Process Automation Guide for Automation for SAP HANA

Release 3.0
December 2013

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Text Part Number: OL-30857-01

Process Automation Guide for Automation for SAP HANA

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Preface

The SAP Automation pack files are a collection of Cisco Process Orchestrator processes (workflows) authored by subject matter experts that work out-of-the-box to automate best practices for a particular technology. The automation pack files also include configuration objects that are used in the processes, such as variables, categories, target groups and knowledge base articles.

The SAP Automation pack for Automation Pack for SAP HANA contains the content used to provide intelligent automation, analysis, and corrective actions to support the operations, management, and maintenance of the SAP HANA database and its related technologies.

This guide is intended to provide information on importing and using the Automation for SAP HANA automation pack in Cisco Process Orchestrator.

Organization

This guide includes the following sections:

Chapter 1	Importing Automation Packs	Provides instructions for installing the automation packs during or after the initial installation of Cisco Process Orchestrator.
Chapter 2	Understanding Automation Pack Objects	Provides information about the objects included in the Automation for SAP HANA automation pack.
Chapter 3	Getting Started Using the Automation Pack	Provides information about configuring the objects in Cisco Process Orchestrator that are used in the Automation for SAP HANA processes.
Chapter 4	Managing Automation for SAP HANA Processes	Provides information about using and managing the Automation for SAP HANA processes.
Chapter 5	Using the SAP HANA Processes (Activities)	Provides information about the HANA activities and how to define them in a process.
Appendix A	Understanding the Core Automation for SAP Content	Provides information about the objects included in the Core Automation for SAP automation pack.

Conventions

This guide uses the following conventions:

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

Note Means *reader take note*.

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

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

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

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

Product Documentation

Guides and Release Notes

You can download the product documentation from the Enterprise Orchestrator CD location. 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 the **Help** button on any dialog in the application to open the help topic in a pane to the right of the dialog.
- In the Cisco Process Orchestrator console:
  - Click the **Help Pane**  tool on the toolbar to open the help topic in a pane to the right of the console results pane.
  - Click **Help** on the menu bar.

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, 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

Importing Automation Packs

After installing Cisco Process Orchestrator, you can continue to import the automation packs, or import them later from within the Console. This chapter guides you through importing the SAP Automation Packs for SAP HANA. It contains the following sections:

Note It is recommended that you review the system requirements and prerequisites before importing automation packs. *See* the *Intelligent Automation Guide for SAP 3.0 Installation Guide*.

Accessing the Automation Pack Import Wizard

You use the Automation Pack Import Wizard to import the automation packs (tap files). You can either open the wizard immediately after installing Process Orchestrator or from within the Console.

Opening the Import Wizard After Running Setup Wizard

Step 1 After running the Setup wizard to install the product, ensure that the **Launch automation pack import wizard now** check box is checked before closing the wizard.

Step 2 On the Select Automation Pack dialog box, check the following check boxes and then click **OK** to launch the Automation Pack Import Wizard:

- Common Activities (*dependency*)
- Core (*dependency for all automation packs*)
- Core Automation for SAP (*dependency*)
- Core Automation for SAP BW, BOBJ and In-Memory Computing (*dependency*)
- Automation for SAP HANA

Note *See* the *Cisco Process Orchestrator Installation Guide* for instructions on importing and configuring the Core components for the product.

Proceed to Importing the Common Activities.tap, page 1-3.

Opening the Import Wizard in Console

You can open the Automation Pack Import Wizard from within the Console after installing the product. When importing automation packs from within the Console, you must re-open the Automation Pack Import Wizard for each automation pack that you are importing.

Because the Automation for SAP HANA automation pack has dependencies on other automation packs, the dependent automation packs must be imported in the order listed in Step 2 in Opening the Import Wizard After Running Setup Wizard, page 1-2. After importing each automation pack, re-open the Automation Pack Import Wizard to import the next automation pack.

Step 1 In the Administration workspace on the Console, click **Automation Packs** in the navigation pane.

Step 2 Use one of the following methods to open the Automation Pack Import Wizard:

- In the navigation pane, right-click **Automation Packs** and choose **Import**.
- On the Menu bar, choose **Actions > Import**.

Step 3 Click **Add**. On the Windows Open dialog box, select the **Common Activities.tap** file and click **Open** to open the Automation Pack Import Wizard.

Proceed to Importing the Common Activities.tap, page 1-3.

Importing the Common Activities.tap

You must first import the Common Activities automation pack (Common Activities.tap). If you opened the Automation Pack Import Wizard from the Setup Completed panel, the wizard will guide you through importing each automation pack.

Step 1 On the Automation Pack Import Wizard Welcome panel, click **Next**.

Note If you do not want to display the Welcome panel the next time the wizard is opened, check the **Do not show this page next time** check box.

Step 2 On the General Information panel, review the information about the automation pack.

Step 3 If you want to disable all the processes that are imported with the automation pack, check the **Disable all imported processes** check box.

Note If you disable all the imported processes, you will need to manually enable the processes in the Console before they can execute.

Step 4 Click **Next** to continue.

The Review Prerequisites panel displays the prerequisites for the automation pack being imported. The green check mark indicates that the prerequisite was found on the computer.

The red X indicates that the prerequisite was not found on the computer. When this occurs, the import process is stopped and cannot continue until all prerequisites have been met.

If all prerequisites are passed, the wizard automatically continues to the next panel.

Note If you opened the Automation Pack Import Wizard from the Setup Completed panel, the wizard displays the General Information panel for the next automation pack.

Step 5 After the objects have been imported, review the information on the Completing the Automation Pack Import Wizard panel to verify that it is correct and then click **Close** to close the wizard.

Importing the Core Automation for SAP.tap

If you are importing the automation packs from within the Console, you must re-open the Automation Pack Import Wizard to import the Core Automation for SAP automation pack.

Step 1 Use one of the following methods to open the Import Automation Pack Wizard:

- In the navigation pane, right-click **Automation Packs** and choose **Import**.
- On the Menu bar, choose **Actions > Import**.

Step 2 On the Windows Open dialog box, select the **Core Automation for SAP.tap** file and click **Open** to launch the Automation Pack Import Wizard.

Note If you do not want to display the Welcome panel the next time the wizard is opened, check the **Do not show this page next time** check box.

Step 3 On the Welcome panel, click **Next**.

Step 4 On the General Information panel, review the information about the automation pack.

Step 5 If you want to disable all the processes that are imported with the automation pack, check the **Disable all imported processes** check box.

Note If you disable all the imported processes, you will need to manually enable the processes in the Console before they can execute.

Step 6 Click **Next** to continue.

Use the Default Incidents Assignee Setup panel to specify the default person who should be assigned SAP-related incidents.

Step 7 Click the **Browse** button to specify the user.

Step 8 On the Select User or Group dialog box, click **Location** and choose the location from which the user will be selected.

Step 9 In the text box, enter the user name and click **Check Names**.

If the name is found, the box will be populated with the appropriate email address.

Step 10 Click **OK** to close the Select User or Group dialog box.

Step 11 On the Default Incidents Assignee Setup panel, click **Next**.

The Review Prerequisites panel displays the prerequisites for the automation pack being imported. The green check mark indicates that the prerequisite was found on the computer.

The red X indicates that the prerequisite was not found on the computer. When this occurs, the import process is stopped and cannot continue until all prerequisites have been met.

If all prerequisites are passed, the wizard automatically continues to the next panel.

Note If you opened the Automation Pack Import Wizard from the Setup Completed panel, the wizard displays the General Information panel for the next automation pack.

Step 12 After the objects have been imported, review the information on the Completing the Automation Pack Import Wizard panel to verify that it is correct and then click **Close** to close the wizard.

Importing the Core Automation for SAP BW, BOBJ and In-Memory Computing.tap

If you are importing the automation packs from within the Console, you must re-open the Automation Pack Import Wizard to import the Core Automation for SAP BW, BOBJ and In-Memory Computing automation pack.

Step 1 Use one of the following methods to open the Import Automation Pack Wizard:

- In the navigation pane, right-click **Automation Packs** and choose **Import**.
- On the Menu bar, choose **Actions > Import**.

Step 2 On the Windows Open dialog box, select the **Core Automation for SAP BW, BOBJ and In-Memory Computing.tap** file and click **Open** to launch the Automation Pack Import Wizard.

Note If you do not want to display the Welcome panel the next time the wizard is opened, check the **Do not show this page next time** check box.

Step 3 On the Welcome panel, click **Next**.

Step 4 On the General Information panel, review the information about the automation pack.

Step 5 If you want to disable all the processes that are imported with the automation pack, check the **Disable all imported processes** check box.

Note If you disable the imported processes, you will need to manually enable the processes in the Console before they can execute.

Step 6 Click **Next** to continue.

The Data Extraction panel is used to specify the destination where the BWA Script files will be extracted.

Note The BWA Script files are not required for the SAP HANA processes. If you uncheck the BWA Scripts check box, the files will not be extracted.

Step 7 Accept the default location or click the **Browse** ... tool to specify a different location to extract the files and then click **Next**.

The Review Prerequisites panel displays the prerequisites for the automation pack being imported. The green check mark indicates that the prerequisite was found on the computer.

The red X indicates that the prerequisite was not found on the computer. When this occurs, the import process is stopped and cannot continue until all prerequisites have been met.

If all prerequisites are passed, the wizard automatically continues to the next panel.

Note If you opened the Automation Pack Import Wizard from the Setup Completed panel, the wizard displays the General Information panel for the next automation pack.

Step 8 After the objects have been imported, review the information on the Completing the Automation Pack Import Wizard panel to verify that it is correct and then click **Close** to exit the wizard.

Importing the Automation for SAP HANA.tap

If you are importing the automation packs from within the Console, you must re-open the Automation Pack Import Wizard to import the Automation for SAP HANA automation pack.

Step 1 Use one of the following methods to open the Import Automation Pack Wizard:

- In the navigation pane, right-click **Automation Packs** and choose **Import**.
- On the Menu bar, choose **Actions > Import**.

Step 2 On the Windows Open dialog box, select the **Automation for SAP HANA.tap** file and click **Open** to launch the Automation Pack Import Wizard.

Step 3 On the Welcome panel, click **Next**.

Step 4 On the General Information panel, review the information about the automation pack.

Step 5 If you want to disable all the processes that are imported with the automation pack, check the **Disable all imported processes** check box.

Note If you disable all the imported processes, you will need to manually enable the processes in the Console before they can execute.

Step 6 Click **Next** to continue.

If all prerequisites are passed, the wizard automatically continues to the next panel.

Step 7 After the objects have been imported, review the information on the Completing the Automation Pack Import Wizard panel to verify that it is correct and then click **Close** to exit the wizard.

CHAPTER 2

Understanding Automation Pack Objects

The Automation for SAP HANA automation packs contain the content used to automate monitoring SAP HANA content. This chapter provides information on the objects included in the Automation for SAP HANA automation pack. It contains the following sections:

Accessing Automation Pack Properties

You can access the automation pack properties from the Administration—Automation Packs view in the console. The automation pack properties dialog box displays general information about the content provided by the automation pack, version number, publish date, the provided objects, the dependencies of the automation pack, and the history of changes made to the automation pack.

Step 1 On the Administration workspace, click **Automation Packs** in the navigation pane to display the installed automation packs in the Automation Packs pane.

Information about the automation packs display in the following columns:

Column	Description
Company Name	Name of the company that released the automation pack.
Publish Date	Date the automation pack was created or exported to a file.
Version	Version number of the automation pack.
Display Name	Name of the automation pack.
ID	Identification number of the automation pack.
Import Date	Date the automation pack was imported into the product.
Licensed	Indicates whether the automation is a licensed product in Process Orchestrator.
Description	Text description of the automation pack.

Step 2 Select the automation pack in the Automation Packs pane, right-click and choose **Properties**.

Step 3 On the Properties dialog box, select the appropriate tab to view the automation pack properties:

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

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

Viewing Automation Pack Content and Dependencies

Use the automation pack Properties dialog box to view the objects contained in the automation packs and the dependencies associated with the automation pack.

Note See Appendix A, "Understanding the Core Automation for SAP Content" for information on the content included in this automation pack.

Viewing Automation Pack Content

Step 1 On the Administration—Automation Packs view, select **Automation for SAP HANA**, right-click and choose **Properties**.

Step 2 On the Automation for SAP HANA Properties dialog box, click the **Objects** tab.

Step 3 On the Objects tab, review the information about the objects provided by the Automation for SAP HANA automation pack.

