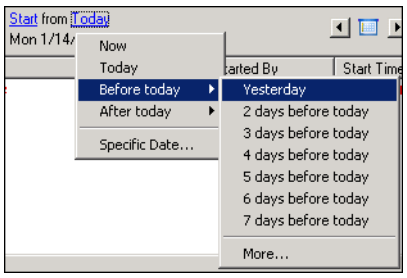
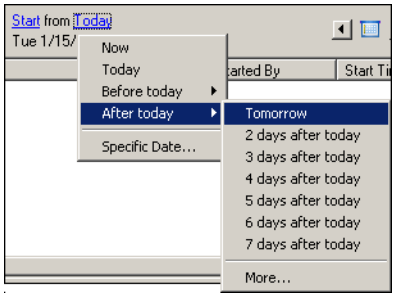


Figure 5-7 After Today Sub-Menu



The selected date displays on the Date hyperlink.

Querying Activities by End Time Period

The Start menu to the right of To provides the end of the time period options used to define which activities are displayed. To use the current time as the end of the time period in which the activities are displayed, do not make any changes to Time menu options.

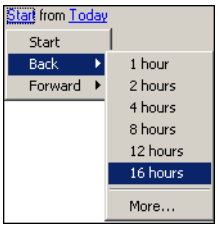
To query by the display ending time:

Step 1 On the Activity Views header, to the right of To, click **Start**.

The Start Time drop-down list displays.

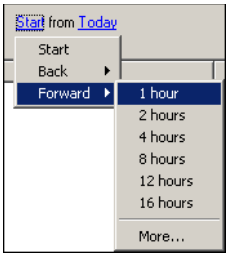
Step 2 To adjust the results for activities to display that precedes the current ending time by a defined number of hours, click **Back** and choose the appropriate number of hours.

Figure 5-8 Back Submenu



Step 3 To adjust the results for activities to display after the current ending time by a defined number of hours, click **Forward** and choose the appropriate number of hours.

Figure 5-9 Forward Submenu



The selected time displays on the End Time hyperlink.

Specifying Time Period to Offset Query

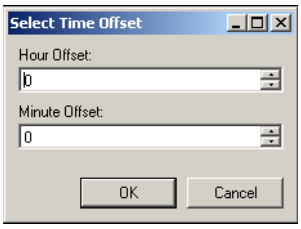
The More option on the Back and Forward sub-menus should be used when the number of hours and minutes to offset is not on the predefined list. When selected, the More option launches the Select Time Offset dialog box to enter the specific hours and minutes for the start and end time.

To query by specific time frame:

Step 1 On either the Back or Forward submenus, click **More**.

The Select Time Offset dialog box displays.

Figure 5-10 Select Time Offset Dialog Box



Step 2 Enter the following information and click **OK**:

Field	Description
Hour Offset	Specific number of hours to precede or follow the current end time To specify hours before the displayed value, select or enter a negative number.
Minute Offset	Specific number of minutes to precede or follow the current end time To specify minutes before the displayed value, select or enter a negative number.

The selected time displays on the hyperlink.

Specifying Days to Offset Query

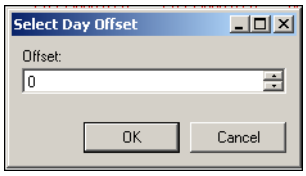
The More option on the Before today and After today sub-menus should be used when the appropriate number of days to offset is not on the predefined list. When selected, More option launches the Select Day Offset dialog box to enter a specific number of days for a start and end date.

To query by days to offset:

Step 1 From either the Before today or After today submenu, click **More**.

The Select Day Offset dialog box displays.

Figure 5-11 Select Day Offset Dialog Box



Step 2 In the Offset field, enter the number of days to precede or follow the current date and click **OK**.

The selected date displays on the hyperlink.

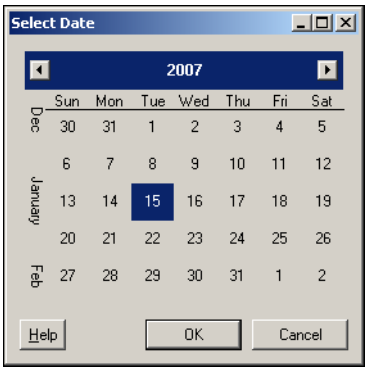
Selecting a Specific Date

To choose specific date from calendar:

Step 1 From the Start Date menu, choose **Specific Date**.

The Select Date dialog box displays.

Figure 5-12 Select Date Dialog Box



Step 2 On the Select Date dialog box, choose the appropriate date, and click **OK**.

Navigating the Current Time Period

The two navigation arrows located on each side of the Calendar tool selects the next day on the Back and Forward options on the Start Date and End Date sub-menu.

To navigate between the currently selected time:

On the Filter by Date/Time toolbar, click the appropriate navigation arrow next to the Calendar icon.

Navigation Option	Description
Back arrow	Chooses the previous day prior to the currently selected day on the Back submenu for the starting and ending dates **Example:** If *Yesterday* is currently selected, then clicking the **Back** arrow changes the display selection to *2 days before today*.
Forward arrow	Chooses the day after the currently selected day **Example:** If *Tomorrow* is currently selected, then clicking the **Forward** arrow changes the display selection to *2 days after today*

The Activity View header automatically updates the displayed time frame.

Viewing Activity Instance Properties

The activity instance properties displayed from the Activity View are display-only.

To view activity instance properties:

Step 1 On the Operations workspace, click the **Activity Views** folder.

Highlight the appropriate activity instance, right-click and choose **Properties**.

The [Activity Name] Properties display-only dialog box displays. The displayed tabs depend on the activity.

Tab	Description
General	Displays the basic information for the activity
Activity-Configuration Tab	Displays the defined properties of the activity
Activity-Results Tab	Displays any output results from the execution of the activity
Target	Indicates whether the process target was used for activity execution or overridden with a different target
Credentials	Displays the runtime user whose credentials were used to execute the activity
Knowledge Base	Displays the knowledge base article assigned to the activity
Result Handlers	Displays the condition branches defined on the workflow

Step 2 Review the properties and click **OK** to close the dialog box.

Canceling Running Processes

Process and activity instances can only be canceled from one of the views under the Activity Views folder or the bottom View Results pane on any of the Process Views. Users cannot cancel processes from the top Process results pane.

To cancel a process:

On an Activity View, highlight the appropriate process or activity instance, right-click and choose **Cancel**.

The Cancel Process dialog box displays.

CHAPTER 6

Monitoring Processes

The Operations—Process Views workspace is used to monitor the processes that are scheduled to execute, view processes that are currently running, and verify that processes have successfully completed.

The Process Views folder includes all the defined processes and their associated activity instances that are in progress, scheduled or have been completed. From this view, detailed information is provided about all the processes that have been triggered, executed adhoc, or are scheduled for execution.

Individuals can review both process and activity instances in the Process Views folders when querying the properties and status of process instances. Each Process View has two separate results panes. The top results pane displays the process instances for the selected view. This view also allows users with the appropriate rights to access the Process Editor to modify the configuration of the process, to start the process, and enable or disable the process.

The bottom results pane has functionality similar to the Activity Views and displays the process instances and the activity instances that were configured as part of the process. Display-only process instance properties can be observed from the bottom results pane, but cannot be edited or started from these views. However, running process instances can be canceled from this view.

