



Cisco TEO Adapter Guide for Microsoft Active Directory

Release 2.3
April 2012

Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
<http://www.cisco.com>
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883

Text Part Number: OL-24567-02

THE SPECIFICATIONS AND INFORMATION REGARDING THE PRODUCTS IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL STATEMENTS, INFORMATION, AND RECOMMENDATIONS IN THIS MANUAL ARE BELIEVED TO BE ACCURATE BUT ARE PRESENTED WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. USERS MUST TAKE FULL RESPONSIBILITY FOR THEIR APPLICATION OF ANY PRODUCTS.

THE SOFTWARE LICENSE AND LIMITED WARRANTY FOR THE ACCOMPANYING PRODUCT ARE SET FORTH IN THE INFORMATION PACKET THAT SHIPPED WITH THE PRODUCT AND ARE INCORPORATED HEREIN BY THIS REFERENCE. IF YOU ARE UNABLE TO LOCATE THE SOFTWARE LICENSE OR LIMITED WARRANTY, CONTACT YOUR CISCO REPRESENTATIVE FOR A COPY.

The Cisco implementation of TCP header compression is an adaptation of a program developed by the University of California, Berkeley (UCB) as part of UCB's public domain version of the UNIX operating system. All rights reserved. Copyright © 1981, Regents of the University of California.

NOTWITHSTANDING ANY OTHER WARRANTY HEREIN, ALL DOCUMENT FILES AND SOFTWARE OF THESE SUPPLIERS ARE PROVIDED "AS IS" WITH ALL FAULTS. CISCO AND THE ABOVE-NAMED SUPPLIERS DISCLAIM ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THOSE OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OR ARISING FROM A COURSE OF DEALING, USAGE, OR TRADE PRACTICE.

IN NO EVENT SHALL CISCO OR ITS SUPPLIERS BE LIABLE FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR LOSS OR DAMAGE TO DATA ARISING OUT OF THE USE OR INABILITY TO USE THIS MANUAL, EVEN IF CISCO OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: www.cisco.com/go/trademarks. Third-party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1110R)

Any Internet Protocol (IP) addresses and phone numbers used in this document are not intended to be actual addresses and phone numbers. Any examples, command display output, network topology diagrams, and other figures included in the document are shown for illustrative purposes only. Any use of actual IP addresses or phone numbers in illustrative content is unintentional and coincidental.

Cisco TEO Adapter Guide for Microsoft Active Directory
© 2011–2012 Cisco Systems, Inc. All rights reserved.



CONTENTS

Preface vii

- Organization vii
- Conventions viii
- Product Documentation ix
 - Documentation Formats ix
 - Guides and Release Notes ix
 - Online Help ix
 - Open Source License Acknowledgements ix
- Obtaining Documentation and Submitting a Service Request ix

CHAPTER 1

Understanding Active Directory Adapter 1-1

- Accessing Active Directory Adapter Properties 1-2
- Viewing Active Directory Adapter-Supported Objects 1-3
- Viewing Active Directory Adapter History 1-4

CHAPTER 2

Managing Active Directory Targets 2-1

- Accessing Definitions—Targets 2-2
 - Viewing Target Properties 2-3
 - Target Algorithms 2-4
 - Common Regular Expressions 2-4
- Defining an Active Directory Domain Target 2-5
- Managing Target Definitions 2-7
 - Enabling a Target 2-7
 - Disabling a Target 2-8
 - Modifying Targets 2-8
 - Defining Target Criteria 2-8
 - Comparison Operators 2-10
 - Inserting a Target Variable Reference 2-11
 - Creating a Copy of a Target 2-12
 - Deleting a Target 2-13
 - Viewing Member Of Properties 2-13
 - Viewing Extended Properties 2-14
 - Modifying Extended Property Values 2-14
 - Viewing Used By Properties 2-15

Viewing Targets History 2-15

CHAPTER 3

Managing Active Directory Target Groups 3-1

- Accessing Definitions—Target Groups 3-2
 - Details Pane 3-3
 - Target Groups Descriptions 3-3
 - Viewing Target Group Properties 3-4
- Defining an Active Directory Group 3-5
- Defining an Active Directory Organizational Unit Target Group 3-7
- Managing Target Group Definitions 3-9
 - Enabling a Target Group 3-9
 - Disabling a Target Group 3-10
 - Modifying Target Groups 3-10
 - Selecting an Active Directory Object 3-10
 - Creating a Copy of a Target Group 3-12
 - Deleting a Target Group 3-12
 - Viewing Member Properties 3-13
 - Modifying Target Group Member List 3-13
 - Viewing Used By Properties 3-14
 - Viewing Target Group History 3-14

CHAPTER 4

Managing Runtime Users 4-1

- Definitions—Runtime Users Overview 4-2
 - Accessing Definitions—Runtime users 4-2
 - Actions Menu and Toolbar 4-3
 - Runtime User Details Pane 4-3
- Defining a Windows User 4-4
- Managing Runtime User Definitions 4-6
 - Modifying a Runtime User Record 4-6
 - Deleting a Runtime User 4-6
 - Viewing Used By Properties 4-6
 - Viewing Runtime User History 4-7

CHAPTER 5

Using Active Directory Activities 5-1

- Active Directory Adapter Activities 5-2
- Defining the Create User Account Activity 5-2
- Defining the Resolve Email Activity 5-6
- Defining the Set User Password Activity 5-8

Managing Activity Definitions	5-10
Modifying an Active Directory Activity	5-10
Inserting Activity Variable References	5-11
Viewing Activity Instance Information	5-12
Viewing Activity Status	5-13
Status Indicators	5-13
Color Indicators	5-13
Viewing Activity Instance Properties	5-13
Viewing Resolve Email Address Results	5-15

INDEX



Preface

Revised: April 2012, OL-24567-02

Tidal™ Enterprise Orchestrator is designed to enhance the management and administration of several objects in the Microsoft Active Directory. The Active Directory Adapter provides the ability to automate common administrative tasks, such as adding users and groups, managing printers, and setting permissions for network resources.

This guide provides instructions for viewing Active Directory adapter properties, defining Active Directory targets and activities, instructions for completing the property pages for each specific activity, and instructions on viewing the activity results. The information is organized into the following chapters.

Organization

This guide includes the following sections:

Chapter 1	Understanding Active Directory Adapter	Provides information on the Active Directory adapter properties
Chapter 2	Managing Runtime Users	Provides information on creating and managing runtime user accounts
Chapter 3	Managing Active Directory Targets	Provides information on viewing defined targets that are available for execution by a process
Chapter 4	Managing Active Directory Target Groups	Provides the specific groups of environments that are appropriate that are appropriate for processes, activities, or triggers to execute
Chapter 5	Using Active Directory Activities	Provides instructions for defining Active Directory activities and instructions for completing the property pages for the activity

Conventions

This guide uses the following conventions:

Convention	Indication
bold font	Commands and keywords and user—entered text appear in bold font .
<i>italic font</i>	Document titles, new or emphasized terms, and arguments for which you supply values are in <i>italic font</i> .
[]	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.
<code>courier font</code>	Terminal sessions and information the system displays appear in <code>courier font</code> .
< >	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

Understanding Active Directory Adapter

The Active Directory adapter properties dialog box displays general information about the functionality provided by the adapter, version number, release date and install date, any prerequisites, and the history of changes made to the adapter.

This chapter provides instructions for viewing Active Directory adapter properties.

- [Accessing Active Directory Adapter Properties, page 1-2](#)
- [Viewing Active Directory Adapter-Supported Objects, page 1-3](#)
- [Viewing Active Directory Adapter History, page 1-4](#)

Accessing Active Directory Adapter Properties

Users can access the Active Directory adapter properties from the Administration—Adapters view in the console.

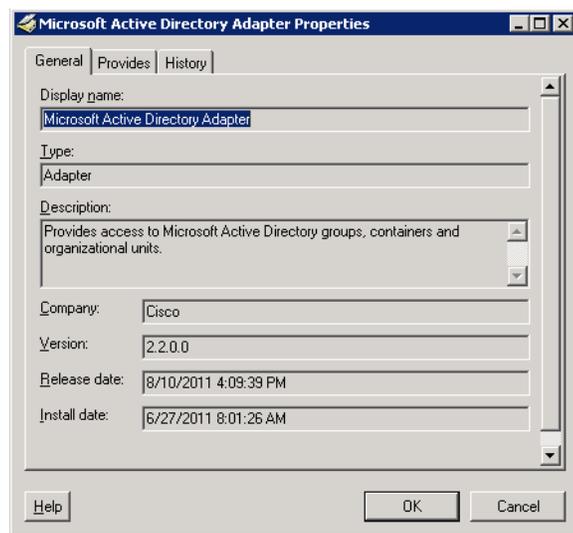
To view adapter properties:

Step 1 On the Administration—Adapters view, highlight **Microsoft Active Directory Adapter**, and use one of the following methods:

- Right-click and choose **Properties**.
- or-
- On the Details pane, click the hyperlink name on any of the tabs.

The Microsoft Active Directory Adapter Properties dialog box displays.

Figure 1-1 Microsoft Active Directory Adapter Properties Dialog Box—General Tab



The General tab displays the following information about the adapter:

Field	Description
Name	Name of the adapter
Type	Object type
Description	Brief overview of the adapter
Company	Name of company that created or supplied the adapter
Version	Version number of the adapter
Release date	Date and time the adapter was available in the product
Install date	Date and time the adapter was installed

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

Viewing Active Directory Adapter-Supported Objects

Use the Provides tab to view the name and type of component for each object the Active Directory adapter supports.

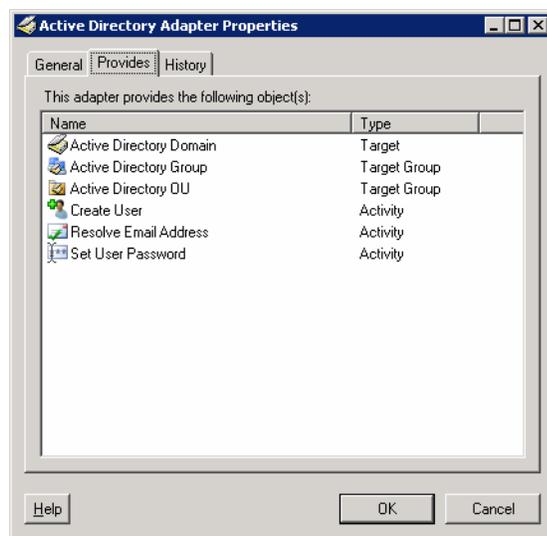
To view adapter-provided objects:

Step 1 On the Administration—Adapters view, highlight **Active Directory Adapter**, right-click and select **Properties**.

The Active Directory Adapter Properties dialog box displays.

Step 2 Click the **Provides** tab to view the functionality that is provided by the adapter.

Figure 1-2 Active Directory Adapter Properties Dialog Box—Provides Tab



Step 3 Review the list of objects and click **OK** to close the dialog box.