Columns	Description
Display Name	Name of the object (processes, global variables, knowledge base).
Type	Object type.
Action Required	Action required to successfully import or export the objects.
Customization Setting	Displays the customization setting for the automation pack: • No—Indicates the author of the object prefers the object to remain unchanged whenever a new automation pack is imported. • Limited—Indicates the author has granted editing permission to some properties of the object and any changes made will be preserved whenever a new automation pack is imported. • Workflow—Indicates the author has granted editing permission to the process properties and the objects within the process workflow.
Description	Text description of the object.
Version	Object version.

Automation for SAP HANA Processes

The following table contains the processes that are imported by the Automation for SAP HANA automation pack.

Process Name	Description
HANA Alert Monitoring	Proactively monitors HANA alerts.
HANA Alerts - Automate Actions	Automates execution of recommended BWA actions.
HANA Backup Status	Checks the HANA backup execution status.
HANA Blocked Transactions	Checks for HANA transactions blocked by table locks.
HANA Checklist	Checks HANA system health.
HANA Console Events	Checks for HANA console events.
HANA CPU Usage	Checks HANA system CPU utilization.
HANA Data Disk Usage	Checks HANA data disk utilization.
HANA Data Volume Shrink Status	Checks HANA data volume shrink status.
HANA Log Disk Usage	Checks HANA log disk utilization.
HANA Memory Usage	Checks HANA system memory utilization.
HANA Monitor Workload Statistics	Monitors HANA workload statistics.
HANA Node Availability	Checks HANA node availability.
HANA Savepoints	Checks HANA savepoint execution.
HANA Services Monitoring	Proactively monitors HANA services based on thresholds defined in the HANA Service Thresholds global variable.
HANA Threads Monitoring	Monitors HANA threads for long running requests.
HANA Trace Disk Usage	Checks HANA trace disk utilization.

For information on using the processes, *see* Chapter 4, "Managing Automation for SAP HANA Processes."

Automation for SAP HANA Activities

The following table contains the activities that are imported by the Automation for SAP HANA automation pack. These are activities that are used similar to HANA processes.

For information on defining the processes, see Chapter 5, "Using the SAP HANA Processes (Activities).".

Process Name	Description
HANA Alerts	Retrieves all HANA alerts generated for a specific time period.
HANA Backup Catalog	Retrieves all backups from the catalog for the defined time period.
HANA Blocked Transactions	Retrieves all HANA transactions that are blocked by locks.
HANA Cancel Operation	Cancels the operation associated with the specified connection ID.

Process Name	Description
HANA Cancel Thread	Cancels the thread for the specified connection ID.
HANA Console Events	Retrieves all HANA console events. These are the same console events an administrator would see in the HANA Administrator Console.
HANA Data Volumes Information	Retrieves detailed information about HANA data volumes, including if a shrink operation is recommended.
HANA Data Volumes Shrink	Perform a shrink operation on the specified data volume.
HANA Diagnosis File Content	Retrieves the contents of a specified HANA diagnosis file. The diagnosis file is similar to a trace file containing diagnostic information.
HANA Diagnosis File Sizes	Retrieves the file size of all HANA diagnosis files.
HANA Disconnect Session	Disconnects the connection for the specified connection ID. This activity is used to disconnect sessions that are negatively impacting HANA system performance.
HANA Execute Complete Backup	Executes a complete HANA backup. It is recommended that a complete backup be done before performing some system commands.
HANA Execute Savepoint	Executes a savepoint on the persistence manager. A savepoint is a point in time when a complete consistent image of the database is persisted on the disk. The consistent image can be used to restart the database.
HANA Expensive Statements	Retrieves the most expensive SQL statements for the specified time period.
HANA Get Process List	Retrieve a list of all executing processes in a HANA system.
HANA Global CPU Statistics	Retrieves detailed CPU statistics for a specified time period.
HANA Landscape Configuration	Retrieves detailed HANA landscape configuration details.
HANA Landscape Overview	Retrieves current HANA landscape overview.
HANA Landscape Services	Retrieve a list of services that match the specified filter in the HANA landscape.
HANA Largest Column Store Tables	Retrieves a list of the largest column store tables in the HANA system.
HANA Largest Row Store Tables	Retrieves a list of the largest row store tables in the HANA system.
HANA Last Savepoints	Retrieves a list of all save points for the specified time period. A savepoint is a point in time when a complete consistent image of the database is persisted on the disk. The consistent image can be used to restart the database.
HANA Linux CPU IO Statistics	Retrieves detailed CPU core information for systems hosting the HANA database, including the standard output activities for each available processor.

Process Name	Description
HANA Linux File System Usage	Retrieves detailed file system information hosting the HANA databases, including amount of free space available.
HANA Linux Memory Usage Statistics	Retrieves detailed system memory statistics and event counters for systems hosting the HANA database.
HANA Linux Top CPU	Retrieves top Linux tasks running on systems hosting the HANA database.
HANA Log Information	Retrieves detailed information about HANA logs, including log file size.
HANA Log Operations	Executes a specified operation against a HANA log file. For example, 'Backup' to force log backup or 'Release' to release log segments.
HANA Memory Garbage Collection	Performs garbage collection on the HANA system, and optionally forces memory management garbage collection.
HANA Memory Management	Executes memory management command to retrieve memory allocations details.
HANA Performance Load	Retrieves detailed information about the current HANA system workload, such as connections, memory, and swapping.
HANA Performance Threads	Retrieves detailed thread information for the specified HANA service, such as connection details, user details, and memory.
HANA Start Instance	Starts HANA daemon instance wide or on a single host.
HANA Stop Instance	Stops HANA daemon instance wide or on a single host.
HANA Stop Service	Stops a service instance wide or on a single host.
HANA Table Locks	Retrieves detailed information for table locks older than the specified duration.
HANA Table Replication Status	Retrieves the current status of the HANA table replication.
HANA Thread Context	Retrieves detailed information about the context of HANA threads.
HANA Thread Operations	Executes a command for a defined thread context. For example, 'Suspend' to suspend thread or 'Resume' to resume thread.
HANA Volumes	Retrieves detailed information about the HANA volumes, such as data size, log size, and usage.
LT Replication Master and Load Job Status	Retrieves a list of all IUUC and DTL HANA jobs that have cancelled prematurely.
LT Replication Test HANA Connection	Tests the LT replication connection between the source SAP system and HANA.

Automation for SAP HANA Target Properties

The following table contains the target properties that are imported by the Automation for SAP HANA automation pack.The target properties that do not have a value defined must be configured by the user prior to using them in processes.

Target Property Name	Description	Value Defined?
HANA.ABAP Target	Use this property to reference the HANA ABAP system target.	No
HANA.Alert Monitoring – Actions	Used for HANA alert monitoring and problem resolution; contains the action ID for each alert.	Yes
HANA.Alert Monitoring – HANA Alerts	Used for HANA alert monitoring. Alert ID: Enter the SAP HANA Alert IDs that should raise alerts and incidents. Custom Description: Optional description to be added to the alert and incident. Action Required: Check the check box to set to be set to true if the process *HANA Alerts – Automate Actions* has automation for the alert. Alert Class: Class ID for the alert and incident to be created.	Yes
HANA.Archive.Diagnosis File Age For Move	Contains the number of days old to specify archiving for HANA diagnosis files; files older than the specified value will be archived.	No
HANA.Archive.Log Backup File Age For Move	Contains the number of days old to specify archiving for HANA log backup files; files older than the specified value will be archived.	No
HANA.Archive.Path to Diagnosis File Archive Target	Contains the path to the HANA log archive backup location where old diagnosis files will be moved.	No
HANA.Archive.Path to Log Backup Archive Target	Contains the path to the HANA log archive backup location where old log backup will be moved.	No
HANA.Database Target	Use this property to reference the HANA database target.	No
HANA.Global Thresholds	Contains the threshold values to be used for monitoring HANA global CPU, memory, disk space and other services.	Yes
HANA.Linux Configuration	Contains the Linux OS user to be used for monitoring HANA host OS resources.	Yes
HANA.Long Running Threads – Types to Include	Contains the thread types that should be monitored for long running threads.	No
HANA.Long Running Threads Thresholds	Contains the thresholds for long running threads. Use the property HANA.Long Running Threads – Types to Include to exclude thread types from monitoring.	Yes

Target Property Name	Description	Value Defined?
HANA.Service Statistics Threshold	Contains the threshold values for monitoring BWA Index Server service.	No
HANA.Unix Target	Use this property to reference the HANA Unix target.	No
HANA.Web Target	Use this property to reference the HANA Web target.	No
HANA.Workload Metrics	Contains the thresholds for system workload metrics. Thresholds set to 0 will not be monitored.	No

For information on configuring target properties, *see* Managing Target Properties, page 3-21.

Automation for SAP HANA Target Groups

The following target groups are imported with the Automation for SAP HANA automation pack:

Target Group Name	Description
All SAP HANA Systems	Contains all SAP HANA targets.

For information on target groups, *see* the *Cisco Process Orchestrator Reference Guide*.

Viewing Automation Pack Dependencies

Use the Dependencies tab to view the automation packs and adapters referenced by the objects in the automation pack. These object must be installed prior to importing the Automation for SAP HANA automation pack.

Step 1 On the Administration—Automation Packs view, select **Automation for SAP HANA**, right-click and choose **Properties**.

Step 2 On the Automation for SAP HANA Properties dialog box, click the **Dependencies** tab.

Step 3 Review the list of automation packs and adapters referenced by the Automation for SAP HANA automation pack.

Object Type	Dependency
Automation Packs	• Common Activities • Core • Core Automation for SAP • Core Automation for SAP BW, BOBJ and In-Memory Computing
Adapters	• Core Functions Adapter • Generic (Microsoft OLEDB) Database Adapter • Microsoft Windows Adapter • SAP ABAP Adapter • Terminal Adapter • Web Service Adapter

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

CHAPTER 3

Getting Started Using the Automation Pack

Before you begin using the content that ships with the automation pack, you must create the objects in Cisco Process Orchestrator that are referenced in the processes. These objects include targets, runtime users, task rules for assignments and notifications, and target properties.

This chapter provides basic information on defining the objects. It includes the following sections:

For additional information about the objects discussed in this chapter, refer to the following documentation:

Document	Description
Cisco Process Orchestrator User Guide	General information about Core product features.
Cisco Process Orchestrator User Guide	Information about the Unix objects (Unix target and runtime user)
Cisco Process Orchestrator Online Help	Information about the adapter prerequisites and the objects provided by it.
Intelligent Automation for SAP 3.0 Installation Guide	Information about the SAP targets and SAP User runtime user account.

Prerequisites

The following prerequisites must be met prior to configuring the SAP HANA targets in Process Orchestrator.

Install SAP HANA Database Client for Windows

The SAP HANA Database Client for Windows must be installed on the server where Process Orchestrator is installed. Download the *SAP HANA CLIENT 1.00 (SP05 Revision 60 or later) for Windows on x64 64-bit* from the SAP Service Marketplace.

Note The revision number of *SAP HANA CLIENT 1.00 for Windows on x64 64-bit* installed on the Process Orchestrator server must be the same as the revision number on the HANA database.

The minimum supported version for the SAP HANA Client 1.00 is SP05 Revision 60 or later.

Configure Windows Host File and Path

Before you can connect to the ODBC system DSN, you must add the HANA data source hostname and IP address to the Windows hosts file.

Step 1 On the Process Orchestrator server, navigate to the following location:

C:\Windows\System 32\drivers\etc\hosts

Step 2 Right-click the **hosts** file and open in Notepad.

Step 3 Enter the IP address and host name for the HANA host server and press **Enter** on the keyboard.

Step 4 Click **File > Save** to save the file and complete the procedure.

Create Data Source for ODBC System DSN

Before you can create SAP HANA targets, you must add the ODBC system data source used to connect to the HANA data provider from Process Orchestrator.

Step 1 In the Control Panel, double-click **Administrative Tools > Data Source (ODBC)**.

Step 2 On the ODBC Data Source Administrator dialog box, click the **System DSN** tab.

Step 3 Click **Add** to open the Create New Data Source dialog box.

Step 4 In the list of drivers, select **HDBODBC** and click **Finish**.

Step 5 On the SAP HDB dialog box, specify the following information:

- Data Source Name
- Description
- Server:Port

Step 6 Click **Connect**.

Step 7 On the SAP HDB Connection dialog box, enter the **User Name** and **Password** for connecting to the HANA Database and then click **OK**.

Unix/Linux Target Prerequisites

The following prerequisites must be met for Unix/Linux target functionality:

- The following versions of Linux are supported:
  - SUSE Linux Enterprise 11 Service Pack 1
  - SUSE Linux Enterprise 11 Service Pack 2
- Linux performance monitoring requires that the SYSSTAT Linux package be installed. To install the package, run the command *yast -i sysstat*.
- If you want to monitor all Linux hosts, you must configure Auto-SSH login proxy. See Configuring Auto-SSH Login Proxy, page 3-13.

