



HP Database and Middleware Automation

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Linux

Sybase Database Patching User Guide

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Welcome

This document describes the HP Database and Middleware Automation (HP DMA) Sybase Database Patching solution. You can use this solution to automate the following processes:

- [Sybase - Patch Home and Instance](#) on page 14
- [Sybase - Rollback Patch from Home and Instance](#) on page 41

About HP DMA Solution Packs

HP Database and Middleware Automation (HP DMA) software automates administrative tasks like provisioning and configuration, compliance, patching, and release management for databases and application servers. When performed manually, these day-to-day operations are error-prone, time consuming, and difficult to scale.

HP DMA automates these daily, mundane, and repetitive administration tasks that take up 60-70% of a database or application server administrator's day. Automating these tasks enables greater efficiency and faster change delivery with higher quality and better predictability.

HP DMA provides role-based access to automation content. This enables you to better utilize resources at every level:

- End-users can deliver routine, yet complex, DBA and middleware tasks.
- Operators can execute expert level tasks across multiple servers including provisioning, patching, configuration, and compliance checking.
- Subject matter experts can define, enforce, and audit full stack automation across network, storage, server, database, and middleware.

An HP DMA workflow performs a specific automated task—such as provisioning database or application servers, patching database or application servers, or checking a database or application server for compliance with a specific standard. You specify environment-specific information that the workflow requires by configuring its parameters.

Related HP DMA workflows are grouped together in solution packs. When you purchase or upgrade HP DMA content, you are granted access to download specific solution packs.

Audience

This solution is designed for:

- IT architects and engineers who are responsible for planning, implementing, and maintaining Sybase Database environments
- Engineers who are implementing—or planning to implement—HP Database and Middleware Automation (HP DMA)

To use this solution, you should be familiar with Sybase and its requirements (see links to the [Sybase Product Documentation](#)).

Document Map

The following table shows you how to navigate this guide:

Topic	Description
The Sybase Database Patching Solution	General information about this solution, including what it contains.
Workflow Details	Information about each of the workflows included in this solution, including: prerequisites, how it works, how to run it, sample scenarios, and a list of input parameters.
Reference Information	Links to pertinent Sybase documentation and more information about HP DMA.
Tips and Best Practices	Simple procedures that you can use to accomplish a variety of common HP DMA tasks.
Troubleshooting	Tips for solving common problems.

Chapter 1: The Sybase Database Patching Solution

The HP Database and Middleware Automation (HP DMA) Database Patching solution provides tools to patch your Sybase database in an efficient, automated way.

What this Solution Includes

This solution includes the following workflows:

Workflow Template	Description
Sybase - Patch Home and Instance	This workflow applies Emergency Bug Fix (EBF) patch to an existing Sybase Adaptive Server Enterprise (ASE) version 15.7 installation. It uses a binary setup.bin installation utility to apply the patch and then runs post-patching scripts.
Sybase - Rollback Patch from Home and Instance	This workflow rolls back a Sybase applied EBF/ESD patch binaries for the target Sybase Adaptive Server Enterprise (ASE) database. The Workflow currently supports Sybase ASE version 15.7 platform for backout EBF/ESD.

Supported Products and Platforms

Operating Systems

The Sybase database patching workflows are supported on the following operating system platforms.

- Red Hat Enterprise Linux

For specific target operating system versions supported by each workflow, see the *HP Database and Middleware Automation Support Matrix* available on the HP Software Support web site:

<https://softwaresupport.hp.com/>

HP DMA Hardware Requirements

For HP DMA server hardware requirements, see the *HP DMA Installation Guide* and the *HP DMA Release Notes*.

HP DMA Software Requirements

The latest HP DMA solution packs require the latest HP DMA platform. To use the latest solution packs, update the HP DMA platform. HP DMA 10.30 solution packs are supported on HP DMA 10.30 (and later).

Sybase Requirements

For database product hardware and software requirements, see [Sybase Product Documentation](#).

Chapter 2: Sybase Database Patching Quick Start

This tutorial shows you how to run the [Sybase - Patch to Home and Instance](#). You can use this tutorial as an example for running the other patching workflows.

The tutorial will guide you through the following steps:

1. [Import the Solution Pack](#)
2. [Create a Deployable Workflow](#)
3. [Create a Deployment](#)
4. [Run Your Workflow](#)
5. [View the Results](#)

Note: In this tutorial, default values will be used for most input parameters. Before executing these steps, make sure that these default values are suitable for your environment.

See [Parameters for Sybase - Patch Home and Instance](#) for descriptions of available input parameters, including default values.

The information presented in this tutorial assumes the following:

- HP DMA is installed and operational.
- At least one valid target is available.

Note: This tutorial is included in every HP DMA solution pack user guide. To skip directly to information about the Database Patching workflows, see the [Workflow Details](#).

Import the Solution Pack

The following instructions assume that you have purchased a license for HP DMA.

Note: Always check to see if there are more recent HP DMA patches available online. Due to frequent releases, it is possible that the solution packs provided on the installation media have since been updated.

To get the most recent HP DMA patch:

1. Go to the following web site: <https://softwaresupport.hp.com/>
2. Sign in using your HP Passport credentials (see [Support](#) on page 2 for more information).
3. Your dashboard experience is based on your SAID. Under **My Products**, select database and middleware automation.
4. Look under **Software Patch** to determine whether a more recent patch is available.
5. If there is a more recent patch, do the following:
 - a. Click the link for the desired patch.
 - b. Under **Download Information**, click the link to download the patch installation media.

To access the HP DMA solution packs:

To access the HP DMA solution packs, mount the ISO file of the HP DMA10.30 (or patch) installation media.

The solution packs are located in the following folders:

- The `DMA_10.30_Server_and_Client` folder contains the Discovery and Promote solution packs. The Discovery solution pack is not automatically installed with HP DMA. You must import it if you want to use the discovery workflows.
- The `DMA_10.30_Database_Solution_Packs` folder contains all of the database solution packs (provisioning, advanced provisioning, patching, advanced patching, compliance, refresh, and release management).
- The `DMA_10.30_Middleware_Solution_Packs` folder contains all of the application server solution packs (provisioning, patching, configuration management, and release management).