Viewing Active Directory Adapter History

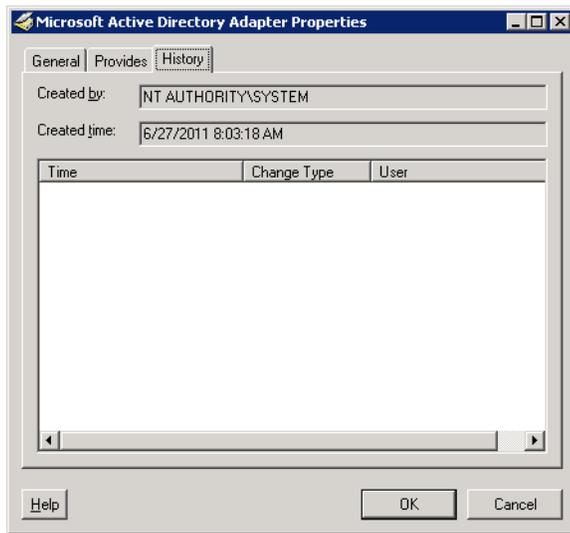
Use the History tab to view a history of changes that have been made to the adapter.

To view adapter history:

- Step 1** In the Administration—Adapters view, highlight **Active Directory Adapter**, right-click and choose **Properties**.

The Active Directory Adapter Properties dialog box displays.

Figure 1-3 Active Directory Adapter Properties Dialog Box—History Tab



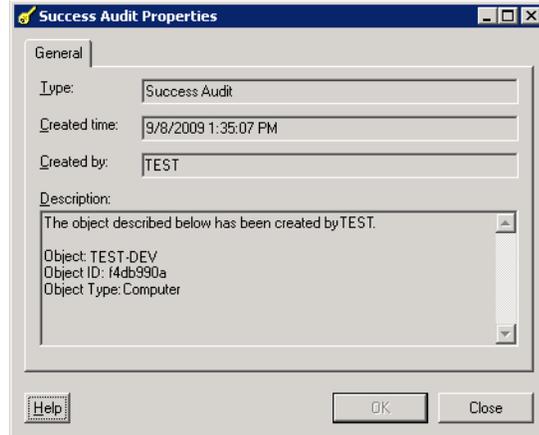
- Step 2** Click the **History** tab to view the changes made to the adapter.

Column	Description
Created by	The user name of the person who created the object
Created time	The date and time the object was created
Time	The date and time the action occurred
Change Type	The action that occurred
User	The user name or group that performed the action
Description	Information about the action that was performed

- Step 3** To view the audit history for a specific action, highlight the appropriate object, right-click and choose **Properties**.

The Audit Properties dialog box displays.

Figure 1-4 Success Audit Properties Dialog Box



- Step 4** Review the display-only properties dialog box for information about system-related events that occurred and their status.

Field	Description
Type	Type of event logged by the system <ul style="list-style-type: none"> • Success Audit • Failure Audit
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
Description	Brief description of the event

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



CHAPTER 2

Managing Active Directory Targets

The Targets feature provides the specific environments that are appropriate for processes, activities, or triggers to execute. 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 an Active Directory domain that has been created in Tidal Enterprise Orchestrator.

This chapter provides instructions on managing Active Directory adapter targets.

- [Accessing Definitions—Targets, page 2-2](#)
- [Defining an Active Directory Domain Target, page 2-5](#)
- [Managing Target Definitions, page 2-7](#)

Accessing Definitions—Targets

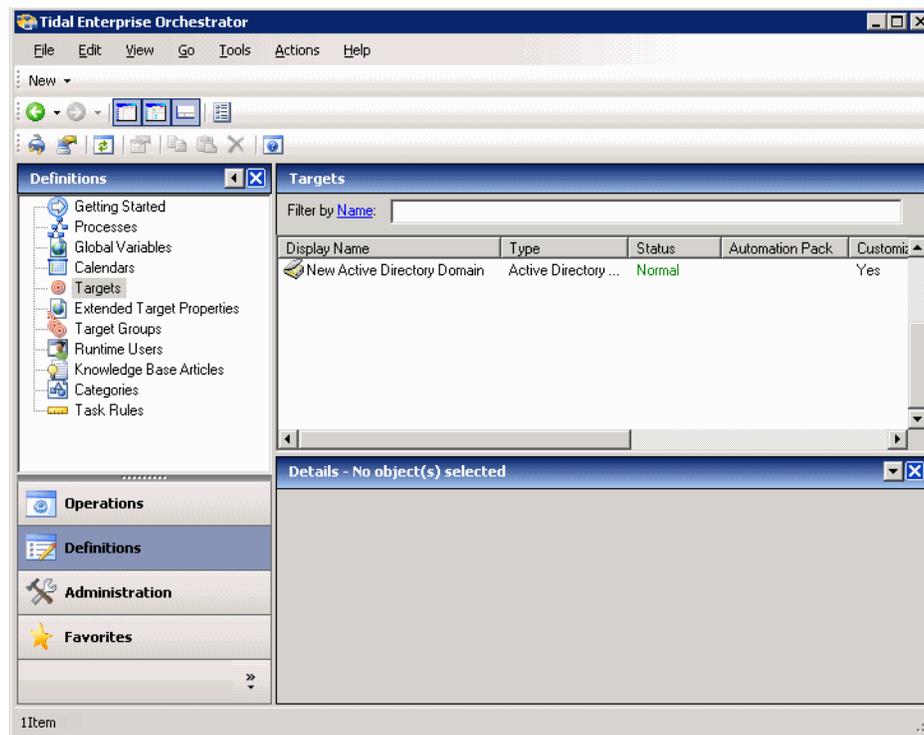
The Definitions—Targets displays all the existing defined targets. You also use this view to create new targets, modify the properties of a target, and delete targets.

To access the Targets view:

On the Definitions workspace, select **Targets**.

The Results pane displays.

Figure 2-1 Definitions—Targets



Information about the target can be displayed in the following columns:

Column	Description
Name	The name assigned to the target
Enabled	Indicates whether the target is enabled (<i>True</i>) or disabled (<i>False</i>). A disabled target is unavailable for execution.
Type	The type of target based on the associated adapter

Column	Description
Status	Indicates the status of the target. The status is used to determine whether the target is available or is not available for process or activity execution. <ul style="list-style-type: none"> 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
Automation Pack	Name of the automation pack associated with the target
Customizable	Indicates the customization setting for the object in the automation pack
Owner	The user name of the person who created the target
Last Modified Time	The time the target was last modified
Last Modified By	The user name of the person who last modified the target
Id	The unique identification number of the target definition
Description	A brief description of the target
Type Description	A brief overview of the target type
Created Time	The time at which the target was created
Created By	The user name of the person who created the target

**Note**

For information on adding, removing, or sorting column headings on the display, see the *Cisco Tidal Enterprise Orchestrator Reference Guide*.

Viewing Target Properties

To view target properties:

Step 1 On the Definitions—Targets view, highlight the appropriate target, and use *one* of the following methods:

- Right-click and choose **Properties**.
- or-
- On the Details pane, click the hyperlink name on any of the tabs.

The Properties dialog box displays.

Step 2 Click the appropriate tab to review the properties

Tab	Description
General	Displays general information about the target
Domain	Displays the domain connection properties for the defined target
Member Of	Displays the target groups associated with the defined targets
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.
Provides	Displays the objects used by the target
History	Displays when the target was created or modified. The column also displays audit log entries that are relevant to the target.

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

Target Algorithms

The following table displays the list of target algorithms that may display for an activity.

Algorithm	Description
Choose the target with the specified name	Select this radio button to run the process on the member of the group specified in the Name to match text field.
Choose all target that satisfies the specified criteria	Select this radio button to execute the process on all targets defined by the criteria specified in the Target Selection dialog box. See Defining Target Criteria, page 2-9 .

Common Regular Expressions

The following table describes are commonly used special characters that display according to the selected activity.

Character	Description
*	Zero or more
.	Any single character
+	One or more
^	Beginning of line
\$	End of line
<	Beginning of word
>	End of word

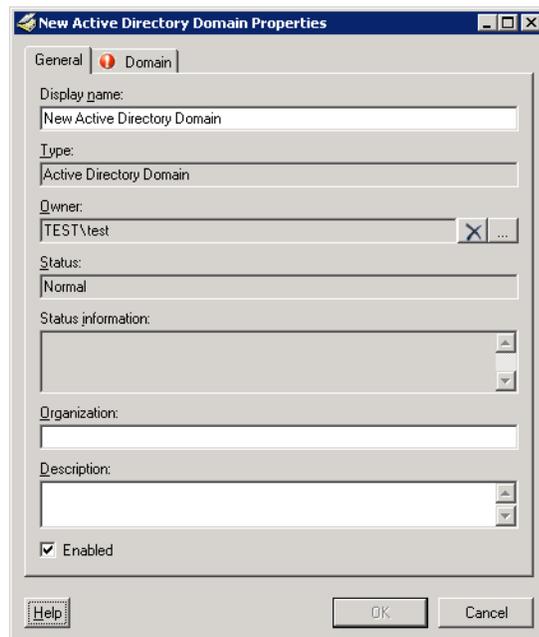
Character	Description
\n	Line break
[]	Any one character in the set
[^]	Any one character not in the set
	Or
\	Escape Special Character
{}	Tag expression
:l	C/C++ identifier
:q	Quoted string
:z	Integer
:b	Space or tab

Defining an Active Directory Domain Target

Use the Active Directory Domain target to specify the connection information for an Active Directory domain. Active Directory domains are used in defining Active Directory Organizational Units and Computer Groups.

- Step 1** On Definitions—Targets, right-click and choose **New > Active Directory Domain**.
The New Active Directory Domain Properties dialog box displays.

Figure 2-2 New Active Directory Domain 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	<i>Display-only</i> . 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.
Status	Status of the target <ul style="list-style-type: none"> 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

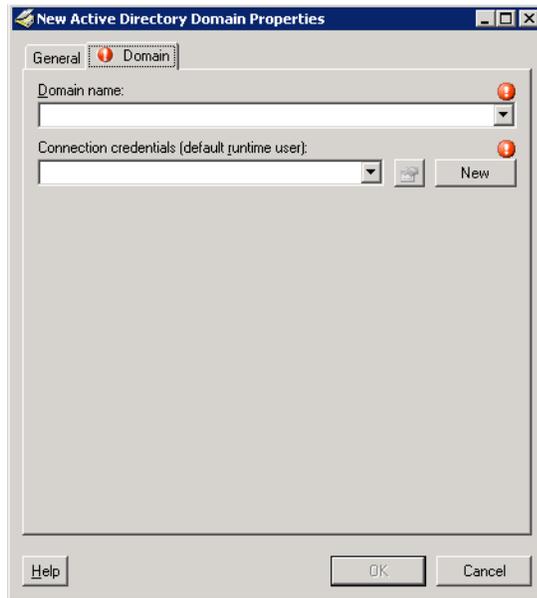
Step 3 Click the **Domain** tab to continue.



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 Active Directory Domain Properties Dialog Box—Domain Tab



- Step 4** On the Domain tab, enter the appropriate target information to specify the connection information for the appropriate Active Directory domain.