Creating and Configuring HANA Targets

The Automation for SAP HANA automation pack includes a SAP HANA target template that can be used to create a target for the HANA environment. The SAP HANA target will hold the reference to all of the connections to HANA that are needed for automation.

Before you can reference the connections in the SAP HANA target, you must create the targets that will be referenced (Web target, Linux/Unix targets, Database target, SAP HANA target). After you create these targets, you create a unique SAP HANA target using the template and reference them.

This section guides you through creating the targets in the HANA environment, creating a SAP HANA target using the template, and then referencing the target using the Target Properties feature.

Creating SAP HANA Target

Before you can create or run processes, you must create the SAP HANA target on which the processes will run. This section guides you through creating SAP HANA target using the New SAP HANA Wizard.

After creating the SAP HANA target, you can reference the ABAP target, database target, Linux Administration Unix target, SAP Administration Unix Target, and web target.

Note To configure the references to targets, see Configuring References to Targets, page 3-18.

Step 1 On the Definitions workspace, right-click **Targets** and choose **New > SAP HANA** to open the SAP HANA Properties dialog box.

Step 2 In the Display name text field, enter a name for the SAP HANA target.

Step 3 Click **OK** to save the target and close the dialog box.

Step 4 In the Targets pane, right-click the newly created SAP HANA target and choose **Enable** to enable the target.

Creating SAP HANA Database Target

You must create a database target for the SAP HANA using the Generic Data Source (OLEDB) target type. Use the New Generic Data Source (OLEDB) Properties dialog box to create the database target.

Step 1 On the Definitions workspace, right-click **Targets** and choose **New > Generic Data Source (OLEDB)** to open the New Generic Data Source (OLEDB) Properties dialog box.

Step 2 On the **General** tab, specify the following information:

Field	Description
Display name	Name for the target. This is the name that will display in the Targets pane.
Type	*Display only.* Type of target.
Owner	User name of the owner of the target. This is typically the person who created the target.
Status	*Display only.* Status of the target.
Status information	*Display only.* Detailed information regarding the target status.
Organization	Name of the group or organization within the company that owns the target.
Description	Optional field to enter a description for the target.

Step 3 Click the **Connection** tab.

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

Step 4 On the **Connection** tab, specify the following connection information for the target:

Field	Description
Hostname or Datasource	Name of the server or data source where the HANA database resides. Enter the information in the following format: <server name>:port **Note** Port number will be 3XX15, where XX is the HANA System Number.
Database Owner	Principal owner of the database.
Default time out for activities (seconds)	Indicates the length of time to wait before a command is complete
Runtime User	Choose the runtime user account that is used to connect to the data source from the drop-down list. **Note** To view the properties for the selected runtime user, click the **Properties** tool. To create a new runtime user account, click **New** and then choose **Runtime User**. *See* Creating a Runtime User, page 3-7. **Note** The HANA User account created for Process Orchestrator should have the following authorizations: MONITORING HANA: This role authorizes the read monitoring activities. SESSION ADMIN: This role adds system privileges to the accounts to support the corrective actions in the content. These two authorizations cover all authorized content shipped in the automation pack for HANA.
Connection string	Check the check box and enter the DSN connection string to the data source. **For example:** DSN=DH1;

Step 5 Click the **Permission** tab.

Step 6 Click the **Execute SQL command** radio button.

Step 7 Click **OK** to close the dialog box and complete the procedure.

Creating a Runtime User

The Runtime User is the account that will be used to connect to the targets. You can create the runtime users for all targets prior to creating the targets, or when specifying the target connection information.

When creating runtime users, refer to the following information regarding the required user accounts for the HANA environment.

HANA Target	Runtime User Account Requirements
SAP HANA Database Target	The HANA User account created for Process Orchestrator should have the following authorizations: MONITORING HANA: This role authorizes the read monitoring activities. SESSION ADMIN: This role adds system privileges to the accounts to support the corrective actions in the content. These two authorizations cover all authorized content shipped in the automation pack for HANA.
HANA Web Target	The runtime user for this target should be the HANA OS SIDADM user.
Unix/Linux Targets:	
HANA.SAP Administration Unix Target	The runtime user for this target is the HANA OS SIDADM user)
HANA.Linux Administration Unix Target	The runtime user for this target is a Linux user with OS administration permissions.

Note For additional information on creating and managing runtime users, *see* the *Cisco Process Orchestrator Reference Guide*.

Step 1 Open the New Runtime User Properties dialog box using one of the following methods:

- In the Definitions workspace, right-click **Runtime Users** and choose **New > Runtime User**.
- On the target Connection tab, click **New > Runtime User** in the Runtime User field.

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

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.

Field	Description
Display name	Name for the user account. This field can be populated with the information specified in the Domain and User name text fields, or you can enter a different name to display for the user account.
User name	User name assigned to the user account that connects to the Remedy Server target.

Field	Description
Password	Check the check box and enter the password assigned to the user account. **Note** No password verification is done for the simple (generic) runtime user.
Description	A description of the user account.

Step 3 Click **OK** to close the dialog box and complete the procedure.

Creating Web Targets

If you want to configure Process Orchestrator to monitor the Web targets in your HANA environment, you must create a Web target using the New Web Target Properties dialog box.

Step 1 On the Definitions workspace, right-click **Targets** and choose **New > Web Target** to open the New Web Target Properties dialog box.

Step 2 On the General tab, enter the information in the following text fields:

Field	Description
Display name	Name for the target. This is the name that will display in the Targets pane.
Type	*Display only.* Type of target.
Owner	User name of the owner of the target. This is typically the person who created the target.
Status	*Display only.* Status of the target.
Status information	*Display only.* Detailed information regarding the target status.
Organization	Name of the group or organization within the company that owns the target.
Description	Optional field to enter a description for the target.

Step 3 Click the **Connection** tab.

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

Step 4 On the Connection tab, specify the following connection information for the target:

Field	Description

Base Url	Enter the appropriate target URL to use as a base for the execution.
	
	For example:
	`http://<hanahostname>:5XX13/?wsdl`
	
	`where XX=HANA System Number`

Runtime User	Click one of the following radio buttons to indicate which runtime user account to use to connect to the target: • No runtime user—Click this radio button to indicate that no runtime user is required to execute a process or activity against the target. • Default runtime user—Click this radio button and then choose 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** and then choose **Runtime User**. *See* Creating a Runtime User, page 3-7. **Note** The runtime user for this target should be the HANA OS SIDADM user.
Ignore certificate errors	Check or uncheck the check box to indicate whether the target should ignore any certificate errors on the specified web site. If the check box is checked, all errors will be ignored.

Step 5 Click **OK** to close the dialog box and complete the procedure.

Creating Unix/Linux Target

If you want to monitor the SAP HANA Linux systems in your environment, you must create the Unix/Linux System targets. The Automation for SAP HANA content requires that two different Unix/Linux targets be created with different runtime user accounts:

- HANA.SAP Administration Unix Target—This target is used for SAP command line applications and uses the HANA OS SIDADM runtime user account.
- HANA.Linux Administration Unix Target—This target is used for LINUX command line administration applications and uses a Linux user with OS administration permissions as the runtime user account.

Note Review the Unix/Linux Target Prerequisites, page 3-3 prior to creating the targets

Note For additional information on creating and managing Unix/Linux targets, *see* the *Cisco Process Orchestrator User Guide*.

Step 1 On the Definitions workspace, right-click **Targets** and choose **New > Unix/Linux System** to open the New Unix/Linux System Properties dialog box.

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

Field	Description
Display name	Enter a name for the Database target. This is the name that will display in the Targets pane.
Type	*Display only.* Type of target.
Owner	User name of the owner of the target. This is typically the person who created the target.
Status	*Display only.* Status of the target.
Status information	*Display only.* Detailed information regarding the target status.
Organization	Name of the group or organization within the company that owns the target.
Description	Optional field to enter a description for the target.
Enabled	Check or uncheck the check box to enable or disable the target. The check box is checked by default.

Step 3 Click the **Connection** tab.

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

Step 4 On the Connection tab, specify the connection information to connect to the Unix/Linux server:

Field	Description
Host name	Host name or IP address of server.
Port	Port number used to access the server.

Field	Description
Prompt prefix	Enter the command prompt prefix that will be used by the device type configurations and expects when issuing commands and connecting to the device. Adding a regex character, such as $, >, and #, at the end of a prompt in the Prompt Prefix field invalidates the command prompt prefix. Regular expressions should be placed in the appropriate Terminal Interaction Pattern fields. **Example:** Unix system prompt prefix is defined by the user default login script. it usually contains username, node name or current directory name. If the user does not define anything, the prompt prefix is empty. If you connect to the terminal, and the prompt is `jsmith@TBD-SH03-IT ~$`, enter the regular expression that will match the entire prefix (before #) using any of the following expressions: • .*TBD-SH03-IT.* • \[\w+@TBD-SH03-IT.*\]
Default runtime user	Choose the default runtime user account that contains the credentials to connect to the target from the drop-down list. • HANA.SAP Administration Unix Target—Select the HANA OS SIDADM runtime user account. • HANA.Linux Administration Unix Target—Select the Linux user with OS administration permissions runtime user account. To view the properties for the selected runtime user, click the **Properties** tool. To create a new runtime user account, click **New > [Runtime User Type]** to create a new Runtime User account. *See* Creating a Runtime User, page 3-7.
Enable code injection prevention	Check this check box to enable the protection which prevents code that is injected to exploit the security vulnerability.
Maximum allowed concurrent sessions	Enter the maximum allowed open sessions to run concurrently (default value is 3). If the user tries to open new session via Open Session activity, it will wait in a queue until there is a session available to open.

Step 5 Click the **Authentication** tab and specify the following information to indicate whether the target should allow authentication based on the host system:

Field	Description
Use host-based authentication	Check this check box to indicate that host-based authentication will be used with this target. If this check box is unchecked, then host-based authentication will not be used.
Use the default host keys	This check box becomes enabled after the *Use host-based authentication* check box is checked. Check this check box to indicate the host keys defined on the Terminal Adapter property page will be used for this target. If this check box is unchecked, then the user will need to load the appropriate private key to be used to validate this target.
Private key	This box becomes enabled only if the *Use the default host keys* check box is unchecked. To the right of the *display-only* field, click the **Browse** tool to launch the Load Private Key dialog box and select a private key.

Step 6 Click the **Advanced** tab and specify the interaction patterns for the target.

Field	Description
Use patterns common for the following device	Click the radio button *one* of the pre-defined device targets from the drop-down list. • Cisco IOS Device—Select this option to use the default pattern values used by the device during the completion of a session command. • Unix/Linux System—Select this option to use the default pattern values indicated for a Unix or Linux system during the completion of a session command. To view the properties for the selected device, click the **Properties** tool. To create a new device, click **New > Expect Template** to create a new expect template.
Customize patterns for this target	Select this radio button to enable the display-only sections in order to customize the default values for the selected device type.

Step 7 Click **OK** to close the dialog box and complete the procedure.

Configuring Auto-SSH Login Proxy

If you want to monitor all Linux hosts in your environment, you must configure an Auto-SSH login proxy.

Note If you choose not to set up auto login proxy, only the Process Orchestrator Linux system target will be monitored.

Note If the auto-ssh proxy connection fails due to the network changes made to the host Linux systems, rebuild the linux auto-ssh connection by deleting the /.ssh directory (which includes the id_rsa, id_rsa.pub, and known_hosts files for the auto-login). After deleting the directory, follow the procedure as mentioned from Step 2.

Step 1 Create a Linux user with permissions for the following linux commands:

- top
- iostat
- mpstat
- vmstat
- df

Step 2 Perform SSH login to the HANA Unix/Linux system target configured in Process Orchestrator using the Linux user account created in Step 1.

Step 3 Execute the command **ssh-keygen -t rsa**.

a. Enter passphrase as empty.

b. Note the file location of the key.

Step 4 Execute the command **ssh-copy-id -i <file path to key> < remote host>** and replace the <remote host> with the hostname for all HANA hosts in the instance.

Step 5 Test the remote connection by executing the command **ssh <remote host>** and confirm that you are no longer prompted for a password.

Step 6 Add the new Linux user name to the Process Orchestrator target property *HANA Linux Configuration – HANA Linux Shell User.*

Creating SAP System Target

If you want to use the Landscape Transformation (LT) processes, you must create the SAP System (ABAP) targets for the LT replication servers that replicate data into HANA. The SAP System Wizard is used to create these targets.

Note The SAP ABAP Adapter requires the dll files for SAP .NET Connector 3.0 for .NET 4.0 on x64 version 3.0.7.0 or higher. Before you can configure an SAP ABAP system target, these files must be installed on the Process Orchestrator server.