To import the solution pack:

1. On the system where you mounted the installation media, open a web browser, and go to the following URL:
`http://<HP DMA server>/dma/login`
2. Log in to the HP DMA server using an account with Administrator capability.
3. On the Solutions > Installed tab, click the **Browse** button in the lower right corner. The Choose File dialog opens.

Note: This button and the dialog that subsequently opens may have different names depending on the browser that you are using.

4. Locate and select the ZIP file for the desired solution pack, and click **Open**.
5. Click **Import solution pack**.

To view basic information about the solution pack, hover your mouse over its name in the left pane:

The screenshot shows the HP Database & Middleware Automation web interface. At the top, there is a navigation bar with 'Home', 'Automation', 'Reports', 'Environment', 'Solutions', and 'Setup'. Below this is a sub-menu with 'Installed' and 'History'. The main heading is 'Installed Solutions'. A green banner indicates 'Successfully imported HP DMA Database Patching Solution Pack'. The interface is split into two panes: 'SOLUTION PACKS' on the left and 'DETAILS' on the right. The 'SOLUTION PACKS' pane lists several solution packs, with 'HP DMA Database Patching Solution Pack' (Version 10.01) highlighted. The 'DETAILS' pane shows the following information for the selected pack: Name: HP DMA Database Patching Solution Pack; Version: 10.01; Targets: 7; Installed: 06 Mar, 2013; Description: Database Patching for Oracle, SQL Server, DB2, and Sybase Build 31995. At the bottom right, there are 'Browse...' and 'Import solution pack' buttons.

To view detailed information about the solution pack, click its name in the left pane. To view a list of the workflows that the solution pack contains, go to the Workflows tab.

The screenshot shows the HP Database & Middleware Automation interface. At the top, there is a navigation bar with the following tabs: Home, Automation, Reports, Environment, Solutions, and Setup. Below this, there are sub-tabs for Installed and History. The main content area is titled "HP DMA Database Patching Solution Pack" with a version of 10.01. There are four sub-tabs: General, Policies, Workflows, Steps, and Reports. The Workflows tab is currently selected. On the left side, there is a list of workflow items, with "Apply Critical Patch Update to Database" selected. On the right side, a detailed list of steps for this workflow is shown, numbered 1 through 12. At the bottom of the interface, there is a red "X DELETE" button.

Workflow Item	Step
Apply Critical Patch Update to Database	1 Prepare Server
Apply Critical Patch Update to Home	2 Determine Oracle Home
Apply Oracle Patchset	3 Failure
Apply Sybase Stand Alone EBF Patch	4 Prepare Oracle Instance
Clone Oracle Home	5 Validate Apply Critical Patch Update to Database
Migrate Oracle Home	6 Check If Download File Exists
MS SQL - Install Patch	7 Download Software
MS SQL: Rollback Patch	8 Determine Oracle Patch Info
Rollback Critical Patch Update from Database	9 Failure
Rollback Critical Patch Update from Home	10 Run SQL Script
Rollback Sybase EBF Patch for Standalone	11 Run SQL Script
	12 Verify Patch Applied

Create a Deployable Workflow

The workflow templates provided by HP in your solution pack are read-only and cannot be deployed. When you are viewing a read-only item in the HP DMA web UI, you will see the lock icon in the lower right corner:



Read-only workflows are not deployable. You can create a deployable workflow by making a copy of a workflow template.¹

To create a deployable copy of the workflow template:

1. In the HP DMA web interface, go to Solutions > Installed.
2. In the left pane, click the Database Patching Solution Pack.
3. Go to the Workflows tab.
4. From the list of workflows, select the Apply Critical Patch Update to Home template.
5. Click the **Copy** button in the lower left corner.
6. On the Documentation tab, specify the following:
 - Name – Name that will appear in the list of available workflows
 - Tags – Keywords that you can use later to search for this workflow (optional)
 - Type – Sybase (this will be selected as a result of the copy)
 - Target level – Server (this will be selected as a result of the copy)
7. On the Roles tab, grant Read access to at least one user or group and Write access to at least one user or group.
8. Click **Save**.

Your new workflow now appears in the list of available workflows, and the following message is displayed:

✓ Workflow saved successfully. Would you like to [deploy the workflow now?](#)

9. Click the **deploy the workflow now** link in the green message bar.

¹For more information about creating and working with workflows, see “Workflows” in the *HP DMA User Guide*. This document is available on the HP Software Support web site: <https://softwaresupport.hp.com/>

Create a Deployment

Before you can run your new workflow, you must create a deployment. A deployment associates a workflow with one or more specific targets (servers, instances, or databases).

To create a deployment:

1. If you do not see the green message bar—for example, if you navigated to another page after you created your copy of the workflow template—follow these steps:
 - a. Go to the Automation > Deployments page.
 - b. In the lower right corner, click **New deployment**.
2. Specify the following:
 - Name – Name that will appear in the list of available deployments.
 - Workflow – From the drop-down list, select the deployable workflow (the copy) that you just created.
 - Schedule – Frequency or date when the workflow will run. Select None so that the workflow will run once when you explicitly tell it to run.
3. From the list of AVAILABLE targets on the left side of the Targets area, click the **ADD** link for the server where the workflow will run.
4. On the Parameters tab, specify values for the input parameters listed there.

Note: These are a subset of the required parameters for this workflow. Parameters that are not visible in the deployment will have default values. See [Parameters for Sybase - Patch Home and Instance](#) for descriptions of all available input parameters for this workflow, including default values.

5. Click **Save**.
Your new deployment now appears in the list of available deployments, and the following message is displayed:

✓ Deployment saved successfully. Would you like to [run the workflow now?](#)

6. Click the **run the workflow now** link in the green message bar.

Run Your Workflow

Now you are ready to run your workflow against the target that you selected.