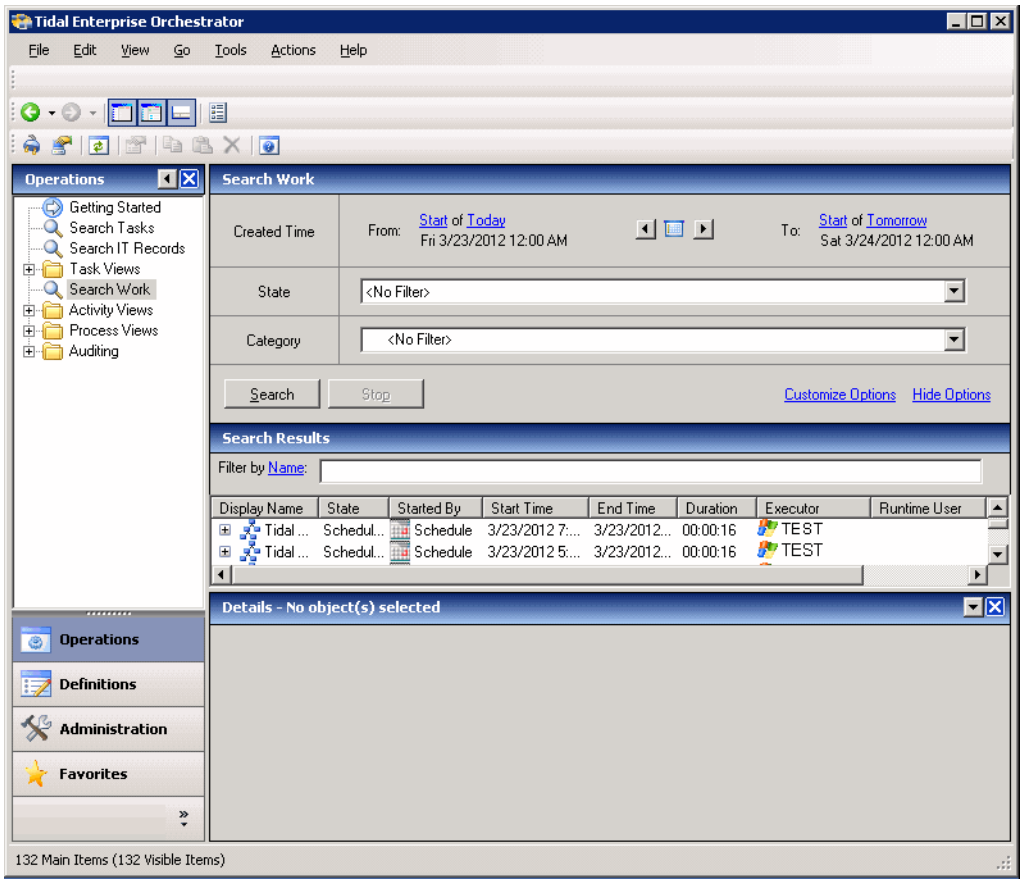
Use the following sections in this chapter for information on navigating the Processes Views in the Operations workspace as well as querying:

Searching Work

The Operations—Search Work view displays the results of the query for processes and activities based on the specified filter options. The Search Work view displays all processes and activities that are scheduled to be performed during the selected display time period.

On the Operations workspace, choose **Search Work**.

Figure 6-1 Operations Workspace—Search Work



The default information about the queried process or activity displays in the following columns:

Column	Description
Display name	Name of the process instance or activity instance that is scheduled, in progress, or completed
State	Current status of the operations activity • Succeeded • Running • Canceled • Failed (Canceled) • Failed (Not Completed)

Column	Description
Started By	User ID of the person who initiated the activity instance
Start Time	Start time of the activity
End Time	End time of the activity as it completed or failed. If the instance is in progress, 1/1/0001 12:00:00 AM is displayed.
Duration	Amount of time taken for the activity to complete
Type	Type of activity
Executor	Target where the process or activity is executing
Runtime User	Runtime user of the activity
Categories	The category to which this process has been assigned if applicable
Error	Brief description of any error that occurred
ID	Unique ID assigned to the activity instance
Description	Brief description of the process activity
Owner	Owner of the activity. This is typically the user name of the person who created the activity.
Type Description	Brief description of the type associated with the activity
Time Saved	Time taken to execute the process manually
Money Saved	Cost of manual process execution

Customizing Search Work Header

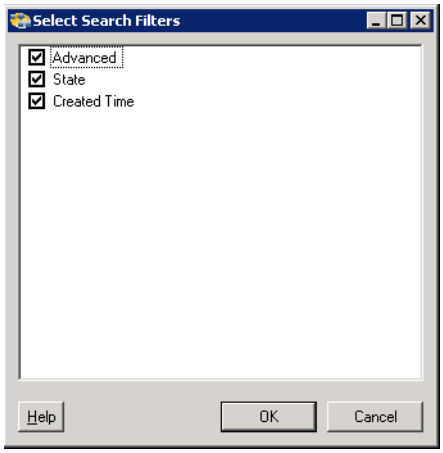
Use the Select Search Filters dialog box to customize the query header options. If the check box to the left of the option remains unchecked, then the filter option will not display on the designated Search header.

To customize the search filter options:

Step 1 On the Operations—Search Work header, click **Customize Options**.

The Select Search Filters dialog box displays.

Figure 6-2 Select Search Filters Dialog Box

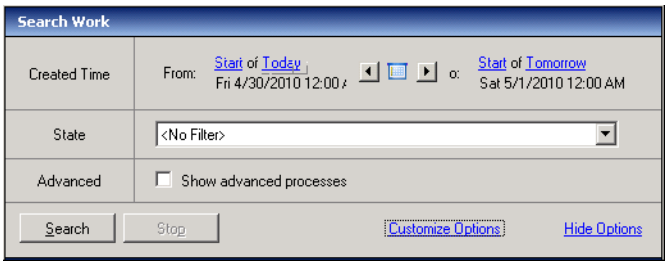


Step 2 Click the check box to the right of the appropriate option, and then click **OK**.

Filter Option	Description
Created Time	Check the check box to display the time options to determine the time period for which processes or activities to display
State	Check the check box to display the filtering option for the state of the process or activity.
Advanced	Check the check box to display the Show advanced processes check box for filtering.

The selected search filters display in the Search Work header.

Figure 6-3 Operations—Search Work Header



Query Work by Date/Time

Use the following steps to query according to when the process or activity was scheduled to run.

To query work by created time:

Step 1 On the Search Work header, to the right of Created Time, choose the appropriate time filter options to query the processes or activities. See Filtering the Activity View, page 5-5 for additional information.

Step 2 Click **Search** to begin the query.

The results display in the Search Results pane.

Query Work by State

Use the following steps to create a query according to current state of the process or activity.

To query by state:

Step 1 In the Search Work header, to the right of State, on the drop-down list, choose *one* of the following items:

- Succeeded
- Running
- Canceled
- Failed (Canceled)
- Failed (Not Completed)

Step 2 Click **Search** to begin the query by the selected state of completion.

The results display in the Search Results pane.

Viewing Process View Information

The Operations—Process View folders display all processes that have been started, scheduled to start, started by a trigger, or started ad hoc. Each Process view display can be filtered to display by the name, category, or column view.

This section provides instructions on viewing the information displayed in the Process Views. For additional information on defining or modifying processes, see the *Cisco Tidal Enterprise Orchestrator Reference Guide*.

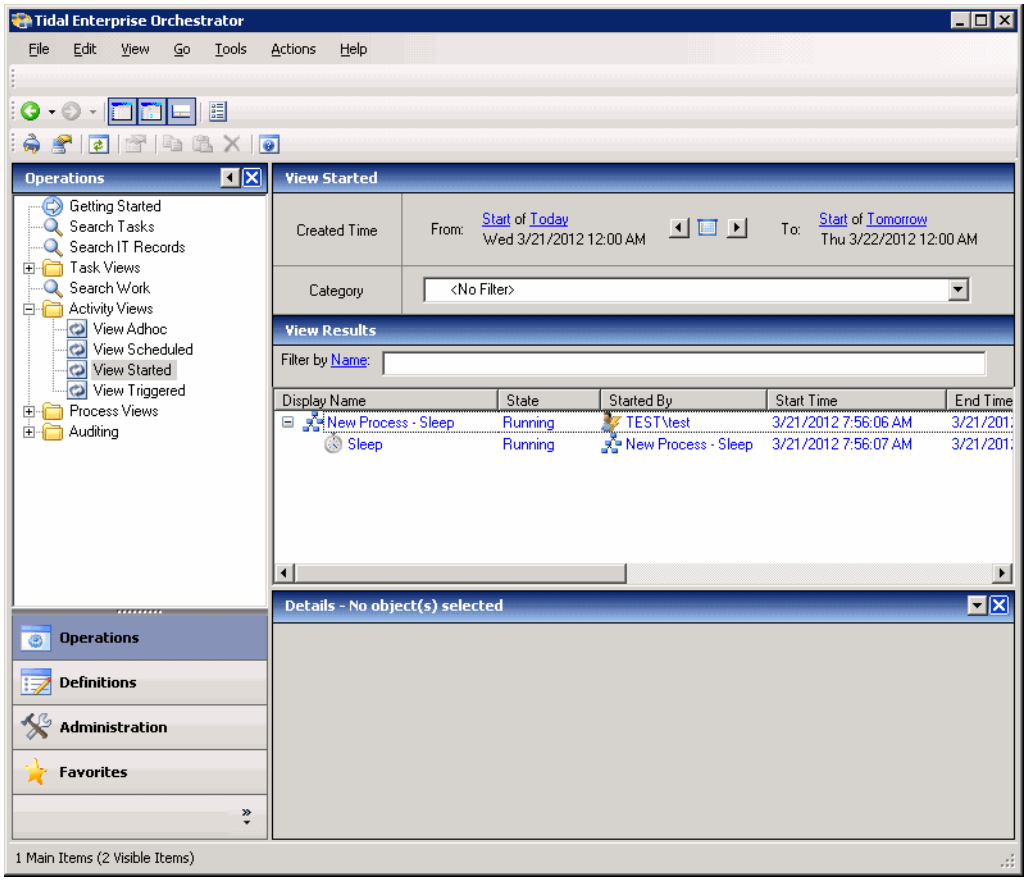
Displaying Process Views

From this view, detailed information is provided about the processes that are in TEO.