See the *Intelligent Automation Guide for SAP 3.0 Installation Guide* for instructions on installing these files, and additional information on configuring SAP HANA targets.

Step 1 On the Definitions workspace, right-click **Targets** and choose **New > SAP System** to open the New SAP System wizard.

Step 2 On the Welcome panel, click **Next** to display the System Setup panel.

The System Setup panel is used to specify the SAP system name, the type of system components to be configured, and the monitoring level for the SAP system.

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.

Note You can only create one target for each SAP system. However, for multi-tenant environments, you can create targets for different SAP systems with the same system ID (SID).

When using the same SID for different SAP systems, you must enter the organization for each SAP system so Process Orchestrator can differentiate the alerts and incidents for each system.

Step 3 Specify the following information about the SAP system:

Field	Description
Display name	Enter a name for the SAP system. This is the name that will display in the Targets pane.
System Components	
ABAP application servers	Check this check box if the SAP system uses an ABAP connection to the application server.
Java application servers	*Not applicable for LT replication servers.*
SAP database	Check this check box if you want to configure the SAP database that is associated with the SAP system.
Monitor as production system	This check box is checked by default. Certain processes will run only on production systems. If you want to monitor the system as a non-production system (development or sandbox), uncheck the check box.
Organization	Enter the group or organization within the company that owns the target. **Note** If you are configuring multiple SAP systems with the same SID, you must specify the organization for each SAP system target.

Step 4 Click **Next** to display the ABAP Connection panel.

Use the ABAP Connection panel to enter the connection information for the SAP system.

Note The system information entered on this panel must be unique.

Step 5 Specify the connection information for connecting to the SAP application server:

Field	Description
Connect using	Choose the connection method from the drop-down list. The fields that display on the panel depend on the connection method selected.
Application server	Choose this option to connect to the SAP system using the SAP application server connection information. Specify the information in the following fields: • Server name—Enter the name of the SAP application server. • System number—Enter the SAP system number.
Logon group	Choose this option to establish a connection using a logon group, which contains a group of SAP system instances. When a user logs on to a logon group, the message server directs the users to the server of this group that currently has the lightest load. Specify the information in the following fields: • System ID—Enter the SAP system ID (SID). • Message server—Enter the name of the server a user logs on to and that handles the communication between the application servers. For example, transport of update requests and lock requests. • Group name—Enter the name of the Logon Group to be accessed. The name entered in this field is case-sensitive.
Router string (optional)	Enter the router string for accessing the SAP systems via SAPRouter. If you do not specify a router string, Process Orchestrator accesses the SAP system directly. The router string must be formatted as: /H/host01/H/host02/H/ where host01 and host02 are the SAP systems that you want to access through the SAPRouter.
Default runtime user	Choose the user account that contains the credentials to connect to the target from the drop-down list. • To view the properties for the selected runtime user, click the **Properties** tool. • To create a new SAP User, click **New > SAP User**. *See* Creating an SAP User Account, page 3-18.

Step 6 Click **Next** to display the Server Availability panel.

The Server Availability panel is used to specify the SAP application servers that you want to monitor for availability and the ability to log in a user.

Step 7 Specify the following information:

Field	Description
Servers available for monitoring	All detected servers are checked by default. Verify that the check box next to each server that you want to monitor is checked.
Add	If a server is offline during configuration, it will not be displayed in the list of available servers. To manually add the server, click **Add** and enter the name of the server.
Remove	If you want to remove a server from the list, select the server and click **Remove**.
Select All	If the check boxes have been unchecked and you want all servers to be monitored, click **Select All**.
Deselect All	If all the check boxes are checked and you want to uncheck all of them, click **Deselect All**.

Step 8 Click **Next**.

If you are configuring the SAP database, the Database Connection panel displays. Otherwise, proceed to Step 12.

Note The fields that display on this panel depend on the type of database that is being configured.

Step 9 Choose the Database type from the drop-down list to display the fields for the specific type of database.

Step 10 Specify the information for the type of database that is being configured. The fields that display depend on the database type.

Field	Description
Server	Enter the name of the SAP application server where the database resides.
Hostname or data source	Name of the host server or data source for the Oracle or Generic database.
SID	System ID for the server where the Oracle database resides.
Database name	Enter the name of the SAP database that is associated with the SAP system.
Database owner	Enter the name of the user that owns the rights to the database.
Database source	Enter the Data source to connect to the database.
Port Number	Enter the Port number used to connect to the database.
Default timeout for activities (seconds)	Enter the number of seconds before the activity times out. The default timeout period is 120 seconds.

Field	Description
Default runtime user	Choose the user account that contains the credentials to connect to the database from the drop-down list. • To view the properties for the selected runtime user, click the **Properties** tool. • To create a new runtime user, click **New > Runtime User**. *See* Creating a Runtime User, page 3-7.
Connection string	If the database has a custom connection string label appended to the name, check the check box and modify the string in the text field.

Step 11 Click **Next**.

Step 12 On the Completing the New SAP System Wizard, verify that the information is correct and click **Finish** to complete the procedure.

Creating an SAP User Account

The SAP User is the account that will be used to connect to an SAP ABAP application server or SAP system target.

Step 1 In the Definitions workspace, right-click **Runtime Users** and choose **New > SAP User** to open the New SAP User Properties 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 On the General tab, specify the following information:

Field	Description
Display name	Name for the user account.
User name	User name assigned to the SAP user account that connects to the SAP system or ABAP application server.
Password	Password assigned to the SAP user account that connects to the SAP system or ABAP application server.
Client	SAP client number assigned to the user account.
Description	A description of the user account.

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

Configuring References to Targets

You must now configure the SAP HANA target to reference the Web target, Unix target and Database target. Use the SAP HANA Target Properties feature to reference the targets.

Creating Reference to HANA ABAP Target

Use this procedure to reference the HANA ABAP target that was created in "Creating SAP System Target" section on page 3-13.

Step 1 On the Definitions workspace, click **Targets**.

Step 2 Right-click the **SAP HANA** target and choose **Properties**.

Step 3 On the [**SAP HANA Target**] Properties dialog box, click the **HANA Connections** tab.

Step 4 Click the **Browse** tool next to the value field.

Step 5 On the Select Target dialog box, select the SAP HANA ABAP target and click **OK** to add the system to the value field.

Step 6 Click **OK** to close the SAP HANA Target Properties dialog box.

Creating Reference to SAP HANA Database Target

Use this procedure to reference the SAP HANA Database target that was created in "Creating SAP HANA Database Target" section on page 3-5.

Step 1 On the Definitions workspace, click **Targets**.

Step 2 Right-click the **SAP HANA** target and choose **Properties**.

Step 3 On the [**SAP HANA Target**] Properties dialog box, click the **HANA Connections** tab.

Step 4 Click the **Browse** tool next to the value field.

Step 5 On the Select Target dialog box, select the HANA Database target and and click **OK** to add the system to the value field.

Note If you are configuring all the target references at one time, proceed to Step 6 in Creating Reference to SAP HANA Unix Target.

Step 6 Click **OK** to close the SAP HANA Target Properties dialog box.

Creating Reference to SAP HANA Web Target

Use this procedure to reference the Web target that was created in "Creating Web Targets" section on page 3-8.

Step 1 On the Definitions workspace, click **Targets**.

Step 2 Right-click the **SAP HANA** target and choose **Properties**.

Step 3 On the [**SAP HANA Target**] Properties dialog box, click the **HANA Connections** tab.

Step 4 Click the **Browse** tool next to the value field.

Step 5 On the Select Target dialog box, select the HANA Web target and and click **OK** to add the system to the value field.

Step 6 Click **OK** to close the SAP HANA Target Properties dialog box.

Creating Reference to SAP HANA Unix Target

Use this procedure to reference the Unix target that was created in "Creating Unix/Linux Target" section on page 3-9.

Step 1 On the Definitions workspace, click **Targets**.

Step 2 Right-click the **SAP HANA** target and choose **Properties**.

Step 3 On the [**SAP HANA Target**] Properties dialog box, click the **HANA Connections** tab.

Step 4 Click the **Browse** ... tool next to the **Linux Administration Unix Target** value field.

Step 5 On the Select Target dialog box, select the Linux Administration Unix Target and click **OK** to add the system to the value field.

Step 6 To select the SAP Administration Unix target, click the **Browse** ... tool next to the **SAP Administration Unix Target** value field.

Step 7 On the Select Target dialog box, select the SAP Administration Unix target and click **OK** to add the target to the value field.

Step 8 Click **OK** to close the SAP HANA Target Properties dialog box.

Managing Target Properties

The HANA processes use target properties to specify the values to override certain target properties. This section provides information on configuring the target properties that ship with the Automation for SAP HANA automation pack.

Accessing Target Properties

The target properties that ship with the Automation for SAP HANA automation pack can be accessed from the Definitions—Target Properties view.

Note If the Target Properties view is hidden, go to **Tools > Options**. On the Options dialog box, click the **Windows and Layout** tab and select the **Display target properties definitions node** check box.

Step 1 On the Console, select the Definitions workspace and click **Target Properties** in the navigation pane. By default, all the properties display in the Target Properties pane.

The following information about the target properties displays by default:

Column	Description
Display Name	Name of the target property.
Description	Text description of the target property.
Value	Value assigned to the target property.
Data Type	Type of value being used for the target property (Boolean, Encrypted String, Identity, Numeric, String, Table).
Automation Pack	Name of the automation pack that provides the target property.
Customizable	Indicates the customization setting for the target property in the automation pack.
Target Types	Indicates the targets associated with the target property.
Last Modified Time	Date and time the variable was last modified.
Last Modified By	Name of the user who last modified the target property.
Id	Unique ID of the target property.
Owner	User name of the owner of the target property. This is typically the person who created the target property.
Created Time	Date and time the target property was created.
Created By	User name of the person who created the target property.

Step 2 Click the **Filter by** link and choose **Automation Pack > Automation for SAP HANA** to filter for only the target properties that ship with the specific automation pack.

Configuring Target Properties

You use the Target Properties dialog box to view or modify the target property. You access the properties from the Definitions—Target Properties view.

The following section provides information on configuring target properties that ship with the Automation for SAP HANA automation pack.

Step 1 On the Target Properties pane, right-click **[Target Property]** and choose **Properties**.

Step 2 On the General tab, review the information in the Description field to determine the values that need to be specified for the target property.

Step 3 Click the **Value** tab to view or modify the default value for all targets.

Note The tab in the second position will depend on the variable type. *See* the *Cisco Process Orchestrator Reference Guide* for instructions on configuring the different types of target properties.

Step 4 Click in the cell to specify the default value or change the default value for all targets.

Step 5 If you want to specify different values to be used on specific targets, click the **Target Values** tab to specify the values to override the default values and the targets on which to use the overrides.

Step 6 Click **New** to add a new target override.

Step 7 On the Target Property Value dialog box, click one of the following radio buttons to indicate which target(s) will use the override value:

- Set the value for a single target—Click this radio button to specify only one target that will use the override value.
- Set the same value for multiple targets—Click this radio button to specify multiple targets that will use the override value.

Step 8 Click the **Browse** ... icon to open the Select Target dialog box.

Step 9 Select the target(s) in the list and click **OK**.

Step 10 In the Value area, click in the cell to specify the override values to be used for the specified targets and click **OK**.

The target override displays on the Target Values tab.

Step 11 Click **OK** to close the dialog box and save your changes.

Note The Target Types tab is only available if you have explicit rights to the object. *See* the *Cisco Process Orchestrator Reference Guide* for information on using this property page.

Using Task Rules for Assignments and Notifications

Task rules are used to manage task assignments and notifications for tasks, such as incidents and alerts, that are generated from processes. When you import the Core Automation for SAP automation pack, you are prompted to specify the default user or group who should be assigned SAP incidents. By default, this person will receive all assignments unless task rules are created to specify alternate users or groups for specific tasks.

This section guides your through configuring the task rule that ships with the Core Automation for SAP automation pack and provides instructions for creating and managing task rules.

Note If you do not want to create task rules for email notifications, you can use the default notification based on assignment processes that ship with the Core automation pack. These processes are disabled by default and must be enabled if you want notifications to be sent (*see* Enabling Notification Based on Assignment Processes, page 3-33).

Accessing Task Rules View

The task rule that ships with the Core Automation for SAP automation pack can be accessed from the Definitions—Task Rules view.

Step 1 On the Console, select the Definitions workspace and click **Task Rules** in the navigation pane. By default, all the rules display in the Task Rules pane.

Step 2 Click the **Filter by** link and choose **Automation Pack > [Automation Pack Name]** to filter for only the task rules that ship with the specific automation pack.