To run the workflow:

1. If you do not see the green message bar—for example, if you navigated to another page after you created your deployment—follow these steps: show
 - a. Go to the Automation > Run area.
 - b. In the list of WORKFLOWS on the left side, select the workflow that you created.
 - c. In the list of DEPLOYMENTS on the right side, select the deployment that you just created.
2. Select the target selector check box for the server where you want to run the workflow.
3. Click the **Run workflow** button.
4. The following message is displayed:



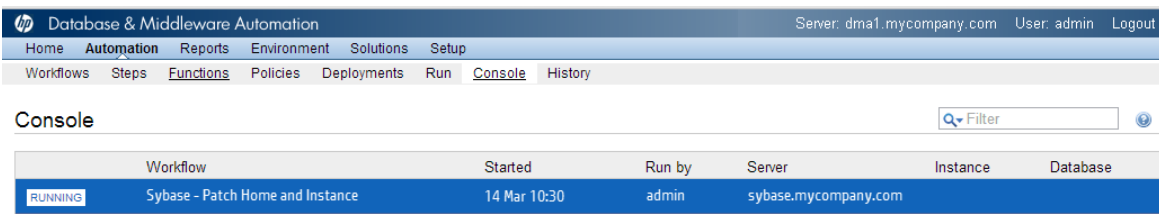
✓ Workflow started successfully. For status, see the [console](#) or [history](#).

5. To view the progress of your deployment, click the **console** link in the green message bar.

View the Results

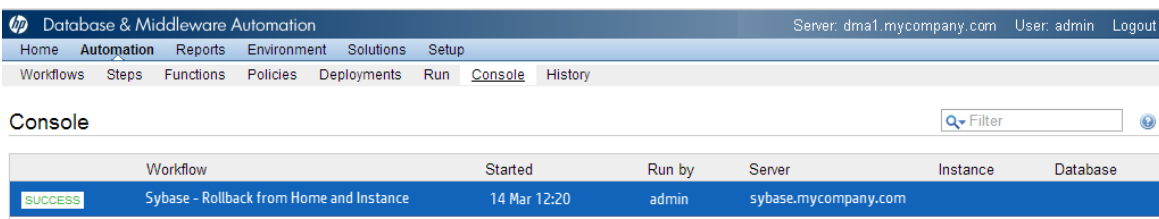
While your workflow is running, you can watch its progress on the Automation > Console page.

To view the progress of the workflow as the deployment proceeds, click the workflow name in the upper box on the Console page.



To view the outcome of a specific step, select that step in the left box in the Output area. Informational messages are displayed in the right box, and the values of any output parameters are listed.

While the workflow is running, its status indicator on the Console says **RUNNING**. After the workflow finishes, its status indicator changes to **SUCCESS**, **FAILURE**, or **FINISHED** depending on the outcome of the workflow.



After the workflow has finished running, you can view a summary of your deployment on the History page. This page lists all the workflows that have run on this HP DMA server during the time period specified in the Filter box.

To view step-by-step results, select the row in the table that corresponds to your deployment. The tabs below the table show you information about each step in the workflow. This includes the start and end time for each step, the exit code, and the following information:

- Step Output – any informational messages that were produced
- Step Errors – any errors that were reported
- Step Header – values assigned to any output parameters
- Connector Output – any informational messages related to the connection to your server management tool
- Connector Errors – any errors that were reported by the connector to your server management tool— if any errors were reported a red asterisk (*) appears on the tab

Chapter 3: Workflow Details

This solution pack contains the following workflows:

Workflow Template	Description
Sybase - Patch Home and Instance	This workflow applies an Emergency Bug Fix (EBF) patch to an existing Sybase Adaptive Server Enterprise (ASE) version 15.7 installation. It uses a binary setup.bin installation utility to apply the patch and then runs post-patching scripts.
Sybase - Rollback Patch from Home and Instance	This workflow rolls back a Sybase applied EBF/ESD patch binaries for the target Sybase Adaptive Server Enterprise (ASE) database. The Workflow currently supports Sybase ASE version 15.7 platform for backout EBF/ESD.

Tip: Detailed instructions are provided in the "How to Run this Workflow" topic for each workflow.

The information presented here assumes the following:

- HP DMA is installed and operational.
- At least one suitable target server is available (see [Supported Products and Platforms](#) on page 3).
- You are logged in to the HP DMA web interface.
- You have permission to create, edit, and deploy copies of the workflows included in this solution pack.

Tip: All parameters used by the workflows in this solution are provided in the "Parameters" topic associated with each workflow.

How to Use the Workflows Together

The workflows contained in the Database Patching Solution Pack and the Database Provisioning Solution Pack are designed to work together to accomplish your patching tasks. The following tasks provide procedures to apply a patch or rollback a patch.

Choose the task that best matches your objectives.

To create a new Sybase Home and Database:

How to Create Sybase Home	What to Do if There Is a Problem
<p>Create a brand new Sybase Home:</p> <ol style="list-style-type: none"> 1. Run the Create Sybase Database workflow (found in the Database Provisioning Solution Pack). 	<p>Go back to the old Sybase Home:</p> <ol style="list-style-type: none"> 1. Delete the new Sybase Home. 2. Go back to using the old Sybase Home.

To apply a patch:

How to Apply the Patch	What to Do if There Is a Problem
<p>Apply the EBF patch to the current Sybase Home:</p> <p>Run the Sybase - Patch to Home and Instance workflow to apply the patch to the current Sybase Home and databases.</p>	<p>Rollback the patch that you just applied:</p> <p>Run the Sybase - Rollback from Home and Instance workflow to rollback the patch from the Sybase Home and databases.</p>

Sybase - Patch Home and Instance

This workflow applies an Emergency Bug Fix (EBF) patch to an existing Sybase Adaptive Server Enterprise (ASE) version 15.7 installation. It uses a binary setup.bin installation utility to apply the patch and then runs post-patching scripts.

If you have problems after applying the patch, you can remove it by running [Sybase - Rollback Patch from Home and Instance](#) on page 41.

For additional information about how the Sybase - Patch to Home and Instance workflow can be used with other provisioning and patching workflows see [How to Use the Workflows Together](#) on the previous page.