To access the Process View folders:

Step 1 On the Operations workspace, choose **Process View**.

Figure 6-4 Operations Workspace—Process Views Folder



Step 2 To access detailed information about an process view, expand the Process Views folder, and choose *one* of the following items:

Process View	Description
View Adhoc	Displays all process or activity instances that were executed manually and are in progress, have successfully completed, or failed
View All	Displays all process, activity, and scheduled process and activity instances that are in progress, have successfully completed, or failed
View Started	Displays all process or activity instances that have been executed
View Scheduled	Displays all process or activity instances that are in progress, have successfully completed, or failed and are also scheduled to execute
View Triggered	Displays all process or activity instances that were executed (manually or automatically) and are in progress, have successfully completed, or failed

Information about each process can be displayed in the following columns:

Column	Description
Display Name	Name assigned to the process
Triggers	Name of the trigger associated with the process
Enabled	Specifies whether the process is enabled (*True*) or disabled (*False*). A disabled process is unavailable for execution.
Target	The specific environment where the process runs
Runtime User	The name of the runtime user record assigned to the process. The runtime user record stores information about the user security context and passes this information to the adapters when running certain activities.
Categories	Category to which the process is assigned
Owner	The owner of the process. This is typically the creator of the process.
Last Modified Time	Time the process was last modified
Last Modified By	User name of the person who last modified the process
Id	Unique identification number of the process
Description	Brief overview of process
Time Saved	Amount of time saved by running the process and workflow
Created Time	Time the process was created
Created By	User or object that created the process

Column	Description
Automation Pack	Name of the automation pack
Customizable	Indicates the customization setting for the object in the automation pack

Step 3 On the Activity Views subheader, choose the appropriate category and time period to display.

Note For information on the modifying the time period, see Filtering the Activity View, page 5-5.

The selected view displays in the Results pane. Certain columns display information about a process or activity instance by default. To view the description for the activity instance columns, see Viewing Activity Views Information, page 5-2.

Viewing the Process Workflow Only

A graphical view of a process workflow can be viewed from the Process Views area after a process has been launched. The Workflow pane is a canvas located in the center portion of the Process Viewer.

To view the workflow:

Choose any of the Process Views to display in the Results pane, and use one of the following methods:

- Highlight the appropriate process instance, on the Process Views Details pane, click the **Workflow** tab.
- Double-click the process instance to launch the Process Viewer. The Workflow pane displays the graphical workflow of the process.

Viewing the Process Instance Properties

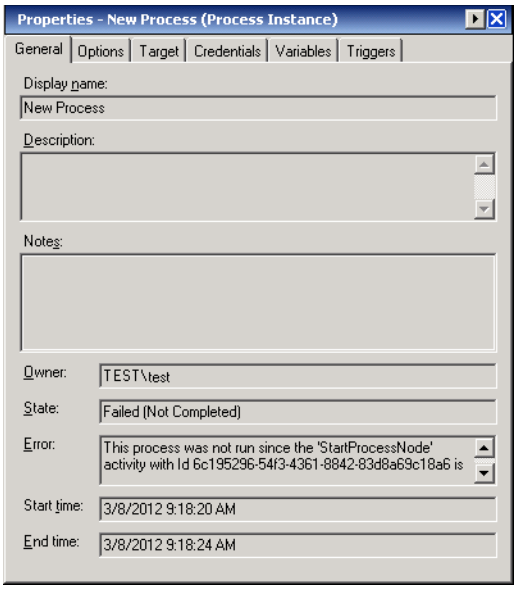
The Process Properties pane is located on the right side of the Process Viewer and displays the properties for the selected process instance. The information displayed on the Process Viewer is display-only.

Step 1 Choose any of the four process views to display the process instances in the Results pane.

Step 2 From the Process Instance Results pane, double-click the appropriate process instance.

The Process Viewer displays.

Figure 6-5 Process Viewer—Process Properties Pane



Step 3 Click the appropriate tab to view the properties pane to define the process properties.

Property Page	Description
General	Specifies general information about the process
Options	Specifies execution and storage options about the process
Target	Specify which target or target group the process can execute.
Credentials	Specifies the runtime user for the process
Variables	Used to store or pass a value between executions of a process or between steps within a single process
Triggers	Used to determine how or when the process will be executed

Starting a Process

With the appropriate rights, a user can start any enabled process displayed on a Process View. Only one process can be manually started at a time. A process can display in the Process View, but it must be enabled before it can be executed.

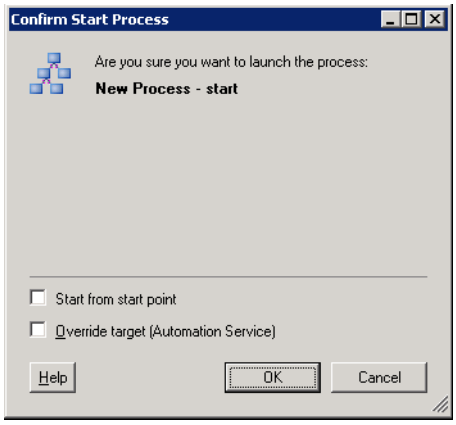
Note When a process is started manually, all conditions and triggers included in the process definition will be overridden.

To start a process:

Step 1 On a process view, highlight the appropriate process, right-click and choose **Start Process**.

The Confirm Start Process dialog box displays.

Figure 6-6 Confirm Start Process Dialog Box



Step 2 If the process has any input variables, verify the variables associated with the process in the Parameters table. To update the variable, highlight the variable, and click **Edit** to modify the value.

Step 3 To start a process from a specific starting point, check the **Start from start point** check box and then select the appropriate starting point from the drop-down list. The first activity after the specified starting point will run first.

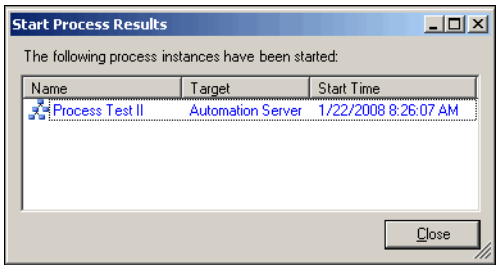
Step 4 To specify a target different from the defined process target, check the **Override target (Target name)** check box and select a target from the drop-down list.

Note To create a new target for this process, click **New**. For additional information, see the *Cisco Tidal Enterprise Orchestrator Reference Guide*.

Step 5 Click **OK** to confirm.

The Start Process Results dialog box displays and the process begins executing.

Figure 6-7 Start Process Results Dialog Box



Note To view the process workflow on the Process Viewer, double-click the process instance.

Step 6 Click **Close** to return to the Console.

CHAPTER 7

Monitoring Tasks

The Operations workspace provides users with the ability to query information about the user interaction and IT record tasks based on the specified query. These queries display the tasks that are created in the Operations view and the tasks that are created as a result of the task activities defined in the Process Editor. The purpose of this section is to provide the steps on querying task information and what is displayed in the results.

This chapter does not provide any steps on how to create or modify tasks in the Operations view or define tasks in the Process Editor. For information on creating tasks, see the *Cisco Tidal Enterprise Orchestrator Reference Guide*.