The following information about the task rules displays by default:

Column	Description
Display Name	The name assigned to the task rule.
Enabled	Indicates whether the task rule is enabled (*True*) or disabled (*False*). A disabled task rule is unavailable for execution.
Type	Type of task.
Owner	User name of the person or group who assigned the task rule.
Last Modified Time	The date and time the task rule was last modified.
Last Modified By	The object or user name that last modified the task rule.
Id	Unique ID of the task rule.
Description	Brief description of the task rule.
Type Description	Brief overview of the task rule type.
Created Time	Time at which the task rule was created.
Created Date	Date the task rule was created.
Automation Pack	Name of the automation pack associated with the task rule.

Configuring Task Rules

Use the Task Rules view to configure the task rule that ships with the Core Automation for SAP automation pack.

SAP Default Assignment

The Core Automation for SAP automation pack ships with the Default SAP Assignment task rule, which is used to specify the default user or group who will be assigned all SAP-related incidents unless otherwise specified in task rules. This task rule can be configured during the import process on the Default Incidents Assignee Setup panel or from the Task Rules view in the Console.

Step 1 In the Definitions workspace, click **Task Rules** in the navigation pane to display the task rules in the results pane.

Step 2 Click the **Filter by** link and choose **Automation Pack**, and then choose **Core Automation for SAP** from the drop-down list to display the task rules that ship with the automation pack.

Step 3 Right-click the **SAP Default Assignment** task rule and choose **Properties** to open the SAP Default Assignment Properties dialog box.

Step 4 Click the **Assign** tab to specify the user or group that should receive assignments for incidents and alerts generated by the processes.

Step 5 On the Assign tab, click **Add** to open the Select Assignee to Add dialog box.

Step 6 On the Select Assignee to Add dialog box, specify the assignees using one of the following methods:

- Click the **Reference** tool to select the appropriate variable reference containing the assignee or list of assignees from the Insert Variable Reference dialog box.
- Click the **Browse** tool to launch the Select User or Group dialog box to add user to the list of assignees.

Step 7 Click **OK** to add the assignee to the task rule.

Step 8 When you have completed adding assignees to the task rule, click **OK** to close the dialog box.

Creating a New Task Rule

Use the Task Rules view to create a new task rule. The procedure is the same for all types of task rules with the exception of the task-specific tab (Assign, Notify, Update) for the type of task rule you are creating.

Note Only users with administrative rights can create task rules in Process Orchestrator.

You can create the following types of task rules:

Task Rules	Description
Assign Task Rule	Assigns users to a task.
Notify Task Rule	Notifies users that a task has been created.
Update Task Rule	Specifies the properties to be updated in a task.

Step 1 In the Definitions workspace, right-click **Task Rules** and choose **New > [Task Rule Type]** to open the New Rule Properties dialog box.

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

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

Step 3 Click the **Task Types** tab to specify the types of tasks to be executed by the rule.

Step 4 Check the check box for the type of task that will execute the rule.

Task Type	Description
Alert	Alerts reflect potential problems that a user may want to investigate and possibly diagnose the problem.
Approval Request	Specifies the message and choices for the assignee who is approving the task.
Guided Operation	Details the steps a user takes to complete an assigned task.

Task Type	Description
Incident	Task requires an operator to take action in order to resolve an issue.
Input Request	Task requires input from an individual or group.
Review	Task assigns a document for review.

Step 5 Click the **Conditions** tab to specify the conditions of when the task rule action is to be taken based on an evaluation of the defined conditions.

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 6 On the Conditions tab, define the conditions that must be met for the rule to execute.

Defining a Basic Condition:

a. On the Basic page, click **New** to add a new property for the condition that must be met.

b. In the Property text field, click the **Reference** tool to choose a defined variable or reference an object on the Insert Variable Reference dialog box.

c. Choose the condition expression from the drop-down list.

d. Enter the condition description in the text box or click the **Reference** tool to choose a defined variable or reference an object on the Insert Variable Reference dialog box.

e. Click **New** to define additional properties, if necessary.

Defining an Advanced Condition:

a. Click the **Advanced** tab to define a specific type of condition (Compound, Prior Process Instance, Time, or Variable).

b. Click the link to modify the option for the condition equation.

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

c. Click **New** and choose the type of condition from the drop-down list.

d. Specify the relevant information for the type of condition selected.

Note Click the **Reference** tool to choose a defined variable or reference an object on the Insert Variable Reference dialog box.

e. Click **New** to define additional properties, if necessary.

Step 7 Click the task rule specific tab (**Assign**, **Notify**, or **Update**) and specify the relevant information for the specific type of rule.

Assign Task Rule

If you are creating an Assign Task Rule, the Assign tab displays on the New Rule Properties dialog box.

On the Assign tab, specify the assignees for task rule.

Field	Description
Add	Click this button to launch the Select Assignee to Add dialog box to specify the assignees. On the Select Assignee to Add dialog box, use one of the following methods to specify the assignee: • Click the **Reference** tool to select the appropriate variable reference containing the assignee or list of assignees from the Insert Variable Reference dialog box. • Click the **Browse** tool to launch the Select User or Group dialog box and add user to the list of assignees.
Edit	Select the appropriate assignee in the list and click this button to view or modify the assignee of the task rule.
Remove	Select the appropriate assignee and click this button to remove the assignee from the list.
Remove All	Click this button to remove all specified assignees from the list.

Notify Task Rule

If you are creating a Notify Task Rule, the Notify tab displays on the New Rule Properties dialog box.

On the Notify tab, specify the recipients of the notification that the task rule has executed. You can add individual recipients or include a notification recipient list.

Field	Description
Add notification recipients	Displays list of users to be notified by the task rule. • Add—Click this button to launch the Select Notification Recipient to Add dialog box to specify the recipients. On the dialog box, enter the email address for the recipient or click the **Reference** tool to select the appropriate variable reference containing the recipient or list of recipients from the Insert Variable Reference dialog box and then click **OK**. • Edit—Select the appropriate recipient in the list and click this button to view or modify the recipient of the task rule. • Remove—Select the appropriate recipient in the list and click this button to remove the recipient from the list. • Remove All—Click this button to remove all specified recipients from the list.
Add notification recipient list	Click the **Reference** tool to select the appropriate variable reference containing list of recipients from the Insert Variable Reference dialog box.

Update Task Rule

If you are creating an Update Task Rule, the Update tab displays on the New Rule Properties dialog box.

On the Update tab, specify the properties to be updated after the task rule has executed.

Field	Description
Add	Click this button to add a new property to the Properties to update area.
Remove	Click this button to remove the last property added to the Properties to update area.
Property	From the Property drop-down list, choose the item to update within the task. The properties displayed depend on the selected item.

Field	Description
List action	Choose the appropriate item from the drop-down list to determine which action to take with the selected property: • Add Item—Adds item to task. • Remove item—Removes item from task. • Clear—Removes property value from task.
Value	Enter new value for the property.

Step 8 Click **OK** to save the task rule definition and close the dialog box.

Managing Task Rule Definitions

This section provides instructions on modifying task rules in the Definitions—Task Rule view. Only users with administrative rights can modify task rules in Process Orchestrator.

Note For additional information on managing task rules, see the *Cisco Process Orchestrator Reference Guide*.

Enabling a Task Rule

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

On the Definitions—Task Rules view, select the task rule and then use one of the following methods to enable it:

- On the Results pane, right-click and choose **Enable**.

  -or-

- On the Details pane, select **Click here to enable**.

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

Disabling a Task Rule

Disabling a task rule prevents the item from being available for execution. The disabled task rule is not removed from the list of task rules on the Definitions—Task Rules Results pane.

On the Definitions—Task Rule view, select the task rule and then use one of the following methods to disable it:

- On the Results pane, right-click and choose **Disable**.

  -or-

- On the Details pane, select **Click here to disable**.

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

Creating a Copy of a Task Rule

The copy option is used when the user wants to leverage an existing task rule to define a new task rule using existing properties.

Step 1 On the Definitions—Task Rules view, select the appropriate task rule, right-click and choose **Copy**.

Step 2 On the Results pane, right-click and choose **Paste**.

A copy of the defined task rule is pasted onto the Results pane.

Step 3 To rename the copied task rule or other properties, right-click and choose **Properties**.

Step 4 Modify the task rule name, as appropriate, and click **OK** to close the dialog box.

Sorting Task Rules

The task rules are executed according to the order they are listed on the Definitions—Task Rules view. You should sort the task rules based on the order in which you want them to execute.

Note All task rules will execute even if there is more than one task rule assigned for the same condition. For example, if you have two assignment rules for the same incident, both rules will be executed in the order listed in the Task Rules view.

On the Definitions—Task Rules view, select the task rule and use one of the following methods to move it to the desired position in the list:

- Drag and drop the task rule into the appropriate position in the list.
- On the Actions toolbar, click **Move Up** or **Move Down**.
- Click the Actions menu and choose **Move Up** or **Move Down**.
- Right-click and choose **Move Up** or **Move Down**.

The list of task rules are sorted according to the selected action.

Deleting a Task Rule

Use the Definitions—Task Rules view to delete task rules that are no longer used.

Step 1 On the Definitions—Task Rules view, select the task rule, right-click and choose **Delete**.

Step 2 On the Confirm Delete dialog box, click **Yes** to confirm the deletion.

Enabling Notification Based on Assignment Processes

If you want to have emails sent to whoever is assigned to a task but do not want to create notification task rules, you can enable the processes that ship with the Core automation pack that send emails based on assignment.

When these processes are enabled, the user or user group who was assigned to tasks will receive the email notification.

Step 1 In the Definitions workspace, click **Processes**.

Step 2 Click the **Filter by** link and choose **Automation Pack > Core** to filter for the processes that ship with the Core automation pack.

Step 3 Right-click the appropriate **Notification Based on Assignment** process and choose **Enable**.

The following processes are for notification based on assignment:

Process Name	Description
Default Alert Notification Based on Assignment	Sends email when an alert gets assigned.
Default Approval Request Notification Based on Assignment	Sends email when an approval request gets assigned.
Default Change Request Notification Based on Assignment	Sends email when an change requests gets assigned.
Default Guided Operation Request Notification Based on Assignment	Sends email when a guide operation request gets assigned.
Default Incident Notification Based on Assignment	Sends email when an incident gets assigned.
Default Input Request Notification Based on Assignment	Sends email when an input request gets assigned.
Default Review Request Notification Based on Assignment	Send email when a review request gets assigned.

CHAPTER 4

Managing Automation for SAP HANA Processes

This chapter provides information on using the product, specific to the Automation for SAP HANA automation pack. It includes information on accessing the Automation for SAP HANA processes and filtering for specific processes, managing the processes, starting a process, and viewing a running process, its results, and the automation summary generated by the process.

It includes the following sections:

Note Before you can run the Automation for SAP HANA processes, you must configure the objects that are referenced by the processes and activities. *See* Chapter 3, "Getting Started Using the Automation Pack."

Accessing Automation for SAP HANA Processes

The processes that ship with the product can be accessed from the Definitions—Processes view.

Step 1 On the Console, select the Definitions workspace and click **Processes** in the navigation pane. By default, all the processes display in the Processes pane.

If you have multiple automation packs installed, you can filter the processes to display the processes specific to the automation pack.

Step 2 In the upper portion of the Processes pane, click the **Filter by** link and choose **Automation Pack**.

Step 3 In the drop-down list, choose **Automation for SAP HANA**.

The processes display in the Processes pane.

Managing Automation for SAP HANA Processes

This section provides information on managing the Automation for SAP HANA processes, including:

- Enabling and disabling processes
- Enabling and disabling the process archival feature
- Modifying a process schedule
- Creating an automation pack for new processes

Enabling a Process

Some of the processes that ship with the automation packs are disabled by default to reduce the load on the server or because they require user configuration.

Perform the following steps to enable a process.

Step 1 In the Processes view, navigate to the process that you want to enable (disabled processes appear dimmed).

Step 2 Use one of the following methods to enable the process:

- Right-click the process and choose **Enable** from the submenu.
- In the Process Editor, click the **General** tab and then check the **Enabled** check box. Click the **Save** tool to save your changes to the process and close the Process Editor.

Disabling a Process

Disabling a process prevents the process from executing. You may want to disable some processes to reduce the load on your server or while you are modifying the process definition.

Perform the following steps to disable a process.

Step 1 In the Processes view, navigate to the process that you want to disable.

Step 2 Use one of the following methods to disable the process:

- Right-click the process and choose **Disable** from the submenu.
- In the Process Editor, click the **General** tab and then uncheck the **Enabled** check box. Click the **Save** tool to save your changes to the process and close the Process Editor.