To use this workflow in your environment, see the following information:

Topic	Information Included
Prerequisites for this Workflow	List of prerequisites that must be satisfied before you can run this workflow
How this Workflow Works	Information about what the workflow does, including validation checks performed, steps executed, and a high-level process flow
How to Run this Workflow	Instructions for running this workflow in your environment
Sample Scenario	Examples of typical parameter values for this workflow
Parameters for Sybase - Patch Home and Instance on page 30	List of input parameters for this workflow

Note: The documentation for this workflow contains steps that are referred to by their base names. The names in the HP DMA user interface may have a version appended, for example, v2.

Prerequisites for this Workflow

Be sure that the following prerequisites are satisfied before you run the [Sybase - Patch to Home and Instance](#) workflow:

- The latest HP DMA solution packs require the latest HP DMA platform. To use the latest solution packs, update the HP DMA platform. HP DMA 10.30 solution packs are supported on HP DMA 10.30 (and later).
- You have installed the HP DMA Database Patching Solution Pack.
- You need to have Sybase provisioned and operational. You can do this by running the following workflows in the HP DMA Database Provisioning Solution Pack:
 - Sybase Provision Software
 - Sybase Provision Instance v2
- You have read access to all specified inventory pointers (Linux/UNIX).
- You have a Sybase support contract and have downloaded the appropriate patches either to the software repository or to the target machine.
- You have unchallenged sudo access to a user (typically root) who can access all required files and directories to download and execute.

For more information about prerequisites for Sybase, refer to the [Sybase Product Documentation](#) on page 58.

How this Workflow Works

The following information describes how the [Sybase - Patch to Home and Instance](#) workflow works:

Overview

This workflow does the following things in the order shown:

- The initial steps of the workflow prepare it to patch the Sybase Home. The workflow processes and validates user input parameters, executes commands used in subsequent steps, downloads any required files, takes backup of the database, database tables, and server configuration, and shuts down the Sybase server. Default values are set for optional parameters if no values are specified.
- The workflow applies the patch to the Sybase Database Home.
- The workflow applies the patch to the Sybase Instances.
- The final steps of the workflow allow the workflow to end cleanly. The workflow restarts Sybase server, brings Sybase database online, and discovers Sybase database. Then it cleans up the downloaded files.

Validation Checks Performed

Much of the validation centers on the input parameters:

- The input parameters have the proper syntax (no special characters or spaces).
- Files exist or have valid specifications if they do not exist.
- The supplied patch update applies to the current Sybase Database version.

Steps Used in Sybase - Patch to Home and Instance

Workflow Step	Description
Gather Parameters for Sybase Patch Home and Instance	This step gathers the required parameters for the Sybase - Patch to Home and Instance workflow.
Gather Advanced Parameters for Sybase Patch Home and Instance	This step gathers the optional advanced parameters for the Sybase - Patch to Home and Instance workflow.
Prepare Sybase Call Wrapper v2	This step constructs the commands that will be used to execute subsequent workflow steps as either the OS administrative user or the owner of the Sybase ASE installation.
Validate Parameters for Sybase Patch Home and Instance	This step validates the values specified for the input parameters used by the Sybase - Patch to Home and Instance workflow. It also sets the values of various output parameters that will be consumed by subsequent steps.
Download Software	This step downloads a list of files to a specified location on the target server.
Uncompress Sybase File v2	For each supplied file, this step extracts the contents of the archive file (or files).
Run Sybase DBCC Checks v2	This step runs the specified database consistency checker (DBCC) checks to ensure that no database tables or objects have become corrupted. The output of these checks is printed in the step log and stored in files under the specified directory.
Backup Sybase System Databases v2	This step takes backup the user databases, schemas, and transaction logs and stores them in the backup directory.
Backup Sybase System Tables v2	This step takes backup the system tables and store the backup in the backup directory.
Backup Sybase Server Configuration v2	This step takes backup the database server level configuration details and stores them in the backup directory.

Steps Used in Sybase - Patch to Home and Instance, continued

Workflow Step	Description
Backup Sybase Directory v2	This step creates a backup copy of the entire Sybase installation folder and Sybase device files.
Validate Patch for Target Platform Compatibility	This step validates the following: <ul style="list-style-type: none"> • If the patch and the target OS and architecture (64-bit or 32-bit) are compatible • If the intended patch is more recent than the existing patch on the Sybase installation • If the ESD number of the patch is greater than the ESD number of the current sybase installation • If the EBF number of the patch is greater than the EBF number of the current sybase installation
Shutdown Sybase Servers v2	This step shuts down the Sybase server prior to installing the EBF patch.
Install Sybase Patch	This step installs EBF patch for Sybase ASE.
Cleanup Downloaded Files v2	This step removes files and archives that were downloaded to the target system during previous workflow steps.
Startup Sybase Servers v2	This step invokes the Sybase commands to startup the Sybase servers. It can startup dataserver, backupserver, and monserver if proper input parameter values are provided. It verifies that the servers have been started successfully by checking the process running on the operating system.
Copy Directory	This step creates a backup copy of the entire Sybase installation folder and Sybase device files.
Run Sybase Post Patch System Scripts	This step executes the Sybase system scripts necessary as configured in the workflow deployment post EBF patch for the Sybase installation on the target server.
Bring Sybase Database Online v2	This step brings the user-defined databases online within the database server.
Shutdown Sybase Servers	This step shuts down the dataserver instance.
Startup Sybase Servers v2	This step implements the Sybase commands to startup the Sybase servers. It can startup dataserver, backupserver, and monserver if proper input parameter values are provided. It verifies that the servers have been started successfully by checking the process running on the operating system.

Steps Used in Sybase - Patch to Home and Instance, continued

Workflow Step	Description
Disable Sybase Database Object DDL Text v2	This step disables access to the database object's DDL text.
Cleanup Downloaded Files v2	This step removes files and archives that were downloaded to the target system during previous workflow steps.
Run Sybase DBCC Checks v2	This step runs the specified database consistency checker (DBCC) checks to ensure that no database tables or objects have become corrupted. The output of these checks is printed in the step log and stored in files under the specified directory.
Update Sybase Version v2	This step updates the Sybase Instance.Version metadata information for a Sybase Dataserver Instance.
Discover Sybase Databases v2	This step audits the server's physical environment looking for Sybase databases and instances.