The tasks that display in the following workspace depend on the

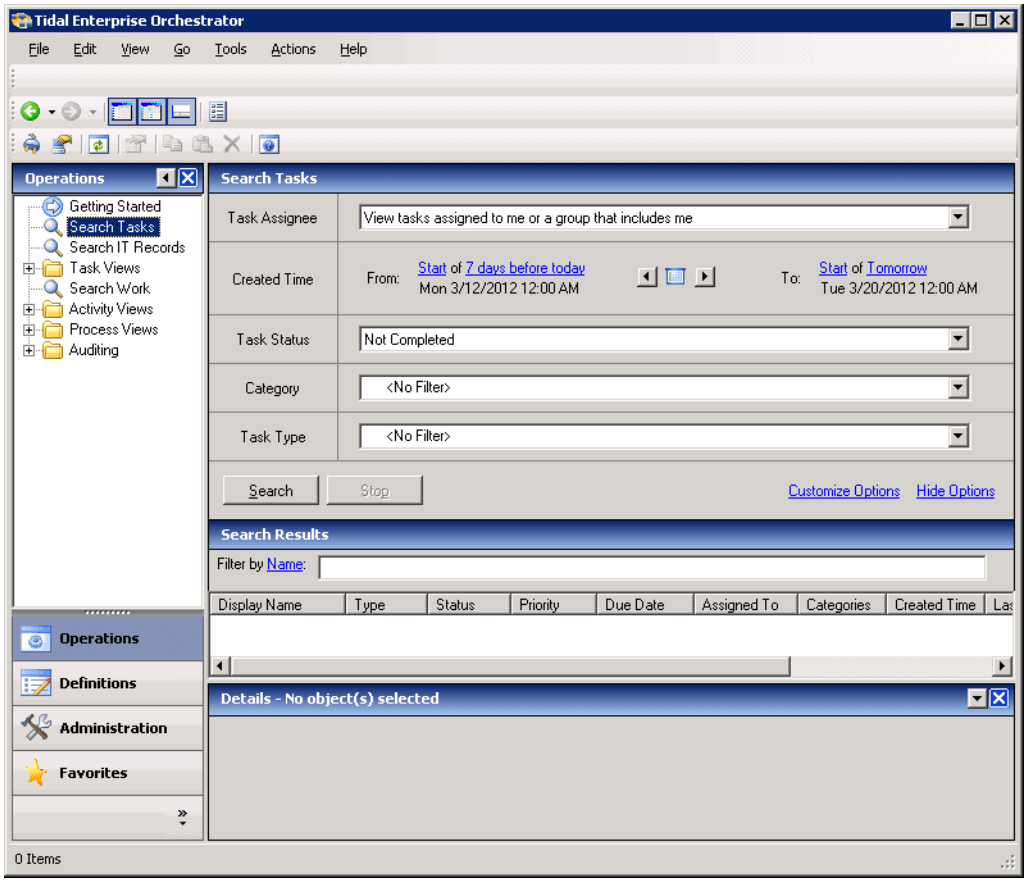
Use the following sections in this chapter for information on searching the history of tasks:

- Searching Tasks, page 7-2
- Searching IT Records, page 7-7
- Viewing Tasks View Information, page 7-9

Searching Tasks

The Operations—Search Tasks view displays all tasks created or defined in TEO. The results of the query based on the specified filter options. Users can search by the assignee, category, task type, and status.

Figure 7-1 Operations Workspace—Search Tasks



The Operations—Search Tasks view displays the default information about the queried task in the following columns:

Column	Description
Display Name	Name of the task
Type	Type of task
Priority	Priority of the task
Status	Status of the task
Due Date	Date the task should be completed
Assigned to	User name of the person assigned to the task
Categories	Category assigned to task alert
Created Time	Time at which the task view was accessed
Last Modified Time	The date and time the contents were last modified

Column	Description
Last Modified By	The object or user name that last modified the contents
Id	Task identifier
Notes	Notes associated with the task
Owner	User name of the person who assigned the task
Type Description	Brief description of the type of task
Expiration Date	Date the task is set to expire
Completed Time	Time the task was completed
Completed By	User who completed the task
Produced by	User who generated the alert or task
Related Tasks	Related tasks associated with the task
Parameters	Parameters of the task
Created By	User or object that created the task view

TEO Tasks

The following table displays the tasks that are provided by TEO.

Tasks	Description
Alert	Alerts reflect potential problems that a user may want to investigate and possibly diagnose the problem
Approval Request	Specifies the message and choices for the assignee who is approving the task
Change Request	Requests a modification to the configuration of an object or system
Guided Operation	Details the steps a user takes to complete an assigned task
Incident	Task requires an operator to take action in order to resolve an issue
Input Request	Task requires input from an individual or group
Review	Task assigns a document for review

Customizing Search Tasks Header

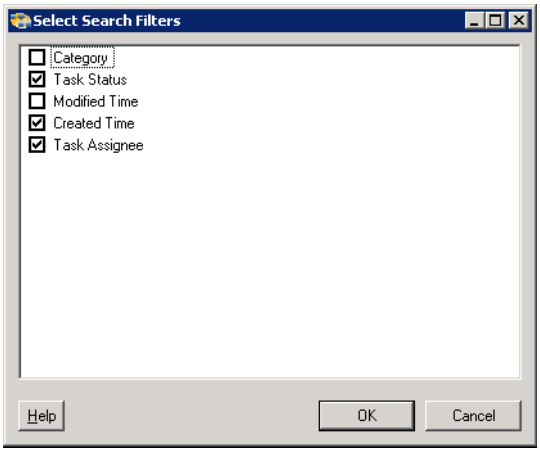
Use the Select Search Filters dialog box to customize the query header options. If the check box to the left of the option remains unchecked, then the filter option will not display on the designated Search header.

To customize the search filter options:

Step 1 On the Operations—Search Tasks header, click **Customize Options**.

The Select Search Filters dialog box displays.

Figure 7-2 Select Search Filters Dialog Box

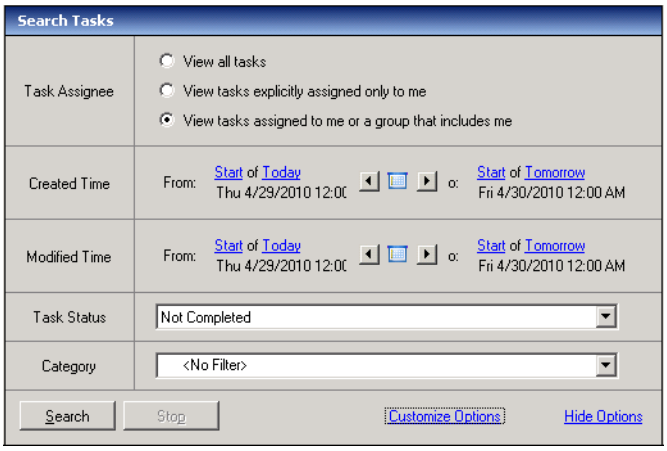


Step 2 Check the check box to the right of the appropriate option, and then click **OK**.

Filter Option	Description
Task assignee	Check the check box to display the list of task assignee options on the header.
Created Time	Check the check box to display the time options to determine which task to display
Modified Time	Check the check box to display the time options to determine the time frame for which tasks to display.
Task Status	Check the check box to display the available statuses to filter.
Category	Check the check box to display the categories available for filtering.

The selected search filters display in the Search Tasks header.

Figure 7-3 Operations—Search Tasks Header



Query Tasks by Assignee

When performing a search query, users can search tasks by using all the default filters or they can modify the query according to the individual filters. Use the following steps to query tasks according to the assignee.

To query tasks by assignee:

Step 1 In the Search Tasks header, to the right of Task Assignee, choose *one* of the following options:

Task View	Description
View all tasks	Choose this option to query all tasks in progress.
View tasks explicitly assigned only to me	Choose this option to query all tasks assigned to the logged on user.
View tasks assigned to me or a group that includes me	Choose this option to query all tasks assigned to the logged in user and any groups containing the user.

Step 2 Click **Search** to query the tasks by the selected assignee.

The results display in the Search Results pane.

Query Tasks by Date/Time

Use the following steps to query tasks according to when the task was created.

To query tasks by created time:

Step 1 In the Search Tasks header, to the right of Created Time, choose the appropriate time filter options to query the tasks. See Filtering the Activity View, page 5-5 for additional information.

Step 2 Click **Search** to query the tasks by the selected time filter options.

The results display in the Search Results pane.

Note These steps can also be used for querying tasks according to their modified date or time.

Query Tasks by Status

Use the following steps to query tasks according to current state of the task.

To query tasks by status:

Step 1 In the Search Tasks header, to the right of Task Status, from the drop-down list, choose *one* of the following options:

- Complete
- Not Complete

Step 2 Click **Search** to query the tasks by the selected state of completion.

The results display in the Search Results pane.

Filtering Search Results

Use the Filter pane in the Tasks Views header to display selected tasks in the results pane. The hyperlinked Filter by drop-down list in the Tasks Views header contains several options which can be used for filtering tasks.

The default selection is <*No Filter*>. After the initial change to the selection, the last selected item displays.