Modifying Process Instance Archival

Process Orchestrator provides an option in the process definition that allows you to choose whether or not to archive process and activity execution in the Process OrchestratorProcess database. Disabling the archive option helps improve performance and minimizes the size of the database. It is also useful when debugging the execution of processes.

If you want to view the execution of a process and its activities, or view the process instances after a process has completed, you must enable the archival functionality in the process definition.

Step 1 In the Processes view, navigate to the process you want to flag for archival.

Step 2 Right-click the process and choose **Edit** from the submenu.

Step 3 On the process Properties dialog box, click the **Options** tab.

Step 4 On the **Options** tab, click one of the following radio buttons to indicate how you want to archive the process instance.

Field	Description
Never archive any instances	Click this radio button to indicate that the process should not be stored upon completion.
Only archive failed instances	Click this radio button to indicate that only failed instances should be archived.
Archive all completed instances	Click this radio button to indicate that the process should be stored upon completion.
Archive based on condition	Click this radio button to indicate that the process should be stored based on the condition (True/False) selected. Click the **Browse** ... tool to launch the Archive Condition dialog box and select the condition.

Modifying a Process Schedule

Many of the processes that ship with the automation packs are triggered by a schedule. You can modify when the process will be executed by disabling the existing schedule and then creating a new schedule for the process. You use the process Properties dialog box to modify the process schedule.

Perform the following steps to assign a new schedule to a process.

Step 1 In the Processes view, navigate to the process that you want to modify.

Step 2 Right-click the process and choose **Edit** from the submenu.

Step 3 On the process Properties dialog box, click the **Triggers** tab.

Step 4 On the Triggers tab, right-click the current **Schedule** and choose **Disable** from the submenu.

Step 5 Click **New > Schedule** to open the Schedule Properties dialog box to create a new schedule for this process.

Step 6 On the Schedule Properties dialog box, specify the criteria for the new schedule and click **OK**.

Note For information on creating schedules, *see* "Managing Triggers" in the *Cisco Process Orchestrator Reference Guide*.

The newly created schedule displays on the Triggers tab and is enabled.

Step 7 Click the **Save** tool to save your changes to the process and close the Process Editor.

Running Processes

The processes that ship with the product will run based on the trigger that was defined in the process definition. For processes that are triggered by a schedule, you can also manually start the process at any time (adhoc). This section guides you through starting a process and viewing its progress as it runs.

Note You can only view a running process and the process instances for processes that have the **Archive completed instances** feature enabled. *See* Modifying Process Instance Archival, page 4-4 for information on enabling the archival feature on a specific process.

Starting a Process

Step 1 In the Processes view, right-click the process and choose **Start Process**.

The Confirm Start Process dialog box displays.

Step 2 On the Confirm Start Process dialog box, click the **Target** or **Target Group** radio button and then click the **Browse** ... tool to open the Select Target dialog box.

Step 3 Select the target in the list and then click **OK**.

Step 4 On the Confirm Start Process dialog box, click **OK** to start the process.

The Start Process Results dialog box displays. Proceed to Viewing Running Process, page 4-7.

Viewing Running Process

After starting the process, you can use the Process Viewer to view the process as it runs through each activity.

Note You can only view a running process and the process instances for processes that have the **Archive completed instances** feature enabled. *See* Modifying Process Instance Archival, page 4-4 for information on enabling the archival feature on a specific process.

Step 1 On the Start Process Results dialog box, right-click the process and choose **Observe**.

The Process Viewer displays the process workflow.

Step 2 View the process as it proceeds through the workflow.

The activities within the process workflow will change to green as they complete (succeed). If an activity fails, an incident is created.

Step 3 When the process completes, close the Process Viewer and proceed to Viewing Process Results, page 4-8.

Viewing Process Results

After a process completes, you can view the results in the Operations workspace. This section guides you through viewing the results from running the process.

Note You can only view a running process and the process instances for processes that have the **Archive completed instances** feature enabled. See Modifying Process Instance Archival, page 4-4 for information on enabling the archival feature on a specific process.

Accessing Process View

Step 1 On the Console, select the Operations workspace.

Step 2 In the navigation pane, expand **Process Views** and click **View Adhoc** (since the process was manually executed).

Step 3 Using the **Filter by** link, choose **Automation Pack** and then choose **Automation for SAP HANA** from the drop-down list.

Step 4 Scroll to the process and select it.

Step 5 In the View Results pane, expand the process to view each activity in the process workflow.

Step 6 Review the status of the process and each activity within the process to verify that it has succeeded.

Viewing Activity Results

You can view the results of a specific activity within the process using the Activity Instance Properties dialog box.

Step 1 In the View Results pane, scroll to the activity.

Step 2 Right-click the activity and choose **Properties**.

Step 3 On the activity Properties dialog box, view the results of the activity.

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

Viewing Incidents

When a process detects an issue that requires action, an incident is generated. If you have configured the product to send notifications to a specific person in your organization, that person will receive an email notification whenever an incident is generated. You can also view these incidents in the Task Views on the Operations workspace.

Step 1 On the Operations workspace, expand **Task Views** in the navigation pane and click **View Incidents**.

Step 2 In the View Incidents pane, choose **View all tasks** from the Task Assignee drop-down list to display all the incidents in the View Results pane.

Step 3 To view a specific incident, right-click the incident in the View Results pane and choose **Open** to display the Incident Report in your web browser.

Viewing Automation Summary

When incidents are generated, Process Orchestrator delivers an online Automation Summary that details the analysis that was performed to identify a situation that may require action.

You can access the Automation Summary from the Tasks View on the Operations workspace.

Step 1 On the Operations workspace, expand **Task Views** in the navigation pane and click **View Incidents**.

Step 2 In the View Incidents pane, click the **View all tasks** radio button to display the incidents in the View Results pane.

Step 3 Right-click the incident and choose **View Automation Summary**.

The Automation Summary displays in your web browser.

CHAPTER 5

Using the SAP HANA Processes (Activities)

The Automation for SAP HANA automation pack contains additional activities (processes) for use in the SAP HANA processes. These are additional activities that display in the Process Editor toolbox after the user has imported the automation packs.

This chapter provides information about the SAP HANA activities and using them in processes. It includes the following sections:

SAP HANA Processes (Activities)

The following table contains the processes (activities) that are imported by the Automation for SAP HANA automation pack.

Process Name	Description
HANA - Alerts	Retrieves all HANA alerts generated for a specific time period. *See* HANA - Alerts, page 5-9.
HANA - Backup Catalog	Retrieves all backups from the catalog for the defined time period. *See* HANA - Backup Catalog, page 5-10.
HANA - Blocked Transactions	Retrieves all HANA transactions that are blocked by locks. *See* HANA - Blocked Transactions, page 5-10.
HANA Cancel Operation	Cancels the operation associated with the specified connection ID. *See* HANA - Cancel Operation, page 5-11.
HANA - Cancel Thread	Cancels the thread for the specified connection ID. *See* HANA - Cancel Thread, page 5-12.
HANA - Console Events	Retrieves all HANA console events. These are the same console events an administrator would see in the HANA Administrator Console. *See* HANA - Console Events, page 5-12.

Process Name	Description
HANA - Data Volumes Information	Retrieves detailed information about HANA data volumes, including if a shrink operation is recommended. *See* HANA - Data Volumes Information, page 5-13.
HANA - Data Volumes Shrink	Perform a shrink operation on the specified data volume. *See* HANA - Data Volumes Shrink, page 5-13.
HANA - Diagnose File Content	Retrieves the contents of a specified HANA diagnosis file. The diagnosis file is similar to a trace file containing diagnostic information. *See* HANA - Diagnosis File Content, page 5-14.
HANA - Diagnose File Sizes	Retrieves the file size of all HANA diagnosis files. *See* HANA - Diagnosis File Sizes, page 5-15.
HANA - Disconnect Session	Disconnects the connection for the specified connection ID. This activity is used to disconnect sessions that are negatively impacting HANA system performance. *See* HANA - Disconnect Session, page 5-16.
HANA - Execute Complete Backup	Executes a complete HANA backup. It is recommended that a complete backup be done before performing some system commands. *See* HANA - Execute Complete Backup, page 5-16.
HANA - Execute Savepoint	Executes a savepoint on the persistence manager. A savepoint is a point in time when a complete consistent image of the database is persisted on the disk. The consistent image can be used to restart the database. *See* HANA - Execute Savepoint, page 5-17.
HANA - Expensive Statements	Retrieves the most expensive SQL statements for the specified time period. *See* HANA - Expensive Statements, page 5-18.
HANA - Get Process List	Retrieve a list of all executing processes in a HANA system. *See* HANA - Get Process List, page 5-18.
HANA - Global CPU Statistics	Retrieves detailed CPU statistics for a specified time period. *See* HANA - Global CPU Statistics, page 5-19
HANA - Landscape Configuration	Retrieves detailed HANA landscape configuration details. *See* HANA - Landscape Configuration, page 5-20.
HANA - Landscape Overview	Retrieves current HANA landscape overview. *See* HANA - Landscape Overview, page 5-20.
HANA - Landscape Services	Retrieve a list of services that match the specified filter in the HANA landscape. *See* HANA - Landscape Services, page 5-21.

Process Name	Description
HANA - Largest Column Store Tables	Retrieves a list of the largest column store tables in the HANA system. *See* HANA - Largest Column Store Tables, page 5-22.
HANA - Largest Row Store Tables	Retrieves a list of the largest row store tables in the HANA system. *See* HANA - Largest Row Store Tables, page 5-22.
HANA - Last Savepoints	Retrieves a list of all save points for the specified time period. A savepoint is a point in time when a complete consistent image of the database is persisted on the disk. The consistent image can be used to restart the database. *See* HANA - Last Savepoints, page 5-23.
HANA - Linux CPU IO Statistics	Retrieves detailed CPU core information for systems hosting the HANA database, including the standard output activities for each available processor. *See* HANA - Linux CPU IO Statistics, page 5-24.
HANA - Linux File System Usage	Retrieves detailed file system information hosting the HANA databases, including amount of free space available. *See* HANA - Linux File System Usage, page 5-25.
HANA - Linux Memory Usage Statistics	Retrieves detailed system memory statistics and event counters for systems hosting the HANA database. *See* HANA - Linux Memory Usage Statistics, page 5-26.
HANA - Linux Top CPU	Retrieves top Linux tasks running on systems hosting the HANA database. *See* HANA - Linux Top CPU, page 5-27.
HANA - Log Information	Retrieves detailed information about HANA logs, including log file size. *See* HANA - Log Information, page 5-28.
HANA - Log Operations	Executes a specified operation against a HANA log file. For example, 'Backup' to force log backup or 'Release' to release log segments. *See* HANA - Log Operations, page 5-28.
HANA - Memory Garbage Collection	Performs garbage collection on the HANA system, and optionally forces memory management garbage collection. *See* HANA - Memory Garbage Collection, page 5-29.
HANA - Memory Management	Executes memory management command to retrieve memory allocations details. *See* HANA - Memory Management, page 5-30.
HANA - Performance Load	Retrieves detailed information about the current HANA system workload, such as connections, memory, and swapping. *See* HANA - Performance Load, page 5-30.

Process Name	Description
HANA - Performance Threads	Retrieves detailed thread information for the specified HANA service, such as connection details, user details, and memory. *See* HANA - Performance Threads, page 5-31.
HANA - Start Instance	Starts HANA daemon instance wide or on a single host. *See* HANA - Start Instance, page 5-32.
HANA - Stop Instance	Stops HANA daemon instance wide or on a single host. *See* HANA - Stop Instance, page 5-33.
HANA - Stop Service	Stops a service instance wide or on a single host. *See* HANA - Stop Service, page 5-34.
HANA - Table Locks	Retrieves detailed information for table locks older than the specified duration. *See* HANA -Table Locks, page 5-35.
HANA - Table Replication Status	Retrieves the current status of the HANA table replication. *See* HANA - Table Replication Status, page 5-35.
HANA - Thread Context	Retrieves detailed information about the context of HANA threads. *See* HANA - Thread Context, page 5-36.
HANA - Thread Operations	Executes a command for a defined thread context. For example, 'Suspend' to suspend thread or 'Resume' to resume thread. *See* HANA -Thread Operations, page 5-37.
HANA - Volumes	Retrieves detailed information about the HANA volumes, such as data size, log size, and usage. *See* HANA - Volumes, page 5-38.
LT Replication - Master and Load Job Status	Retrieves a list of all IUUC and DTL HANA jobs that have cancelled prematurely. *See* LT Replication - Master and Load Job Status, page 5-38.
LT Replication - Test HANA Connection	Tests the LT replication connection between the source SAP system and HANA. *See* LT Replication - Test HANA Connection, page 5-39.