Field	Description
Domain name	The name of the domain where the target resides. Select the domain name from the drop-down list.
Use credentials of the following 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 Runtime User account. For additional information, see Chapter 4, “Managing Runtime Users.”

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

Managing Target Definitions

Use the Definitions—Targets view to modify and review target information. This view can be used to perform the following functions:

- Enable/Disable targets
- Modify target properties
- Review the objects in the product that use the target
- Review a history of changes made to the target

- Delete the target

Enabling a Target

A target is enabled by default. If a target is manually disabled, the target must be enabled before it is available for execution.

To enable a target:

On the Definitions—Target view, highlight the target, and then use *one* of the following methods:

- On the Results pane, right-click and choose **Enable**.
- or-
- On the Details pane, select the **Click here to enable** option.

The Enabled column on the Results pane changes to *True*. If necessary, click **Refresh**  to update the view.

Disabling a Target

Disabling a target prevents the object from being available for execution. The disabled target is not removed from the list of targets in the in the Definitions—Target Results pane.

To disable a target:

On the Definitions—Target view, highlight the target, and then use *one* of the following methods:

- In the Results pane, right-click and choose **Disable**.
- or-
- In the Details pane, select the **Click here to disable** option.

The Enabled column on the Results pane changes to *False*. If necessary, click the **Refresh** tool to update the view.

Modifying Targets

Use the Definitions—Targets view to modify the configured targets. After the initial creation, not all fields are available for updating.

To modify a target:

-
- Step 1** On the Definitions—Targets view, highlight the appropriate target, right-click and choose **Properties**. The [Target] Properties dialog box displays.
- Step 2** Modify the information on the target property tabs, as necessary.
- Step 3** Click **OK** to save the changes and close the dialog box.
-

Defining Target Criteria

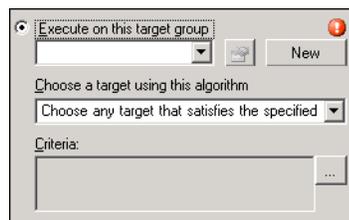
When configuring target properties for a process or activity, users can specify whether the target group should be executed based on when specific criteria is matched.

Use the Target Selection Criteria dialog box to specify the matching criteria for the selected target group.

To define the target selection criteria:

- Step 1** On the Target tab, select the **Execute on this target group** radio button, and then select the appropriate target group from the drop-down list.

Figure 2-4 Target Tab—Execute on this target group Section

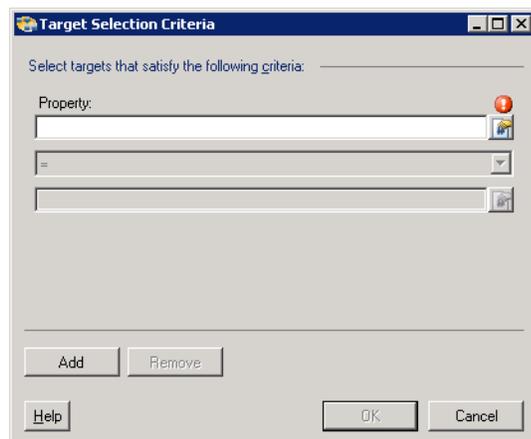


- Step 2** From the Choose a target using this algorithm drop-down list, select **Choose the target that satisfies the specified criteria**.

- Step 3** On the Criteria box, click **Browse**.

The Target Selection Criteria dialog box displays.

Figure 2-5 Target Selection Criteria Dialog Box



Step 4 On the Properties pane, specify the following information, as necessary:

Field	Description
Text field	Select the appropriate operator to be used to evaluate the expression. Choose the appropriate property to match within the target. Click the Reference tool to select the variable from the Insert Variable Reference dialog box. See Inserting a Target Variable Reference, page 2-12 .
Operators	The displayed operators depend on the selected property. Note For information on the displayed operators, see Comparison Operators, page 2-11 .
Value	Enter the appropriate value for the target

Step 5 To modify the list of Properties pane containing target criteria, click one of the following buttons:

Button	Description
Add	Click this button to a new Properties pane to complete with criteria for the target.
Remove	Click this button to remove the selected Properties pane in the display

Step 6 Click **OK** to return to the Target tab.

The defined criteria displays in the display-only box.

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
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

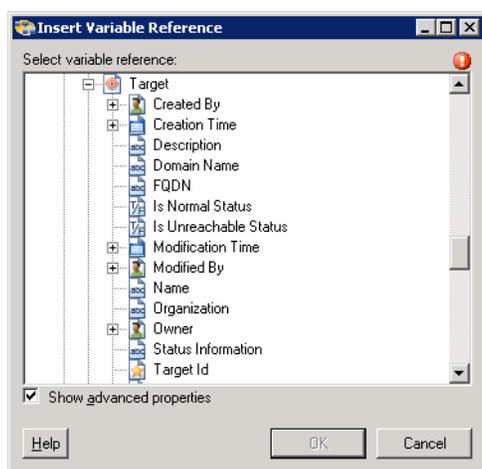
Inserting a Target Variable Reference

The Reference  icon to the right of a text field indicates that the field can be populated by referencing a defined variable or the property of another activity or process. Use the Insert Variable Reference dialog box to select a defined variable or reference an object to populate a field. The OK button does not activate until a valid property or variable is selected.

To insert a target variable reference:

- Step 1** To the right of a field on a property page, click the **Reference** tool.
The Insert Variable Reference dialog box displays.

Figure 2-6 Insert Variable Reference Dialog Box



- Step 2** Check the **Show Advanced** check box to display all items that are available for referencing.
If the check box is not checked, then only the most commonly-used items are displayed for activities, processes or events.



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** Click the **Target Expand (+)** to display the reference objects for the target.
- Step 4** From the list of displayed objects, select the appropriate property.

Reference Variable	Description
Name	Display name of the target
Created by	User name or the owner of the target
Creation Time	The date and time the target was created
Modified by	User name of the individual who modified the target
Modification Time	The date and time the target was modified
Description	Description of the target
Type	Type of target

Reference Variable	Description
Is Normal Status	Status is normal and indicates that there are no known problems with this target
Is Unreachable Status	Status is unreachable which indicates that no known problems with this target
Status Information	Detailed information regarding the target status and the reasons for target being unreachable
Target ID	ID number assigned to the target
Organization	Name of the company which supports the target
Owner	The user name of the person who created the target
Properties	Extended target properties for a specific target type
Domain Name	The name of the domain where the target resides.
FQDN	Fully-qualified domain name specifying the exact location of the domain

Step 5 Click **OK** to add the selected reference variable to the related text field.

Creating a Copy of a Target

The copy option is used when there is an existing target that contains properties that can be used for defining a new target without creating a completely new target. The following steps may not be available for all targets.

To create a copy a target:

-
- Step 1** On the Definitions—Targets view, highlight the appropriate target, right-click and choose **Copy**.
 - Step 2** On the Results pane, right-click and choose **Paste**.
A copy of the defined target is pasted into the Results pane.
 - Step 3** To rename the copied target or other properties, right-click and choose **Properties**.
Modify the target name, as appropriate, and click **OK** to close the dialog box.
-

Deleting a Target

Use the Definitions—Target view to delete targets that are no longer used. Before deleting a target, access the properties, and click the **Used By** tab to view where objects are being referenced by the target. This ensures that deleting the target does not affect any processes or activities. If there are any entries in the Used By tab, the deletion will fail.

To delete a target:

-
- Step 1** On the Definitions—Targets view, highlight the appropriate target, right-click and choose **Delete**. The Confirm Delete dialog box displays.
- Step 2** Click **Yes** to delete the target.
-

Viewing Member Of Properties

Use the Member of tab to view the target groups to which a target belongs. The name and type of target group displays in the list box.

To view the member of targets:

-
- Step 1** On the Definitions—Targets view, highlight the appropriate target, right-click and choose **Properties**. The [Target] Properties dialog box displays.
- Step 2** Click the **Member Of** tab to view the target groups.

Field	Description
Display Name	Name of the target group
Type	<i>Display-only.</i> Type of target group
Description	Brief description of the target

- Step 3** To view the properties for a specific object, highlight the object, right-click and choose **Properties**.
- Step 4** Click **OK** to close the dialog box.
-

Viewing Extended Properties

Use the Extended Properties tab to view 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.

For additional information on extended properties, refer to the *Cisco Tidal Enterprise Orchestrator Reference Guide*.

To view the target extended properties:

Step 1 On the Definitions—Targets view, highlight the appropriate target, right-click and choose **Properties**. The [Target] Properties dialog box displays.

Step 2 Click the **Extended Properties** tab to view the extended properties defined for the target.

Column	Description
Name	Name of the target property
Value	Displays value for the target property. If no value is defined, then the default property value will display.
Using Default	Indicates whether the default property value is displayed. <i>Yes</i> will display if no value is defined. <i>No</i> will display if a value is defined for the target property.

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

Modifying Extended Property Values

To modify the extended properties:

On the Extended Properties tab, highlight the appropriate target property and click the appropriate button to define or modify the value.

Button	Description
Edit	Click this button to defined or modify the value of a specific target property. The Edit button is disabled by default. The button will be enabled only when a target property is selected in the list.
Reset Value	Click this button to reset the value of the target property to its default value. The Reset Value is enabled only if a value is specified for a selected target property.

Viewing Used By Properties

Use the Used By tab to display the objects that directly reference the selected target in their configuration. Because the Used By tab displays objects in a tree view, users can also display the objects which directly reference the top level objects for the selected object.

The objects at the top level are the objects that reference the selected object directly, but users can expand the listed objects and see their referenced objects.

Example:

If *object A* is used by *objects X* and *Y* and *object X* is used by *object Q*, then on the property pages of *object A*, the user will see *X* and *Y* listed. If a user expands (+) *object X*, then *object Q* will display.

To view used by objects:

Step 1 On the Definitions—Targets view, highlight the appropriate target, right-click and choose **Properties**. The [Target] Properties dialog box displays.

Step 2 Click the **Used By** tab to view the objects used by the target.

Object	Description
Display Name	Name of the object
Type	Type of object

Step 3 To view the properties for a specific object, highlight the object, right-click and select Properties.

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

Viewing Targets History

Use the History tab to view a history of changes that have been made to the target.

Step 1 On the Definitions—Targets view, highlight the appropriate target, right-click and select **Properties**. The [Target] Properties dialog box displays.

Step 2 Click the **History** tab to view the changes made to the target.

Column	Description
Created by	The user name of the person who created the object
Created time	The date and time the object was created
Time	The date and time the action occurred
Change Type	The action that occurred
User	The user name of the person that performed the action
Description	Information about the action that was performed

- Step 3** To view the details for a specific action, highlight the appropriate time, right-click and choose **Properties**.
- Step 4** Click **OK** to close the dialog box.
-



CHAPTER 3

Managing Active Directory Target Groups

The Target Groups feature provides the ability to group defined targets or specify other groups of targets so that users can run a process on several environments simultaneously. Using target groups simplifies specifying where certain processes will run. When a user creates a process, the user must specify where the process executes. The user can specify that the process runs on a specific target or a target group.