To filter task search results:

Step 1 In the Search Tasks header, to the right of Category, from the drop-down list, choose the appropriate category to query:

Option	Description
Category	Choose the appropriate category from the list
Name	Enter the name of the task

Option	Description
Description	Enter the description or class for the task
Type	Displays list of all task types
Status	Choose from the list of available statuses • Completed • Not completed

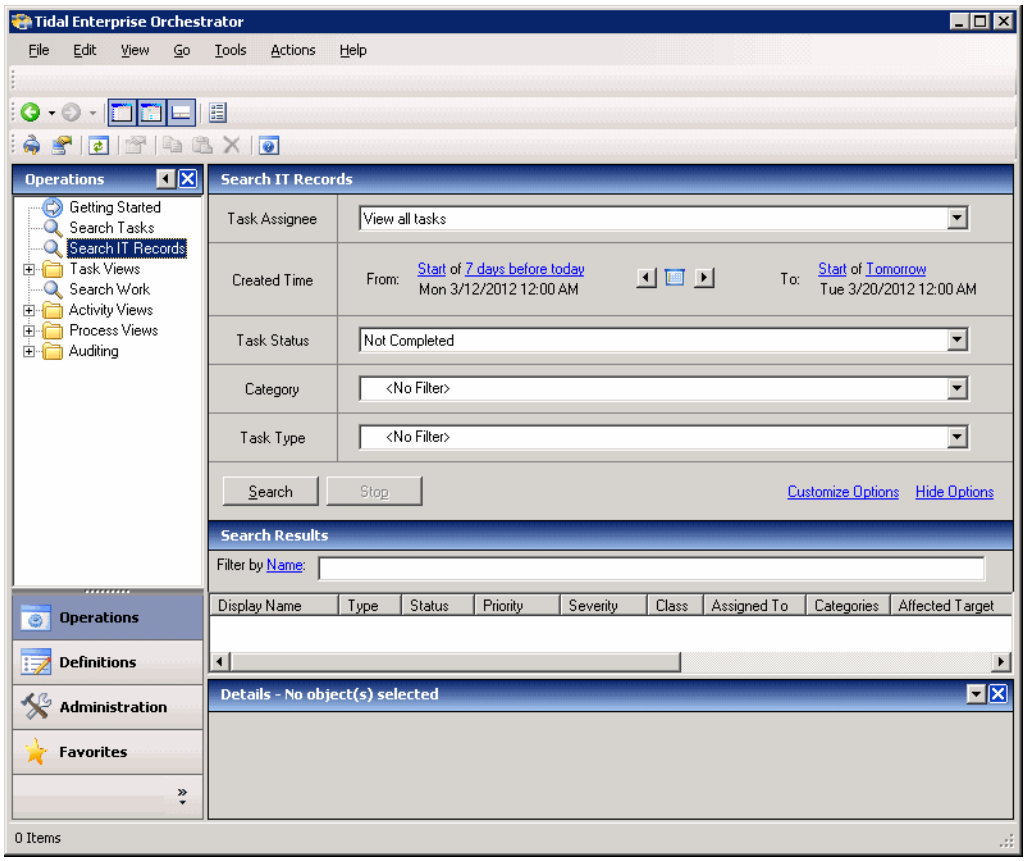
Step 2 Click **Search** to query the tasks by the selected category.

The results display in the Search Results pane.

Searching IT Records

The Operations—Search IT Records view displays only the alerts, incidents, and change requests created in TEO. The results of the query are based on the specified filter options. Users can search by the assignee, category, task type, and status.

Figure 7-4 Operations Workspace—Search IT Records



The Operations—Search IT Records view displays the default information about the queried task in the following columns:

Column	Description
Display Name	Name of the task
Type	Type of task
Priority	Priority of the task
Status	Status of the task
Due Date	Date the task should be completed
Assigned to	User name of the person assigned to the task
Categories	Category assigned to task alert
Created Time	Time at which the task view was accessed
Last Modified Time	The date and time the contents were last modified
Last Modified By	The object or user name that last modified the contents
Id	Task identifier
Notes	Notes associated with the task
Owner	User name of the person who assigned the task
Type Description	Brief description of the type of task
Expiration Date	Date the task is set to expire
Completed Time	Time the task was completed
Completed By	User who completed the task
Produced by	User who generated the alert or task
Related Tasks	Related tasks associated with the task
Parameters	Parameters of the task
Created By	User or object that created the task view

Viewing Tasks View Information

The Operations—Tasks View displays all task activities and tasks that have been assigned to a specific user or group. Tasks that have been defined in the Process Editor and are run as part of an executed process will display in the Operations—Activities View similar to other activities. The tasks display can be filtered to display by category, task type, and status. The user can determine which task view to display.

This section provides instructions on viewing the information displayed in the Tasks View. For additional information on creating or modifying tasks, see the *Cisco Tidal Enterprise Orchestrator Reference Guide*.

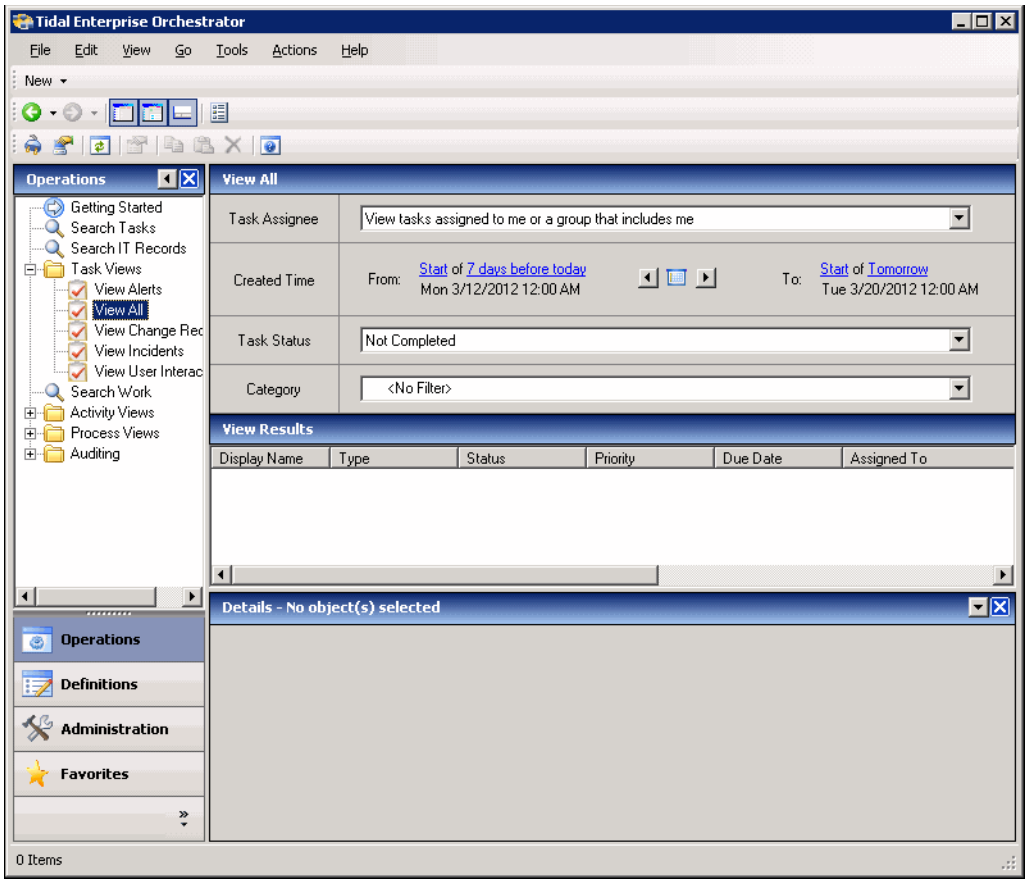
Displaying Tasks Views

From this view, detailed information is provided about all the alerts, incidents, and other tasks that are assigned, in progress, or have been completed. Users with the appropriate security rights can create and modify tasks from this view.

Step 1 On the Operations workspace, choose **Task Views**.

Figure 7-5 Operations Workspace—Tasks—View All

To access a task view:



Step 2 On the Operations workspace, choose **Task Views**.

The Results pane displays.

Step 3 To access detailed information about a task view, from the Tasks Views folder, choose *one* of the following items:

Task View	Description
View Alerts	Displays all task alerts
View All	Displays all tasks that are assigned, in progress, or have successfully completed
View Change Requests	Displays all task change requests
View Incidents	Displays all task incidents
View User Interactions	Displays all tasks that require user action

Step 4 On the Tasks Views Header, choose the appropriate filtering options to display.

The selected view displays in the Results pane. The Results pane displays the following default summary information for each of the four task views.