Defining an Activity

Use the following steps to define an activity in the Process Editor. The property pages that display depend on the activity. Refer to the appropriate section for instructions on completing the activity property pages.

Step 1 On the Toolbox pane, navigate to the appropriate section, click the activity and drag it onto the Workflow pane.

The Activity 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.

Click the **Reference** tool to select a defined variable or reference an object within the process. For additional information, *see* the *Cisco Process Orchestrator Reference Guide*.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab (typically, Inputs) and enter the required information. See the appropriate section in this chapter for instructions on completing the fields on the activity-specific tab.

Step 4 Click the **Start Point** tab to indicate the starting point for when a child process can start in an activity.

Field	Description
Start from beginning of workflow	Click this radio button to indicate the child process should start at the beginning of the process workflow.
Start from a specific start point	Click this radio button, and then from the drop-down list, select the start point component which determines when the child process should start in the process workflow.
Start from start point named	Click this radio button and then enter the name of the start point component that determines when the child process should start in the process workflow. Click the **Reference** tool to reference a variable as the start point name.

Step 5 Click the **Target** tab to specify the process target. You can use the process target or override it and specify a different target for the specific activity.

Field	Description
Execute on the process target	Click this radio button to use the same target that was specified for the process.
Execute on activity target	Click this radio button to indicate that the activity should execute against a target selected in an activity within the process. Choose the activity from the drop-down list.
Execute on this target	Click this radio button and then click the **Browse** tool to launch the Select Target dialog box and choose a specific target on which to execute the activity. The targets that display in the Select Target dialog box are targets already defined in Process Orchestrator. To view the properties for the selected target, click the **Properties** tool.
Execute on this target reference	Click this radio button and then click the **Reference** tool to select the target reference property on which to execute the activity. You can also click the click the **Browse** tool to launch the Select Target dialog box and choose a specific target on which to execute the activity.

Field	Description
Execute on this target group	Click this radio button and then click the **Browse** tool to launch the Select Target Group dialog box and choose a specific target on which to execute the activity. The target groups that display in the Select Target Group dialog box are target groups already defined in Process Orchestrator. To view the properties for the selected target group, click the **Properties** tool. From the Choose a target using this algorithm drop-down list, select the algorithm which will determine the target to execute from the eligible target group. **Note** The available algorithms that display depend on the selected activity.

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

Field	Description
Use target's default runtime user	Click this radio button to use the default runtime user for the target that is specified in the activity.
Use process runtime user	Click this radio button to use the credentials for the runtime user that was specified for the process.
Override process runtime user	Click this radio button to specify different credentials than what are used for the process. The selected runtime user overrides the runtime user that was specified for the process. • To view the properties for the selected runtime user, click the **Properties** tool. • To create a runtime user record for the process, click **New**. For additional information on creating a runtime users, *see* the *Cisco Process Orchestrator Reference Guide*.

Step 7 Click the **Knowledge Base** tab to specify a knowledge base article for the activity. The following information displays:

Field	Description
Knowledge base	Knowledge base article associated with the activity.
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.

a. If the knowledge base article is not displayed by default, click the **Browse** tool in the Knowledge Base field.

b. On the Select Knowledge Base dialog box, select the appropriate knowledge base article in the list and click **OK**.

Note Click **New** to create a new knowledge base article. For additional information on knowledge base articles, *see* the *Cisco Process Orchestrator Reference Guide*.

Step 8 Click the **Result Handlers** tab to specify condition branches for the activity.

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.

Viewing Activity Results

When an activity is executed, results are displayed in the Operations workspace activity instance view.

Step 1 In the Operations workspace, expand the **Activity Views** folder and click the view that represents how the process was executed (for example, View Adhoc, if the process was manually executed).

Step 2 In the View Results pane, expand the process, and double-click the activity instance or right-click and choose **Observe**.

Step 3 On the Process Viewer, ensure that **Properties** is enabled in the View menu, and then click the activity in the workflow to display the activity instance properties.

Step 4 If the activity required input values, click the **Inputs** tab to view the *display-only* properties of the activity.

Step 5 Click the **Outputs** tab to view the results of the activity.

Step 6 When you have completed viewing the properties, close the Process Viewer.

Defining the SAP HANA Activities

This section provides instructions for defining the SAP HANA activities.

HANA - Alerts

Use the HANA Alerts activity to retrieve all the HANA alerts generated within a specified time period.

Step 1 On the Toolbox pane, click the **HANA Alerts** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab.

Step 4 In the Last X Minutes text field, specify how many minutes in the past to indicate which alerts to retrieve (for example, alerts that have been generated in the past 60 minutes). The default value is 60 minutes.

Step 5 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

Step 6 Click the **Save** tool to save the activity definition.

HANA - Backup Catalog

Use the HANA Backup Catalog activity to retrieve all backups from the catalog for the defined time period.

Step 1 On the Toolbox pane, click the **HANA Backup Catalog** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab.

Step 4 In the Last X Minutes text field, specify how many minutes in the past to indicate which backup information to retrieve (for example, backups in the past 60 minutes). The default value is 60 minutes.

Step 5 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

Step 6 Click the **Save** tool to save the activity definition.

HANA - Blocked Transactions

Use the HANA Blocked Transactions activity to retrieve all HANA transactions that are blocked by locks.

Step 1 On the Toolbox pane, click the **HANA Blocked Transactions** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA - Cancel Operation

Use the HANA Cancel Operation activity to cancel the operation associated with the defined connection ID.

Step 1 On the Toolbox pane, click the **HANA Cancel Operation** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab.

Step 4 In the Connection ID text field, enter the connection ID for the operation to be cancelled.

Step 5 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

Step 6 Click the **Save** tool to save the activity definition.

HANA - Cancel Thread

Use the HANA Cancel Thread activity to cancel the thread for the specified connection ID.

Step 1 On the Toolbox pane, click the **HANA Cancel Thread** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab.

Step 4 In the Connection ID text field, enter the connection ID for the thread to be cancelled.

Step 5 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

Step 6 Click the **Save** tool to save the activity definition.

HANA - Console Events

Use the HANA Console Events activity to retrieve all HANA console events. These are the same console events an administrator would see in the HANA Administrator Console.

Step 1 On the Toolbox pane, click the **HANA Console Events** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.

- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA - Data Volumes Information

Use the HANA Data Volumes Information activity to retrieve detailed information about HANA data volumes, including if a shrink operation is recommended.

Step 1 On the Toolbox pane, click the **HANA Data Volumes Information** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA - Data Volumes Shrink

Use the HANA Data Volumes Shrink activity to perform a shrink operation on the specified data volume.

Step 1 On the Toolbox pane, click the **HANA Data Volumes Shrink** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab and specify the following information:

Field	Description
Data Volume Index Number	Enter the data volume index number to shrink.
Shrink Overhead Percentage	The percentage of overhead to shrink. Must be greater than or equal to 100. The recommended shrink overhead percentage is greater than or equal to 110.

Step 4 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA - Diagnosis File Content

Use the HANA Diagnosis File Content activity to retrieve the contents of the specified HANA diagnosis file. The diagnosis file is similar to a trace file containing diagnostic information.

Step 1 On the Toolbox pane, click the **HANA Diagnosis File Content** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab and specify the following information:

Field	Description
Host	Enter the host where the diagnosis file is located.
Diag File Name	Enter the file name of diagnostic .trc file.

Step 4 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA - Diagnosis File Sizes

Use the HANA Diagnosis File Sizes activity to retrieve the file size of all HANA diagnosis files.

Step 1 On the Toolbox pane, click the **HANA Diagnosis Files Sizes** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA - Disconnect Session

Use the HANA Disconnect Session activity to disconnect the connection for the specified connection ID. This activity is used to disconnect sessions that are negatively impacting HANA system performance.

Step 1 On the Toolbox pane, click the **HANA Disconnect Session** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab.

Step 4 In the Connection ID text field, specify the connection ID for the session to be disconnected.

Step 5 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

Step 6 Click the **Save** tool to save the activity definition.

HANA - Execute Complete Backup

Use the HANA Execute Complete Backup activity to execute a complete HANA backup. It is recommended that a complete backup be done before performing some system commands.

Step 1 On the Toolbox pane, click the **HANA Execute Complete Backup** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab.

Step 4 In the Backup_File_Prefix text field, enter a prefix for the backup file name (for example, the date in the format MMDDYY 060812.e).

Step 5 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

Step 6 Click the **Save** tool to save the activity definition.

HANA - Execute Savepoint

Use the HANA Execute Savepoint activity to execute a savepoint on the persistence manager. A savepoint is a point in time when a complete consistent image of the database is persisted on the disk. The consistent image can be used to restart the database.

Step 1 On the Toolbox pane, click the **HANA Execute Savepoint** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA - Expensive Statements

Use the HANA Expensive Statements activity to retrieves the most expensive SQL statements for the specified time period.

Step 1 On the Toolbox pane, click the **HANA Expensive Statements** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab.

Step 4 In the Last X Minutes text field, specify the number of minutes that have occurred to indicate which statements to retrieve (for example, last 60 minutes).

Step 5 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

Step 6 Click the **Save** tool to save the activity definition.

HANA - Get Process List

Use the HANA Get Process List activity to retrieve a list of all executing processes in a HANA system.

Step 1 On the Toolbox pane, click the **HANA Get Process List** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.

- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA - Global CPU Statistics

Use the HANA Global CPU Statistics activity retrieve detailed CPU statistics for a specified time period.

Step 1 On the Toolbox pane, click the **HANA Global CPU Statistics** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab.

Step 4 In the Last X Minutes text field, specify the number of minutes that have occurred to indicate which statistics to retrieve (for example, last 60 minutes).

Step 5 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

Step 6 Click the **Save** tool to save the activity definition.

HANA - Landscape Configuration

Use the HANA Landscape Configuration activity to retrieve detailed HANA landscape configuration details.

Step 1 On the Toolbox pane, click the **HANA Landscape Configuration** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA - Landscape Overview

Use the HANA Landscape Overview activity to retrieve an overview of the HANA landscape.

Step 1 On the Toolbox pane, click the **HANA Landscape Overview** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.

- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA - Landscape Services

Use the HANA Landscape Services activity to retrieve a list of services that match the specified filter in the HANA landscape.

Step 1 On the Toolbox pane, click the **HANA Landscape Services** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab and specify the following information:

Field	Description
Host	Name of the host server on which the services are running.
Service	Name of the service to be retrieved.

Step 4 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA - Largest Column Store Tables

Use the HANA Largest Column Store Tables activity to retrieve a list of the largest column store tables in the HANA system.

Step 1 On the Toolbox pane, click the **HANA Largest Column Store Tables** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA - Largest Row Store Tables

Use the HANA Largest Row Store Tables activity to retrieve a list of the largest row store tables in the HANA system.

Step 1 On the Toolbox pane, click the **HANA Largest Row Store Tables** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.

- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA - Last Savepoints

Use the HANA Last Savepoints activity to retrieve a list of all save points for the specified time period. A savepoint is a point in time when a complete consistent image of the database is persisted on the disk. The consistent image can be used to restart the database.

Step 1 On the Toolbox pane, click the **HANA Last Savepoints** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab.

Step 4 In the Last X Minutes text field, specify the number of minutes that have occurred to indicate which savepoints to retrieve (for example, last 60 minutes).

Step 5 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

Step 6 Click the **Save** tool to save the activity definition.

HANA - Linux CPU IO Statistics

Use the HANA Linux CPU IO Statistics activity to display detailed CPU core information for systems hosting the HANA database, including the standard output activities for each available processor.

Step 1 On the Toolbox pane, click the **HANA Linux CPU IO Statistics** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab and specify the following information:

Field	Description
Hostname	Enter the host name where the file systems are located.
User	Enter the user to log into the host to retrieve file system information.

Step 4 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA - Linux File System Usage

Use the HANA Linux File System Usage activity to display detailed file system information hosting the HANA databases, including amount of free space available.

Step 1 On the Toolbox pane, click the **HANA Linux File System Usage** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab and specify the following information:

Field	Description
Hostname	Enter the host name where the file systems are located.
User	Enter the user to log into the host to retrieve file system information.

Step 4 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA - Linux Memory Usage Statistics

Use the HANA Linux Memory Usage Statistics activity to display detailed system memory statistics and event counters for systems hosting the HANA database.

Step 1 On the Toolbox pane, click the **HANA Linux Memory Usage Statistics** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab and specify the following information:

Field	Description
Hostname	Enter the host name where the file systems are located.
User	Enter the user to log into the host to retrieve file system information.