If the user selects the option to execute the process on a target group, the user can further specify whether to run the process on all the computers that are included in the target group or run the process on a specific computer within the target group.

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.

This chapter provides instructions on managing the Active Directory target groups in Tidal Enterprise Orchestrator. After the target group is defined, the target group can be reused in several processes. This chapter provides the following information:

- [Accessing Definitions—Target Groups, page 3-2](#)
- [Defining an Active Directory Group, page 3-5](#)
- [Defining an Active Directory Organizational Unit Target Group, page 3-7](#)
- [Managing Target Group Definitions, page 3-9](#)

Accessing Definitions—Target Groups

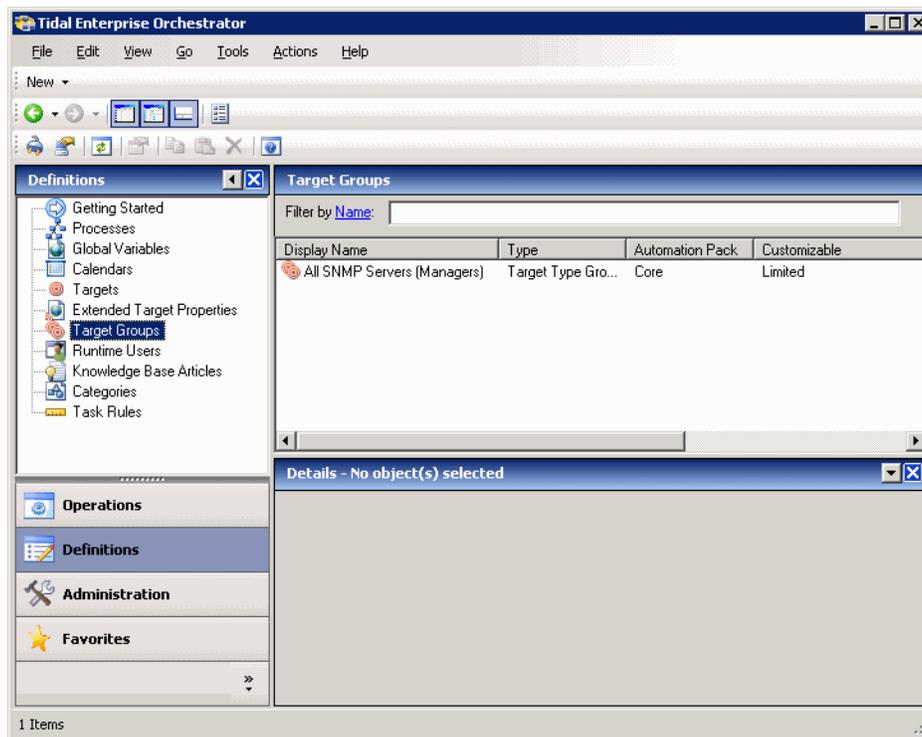
Use Definitions—Target Groups to view the defined target groups. From this view, the user can create new target groups, modify the properties of a target group, and delete target groups.

To access the Target Groups views:

On the Definitions workspace, select **Target Groups**.

The Results pane displays.

Figure 3-1 Definitions—Target Groups



Information about the target group can be displayed in the following columns:

Field	Description
Display Name	The name assigned to the target group
Enabled	Indicates whether the target is enabled (<i>True</i>) or disabled (<i>False</i>)
Type	The type of target group (Active Directory Group, Active Directory Organizational Unit, Target Type Group or Virtual group)
Owner	The user name of the person who created the target group
Last Modified Time	The time the target group was last modified
Last Modified By	The user name of the person who last modified the target group
Id	The unique identification number of the target group definition

Field	Description
Description	A brief description of the target group
Type Description	A brief overview of the target group type
Created Time	The time at which the target group was created
Created By	The user name of the person who created the target group
Version	Version number of the automation pack
Publish Date	Date the automation pack was exported
Automation Pack	Name of the automation pack associated with the target group
Customizable	Indicates the customization setting for the object in the automation pack

Details Pane

The Target Group Details pane displays additional information about the selected object. The hyperlinks on each of the detail pages launch the property pages for the selected target group.

Tab	Description
General	Displays general information about the object including the name, type, value, a brief description of the target group, and the ability to enable or disable a target group.
Attributes	Displays the dates, times and process owner associated with the creation and modification of the target group.

Target Groups Descriptions

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

Target Group	Description
Active Directory Group	Specifies the targets in a group within Active Directory domain See Defining an Active Directory Group, page 3-5 .
Active Directory OU	Specifies targets that belong to an organizational unit or container within an Active Directory domain. See Defining an Active Directory Organizational Unit Target Group, page 3-7 .

Viewing Target Group Properties

To view target group properties:

Step 1 On Definitions—Target Groups view, highlight the appropriate target group definition, and use *one* of the following methods:

- Right-click and choose **Properties**.
- or-
- On the Details pane, click the hyperlink name on any of the tabs.

The Properties dialog box displays.



Note

The property pages may display as display-only if the target group definition is shipped with the product or the user does not have the appropriate rights.

Step 2 Click the appropriate tab to review the properties.

Tab	Description
General	Displays general information about the target group
AD Object	Displays the Active Directory object that is used as the source to resolve whether a computer is a member of an Active Directory Group or Active Directory Organization Unit (OU)
Members	Displays the target members included with the target group
Used by	Displays the objects that use 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 box.

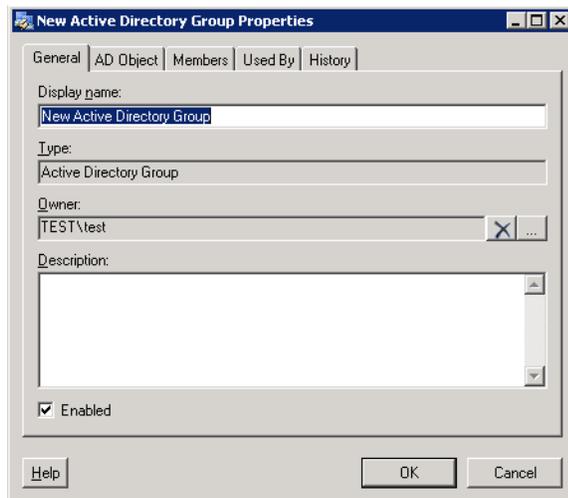
Defining an Active Directory Group

Use the Active Directory Group target group to define the properties used to run processes on multiple Active Directory computers.

To create an active directory group:

- Step 1** On the Definitions—Target Groups view, right-click and choose **New > Active Directory Group**. The New Active Directory Group Properties dialog box displays.

Figure 3-2 New Active Directory Group Properties—General Tab



- 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 box to change the owner.
Description	Brief description of the target group
Enabled	The check box is checked by default. The checked box indicates the target group is available for execution. Uncheck the check box to disable the object. If the check box is unchecked, the object is disabled and will be unavailable for execution.

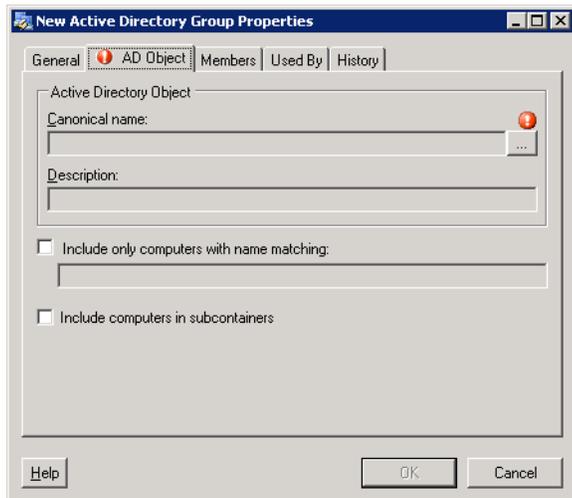
- Step 3** Click the **AD Object** tab to continue.



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 3-3 New Active Directory Group Properties—AD Object Tab



- Step 4** On the AD Object tab, specify the computer that will be used as the source to resolve whether a computer is a member of an Active Directory Group.

Field	Description
Canonical name	The official name, as opposed to an alias, of the Active Directory object that will be used to resolve target group membership. Click Browse to launch the Select Active Directory Object dialog box and select an Active Directory object from a list of computers that are members of a specified Active Directory domain. Note See Selecting an Active Directory Object , page 3-10 for additional information.
Description	Brief description of the Active Directory object
Include only computers with name matching	Check this check box to filter the computers for names that match the expression entered in the associated text field.
Include computers in subcontainers	Check this check box to include computers in subcontainers of the selected group.

- Step 5** Click the following tabs to review the information and click **Ok**.
- **Members tab**—Displays the matching computers for the selected Active Directory object. Information on the Members tab will not populate until an Active Directory object is selected on the AD Object tab. See [Viewing Member Properties](#), page 3-13.
 - **Used By tab**—Displays the objects that directly use the target group. This tab will remain blank until the target group is used by an object. See [Viewing Used By Properties](#), page 3-14.
 - **History tab**—Displays the history of actions taken against the target group. See [Viewing Target Group History](#), page 3-14.

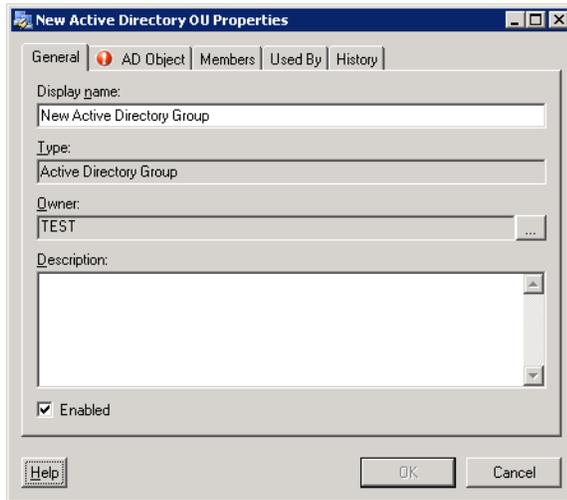
Defining an Active Directory Organizational Unit Target Group

Use the Active Directory Organizational Unit (OU) target group to run processes on an Active Directory Organizational Unit (OU) within a specific Active Directory domain.

To create an Active Directory Organizational Unit (OU) target target group:

- Step 1** On the Definitions—Target Groups view, right-click and choose **New > Active Directory OU**. The New Active Directory OU Target Group Properties dialog box displays.

Figure 3-4 New Active Directory OU Properties—General Tab



- 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
Type	<i>Display-only.</i> Type of target group
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
Description	Brief description of the target
Enabled	The check box is checked by default. The checked box indicates the target group is available for execution. Uncheck the check box to disable the object. If the check box is unchecked, the object is disabled and will be unavailable for execution.