Column	Description
Display Name	Name of the task
Type	Type of task
Priority	Priority of the task
Status	Status of the task
Due Date	Date the task should be completed
Class	String or numeric value indicating the class of the alert or incident
Assigned to	User name of the person assigned to the task
Related Tasks	Related tasks associated with the task
Categories	Category assigned to task alert
Target	Name of ITIL configuration item (IT component) which the alert or incident describes
Target CI	Name of the system on which the condition was detected
Created Time	Time at which the task view was accessed
Last Modified Time	The date and time the contents were last modified
Last Modified By	The object or user name that last modified the contents
Id	Task identifier
Notes	Notes associated with the task
Owner	User name of the person who assigned the task
Type Description	Brief description of the type of task
Expiration Date	Date the task is set to expire
Completed Time	Time the task was completed
Completed Date	Date task was completed

Column	Description
Produced by	User who generated the alert or task
Parameters	Parameters of the task
Affected Organizations	Organizations that consume the IT service affected by the alert or incident
Affected Services	IT Service affected by the alert or incident
Configuration Item	Name of the configuration item (IT component) to which the alert pertains.
Automation Summary	File path for the related automation summary
Created By	User or object that created the task view

Viewing Task Properties

Use the following steps to view the task properties for a specified tasks. See Common Task Properties, page 7-12 for additional information about the properties displayed in the individual tasks.

To view task properties:

Step 1 On the appropriate Operations—Task View, highlight the appropriate task, right-click and choose **Properties**.

The Properties dialog box displays.

Tab	Description
General	Displays the basic information for the task including the name of the user who submitted the task and the current status of the task.
Task-Specific Tab	Displays the properties of the selected task. See TEO Tasks, page 7-3 for the list of task in the TEO system.
Affects	Displays the organizations and configuration item elements of the alerts and incidents.
Assignment	Displays the assignment properties for the task.
Notification	Displays the recipients to be notified about the task.
Parameters	Displays the parameters included in the task.
Notes	Displays any notes related to the task in the text box.
Categories	Displays the categories in which the tasks are assigned.
Related	Displays any tasks assigned to the task as a related or duplicated task.

Tab	Description
External	Displays the external incident information to support the synchronization between TEO and the system the customer is using.
History	Displays the history of actions taken against the task.

Step 2 Review the properties and click **OK** to close the dialog box.

Common Task Properties

The following properties are associated with the tasks managed in TEO. The properties that display depend on the selected task. These properties can be updated using the [Update] activities as well as published in a SNMP trap.

Task Property	Description
Affected Configuration Item	Name of the configuration item (IT component) to which the alert pertains. For example, the name of a database server which failed or the name of a specific job which failed. A configuration item is defined in ITIL as any component that needs to be managed in order to deliver an IT Service. The true source of the CI is in the CMDB, so the Configuration Item properties reference a CMDB entry • Configuration Item Type—Type of ITIL configuration item (IT component) which the alert describes. For example, the type of the specific application element which failed such as a server, database, host, or user. • Description—Brief description of the ITIL configuration item (IT component) for the alert or incident • Object Key—ID for the specific record in the CMDB which contains the configuration item • Object Name—Name for the specific record in the CMDB which contains the target configuration item • Source—Name for the specific record in the CMDB which contains the configuration item.
Affected Organizations	Organizations that consume the IT service affected by the alert or incident
Affected Services	IT Service affected by the alert or incident

Task Property	Description
Affected Target Configuration Item	Name of ITIL configuration item (IT component) which the alert or incident describes • Configuration Item Type—Type of ITIL configuration item (IT component) which the alert describes • Description—Brief description of the ITIL configuration item (IT component) for the alert or incident • Object Key—ID for the specific record in the CMDB which contains the target configuration item • Object Name—Name for the specific record in the CMDB which contains the target configuration item • Source—Name of the specific CMDB containing the target configuration item
Affects Configuration Item	Name of the configuration item (IT component) to which the alert pertains.
Affects Target Configuration Item	Name of the system on which the condition was detected
Alert class	Numeric value indicating the class of the alert
Assignees	User name(s) or group assigned to the task
Automation Summary	File path for the related automation summary
Completed Time	Indicates the time period the task was completed • Local Time • Universal Time
Description	Brief description of the task
Due Date	Indicates the time period the task should be resolved • Local Time • Universal Time
Duplicate Task ID	Task ID of the duplicated alert
Expiration Date	Indicates the time period the task should expire • Local Time • Universal Time
Name	Display name of the task
Notes	Any notes related to the task
Parameter	Any parameters associated with a specific task
Priority	Indicates the priority of the task • Low • Medium • High
Process Properties	For the list of process columns, refer to Viewing Process View Information, page 3-35.

Task Property	Description
Process Target Properties	For information on the target properties, see Viewing Activity Information, page 3-21.
Severity	Indicates the severity of the task • Low • Normal • High
Related Task IDs	Task ID of the related task
Task Status	Indicates status of the task. The statuses displayed depend on the currently open task. **Note** See Common Task Statuses, page 7-14 for additional information.
Task URL	URL of the task. This URL can be used to bring up the Web Console for viewing and editing the task properties. For example, this is the URL which could be placed in an email to notify the user of the task, enabling them to connect to the Web Console to view the task.
Web Form XSL File Name	Name of the source XML text file to transform the task XML into HTML for viewing in the Web Console

Common Task Statuses

The following statuses are associated with the tasks managed in TEO. The statuses that display depend on the currently open task.

Task Status	Description
Assigned	Task is assigned to a user
Bypassed	A step within the operation has been skipped
Canceled	Task has been canceled by the user
Closed	Task is closed
Completed	Task is completed and has been either approved or declined
Duplicate	Indicates whether the alert is a duplicate
Expired	Task due date is expired, but still needs to be completed
In Progress	User is working on the task
New	Indicates task is new
Not Resolved	Indicates task is not resolved
Past Due	Task is past due and still needs to be completed
Pending	Task is in a user's assigned task list
Resolved	Indicates task is resolved
Waiting	Waiting for more information

CHAPTER 8

Monitoring Auditing Information

This section provides the steps to use to access the system logs provided by TEO and accessing the reports provided by TEO in the SQL Server Reporting Services, Business Objects Reports.

The Auditing View displays the system logs for system events that have occurred within Tidal Enterprise Orchestrator. The Report Database feature offers the ability to run reports for viewing process execution history and to audit process changes.

The Report Database feature offers the ability to run reports for viewing process execution history and to audit task and process changes. Although TEO supports SQL Server Reporting Services, Business Objects Reports is the recommended reporting tool for TEO reports.

The following sections provide instruction on viewing the auditing information provided by TEO:

Accessing Auditing Logs

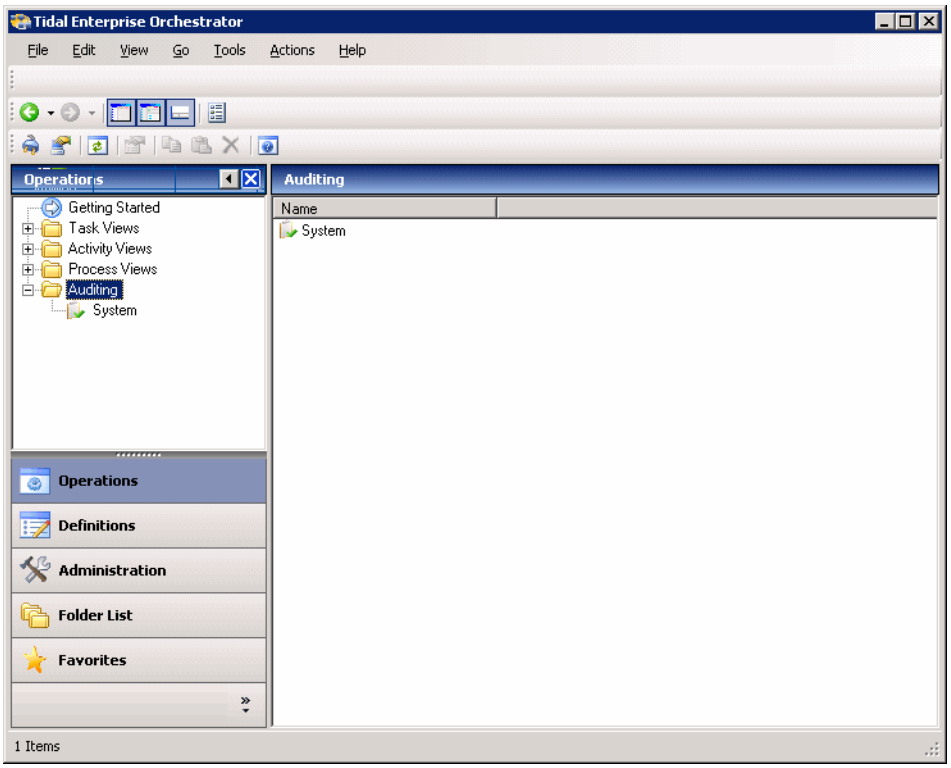
To access the auditing logs:

Step 1 On the Operations workspace, choose Auditing.