Step 4 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA - Linux Top CPU

Use the HANA Linux Top CPU activity to display top Linux tasks running on systems hosting the HANA database.

Step 1 On the Toolbox pane, click the **HANA Linux Top CPU** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab and specify the following information:

Field	Description
Hostname	Enter the host name where the file systems are located.
User	Enter the user to log into the host to retrieve file system information.

Step 4 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA - Log Information

Use the HANA Log Information activity to retrieve detailed information about HANA logs, including log file size.

Step 1 On the Toolbox pane, click the **HANA Log Information** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA - Log Operations

Use the HANA Log Operations activity to execute a specified operation against a HANA log file. For example, 'Backup' to force log backup or 'Release' to release log segments.

Step 1 On the Toolbox pane, click the **HANA Log Operations** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab.

Step 4 In the Log Operation text field, enter the log operation to execute. For example, enter 'Backup' to force log backup or enter 'Release' to release log segments.

Step 5 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.

- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

Step 6 Click the **Save** tool to save the activity definition.

HANA - Memory Garbage Collection

Use the HANA Memory Garbage Collection activity to perform garbage collection on the HANA system, and optionally force memory management garbage collection.

Step 1 On the Toolbox pane, click the **HANA Memory Garbage Collection** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab.

Step 4 In the Force Memory Management Garbage Collection, enter *true* or *false* to indicate whether to force a memory management garbage collection.

Note If set to true, the force returns free memory fragments in big blocks.

Step 5 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

Step 6 Click the **Save** tool to save the activity definition.

HANA - Memory Management

Use the HANA Memory Management activity to retrieve memory allocations details.

Step 1 On the Toolbox pane, click the **HANA Memory Management** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA - Performance Load

Use the HANA Performance Load activity to retrieve detailed information about the current HANA system workload, such as connections, memory, and swapping.

Step 1 On the Toolbox pane, click the **HANA Performance Load** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab.

Step 4 In the Host text field, enter the name of the host server from which to retrieve workload metrics.

Step 5 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

Step 6 Click the **Save** tool to save the activity definition.

HANA - Performance Threads

Use the HANA Performance Threads activity to retrieve detailed thread information for the specified HANA service, such as connection details, user details, and memory.

Step 1 On the Toolbox pane, click the **HANA Performance Load** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab and specify the following information:

Field	Description
Thread Type	Enter the type of threads to request. The default is a 'Request' thread.
Host	Enter the host from which to retrieve the thread information.
Service	Enter a filter to retrieve thread information for selected services.

Step 4 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA - Start Instance

Use the HANA Start Instance activity to start HANA daemon instance wide or on a single host.

Step 1 On the Toolbox pane, click the **HANA Start Instance** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab and specify the following information:

Field	Description
Host	Host (<Hostname> or "Instance") on which to start HANA daemon.
System Number	Enter the system number assigned to HANA instance. Default value is 1.
Run Level	Enter the Unix run-level.
Priority Level	Enter the priority level to indicate up/down instance priority level which instances should be started.
Wait Timeout	Specify the timeout in seconds to wait for an instance to start. If the timeout expires during a start operation, remaining instances with a higher instance priority are not started since they rely on the other instances to be running.

Step 4 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA - Stop Instance

Use the HANA Stop Instance activity to stop HANA daemon instance wide or on a single host.

Step 1 On the Toolbox pane, click the **HANA Stop Instance** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab and specify the following information:

Field	Description
Priority Level	Enter the priority level to indicate up/down instance priority level which instances should be stopped.
Soft Timeout	Specify the timeout in seconds to wait for a soft shutdown via SIGQUIT. If the timeout expires, a hard shutdown is used for the remaining instances. All functions work asynchronously, just triggering the operation and returning immediately.
Wait Timeout	Specify the timeout in seconds to wait for an instance to stop. If the timeout expires during a stop, the operation will continue stopping the remaining instances.
Host	Host (<Hostname> or "Instance") on which to start HANA daemon.

Step 4 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA - Stop Service

Use the HANA Stop Service activity to stop a service instance wide or on a single host.

Step 1 On the Toolbox pane, click the **HANA Stop Service** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab and specify the following information:

Field	Description
Hostname	Enter the name of the host server where the service is running.
Port	Enter the port number used to connect to the host server.

Step 4 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA -Table Locks

Use the HANA Table Locks activity to retrieve detailed information for table locks.

Step 1 On the Toolbox pane, click the **HANA Table Locks** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA - Table Replication Status

Use the HANA Table Replication Status activity to retrieve the current status of the HANA table replication.

Step 1 On the Toolbox pane, click the **HANA Table Replication Status** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab and specify the following information:

Field	Description
Last X Minutes	Specify the number of minutes that have occurred to indicate which information to retrieve (for example, last 60 minutes).
Schema Name	Enter the schema name of the HANA database where the table exists.
Table	Enter the table name for which to retrieve the current status.

Step 4 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA - Thread Context

Use the HANA Thread Context activity to retrieve detailed information about the context of HANA threads.

Step 1 On the Toolbox pane, click the **HANA Thread Context** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA -Thread Operations

Use the HANA Thread Operations activity to execute a command for a defined thread context. For example, 'Suspend' to suspend thread or 'Resume' to resume thread.

Step 1 On the Toolbox pane, click the **HANA Thread Operations** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab and specify the following information:

Field	Description
Operation	Enter the thread operation to perform: • 'Suspend' to suspend thread • 'Resume' to resume thread.
Thread Context ID	Enter the context ID of the thread against which to perform the command.

Step 4 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

HANA - Volumes

Use the HANA Volumes activity to retrieve detailed information about the HANA volumes, such as data size, log size, and usage.

Step 1 On the Toolbox pane, click the **HANA Volumes** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only*. Displays the type of activity.
Description	Text description of the activity.

Step 3 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

LT Replication - Master and Load Job Status

Use the LT Replication Master and Load Job Status activity to retrieve a list of all IUUC and DTL HANA jobs that have cancelled prematurely.

Step 1 On the Toolbox pane, click the **LT Replication Master and Load Job Status** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only*. Displays the type of activity.
Description	Text description of the activity.

Step 3 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.

- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

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

LT Replication - Test HANA Connection

Use the LT Replication Test HANA Connection activity to test the LT replication connection between the source SAP system and HANA.

Step 1 On the Toolbox pane, click the **LT Replication Test HANA Connection** activity and drag it onto the Workflow pane.

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

Field	Description
Name	Name of the activity.
Type	*Display only.* Displays the type of activity.
Description	Text description of the activity.

Step 3 Click the **Inputs** tab.

Step 4 In the HANA DB Connection Name text field, enter the name of the HANA database connection to test.

Step 5 Complete the appropriate information in the following tabs:

- Start Point—Specify the starting point for when the child process starts in the activity.
- Target—Specify whether the defined process target should be used or overridden.
- Credentials—Specify the runtime user whose credentials should be used for process execution.
- Knowledge Base—Select the appropriate knowledge base article to associate with the activity.
- Result Handlers—Click the appropriate buttons to manage the condition branches on the workflow.

Step 6 Click the **Save** tool to save the activity definition.

APPENDIX A

Understanding the Core Automation for SAP Content

The Core Automation for SAP contains content that is used in the other SAP-related automation packs.

This appendix contains the content included in the Core Automation for SAP automation pack. It contains the following sections:

Automation Pack Content

Use the automation pack Properties dialog box to view the content (objects) included in the automation pack. For instructions on accessing the automation pack properties, *see* Accessing Automation Pack Properties, page 2-1.

Core Automation for SAP Task Rules

The following table contains the task rule that is imported by the Core Automation for SAP automation pack.

Task Rule	Description
SAP Default Assignment	Default user or group who will be assigned all SAP-related incidents.

For information on configuring Task Rules, *see* Using Task Rules for Assignments and Notifications, page 3-23.

Core Automation for SAP Global Variables

The following table contains the global variables that are imported by the Core Automation for SAP automation pack.

Global Variable Name	Description
SAP Alert Suppression Time	Used to specify the time Process Orchestrator SAP alerts will be suppressed when duplicated. After this time, a new alert and incident will be created. Enter the time in seconds.
Transaction Analyzer Report Location	If you have Cisco Transaction Analyzer installed, you use this URL to access Transaction Analyzer reports folder.

For instructions on configuring global variables, *see* Managing Target Properties, page 3-21.

Core Automation for SAP Processes

The Core Automation for SAP automation pack contains support processes that may be triggered by alerts and incidents from processes in the other SAP automation packs. You must enable the processes that will be used in your environment before the other processes can be successfully executed.

For instructions on enabling processes, *see* Chapter 4, "Managing Automation for SAP HANA Processes."

The following table contains the processes that are imported by the Core Automation for SAP automation pack.

Process Name	Description
Disable SAP System Monitoring	Allows users to disable the SAP system in Process Orchestrator. This process can be used as an example to create custom processes to disable/enable SAP system monitoring during scheduled downtime.
Enable SAP System Monitoring	Allows users to enable the SAP system in Process Orchestrator. This process can be used as an example to create custom processes to disable/enable SAP system monitoring during scheduled downtime.
Example – Transaction Analyzer Link	Example process for linking to Transaction Analyzer.
Publish SAP Alerts on Windows Event Log	Alerts created by processes in the Automation for SAP BW and BWA automation pack will create events in the Windows event log in the Process Orchestrator server. This is necessary for integration with management frameworks such as Microsoft SCOM 2007 and HP OpenView for Windows. **Note** This process must be enabled if you have integrated Process Orchestrator with SCOM 2007 or HP OpenView.
Reset SAP System Alerts and Incidents	Closes all the alerts and incidents for the selected SAP system in Process Orchestrator.

Process Name	Description
SAP Adapter Connection Issue	Monitors the health of Process Orchestrator connection to SAP systems.
SAP Process Execution Error	Raises an incident when there are errors in activities executed in SAP processes.

Core Automation for SAP Target Groups

The Core Automation for SAP automation pack provides the target groups that are used by the SAP processes. Most of the target groups are automatically populated with members when the targets are configured. For those that are not automatically populated, you must manually add the members. For information on adding members to target groups, *see* the *Cisco Process Orchestrator Reference Guide*.

The following table contains the target groups that are imported by the Core Automation for SAP automation pack.

Target Group Name	Description	Automatically Populated with Members
All Cisco UCS Managers (SAP)	All UCS Managers.	Yes
All SAP ABAP	All SAP systems configured with component ABAP.	Yes
All SAP ABAP 46C	All SAP systems configured with component ABAP and version 46C.	Yes
All SAP ABAP non 46C	All SAP systems configured with component ABAP and not version 46C.	Yes
All SAP BI Warehouse	All SAP BI Warehouse targets.	Yes
All SAP Java	All SAP systems configured with component Java.	Yes
All SAP Systems	All SAP systems.	Yes
All SAP Systems – DB2 Mainframe	All SAP systems configured with database DB2 Mainframe.	Yes
All SAP Systems – DB2 UDB	All SAP systems configured with database DB2 UDB.	Yes
All SAP Systems – Oracle	All SAP systems configured with database Oracle.	Yes
All SAP Systems – SQL Server Database	All SAP systems configured with database SQL Server.	Yes
All Unix Servers (SAP)	All Unix servers.	Yes
All Windows Computers (SAP)	All Windows server.	Yes
Location Availability Monitors	Windows computers that have Availability Monitor Utility installed. Availability Monitor is used to monitor location availability. Contact Cisco Systems support to download the utility.	No

Core Automation for SAP Categories

The Core Automation for SAP automation pack ships with categories that are used by the SAP processes. The following categories are imported by the Core Automation for SAP automation pack.

- SAP
- SAP APO
- SAP Application Layer
- SAP Availability
- SAP Background Processing
- SAP BW
- SAP Communication
- SAP Configuration
- SAP Database DB2
- SAP Database DB2 Mainframe
- SAP Database Informix
- SAP Database MS SQL Server
- SAP Database Oracle
- SAP Database SAP DB
- SAP Infrastructure ABAP
- SAP Infrastructure J2EE
- SAP Operating System
- SAP Performance Metrics
- SAP PI
- SAP Spool System
- SAP System Errors
- SAP Update
- Process Orchestrator SAP Examples
- Process Orchestrator SAP Operations
- Process Orchestrator SAP Self Monitoring

Automation Pack Dependencies

Use the Dependencies tab on the automation pack Properties dialog box to view the automation packs and adapters referenced by the objects in the automation pack. These objects must be installed prior to importing the Core Automation for SAP automation pack.

For instructions on accessing the automation pack properties, *see* Accessing Automation Pack Properties, page 2-1.

Object Type	Dependency
Automation Packs	• Core
Adapters	• Core Functions Adapter • Microsoft Windows Adapter

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