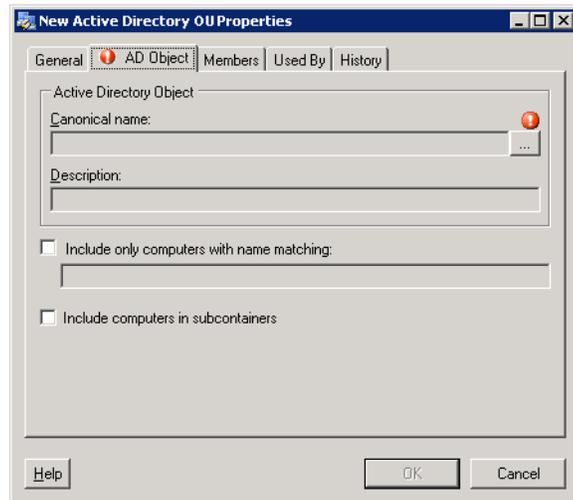
Step 3 Click the **AD Object** tab to continue.



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 3-5 *New Active Directory OU Properties—AD Object Tab*



Step 4 On the AD Object tab, specify the computer that will be used as the source to resolve whether a computer is a member of an Active Directory Group.

Field	Description
Canonical name	The official name, as opposed to an alias, of the Active Directory object that will be used to resolve target group membership. Click Browse to launch the Select Active Directory Object dialog box and select an Active Directory object from a list of computers that are members of a specified Active Directory domain. Note See Selecting an Active Directory Object , page 3-10 for additional information.
Description	Brief description of the Active Directory object
Include only computers with name matching	Check this check box to filter the computers for names that match the expression entered in the associated text field.
Include computers in subcontainers	Check this check box to include computers in subcontainers of the selected group.

- Step 5** Click the following tabs to review the information and click **Ok**.
- **Members tab**—Displays the matching computers for the selected Active Directory object. Information on the Members tab will not populate until an Active Directory object is selected on the AD Object tab. See [Viewing Member Properties, page 3-13](#).
 - **Used By tab**—Displays the objects that directly use the target group. This tab will remain blank until the target group is used by an object. See [Viewing Used By Properties, page 3-14](#).
 - **History tab**—Displays the history of actions taken against the target group. See [Viewing Target Group History, page 3-14](#).
-

Managing Target Group Definitions

Use the Definitions—Target Group view to modify and review target group information. This view can be used to perform the following functions:

- Enable/Disable target groups
- Modify target group properties
- Deleting a target group
- Review the objects in the product that use the target group
- Review a history of changes made to the target group

Enabling a Target Group

A target group is enabled by default. If a target group is manually disabled, the target must be enabled before it is available for execution.

To enable a target group:

On the Definitions—Target Groups view, highlight the target group, and then use *one* of the following methods:

- On the Results pane, right-click and choose **Enable**.
- or-
- On the Details pane, select the **Click here to enable** option.

The Enabled column on the Results pane changes to *True*. If necessary, click the **Refresh**  to update the view.

Disabling a Target Group

Disabling a target group prevents the object from being available for execution. The disabled target group is not removed from the list of target groups in the Definitions—Target Groups Results pane.

To disable a target group:

On the Definitions—Target Groups view, highlight the target, and then use *one* of the following methods:

- On the Results pane, right-click and choose **Disable**.
- or-
- On the Details pane, select the **Click here to disable** option.

The Enabled column on the Results pane changes to *False*. If necessary, click the **Refresh**  to update the view.

Modifying Target Groups

Use the Definitions—Target Groups view to modify the configured target groups. After the initial creation, not all fields are available for updating.

To modify a target group:

-
- Step 1** On the Definitions—Target Groups view, highlight the appropriate target group, right-click and choose **Properties**.
- The [Target Group] Properties dialog box displays.
- Step 2** Modify the information on the appropriate tabs, as necessary.
- Step 3** Click **OK** to save the changes and close the dialog box.
-

Selecting an Active Directory Object

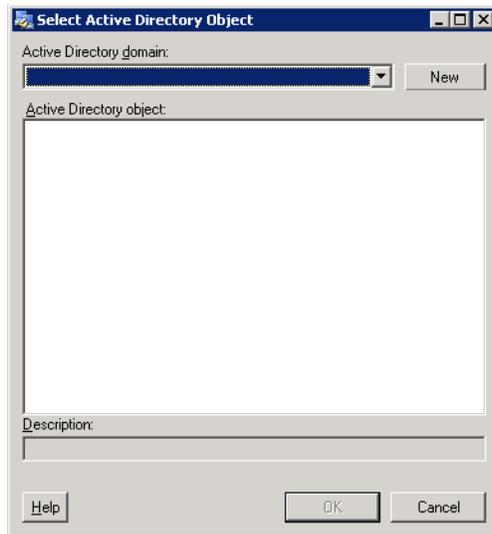
Use the Select Active Directory Object dialog box to select the Active Directory object that will be used as the source to resolve whether a computer is a member of an Active Directory target group. Membership in the Active Directory group is determined dynamically.

The Active Directory object used to determine target group membership may be an Active Directory container or an Active Directory Organizational Unit (OU). An Active Directory object can be selected from the Active Directory domain you select from the drop-down list, or you can define a new Active Directory domain from which to select an Active Directory object.

To select an Active Directory object

-
- Step 1** On the AD Object tab, to the right of the Canonical name field, click **Browse**.
The Select Active Directory Object dialog box displays.

Figure 3-6 Select Active Directory Object Dialog Box



- Step 2** From the Active Directory domain drop-down list, select the domain in which the object resides.



Note If the domain target is not listed in the menu, click **New > Active Directory Domain** to add the domain to the configuration. For additional information on creating a new active directory domain target, see [Defining an Active Directory Domain Target, page 2-5](#).

- Step 3** On the Active Directory Object list, expand the list of objects and select the organizational unit or container to be included in the target group.



Note The OK button is disabled until a valid domain target is selected.

- Step 4** Click **OK** to add the selected active directory domain to the Canonical name field.
-

Creating a Copy of a Target Group

The copy option is used when there is an existing target group that contains properties that can be used for defining a new target group without creating a target group from scratch.

To create a copy a target group:

-
- Step 1** On the Definitions—Target Groups view, highlight the appropriate target group, right-click and choose **Copy**.
 - Step 2** On the Results pane, right-click and choose **Paste**.
A copy of the defined target group is pasted into the Results pane.
 - Step 3** To rename the copied target group or other properties, right-click and choose **Properties**.
 - Step 4** Modify the target group name, as appropriate, and click **OK** to close the dialog box.
-

Deleting a Target Group

Use the Definitions—Target Groups view to delete target groups that are no longer referenced. Before deleting a target group, it is recommended that you verify that it is no longer associated with any processes.

To delete a target group:

-
- Step 1** On the Definitions—Target Groups view, highlight the appropriate target group, right-click and choose **Delete**.
The Confirm Delete dialog box displays.
 - Step 2** Click **Yes** to delete the target group and complete the procedure.
-

Viewing Member Properties

Use the Members tab to view the targets included in the target group.

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

The [Target Group] Properties dialog box displays.

Step 2 Click the **Members** tab to view the objects included in the target group:

Column	Description
Name	Displays the names of the filtered list of computers that are members of the Active Directory group according to the expression specified in the Include only computers with name matching field on the AD Object tab.
Target Defined	Displays <i>Yes</i> if the computer has been defined as a target. The column displays <i>No</i> if the computer has not been defined as a target.
Type	Computer type for a computer that has a <i>Yes</i> value in the Target Defined column



Note

To view the properties of a displayed object, right-click the object and choose **Properties**.

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

Modifying Target Group Member List

Use *one* of the following options to modify the member list in the Active Directory group.

- Click **Define As** to define a specified computer that has a *No* value in the Target Defined column as a target. The column value changes to *Yes*.

After the target members are defined, the matching targets display the computers that are members of the target group according to both the Active Directory and Tidal Enterprise Orchestrator.

- Click **Refresh** to refresh the list of computers displayed on the page.

Viewing Used By Properties

Use the Used By tab to display the objects that directly reference the selected target group in their configuration. Because the Used By tab displays objects in a tree view, users can also display the objects which directly reference the top level objects for the selected object.

The objects at the top level are the objects that reference the selected object directly, but users can expand the listed objects and see their referenced objects.

Example:

If *object A* is used by *objects X* and *Y* and *object X* is used by *object Q*, then on the property pages of *object A*, the user will see *X* and *Y* listed. If a user expands (+) *object X*, then *object Q* will display.

To view used by objects:

- Step 1** In the Definitions—Target Groups view, highlight the appropriate target group, right-click and choose **Properties**.

The [Target Group] Properties dialog box displays.

- Step 2** Click the **Used By** tab to view the objects which use the target group.

Object	Description
Display Name	Name of the object
Type	Type of object

- Step 3** To view information about an object, highlight the object, right-click and choose **Properties**.

The display-only dialog box displays the properties of the object.

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

Viewing Target Group History

Use the History tab to view a history of changes that have been made to the target.

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

The [Target Group] Properties dialog box displays.

- Step 2** Click the **History** tab to view the changes made to the target group.

The following information about the history of the target group is displayed:

Column	Description
Created by	The user name of the person who created the object
Created time	The date and time the object was created
Time	The date and time the action occurred
Change Type	The action that occurred

Column	Description
User	The user name of the person that performed the action
Description	Information about the action that was performed

Step 3 To view the audit history for a specific action, highlight the appropriate time, right-click and choose **Properties**.

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



CHAPTER 4

Managing 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). When defining a process or certain activities, you can use the runtime user records that are defined in the product to assign credentials for the process or activity.

The following sections in this chapter provide instructions on managing runtime user accounts:

- [Definitions—Runtime Users Overview, page 4-2](#)
- [Defining a Windows User, page 4-4](#)
- [Managing Runtime User Definitions, page 4-6](#)

Definitions—Runtime Users Overview

Use the Definitions—Runtime Users view to display the credentials of the runtime users and to specify new runtime user credentials, update the credentials of users, or delete users.

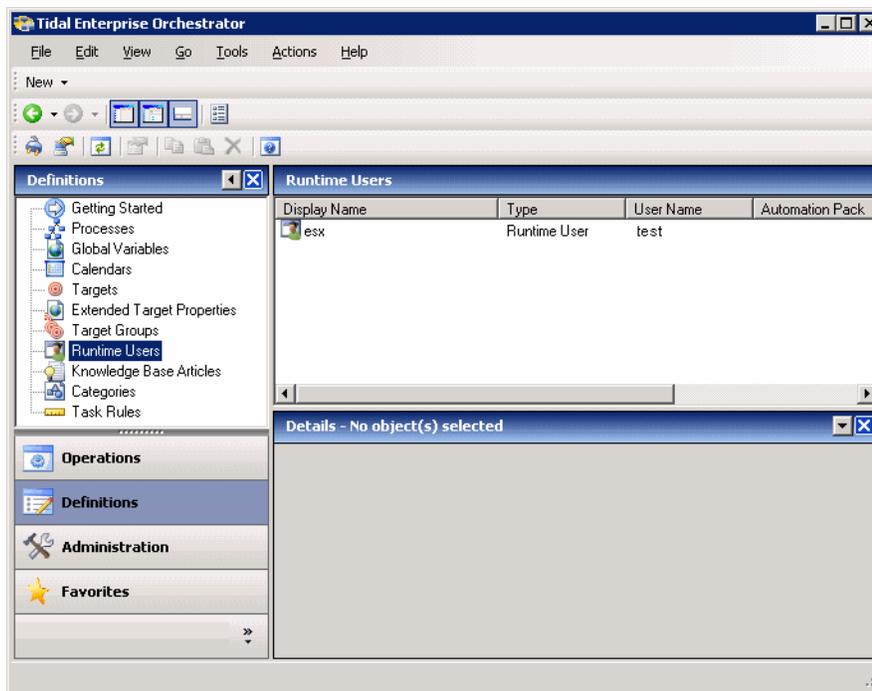
Accessing Definitions—Runtime users

To access the Runtime Users properties:

In the Definitions workspace, choose **Runtime Users**.