The Results pane displays the following default summary information for each of the auditing views:

Column	Description
Name	Name of the audit view
Description	Brief description of the audit view

Figure 8-1 Operations—Auditing View



Step 2 To access detailed information about the system event history, under the Auditing folder, choose **System** to display system event activity, such as start and shut down time and error occurrences.

The selected view displays in the Results pane.

The System Log Results pane contains the following column headings which show information about each system log entry.

Column	Description
Type	Type of event logged by the system
Created By	System-generated record, such as an error condition, or the user name of the person who initiated the process
Created Time	Date and time the event occurred

Column	Description
Event	Number associated with a specific condition on the server for the event
Description	Brief description of the state of a process or activity instance when the event was logged
Category	Numeric ID assigned to the category for a process instance

Viewing System Log Instance Properties

The activity instance properties displayed from the Auditing View are display-only.

To view auditing instance properties:

Step 1 On the Auditing folder, choose the **System** view.

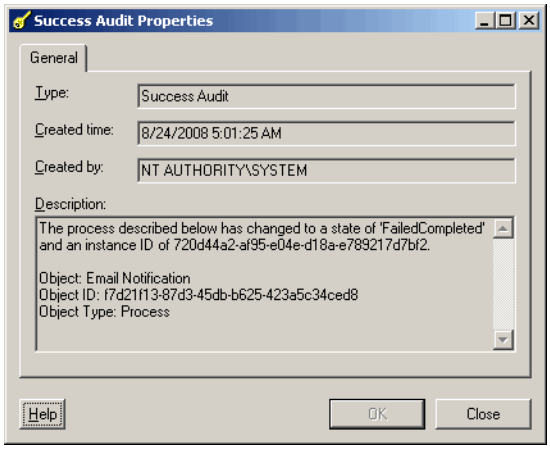
Step 2 In the Auditing Log Results pane, use *one* of the following methods to launch the Audit Log Properties dialog box:

Step 3 Highlight the appropriate activity, and use *one* of the following methods:

- Double-click the appropriate audit log entry.
- Highlight the appropriate log entry, right-click and choose **Properties**.
- Highlight the appropriate log entry, navigate to the Details pane, click the hyperlink of any item on the General tab.

The display-only Audit Log Properties dialog box displays detailed log entry information.

Figure 8-2 Audit Properties Dialog Box



The following information displays about the auditing properties.

Field	Description
Type	Type of event logged by the system. For example, a *Success Audit*, an *Error*, or an *Information* message
Created By	System-generated record, such as an error condition, or the user name of the person who initiated the process
Created Time	Date and time the event occurred
Category	Category name for a process instance
Message ID	Number associated with a specific condition on the server for the event
Message	Brief message of the event associated with the Message ID
Description	Brief description of the event

Step 4 Click **OK** to close the properties dialog box.

Viewing Core Reports

The following section lists the Core reports that can be accessed from SQL Server Reporting Services and Business Objects Reports. See Accessing SQL Server Reporting Services Reports, page 8-9 and Accessing Reports in Business Objects InfoView, page 8-10 for information on how to access the report. For information on setting up the reports, see the *Cisco TEO Installation and Administration Guide*.

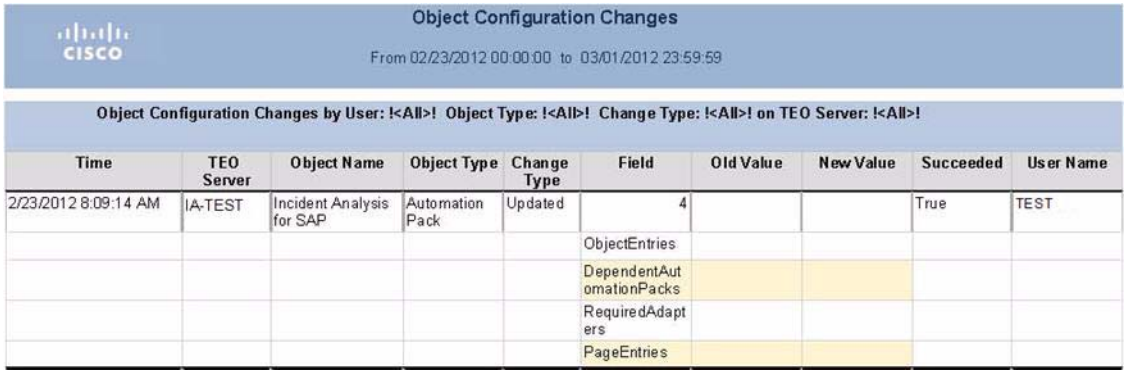
Auditing Reports

The following section provides an overview of the Core auditing reports provided by TEO.

Configuration Audit Report

Use this report to identify changes to the process definitions during a specific date range and the user who made the changes.

Figure 8-3 Core Configuration Audit Report



Time	TEO Server	Object Name	Object Type	Change Type	Field	Old Value	New Value	Succeeded	User Name
2/23/2012 8:09:14 AM	IA-TEST	Incident Analysis for SAP	Automation Pack	Updated	4			True	TEST
					ObjectEntries				
					DependentAutomationPacks				
					RequiredAdapters				
					PageEntries				

Process Audit Report

Use this report to view the status of all process instances that were run during a specific date range.

Figure 8-4 Core Process Audit Report

Process Audit

From 03/01/2012 00:00:00 to 03/01/2012 23:59:59

Process: !<All>! executed by User: !<All>! on Target: !<All>! with Start Type: !<All>! Completion Status: !<All>! on TEO Server: !<All>!

Start Time	TEO Server	Process Name	Status	Start Type	Runtime User	Started By	Owner	Target	D
3/1/2012 12:00:07 AM	IA-TEST	Work Process Analysis	Succeeded	Trigger	user	user	TEST	Connection	

Task Audit Report

Use this report to view the status of all tasks that were run during a specific date range.

Figure 8-5 Core Task Audit Report

Task Audit

Completed Time From 02/29/2012 00:00:00 to 03/01/2012 23

Task: !<All>! in Process: !<All>! completedd by User: !<All>! with Task Type: !<All>! on TEO ServTask: !<All>! in Process: !<All>! completedd by User: !<All>! with Task Type: !<All>! on TEO Server: !<All>!

Date Created	Date Completed	TEO Server	Task Type	Subject	Process Name	Status	Completer	Elapsed Time	Notes
2/29/2012 12:01:14 AM	2/29/2012 12:01:14 AM	IA-TEST	Alert	CPU Queue	CPU Load Average	Completed	NT AUTHORITY \SYSTEM	0	

Operations Reports

The following section provides an overview of the Core operation reports provided by TEO.

All TEO Incidents Report

Displays a history of all TEO Monitoring incidents that meet the specified incident level. Click the link in the Time column to view detailed information about the incident.

Figure 8-6 Core All TEO Incidents Reports

TEO Incidents

2/28/2012 12:27:14 PM thru 3/2/2012 12:27:14 PM

Time	Target	Target CI	Incident Name	Severity	Automation Summary	Short Description
3/1/2012 12:16:42 PM	R47		RFC ST03 Call Failed	Medium	No Summary	No statistical data available Process: Daily Average Workload: Background
3/1/2012 12:16:42 PM	XB1		RFC ST03 Call Failed	Medium	No Summary	No statistical data available Process: Daily Average Workload: Background
3/1/2012 12:13:53 PM	R47	sap_R47	Dialog Response Time	Medium	Automation Summary	TEO detected high 'Dialog Response Time' 6784

All TEO Incident Details Report

This report displays details about the TEO incidents generated in the TEO Incidents report.

Figure 8-7 Core All TEO Incident Details Report

TEO Incident Detail

Time of Incident:	3/1/2012 12:13:53 PM	**Automation Summary**	Automation Summary
Incident Level:	Medium		
Incident Identifier:	20120301.141353405		
TEO Server:	IA-TEST		
Incident Name:	Dialog Response Time		

Description:

TEO detected high 'Dialog Response Time' 6784 msec on server sap_R47 at 3/1/2012 1:50 PM (UTC-06:00).