For parameter descriptions and defaults, see [Parameters for Sybase - Patch Home and Instance](#).

How to Run this Workflow

The following instructions show you how to customize and run the [Sybase - Patch Home and Instance](#) workflow in your environment.

The workflow provides default values for some parameters. These default values are usually sufficient for a "typical" installation. You can override the defaults by specifying parameter values in the deployment. You can also expose additional parameters in the workflow, if necessary, to accomplish more advanced scenarios. Any parameters not explicitly specified in the deployment will have the default values listed in [Parameters for Sybase - Patch Home and Instance](#) on page 30.

Note: Before following this procedure, review the [Prerequisites for this Workflow](#), and ensure that all requirements are satisfied.

To run this workflow, you need to set your parameters differently depending on the location and status of your EBF patch. Use the following table to choose the method that matches your situation.

To use the Sybase - Patch to Home and Instance workflow:

1. Create a deployable copy of the workflow (see "Create a Deployable Workflow" in *HP DMA Quick Start Tutorial*).
2. Determine the values that you will specify for the following parameters:

Basic Parameters

Parameter Name	Default Value	Required	Description
Call Wrapper	see description	required	Command that will execute this step (or subsequent steps) as a specific user. For UNIX targets, the default is: <code>/opt/hp/dma/client/jython.sh</code> running as root
Sybase OS User Account	sybase	required	OS user who owns the Sybase ASE installation directory. This is the directory specified in the Sybase Install Directory parameter, where the Sybase ASE binaries will be installed.
Sybase Installation Location	no default	required	The directory where the patch will be installed. This is equivalent to the \$SYBASE environment variable. For example: <code>/home/sybase/ASE_15_5</code> .
Sybase Admin Password	no default	required	The password for the ASE system administrator (specified in the Sybase Admin Login parameter). This password is assigned after ASE is provisioned to validate the installation.
Sybase Admin Login	no default	required	The Sybase ASE user who is the ASE system administrator and possesses all ASE privileges.
Sybase Patch Archive	no default	required	The name of sybase binary EBF patch file. For example: <code>EBF18380.tgz</code> .
Web Service Password	no default	required	DMA Web Service password of DMA user.
Web Service URL	no default	required	The path for DMA web service.
Web Service User	no default	required	The DMA user.

Basic Parameters, continued

Parameter Name	Default Value	Required	Description
Backup Server Name	no default	required	The Backup Server name associated with the Adaptive Server (dataserver). Backup Server is responsible for performing backups (dumps) and restores (loads) on selected databases and transaction logs. If not specified, it will not be rebooted after rolling back the patch. For example: BS_DEV_300.

Advanced Parameters

Parameter Name	Default Value	Required	Description
Backup Sybase Server Configuration v2	yes	optional	Flag that determines whether to backup Sybase system configuration before EBF patch is applied. If yes, Sybase system configuration backup is taken before EBF patching. If no, Sybase system configuration backup is not taken. Valid values are y, yes, true, n, no, or false. Default is yes.
Backup Sybase System Databases v2	yes	optional	Flag that determines whether to backup Sybase system database before EBF patch is applied. If yes, Sybase system database backup is taken before EBF patching. If no, Sybase system database backup is not taken. Valid values are y, yes, true, n, no, or false. Default is yes.

Advanced Parameters, continued

Parameter Name	Default Value	Required	Description
Backup Sybase System Tables v2	yes	optional	<p>Flag that determines whether to backup Sybase system tables before EBF patch is applied.</p> <p>If yes, Sybase system tables backup is taken before EBF patching. If no, Sybase system tables backup is not taken.</p> <p>Valid values are y, yes, true, n, no, or false. Default is yes.</p>
Clean on Failure	true	optional	<p>Flag that determines whether to clean up on workflow failure. If true, downloaded files will be cleaned up on failure of workflow.</p> <p>Valid values are y, yes, true, n, no, or false. Default is yes.</p>
Clean on Success	true	optional	<p>Flag that determines whether to clean up on workflow success. If true, downloaded files will be cleaned up on success of workflow.</p> <p>Valid values are y, yes, true, n, no, or false. Default is yes.</p>
DBCC Check List	checkdb, checkalloc, checkcatalog	optional	<p>The comma-separated list of database consistency checker (DBCC) checks that you want to run to check whether there are issues with the database before and after applying the patch.</p> <p>Default value is checkdb, checkalloc, or checkcatalog.</p>
DBCC Errorlog Location	/SYBASE_OS_ HOME_DIR/dbcclog	optional	<p>The fully-qualified directory path where you want to store the DBCC run log results (output files) for pre-patch and post-patch checks.</p> <p>The default value is /SYBASE_OS_ HOME_DIR/dbcclog.</p>

Advanced Parameters, continued

Parameter Name	Default Value	Required	Description
Run Sybase DBCC Check v2	yes	optional	Flag that determines whether to run Sybase DBCC patch before EBF patch is applied. If yes, Sybase DBCC check will be done before EBF patching. If no, DBCC check will be skipped. Valid values are y, yes, true, n, no, or false. Default is yes.
Sybase Admin Login:		required	Required: The Admin Login for the Sybase ASE system administrator. It is used to validate the installation by logging in to the server
Sybase Admin Password	no default	required	The password for the Sybase ASE system administrator. It is used to validate the installation by logging in to the server.
Sybase Archive Location	/tmp/dma/archive	optional	Fully qualified directory on the target server where the Sybase ASE installation binaries will be downloaded, or the location where the ASE software installation .tar or .tgz file is located. The default is /tmp/dma/archive.
Sybase Backup Location	/ <code><SYBASE_OS_HOME_DIR>/syb_backup</code>	optional	The absolute directory path where the backup of the Sybase ASE installation will be stored before applying the patch. Default is <code><SYBASE_OS_HOME_DIR>/syb_backup</code> .
Sybase Backupserver Name	no default	optional	The Backup Server name associated with the Adaptive server (dataserver). Backup Server is responsible for performing backups (dumps) and restores (loads) on selected databases and transaction logs. If not specified, it will not be rebooted after applying the patch.