The Results pane displays.

Figure 4-1 Definitions—Runtime Users



Information about the runtime user accounts can be displayed in the following columns:

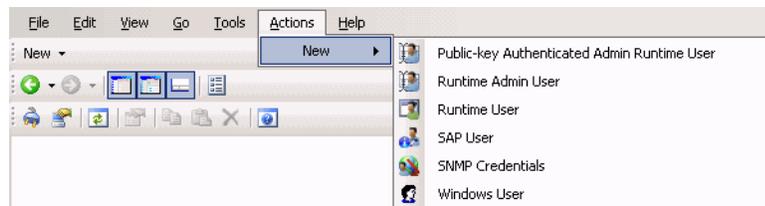
Column	Description
Display Name	The display name assigned to the runtime user account
Type	The type of user account
User Name	The user name assigned to the account
Owner	The user name of the person who created the account
Last Modified Time	The time the credentials were last modified
Last Modified By	The user name of the person who last modified the credentials
Id	The unique identification number of the runtime user definition

Column	Description
Description	A brief overview of the runtime user definition
Type Description	A brief description of the information in the Type column
Created Time	time the runtime user account was created
Created By	The user name of the person who created the runtime user definition
Automation Pack	Name of the automation pack from which the runtime user record was imported

Actions Menu and Toolbar

The Runtime Actions menu and toolbar provide the option to create new runtime users to hold the security credentials that are assigned to processes and activities. The New option is also available by right-clicking **Runtime Users** on the Definitions pane.

Figure 4-2 Runtime Actions Menu



Runtime User Details Pane

The Details pane in the lower portion of the page displays detailed information about the choosed runtime user. Clicking a link on a tab page opens the Properties dialog box for the runtime user.

Tab	Description
General	Displays general information about the object including the name, type, value, a brief description of the runtime user
Attributes	Displays the dates, times and owner associated with the creation and modification of the runtime user

Defining a Windows User

The credentials specified for a runtime user stores the information about the user security context and to pass this information to the adapters. Use the credentials specified for the Windows user to assign run options for processes or activities.

To create a Windows User:

Step 1 On the Definitions—Runtime Users view, right-click and choose **New > Windows User**.

The New Windows 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.

Figure 4-3 New Windows User Properties Dialog Box—General Tab

Step 2 On the General tab, specify the following information, as appropriate:

Field	Description
Display Name	Name of the Windows user account. This field is populated with the information specified in the Domain and User name text fields.
Type	<i>Display only.</i> Type of object
Owner	User name of the owner of the object. This is typically the person who created the object. Click Browse to launch the Select User or Group dialog box to change the owner.
User name	The user name assigned to the user account

Field	Description
Password	<p>The password assigned to the user account</p> <p>Note For existing runtime user records, check the check box to enter the new password assigned to the user account. If the password entered is incorrect, then a confirmation dialog box displays stating:</p> <p><i>"Logon failure: unknown user name or bad password."</i></p>
Domain	The Windows domain in which the user account resides
Description	Brief description of the Windows user account

Step 3 Review the information on the following tabs, as necessary, and then click **OK** to close the dialog box.

- **Used By** tab—Displays the objects which reference the target. This tab will remain blank until the target is used by an object. See [Viewing Used By Properties, page 4-6](#).
- **History** tab—Displays the history of actions taken against the target. This tab remains blank until after the initial target creation. See [Viewing Runtime User History, page 4-7](#).

The new runtime user displays in the list of runtime user accounts on the Definitions—Runtime User view.

Managing Runtime User Definitions

Use the following procedures to view and modify runtime user definitions.

Modifying a Runtime User Record

Use the Definitions—Runtime Users view to display the runtime user properties and modify the runtime user records.

To modify a runtime user credentials:

-
- Step 1** On the Definitions—Runtime Users view, highlight the appropriate runtime user record, right-click and choose **Properties**.
- The [Runtime User] Properties dialog box displays.
- Step 2** On the General tab, modify the appropriate information, as necessary.
- Step 3** Confirm the changes, and then click **OK** to close the dialog box.
-

Deleting a Runtime User

Use the Definitions—Runtime Users view to delete a runtime user record.

-
- Step 1** On the Definitions—Runtime Users view, highlight the appropriate runtime user, right-click and choose **Delete**.
- The Confirm Delete dialog box displays.
- Step 2** Click **Yes** to confirm the deletion.
-

Viewing Used By Properties

Use the Used By tab to display the objects that directly reference the choosed runtime user in their configuration. Because the Used By tab displays objects in a tree view, users can also display the objects which directly reference the top level objects for the choosed object.

The objects at the top level are the objects that reference the choosed object directly, but users can expand the listed objects and see their referenced objects.

Example:

If *object A* is used by *objects X* and *Y* and *object X* is used by *object Q*, then on the property pages of *object A*, the user will see *X* and *Y* listed. If a user expands (+) *object X*, then *object Q* will display.

To view used by objects:

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

The [Runtime User] Properties dialog box displays.

- Step 2** Click the **Used By** tab to view the objects which reference the runtime user.

Object	Description
Display Name	Name of the object
Type	Type of object

- Step 3** To view information about an object, highlight the object, right-click and choose **Properties**.

The display-only dialog box displays the properties of the object.

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

Viewing Runtime User History

Use the History tab to view a history of changes that have been made to the runtime user.

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

The [Runtime User] Properties dialog box displays.

- Step 2** Click the **History** tab to view the changes made to the runtime user.

The following information about the history of the runtime is displayed:

Column	Description
Created by	The user name of the person who created the object
Created time	The date and time the object was created
Time	The date and time the action occurred
User	The user name of the person that performed the action
Type	The action that occurred
Description	Information about the action that was performed

- Step 3** To view the audit history for a specific action, highlight the appropriate time, right-click and choose **Properties**.

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



CHAPTER 5

Using Active Directory Activities

The Active Directory Adapter provides the following activities for managing specific active directory user account information. Additional activities may display in the Process Editor toolbox if the user has imported the Active Directory automation pack. For additional information on those activities, see the *Cisco TEO Process Automation Guide for Microsoft Active Directory*.

This chapter provides instructions for defining a Active Directory activities, instructions for completing the property pages for each specific activity, and instructions on viewing the activity results.

- [Active Directory Adapter Activities, page 5-2](#)
- [Defining the Create User Account Activity, page 5-2](#)
- [Defining the Resolve Email Activity, page 5-6](#)
- [Defining the Set User Password Activity, page 5-8](#)
- [Managing Activity Definitions, page 5-10](#)
- [Viewing Activity Instance Information, page 5-13](#)

Active Directory Adapter Activities

When defining an activity in the process workflow, the properties pane contains property pages that are specific to the selected activity.



Note

To launch these activities, the runtime user should have local administrative rights to the target. If the runtime user does not have these rights, the activity will fail and display a message that the process has encountered a failed node.

The following table displays the activities that are provided by the Active Directory adapter.

Activity	Description
Create User Account	Creates a new active directory user account See Defining the Create User Account Activity, page 5-2 .
Resolve Email Address	Find email addresses for users or groups See Defining the Resolve Email Activity, page 5-6 .
Set User Password	Identifies and sets the password for user See Defining the Set User Password Activity, page 5-8 .

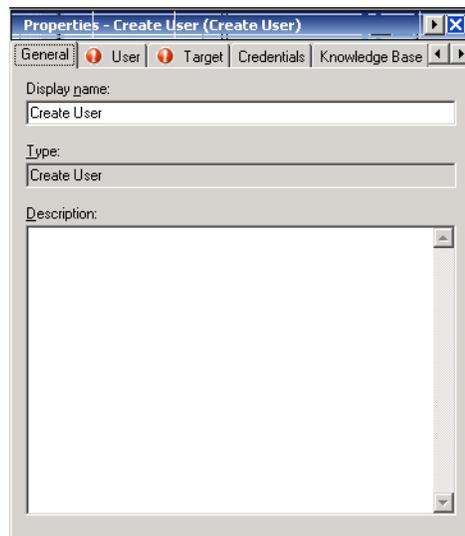
Defining the Create User Account Activity

Use the Create User Account activity to create a new active directory user account.

To define the Create User Account activity:

- Step 1** On the Toolbox pane, select Create User Account and drag and drop the activity onto the Workflow pane. The Create User Account property page displays.

Figure 5-1 Create User Account Properties Page—General Tab



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

Field	Description
Display Name	Name of the activity
Type	<i>Display-only.</i> Type of activity
Description	Brief description of the activity

Step 3 Click the **User** 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 5-2 Create User Account Properties Page—User Tab



Note Click the **Reference**  tool to choose a defined variable or reference an object within the process from the Insert Variable Reference dialog box. For additional information, see [Inserting Activity Variable References](#), page 5-11.

Step 4 On the User tab, specify the following information:

Field	Description
User name	User name of the user
Password	Password of the user
Last Name	Last name of the user
First Name	First name of the user

Field	Description
Canonical Path	Full or partial canonical path of the Organizational Unit object excluding the domain name Example: mydomain.local/LocationOU/DeptOU or LocationOU/DeptOU
Object class	The type of location where new user information will reside <ul style="list-style-type: none"> • Container—Group of objects held within a domain • Organizational Unit—Group of containers of objects held within a domain

Step 5 Click the **Target** tab to specify whether the process target should be used or overridden with a different target:

Field	Description
Execute on the process target	Select this radio button to use the same target that was specified in the process definition.
Execute on activity target	Select this radio button to specify a target different from the process definition target. The selected target overrides the target specified in the process definition
Executed on this target	Select this radio button and choose the appropriate target from the drop-down list to specify where the process should be executed. Note To view the properties for the selected target, click the Properties  tool. See Chapter 2, “Managing Active Directory Targets.”
Execute on this target reference	Select this radio button and then click the Reference tool launch the Insert Variable Reference dialog box. On the Insert Variable Reference dialog box, expand Process > Target > Properties , select the appropriate target reference property, and click OK . The selected target reference property displays in the text field.
Execute on this target group	Select this radio button to execute the process on all members of a selected target group. Note To view the properties for the selected target group, click the Properties  tool. To create a new target group for this process, click New > [Target Group Name] . See Chapter 3, “Managing Active Directory Target Groups.”
Choose a target using this algorithm	Select this radio button to execute the process using the options from the drop-down list. See Target Algorithms, page 2-4 .