Incident Parameters:

Parameter 1:		**Parameter 6:**	
Parameter 2:		**Parameter 7:**	
Parameter 3:		**Parameter 8:**	
Parameter 4:		**Parameter 9:**	
Parameter 5:		**Parameter 10:**	

Process Weekly Summary Report

Use this report to view the overall status of process instances that were run during a specific date range.

Figure 8-8 Core Process Weekly Summary Report

Process Instance Summary

From 02/28/2012 00:00:00 to 02/29/2012 23:59:59

Process: !<All>! executed on Target: !<All>! with Start Type: !<All>! Completion Status: !<All>! on TEO Server: !<All>!

Start Time	TEO Server	Target	Process Name	Record Count	Process Count (Failed)	Process Count (Adhoc)	Process Count (Trigger)	Average Duration (sec)	Total Cost Saving ($)
2/28/2012 12:00:00 AM				1012	16	0	1012	59.05	37,920.00
	IA-TEST			974	16	0	974	61.00	37,920.00
		IA-TEST		10	0	0	10	12.84	0.00
			Tidal Self Monitoring - Collect Persistence Queues Performance Counters	4	0	0	4	16.89	0.00
			Tidal Self Monitoring - Collect TEO Service Performance Counters	4	0	0	4	21.53	0.00
			Tidal Self Monitoring - Monitor TEO Service Performance Counters Thresholds	2	0	0	2	0.11	0.00
		DB2 ABAP Connection		106	0	0	106	4.18	4,240.00
			Daily Average Workload: Update2	1	0	0	1	1.45	40.00
			CPU Utilization Performance Metrics	6	0	0	6	3.30	240.00

ROI Report

Use this report to view the return on investment (ROI) during a specific date range.

Figure 8-9 Core ROI Report

Cost Saving Details	
Date Time	Cost Saving ($)
2/27/2012 12:00:00 AM	887,520.00
2/28/2012 12:00:00 AM	884,320.00
2/29/2012 12:00:00 AM	900,240.00
3/1/2012 12:00:00 AM	407,200.00

Accessing SQL Server Reporting Services Reports

TEO provides database reports required by managers and auditors as well as reports required by developers of process automation. In general, the data that is provided for these diverse audiences is the same. What differs is the granularity and level of aggregation of this data and the specific data that is the focus of a given report.

Access to any automation summary is controlled and available only to authorized users. Automation summary reports are accessed through a web browser using Microsoft SQL Server Reporting Services.

Users are able to access reports from a web browser using SQL Server Reporting Services.

To access reports from your web browser:

Step 1 Open your web browser and in the Address bar, enter the following address:

```
http://<ReportServer>/Reports
```

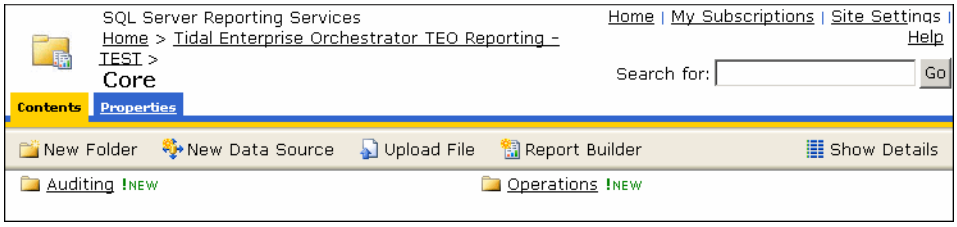
where `<ReportServer>` is the name of the server hosting the reports.

The SQL Reporting Services Report Manager web page displays.

Step 2 Click the **Tidal Enterprise Orchestrator TEO Reporting—<Report Server>** hyperlink.

The TEO Reporting Database Report Manager home page displays.

Figure 8-10 Tidal Enterprise Orchestrator TEO Reporting <Report Server> Home



Step 3 Click **Core** to view the Core TEO report folders.

The available reports and a brief description of the information that is generated by each report is displayed.

Step 4 Click the report name to enter the search criteria and generate the report.

Accessing Reports in Business Objects InfoView

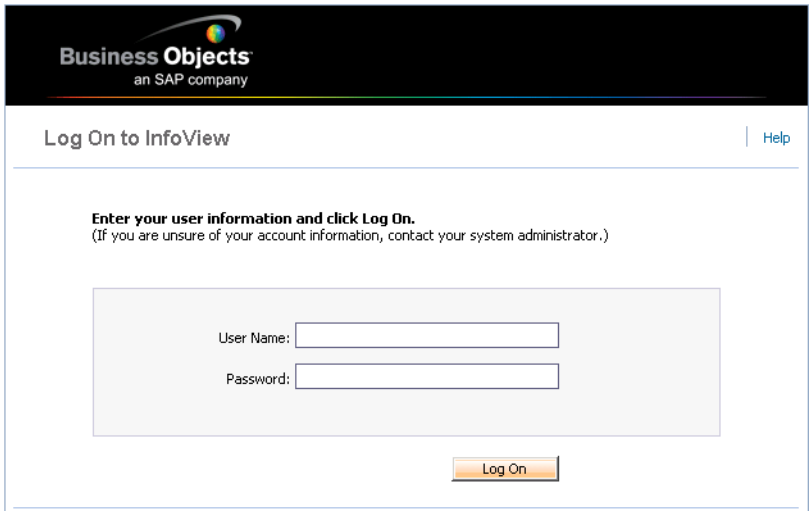
Using the recommended policy for Microsoft Windows may cause the Business Objects InfoView web interface to be blocked due to the enhanced security configuration. The security error dialog box will advise the user to add the site to the list of trusted web sites.

Use the following steps to access reports in Business Objects InfoView.

Step 1 In a web browser, in the Address bar, type the URL to the Business Objects InfoView website.

The Business Objects InfoView Login page opens.

Figure 8-11 Business Objects InfoView—Login Page



Step 2 Enter the appropriate credentials to access the BO reports.

Step 3 Click **Log On** to continue.

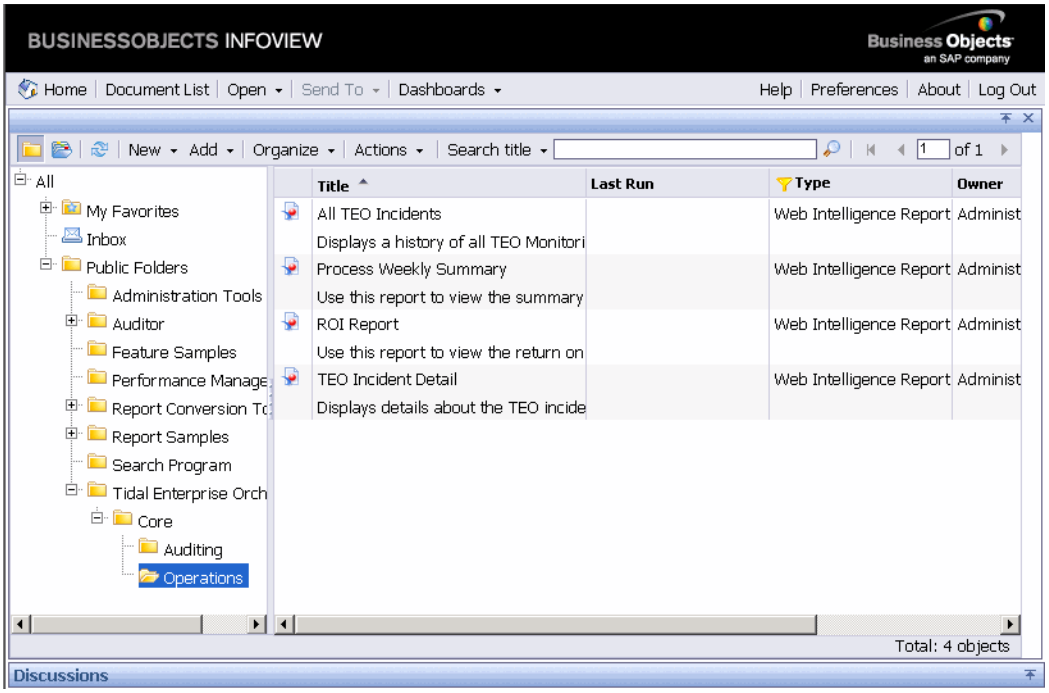
The Business Objects InfoView Dashboard page displays.

Step 4 On the Dashboard page, click **Document List**.

The Document List Navigation page display.

Step 5 Expand **Public Folders > Tidal Enterprise Orchestrator > Core** to access the Core reports.

Figure 8-12 Business Objects InfoView—Core Reports View



Step 6 Double-click the appropriate report to view report details.