Advanced Parameters, continued

Parameter Name	Default Value	Required	Description
Sybase Dataserver Name	See description	optional	The Adaptive Server instance running on the target machine with the dataserver process. The Adaptive server component manages databases and users, records the location of data on disks, maps logical data descriptions to physical data storage, and manages data and procedure caches in memory. The default value is set from the deployment instance.
Sybase Installation Location	no default	required	The directory where the Sybase Software was provisioned.
Sybase Master Device Name	master	optional	Name of the Sybase system device where the master database is mounted and running. If the default device for the master database is not master.dat this is required. If using raw device provisioning and the master database is mounted on dev/raw/raw1, then the value can be raw1. The default is master.
Sybase Monitorserver Name	no default	optional	The Monitor Server name associated with the Adaptive server (dataserver). The Monitor Server is responsible for monitoring and supervising the Adaptive Server. If not specified, it will not be rebooted after applying the patch to reflect the EBF updates
Sybase OS User Account	sybase	required	Sybase account OS user who owns the Sybase ASE installation directory and instance. The default is sybase.
Sybase Patch Archive	no default	required	The name of sybase binary EBF patch file. For example: EBF18380.tgz.

Advanced Parameters, continued

Parameter Name	Default Value	Required	Description
Sybase Postpatch System Script List	installmaster, instmsgs.ebf, installcommit	optional	Comma-separated list of Sybase provided scripts to be run after patching the Sybase instance. These scripts make the appropriate changes to the system tables and procedures and update the Adaptive Server version. The default is 'installmaster, instmsgs.ebf, or installcommit.
Sybase Servers Errorlog File Format	See description	optional	Adaptive Server errorlog file format. Used to allow a non-standard SAP server errorlog file name. Specify your own format that includes '%s'. The '%s' will be replaced with the Adaptive Server name. For example, if the format is set to 'errorLog_%s' and the server name is 'NY_DS', the workflow will create the errorlog file 'errorLog_NY_DS'. This also applies if any backupserver or monserver are being patched and rebooted. The default is '%s.log'.
Sybase Staging Location	/tmp/dma/staging	optional	The staging location on the target server where the Sybase ASE binaries will be stored prior to installation. The default is /tmp/dma/staging.
Sybase System Scripts Location	\$SYBASE/ASE-15_ 0/scripts	optional	Fully qualified directory path where Post Install Script List (the Sybase provided scripts) is available to run after applying the EBF patch. These scripts make the appropriate changes to the system tables and procedures and update the ASE version. The default is \$SYBASE/ASE-15_0/scripts.

Advanced Parameters, continued

Parameter Name	Default Value	Required	Description
Sybase Version	See description	optional	Sybase Version that is installed on the target machine to be patched with provided EBF. Valid values are 15.0.3 or 15.5. Default: It will be extracted from the target machine Sybase installation.
User Defined Patch Responsefile	no default	optional	The silent install response file name. If not provided, then the workflow will use the deployment parameters to create a response file that will be used for patching Sybase. If the response file is provided, the workflow will override the response file parameters with values from the silent response file. If the response file is invalid or has a problem, the workflow behavior may be unpredictable.

3. In the workflow editor, expose any additional parameters that you need (see [How to Expose Additional Workflow Parameters](#)). You will specify values for those parameters when you create the deployment.
4. Save the changes to the workflow (click **Save** in the lower right corner).
5. Create a new deployment (see "Create a Deployment" in *HP DMA Quick Start Tutorial* for instructions).
6. On the Parameters tab, specify values for the required parameters listed in step 2. You do not need to specify values for those parameters whose default values are appropriate for your environment.
7. On the Targets tab, specify one or more targets for this deployment.
8. Save the deployment (click **Save** in the lower right corner).
9. Run the workflow using this deployment (see "Run Your Workflow" in *HP DMA Quick Start Tutorial* for instructions).

Note: See [Parameters for Sybase - Patch Home and Instance](#) on page 30 for detailed descriptions of all input parameters for this workflow, including default values.

To verify the results:

The workflow will complete and report SUCCESS on the Console if it has run successfully. If an error occurs during workflow execution, the error is logged, and the workflow terminates in the FAILURE state.

See the Console page output for error messages that indicate whether problems occurred during the application of the patches.

Optional: If you want to further verify that the patch was successfully applied to the Sybase Database Instances associated with the Sybase Home:

1. Verify the EBF version by querying the global variable (@@version) value. It should match the EBF Patch Number specified.
2. Verify that all databases are online and users are able to log-in.
3. Run basic database consistency check commands, and ensure that no errors are reported.

Sample Scenario

This topic shows you typical parameter values for different use cases for the [Sybase - Patch Home and Instance](#) workflow. The workflow applies Emergency Bug Fix (EBF) patch to an existing Sybase Adaptive Server Enterprise (ASE) version 15.7 installation. It uses a binary setup.bin installation utility to apply the patch and then runs post-patching scripts.

Input Parameters for Gather Parameters for Sybase Patch Home and Instance

Parameter Name	Example Value	Description
Call Wrapper	jython	Command that will execute this step (or subsequent steps) as a specific user.
Sybase OS User Account	sybase	OS user who owns the Sybase ASE installation directory. This is the directory specified in the Sybase Install Directory parameter, where the Sybase ASE binaries will be installed.
Sybase Installation Location	/opt/app/sybase	The directory where the patch will be installed. This is equivalent to the \$SYBASE environment variable.
Sybase Admin Login	sa	The Sybase ASE user who is the ASE system administrator and possesses all ASE privileges.
Sybase Patch Archive	EBF20953.tar	The name of Sybase binary EBF patch file.

Input Parameters for Gather Advanced Parameters for Sybase Patch Home and Instance

Parameter Name	Example Value	Description
Sybase Backupserver Name	BS_200	The Backup Server name associated with the Adaptive server (dataserver).
Sybase Master Device Name	raw1	Name of the Sybase system device where the master database is mounted and running.
Sybase Version	15.7	Sybase Version that is installed on the target machine to be patched with provided EBF.