- Step 6** Click the **Credentials** tab to continue and specify the runtime user whose credentials should be used for process execution:

Field	Description
Use target's default runtime user	Uses the default runtime user for the target that is specified in the activity
Use process runtime user	Uses the credentials for the runtime user that was specified in the process properties
Override process runtime user	Specifies a runtime user whose credentials are different than what was specified in the process properties. The selected runtime user overrides the runtime user that was specified for the process. Note To view the properties for the selected runtime user, click the Properties  tool. To create a runtime user record for the process, click New > Windows User . For additional information on creating a runtime user, see Chapter 4, "Managing Runtime Users."

- Step 7** Click the Knowledge Base tab to assign a knowledge base article to the object.

Knowledge Base Field Options	Description
Text field	<i>Display-only.</i> Display name for the selected knowledge base article(s)
Delete	Highlight the appropriate knowledge base article and click the Delete  tool to remove the knowledge base article from the list.
Browse	Click Browse to launch the Select Knowledge Base dialog box for a list of existing knowledge base articles. For additional information on knowledge base articles, refer to the <i>Cisco Tidal Enterprise Orchestrator Reference Guide</i> .
Properties	Highlight the appropriate knowledge base article and click the Properties  tool to view and/or modify the properties of the defined knowledge base article.

The following information is displayed on the Knowledge Base tab.

Field	Description
Summary	Brief description of the issue
Possible Cause	Explanation of the condition that may be causing the issue
Possible resolution	List of actions that can be performed to attempt to resolve the issue
Related information	Additional information related to the issue

- Step 8** On the Result Handlers tab, click *one* of the following buttons to manage the condition branches on the workflow, as necessary:

Button	Description
Add	Adds a condition branch
Remove	Removes the condition branch from the activity
Move Up	Moves the condition up one position in the list of conditions
Move Down	Moves the condition down one position in the list of conditions

- Step 9** Click the **Save**  tool to save the activity definition.

Defining the Resolve Email Activity

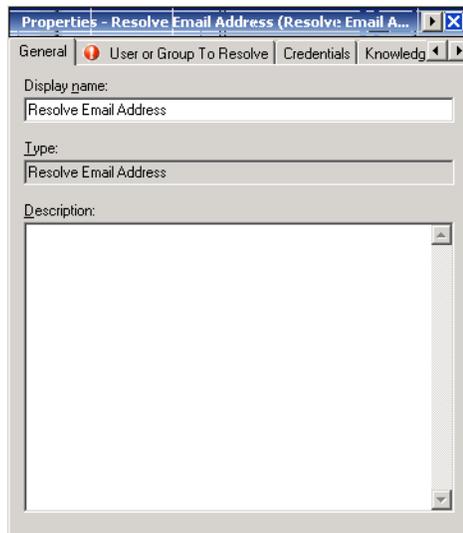
Use the Resolve Email Address activity to find email addresses for users or groups.

To define the Resolve Email Address activity:

- Step 1** On the Toolbox pane, select the Resolve Email Address activity, then drag and drop the activity onto the Workflow pane.

The Resolve Email Address property pages display.

Figure 5-3 Resolve Email Address Properties Page—General Tab



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

Field	Description
Display Name	Name of the activity

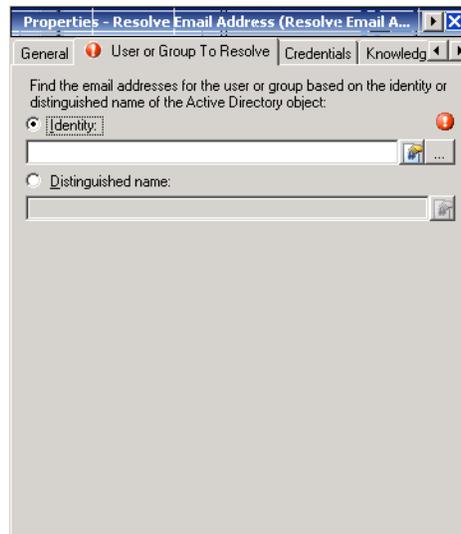
Field	Description
Type	<i>Display-only.</i> Type of activity
Description	Brief description of the activity

Step 3 Click the **User or Group to Resolve** 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 5-4 Resolve Email Address Properties Page—User or Group to Resolve Tab



Note Click the **Reference**  tool to choose a defined variable or reference an object within the process from the Insert Variable Reference dialog box. For additional information, see [Inserting Activity Variable References, page 5-11](#).

Step 4 On the User or Group to Resolve tab, specify the following information:

Field	Description
Identity	Click this button and enter the user name or group to search for the email address. Click Browse to launch the Select User or Group dialog box to search for the identity of the appropriate user or group.
Distinguished Name	Active Directory distinguished name for a user or group Example: CN=UserFirst UserLast, OU=LocationOU, OU=DeptOU, DC=FABRIKAM, DC=C OM

- Step 5** Complete the appropriate information in the following tabs, as necessary, and then click the **Save**  tool to complete the activity definition.
- **Credentials**—Specify the runtime user whose credentials should be used to monitor for changes that will trigger the process. See [Step 6 in Defining the Create User Account Activity](#).
 - **Knowledge Base**—Choose the appropriate knowledge base article to associate with the process. See [Step 7 in Defining the Create User Account Activity](#).
 - **Result Handlers**—Click the appropriate buttons to manage the condition branches on the workflow. See [Step 8 in Defining the Create User Account Activity](#).

**Note**

To view the resolved email addresses, see [Viewing Resolve Email Address Results, page 5-14](#).

Defining the Set User Password Activity

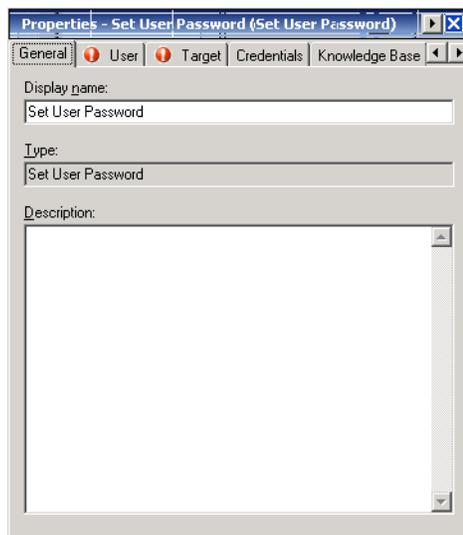
Use the Set User Password activity to identify and set the password for user.

To define the Set User Password activity:

- Step 1** On the Toolbox pane, select the Set User Password activity, then drag and drop the activity onto the Workflow pane.

The Set User Password property pages display.

Figure 5-5 Set User Password Properties Page—General Tab



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

Field	Description
Display Name	Name of the activity

Field	Description
Type	<i>Display-only.</i> Type of activity
Description	Brief description of the activity

Step 3 Click the **User** 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 5-6 Set User Password Properties Page—User Tab



Note Click the **Reference**  tool to choose a defined variable or reference an object within the process from the Insert Variable Reference dialog box. For additional information, see [Inserting Activity Variable References](#), page 5-11.

Step 4 On the User tab, specify the following information:

Field	Description
User LDAP Path	Complete LDAP Path for the user Example: CN=UserFirst UserLast, OU=LocationOU, OU=DeptOU, DC=FABRIKAM, DC=COM
New Password	New user password

- Step 5** Complete the appropriate information in the following tabs, as necessary, and then click the **Save**  tool to complete the activity definition.
- **Target**—Specify whether the defined process target should be used or overridden. See [Step 5 in Defining the Create User Account Activity](#).
 - **Credentials**—Specify the runtime user whose credentials should be used to monitor for changes that will trigger the process. See [Step 6 in Defining the Create User Account Activity](#).
 - **Knowledge Base**—Choose the appropriate knowledge base article to associate with the process. See [Step 7 in Defining the Create User Account Activity](#).
 - **Result Handlers**—Click the appropriate buttons to manage the condition branches on the workflow. See [Step 8 in Defining the Create User Account Activity](#).
-

Managing Activity Definitions

The information in this section provide instructions on modifying the activity properties. Use the activity property page to modify activity properties.

Modifying an Active Directory Activity

Modifying a process does not automatically modify an activity. Activity definitions are included in a process definition and the activity properties must be modified separately from the process properties.

Activities can only be modified in the Process Editor. With the appropriate rights from the Operations view, the Process Editor is launched when accessing the process properties.

When user rights are restricted, the Process Viewer is launched with the properties displaying a display-only view after determining that the user cannot edit the activity.

-
- Step 1** To modify an activity, use *one* of the following methods:
- On the Definitions—Process view, highlight the appropriate process, right-click and choose **Edit**.
 - or-
 - On the Operations workspace, select a process from any of the four process views, right-click and choose **Edit**.
- The Process Editor dialog box displays.
- Step 2** On the Workflow pane, select the appropriate activity, and modify activity properties, as necessary, and click **Save**.
- Step 3** Make any additional changes, as necessary, and click **Exit** to close the Process Editor.
-

Inserting Activity Variable References

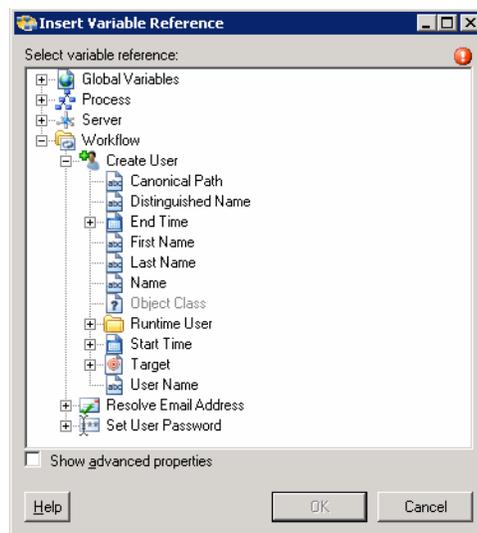
The Reference  icon to the right of a text field indicates that the field can be populated by referencing a defined variable or the property of another activity or process. Use the Insert Variable Reference dialog box to select a defined variable or object to populate a field.

Only variables valid for the selected field can be selected in this dialog box. The OK button does not activate until a valid property or variable is selected.

To insert a variable reference:

- Step 1** To the right of a field on a property page, click the **Reference** tool.
The Insert Variable Reference dialog box displays.

Figure 5-7 Insert Variable Reference Dialog Box



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** Check the **Show Advanced** check box to display all items that are available for referencing.
If the check box is not checked, then only the most commonly-used items are displayed for activities, processes or events.
- Step 3** Click the **Workflow Activity Expand (+)** to display the reference objects for the activities in the Workflow pane. The properties in the Insert Reference Variable dialog box depend on the activities.
- Step 4** From the list of available of items, select the appropriate property or variable and click **OK**.