Parameters for Sybase - Patch Home and Instance

The following tables describe the required and optional input parameters for this workflow.

Input Parameters Defined in this Step: Gather Parameters for Sybase Patch Home and Instance

Parameter Name	Default Value	Required	Description
Call Wrapper	see description	required	Command that will execute this step (or subsequent steps) as a specific user. For UNIX targets, the default is: <code>/opt/hp/dma/client/jython.sh</code> running as root
Sybase OS User Account	sybase	required	OS user who owns the Sybase ASE installation directory. This is the directory specified in the Sybase Install Directory parameter, where the Sybase ASE binaries will be installed.
Sybase Installation Location	no default	required	The directory where the patch will be installed. This is equivalent to the \$SYBASE environment variable. For example: <code>/home/sybase/ASE_15_5.</code>
Sybase Admin Password	no default	required	The password for the ASE system administrator (specified in the Sybase Admin Login parameter). This password is assigned after ASE is provisioned to validate the installation.
Sybase Admin Login	no default	required	The Sybase ASE user who is the ASE system administrator and possesses all ASE privileges.
Sybase Patch Archive	no default	required	The name of sybase binary EBF patch file. For example: <code>EBF18380.tgz.</code>
Web Service Password	no default	required	DMA Web Service password of DMA user.
Web Service URL	no default	required	The path for DMA web service (DMA URL).
Web Service User	no default	required	The DMA user.

Input Parameters Defined in this Step: Gather Parameters for Sybase Patch Home and Instance, continued

Parameter Name	Default Value	Required	Description
Backup Server Name	no default	required	The Backup Server name associated with the Adaptive Server (dataserver). Backup Server is responsible for performing backups (dumps) and restores (loads) on selected databases and transaction logs. If not specified, it will not be rebooted after rolling back the patch. For example: BS_DEV_300.

Additional Input Parameters Defined in this Step: Gather Advanced Parameters for Sybase Patch Home and Instance

Parameter Name	Default Value	Required	Description
Backup Sybase Server Configuration	yes	optional	Flag that determines whether to backup Sybase system configuration before EBF patch is applied. If yes, Sybase system configuration backup is taken before EBF patching. If no, Sybase system configuration backup is not taken. Valid values are y, yes, true, n, no, or false. Default is yes.

Additional Input Parameters Defined in this Step: Gather Advanced Parameters for Sybase Patch Home and Instance, continued

Parameter Name	Default Value	Required	Description
Backup Sybase System Databases	yes	optional	<p>Flag that determines whether to backup Sybase system database before EBF patch is applied.</p> <p>If yes, Sybase system database backup is taken before EBF patching. If no, Sybase system database backup is not taken.</p> <p>Valid values are y, yes, true, n, no, or false. Default is yes.</p>
Backup Sybase System Tables	yes	optional	<p>Flag that determines whether to backup Sybase system tables before EBF patch is applied.</p> <p>If yes, Sybase system tables backup is taken before EBF patching. If no, Sybase system tables backup is not taken.</p> <p>Valid values are y, yes, true, n, no, or false. Default is yes.</p>

Additional Input Parameters Defined in this Step: Gather Advanced Parameters for Sybase Patch Home and Instance, continued

Parameter Name	Default Value	Required	Description
Clean on Failure	true	optional	Flag that determines whether to clean up on workflow failure. If true, downloaded files will be cleaned up on failure of workflow. Valid values are y, yes, true, n, no, or false. Default is yes.
Clean on Success	true	optional	Flag that determines whether to clean up on workflow success. If true, downloaded files will be cleaned up on success of workflow. Valid values are y, yes, true, n, no, or false. Default is yes.
DBCC Check List	checkdb, checkalloc, checkcatalog	optional	The comma-separated list of database consistency checker (DBCC) checks that you want to run to check whether there are issues with the database before and after applying the patch. Default value is checkdb, checkalloc, or checkcatalog.

Additional Input Parameters Defined in this Step: Gather Advanced Parameters for Sybase Patch Home and Instance, continued

Parameter Name	Default Value	Required	Description
DBCC Errorlog Location	/SYBASE_OS_HOME_DIR/dbcclog	optional	The fully-qualified directory path where you want to store the DBCC run log results (output files) for pre-patch and post-patch checks. The default value is /SYBASE_OS_HOME_DIR/dbcclog.
Run Sybase DBCC Check	yes	optional	Flag that determines whether to run Sybase DBCC patch before EBF patch is applied. If yes, Sybase DBCC check will be done before EBF patching. If no, DBCC check will be skipped. Valid values are y, yes, true, n, no, or false. Default is yes.
Sybase Backup Location	/<<SYBASE_OS_HOME_DIR>/syb_backup	optional	The absolute directory path where the backup of the Sybase ASE installation will be stored before applying the patch. Default is /<SYBASE_OS_HOME_DIR>/syb_backup.

Additional Input Parameters Defined in this Step: Gather Advanced Parameters for Sybase Patch Home and Instance, continued

Parameter Name	Default Value	Required	Description
Sybase Backupserver Name	no default	optional	The Backup Server name associated with the Adaptive server (dataserver). Backup Server is responsible for performing backups (dumps) and restores (loads) on selected databases and transaction logs. If not specified, it will not be rebooted after applying the patch.
Sybase Dataserver Name	See description	optional	The Adaptive Server instance running on the target machine with the dataserver process. The Adaptive server component manages databases and users, records the location of data on disks, maps logical data descriptions to physical data storage, and manages data and procedure caches in memory. The default value is set from the deployment instance.