Reference Variable	Description
Notes	Description for the virtual machine
Name	Display name of the activity
Created by	User name or the owner of the activity
Modified by	User name of the individual who modified the activity

Reference Variable	Description
Type	Type of activity
Description	Description of the activity
Audit Starts	Date and time the process audit starts
Audit Successes	Indicates the number of successful audits
End Time	Date and time the activity stopped
Error Information	Description of the error that has occurred
Group Name	Name of toolbox activity group
Instance Cancelled	Indicates the process was cancelled manually
Instance Failed	Indicates the process has failed
Instance Failed (Completed)	Indicates the process has failed but the process execution was completed
Instance Failed (Not Completed)	Indicates the process has failed and did not complete the process execution
Start Time	Date and time the activity was started
Process Id	ID number of the TEO process
Process Instance Id	ID number of the TEO process instance
Fail if Return Code Non-Zero	Indication of when activity should fail when a return code having a non-zero value is received
Output	Information returned from the activity
Return Code	Number for the return code
Canonical Path	Full or partial canonical path of the Organizational Unit object excluding the domain name
Distinguished Name	Active Directory distinguished name for a user or group
First Name	First name of the new user
Last Name	Last name of the new user
Object Class	The type of location where new user information will reside <ul style="list-style-type: none"> • Container—Group of objects held within a domain • Organizational Unit—Group of containers of objects held within a domain
User Name	User name assigned to the new user
Email Address	Email address of the user or group
Identity	Email address of the appropriate user or group
Proxy Addresses	Proxy address associated with the email address on the exchange server
Password	User password
User LDAP Path	Complete LDAP Path for the user

The related text field populates with the selected value.

Viewing Activity Instance Information

This section describes what the user should expect to see after a process with an Active Directory activity is launched. Certain activities generate and display additional activity instance information for review by users.

For example, there will be certain activities that generate information based on the defined properties of the activities. In those situations, the activity instance properties will display the display-only configuration properties as well as the generated results of the configuration properties.

Viewing Activity Status

After a process is launched, status and color indicators display on the console to indicate the current status for each process and activity instance.

Status Indicators

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

State	Description
Succeeded	Process has completed successfully
Running	Process is in progress
Failed (Not Completed)	Displays when the process has failed and did not complete the process execution
Failed (Cancelled)	Displays when the process is cancelled manually

Color Indicators

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

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.



Note

To modify the fonts and colors on the Activity View status display, see the *Cisco Tidal Enterprise Orchestrator Reference Guide*.

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, select any of the four activity views to display the activity instances in the Results pane.

Activity View	Description
View Triggered	Displays all process or activity instances that were executed (manually or automatically) and are in progress, have successfully completed, or failed during the selected time period
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 All	Displays all process, activity, and scheduled process and activity instances that are in progress, have successfully completed, or failed during the selected display time period
View Scheduled	Displays all process or activity instances that are in progress, have successfully completed, or failed and are also scheduled to execute during the selected time period

- Step 2** On the Results pane, expand the appropriate activity instance to display the related activities.

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

- Double-click the appropriate activity instance.
- Right-click and choose **Observe**.
- On the Details pane, click the hyperlink of any item on the tabs.

The [Activity Name] Properties dialog box displays.

Viewing Resolve Email Address Results

When the Resolve Email Address activity is launched, the results of the activity is displayed in the Resolve Email Address activity instance property page. The Email Address display-only page displays the generated results of the email addresses associated with the user or group.

To view the Resolve Email Address results:

- Step 1** On the Operations workspace, click the **Activity Views** folder and expand the appropriate process.

- Step 2** Use *one* of the following methods:

- Highlight the Resolve Email activity instance, right-click and choose **Properties**.
- or-
- Double-click the appropriate activity instance.

The Resolve Email Properties dialog box displays.

Step 3 Click the **Email Addresses** tab to display the results of the Resolve Email Address Activity.

Figure 5-8 Resolve Email Address Instance Properties Page—Email Addresses Tab



The following information is displayed:

Field	Description
Email Address	Email address of the user or group
Proxy Address	Proxy address associated with the email address on the exchange server



INDEX

A

Accessing Active Directory Adapter Properties [1-2](#)
Accessing Definitions - Target Groups [3-2](#)
Accessing Definitions - Targets [2-2](#)
Actions menu and toolbar, runtime users [4-3](#)
Active Directory Activity, modify [5-10](#)
Active Directory Adapter Activities [5-1, 5-2](#)
Active Directory adapter history [1-4](#)
Active Directory adapter properties, viewing, accessing [1-2](#)
Active Directory credential properties [5-5](#)
Active Directory domain [2-6](#)
Active Directory Domain Target, defining [2-5](#)
Active Directory Group properties, AD object [3-5](#)
Active Directory object, selecting [3-10](#)
Active Directory OU, defining [3-7](#)
Active Directory OU properties, AD object [3-8](#)
Active Directory target properties [5-4](#)
Activity instance, view [5-13](#)
Activity variable references [5-11](#)
Active Directory group, History [3-6, 3-9](#)
Active Directory group, Members [3-6, 3-9](#)
Active Directory group, Used by [3-6, 3-9](#)
adapter, viewing Active Director adapter history [1-4](#)
AD Object, Active Directory Group properties [3-5](#)
AD Object, Active Directory OU properties [3-8](#)

C

Collection Operators [2-10](#)
color indicators [5-13](#)
Common Regular Expressions [2-4](#)

Comparison Operators [2-10](#)
Create User [5-2](#)
Create User Account properties [5-3](#)
Create Windows user [4-4](#)
Creating a Copy of a Target Definition [2-12](#)
Creating a Copy of a Target Group [3-12](#)
Creating an Active Directory Domain Target [2-5](#)
Creating a Windows User [4-4](#)
Credentials, Active Directory properties [5-5](#)

D

Defining Activity Target Criteria [2-8](#)
Defining an Active Directory Domain Target [2-5](#)
Defining an Active Directory Group [3-5](#)
Defining an Active Directory OU Target Group [3-7](#)
Defining Create User Account Activity [5-2](#)
Defining Set User Password activity [5-8](#)
Defining the Resolve Email Address Activity [5-6](#)
Delete a Target [2-13](#)
Delete a Target Group [3-12](#)
Delete runtime user [4-6](#)
Details Pane, Runtime User [4-3](#)
disable a target [2-8](#)
Disabling a target [2-8](#)
Disabling a target group [3-10](#)
Domain, targets [2-6](#)

E

Enable a target [2-7](#)
Enabling a target [2-7](#)
Enabling a target group [3-9](#)

Extended property values, modify [2-14](#)

H

History, Active Directory group [3-6, 3-9](#)

History, targets [4-5](#)

I

Insert Variable Reference [5-11](#)

target [2-11](#)

K

Knowledge Base article, trigger [5-5](#)

M

Managing Active Directory Target Groups [3-1](#)

Managing Active Directory Targets [2-1](#)

Managing Activity Definitions [5-10](#)

Managing Runtime User Definitions [4-6](#)

Managing Target Definitions [2-7](#)

Member list, modifying [3-13](#)

Member of [2-13](#)

Members, Active Directory group [3-6, 3-9](#)

Members, viewing target groups [3-13](#)

Modifying an Active Directory Activity [5-10](#)

Modifying Extended Property Values [2-14](#)

Modifying Target Group Member List [3-13](#)

Modifying target groups [3-10](#)

Modifying targets [2-8](#)

Modify runtime user definition [4-6](#)

Modify target group [3-9](#)

N

Normal Operators [2-10](#)

P

Properties, Active Directory adapter history [1-4](#)

Properties, Create User Account [5-3](#)

Properties, Provides [1-3](#)

Properties, Resolve email address [5-7](#)

Properties, result handler [5-6](#)

Properties, Set User Password [5-9](#)

Properties, Windows user [4-4](#)

R

Regular Expressions [2-4](#)

Resolve email address properties [5-7](#)

Result handler properties [5-6](#)

Results, Resolve Email Address [5-15](#)

runtime user, deleting [4-6](#)

runtime user, viewing history [4-7](#)

runtime user, viewing used by object [4-6](#)

Runtime User Details Pane [4-3](#)

Runtime User Properties [4-4](#)

Runtime Users [4-1](#)

Definitions - Runtime users [4-2](#)

Runtime Users, Actions menu and toolbar [4-3](#)

S

Selecting an Active Directory, domain properties [3-11](#)

Selecting an Active Directory Object [3-10](#)

select object, Active Directory [3-10](#)

Set User Password properties [5-9](#)

Specifying target using algorithm criteria [2-8](#)

Status indicators [5-13](#)

Status indicators, color [5-13](#)

supported adapter objects [1-3](#)

T

- Target, Active Directory properties [5-4](#)
- Target, delete [2-13](#)
- Target, disable [2-8](#)
- Target Algorithms [2-4](#)
- Target group, copy [3-12](#)
- Target group, deleting [3-12](#)
- target group, disable [3-10](#)
- target group, enable [3-9](#)
- Target Group Descriptions [3-3](#)
- Target Group Details Pane [3-3](#)
- Target Groups
 - Delete target group [3-9](#)
 - Properties [3-4](#)
- target groups, modify [3-10](#)
- Target history, viewing [4-5](#)
- Targets [2-1](#)
 - Extended Properties [2-14](#)
 - Viewing target history [3-14](#)
- Targets, copy [2-12](#)
- Targets, domain [2-6](#)
- Targets, enable [2-7](#)
- Targets, properties [2-3](#)
- Targets, Used by [4-5](#)
- Targets, viewing extended properties [2-14](#)
- targets, viewing history [2-15, 3-14](#)
- Targets, viewing members of [2-13](#)
- targets, viewing used by objects [2-15](#)
- Target variable references [2-11](#)
- Trigger knowledge base article [5-5](#)

U

- Used by, Active Directory group [3-6, 3-9](#)
- Used by, target groups [3-14](#)
- Used by, targets [2-15](#)
- Used by runtime user [4-6](#)
- Used by targets [4-5](#)

- Using Active Directory Activities [5-1](#)

V

- variable reference, insert [2-11, 5-11](#)
- Variable references
 - Activity [5-11](#)
 - Targets [2-11](#)
- Viewing Active Directory adapter history [1-4](#)
- Viewing Active Directory Adapter-Supported Objects [1-3](#)
- viewing Active Directory objects, provides [1-3](#)
- Viewing Activity Instance Information [5-12](#)
- Viewing Activity Instance Properties [5-13](#)
- Viewing Activity Status [5-13](#)
- Viewing Resolve Email Address Results [5-15](#)
- Viewing runtime user history [4-7](#)
- Viewing target group members [3-13](#)
- Viewing target group properties [3-4](#)
- Viewing target history [2-15](#)
- Viewing Target properties [2-3](#)
- Viewing used by target group objects [3-14](#)
- views, runtime users [4-2](#)
- View target group [3-9](#)
- View target history [4-5](#)

W

- Windows User [4-4](#)
- Windows user, creating [4-4](#)
- Windows User Properties [4-4](#)