Additional Input Parameters Defined in this Step: Gather Advanced Parameters for Sybase Patch Home and Instance, continued

Parameter Name	Default Value	Required	Description
Sybase Installation Location	no default	required	The directory where the Sybase Software was provisioned.
Sybase Master Device Name	master	optional	Name of the Sybase system device where the master database is mounted and running. If the default device for the master database is not master.dat this is required. If using raw device provisioning and the master database is mounted on dev/raw/raw1, then the value can be raw1. The default is master.
Sybase Monitorserver Name	no default	optional	The Monitor Server name associated with the Adaptive server (dataserver). The Monitor Server is responsible for monitoring and supervising the Adaptive Server. If not specified, it will not be rebooted after applying the patch to reflect the EBF updates

Additional Input Parameters Defined in this Step: Gather Advanced Parameters for Sybase Patch Home and Instance, continued

Parameter Name	Default Value	Required	Description
Sybase OS User Account	sybase	required	Sybase account OS user who owns the Sybase ASE installation directory and instance. The default is sybase.
Sybase Patch Archive	no default	required	The name of sybase binary EBF patch file. For example: EBF18380.tgz.
Sybase Postpatch System Script List	installmaster, instmsgs.ebf, installcommit	optional	Comma-separated list of Sybase provided scripts to be run after patching the Sybase instance. These scripts make the appropriate changes to the system tables and procedures and update the Adaptive Server version. The default is 'installmaster, instmsgs.ebf, or installcommit.

Additional Input Parameters Defined in this Step: Gather Advanced Parameters for Sybase Patch Home and Instance, continued

Parameter Name	Default Value	Required	Description
Sybase Servers Errorlog File Format	See description	optional	Adaptive Server errorlog file format. Used to allow a non-standard SAP server errorlog file name. Specify your own format that includes '%s'. The '%s' will be replaced with the Adaptive Server name. For example, if the format is set to 'errorLog_%s' and the server name is 'NY_DS', the workflow will create the errorlog file 'errorLog_NY_DS'. This also applies if any backupserver or monserver are being patched and rebooted. The default is '%s.log'.
Sybase Staging Location	/tmp/dma/staging	optional	The staging location on the target server where the Sybase ASE binaries will be stored prior to installation. The default is /tmp/dma/staging.

Additional Input Parameters Defined in this Step: Gather Advanced Parameters for Sybase Patch Home and Instance, continued

Parameter Name	Default Value	Required	Description
Sybase System Scripts Location	\$SYBASE/ASE-15_0/scripts	optional	Fully qualified directory path where Post Install Script List (the Sybase provided scripts) is available to run after applying the EBF patch. These scripts make the appropriate changes to the system tables and procedures and update the ASE version. The default is \$SYBASE/ASE-15_0/scripts.
Sybase Version	See description	optional	Sybase Version that is installed on the target machine to be patched with provided EBF. Valid values are 15.0.3 or 15.5. Default: It will be extracted from the target machine Sybase installation.

Additional Input Parameters Defined in this Step: Gather Advanced Parameters for Sybase Patch Home and Instance, continued

Parameter Name	Default Value	Required	Description
User Defined Patch Responsefile	no default	optional	The silent install response file name. If not provided, then the workflow will use the deployment parameters to create a response file that will be used for patching Sybase. If the response file is provided, the workflow will override the response file parameters with values from the silent response file. If the response file is invalid or has a problem, the workflow behavior may be unpredictable.

Sybase - Rollback Patch from Home and Instance

Use this workflow if you encounter problems after applying a patch update. Only the last patch that was applied is rolled back.

This workflow requires previously created robust copy of ASE binary files which you may want to use to rollback the current Sybase ASE installation binaries.

For additional information about how the Sybase - Rollback from Home and Instance workflow can be used with other patching workflows see [How to Use the Workflows Together](#) on page 13.

To use this workflow in your environment, see the following information:

Topic	Information Included
Prerequisites for this Workflow	List of prerequisites that must be satisfied before you can run this workflow
How this Workflow Works	Information about what the workflow does, including validation checks performed, steps executed, and a high-level process flow
How to Run this Workflow	Instructions for running this workflow in your environment
Sample Scenario	Examples of typical parameter values for this workflow
Parameters for Sybase - Rollback Patch from Home and Instance on page 54	List of input parameters for this workflow

Prerequisites for this Workflow

Be sure that the following prerequisites are satisfied before you run the [Sybase - Rollback Patch from Home and Instance](#) workflow:

- The latest HP DMA solution packs require the latest HP DMA platform. To use the latest solution packs, update the HP DMA platform. HP DMA 10.30 solution packs are supported on HP DMA 10.30 (and later).
- You have installed the HP DMA Database Patching Solution Pack.
- You need to have Sybase provisioned and operational. You can do this by running the following workflows in the HP DMA Database Provisioning Solution Pack:
Create Sybase Database
- You have read access to all specified inventory pointers (Linux/UNIX).
- You have unchallenged sudo access to a user (typically root) who can access all required files and directories to download and execute.

For more information about prerequisites for Sybase database, refer to the [Sybase Product Documentation](#) on page 58.

How this Workflow Works

The following information describes how the [Sybase - Rollback Patch from Home and Instance](#) workflow works:

Overview

This workflow does the following things in the order shown:

- The Sybase - Rollback from Home and Instance workflow first makes the necessary preparations before actually rolling back the EBF patch. It processes and validates user input parameters. It makes sure files exist or have valid specifications. It executes commands used in subsequent steps. It takes backup of the database, database tables, and server configuration, and shuts down the Sybase server.
- Then the workflow rolls back the EBF patch to the Sybase Database Home.
- To finish up, the workflow restarts all the Sybase Instances and attempts to restart the Sybase database.

Validation Checks Performed

Much of the validation centers on the input parameters:

- The input parameters have the proper syntax (no special characters or spaces).
- Files exist or have valid specifications.

Steps Used in Sybase - Rollback from Home and Instance

Workflow Step	Description
Prepare Sybase Call Wrapper v2	This step constructs the commands that will be used to execute subsequent workflow steps as either the OS administrative user or the owner of the Sybase ASE installation.
Gather Parameters for Rollback Patch from Home and Instance	This step gathers the required parameters for the Sybase - Rollback from Home and Instance workflow.
Gather Advanced Parameters for Rollback EBF Patch from Home and Instance	This step gathers the optional advanced parameters for the Sybase - Rollback from Home and Instance workflow.
Validate Parameters for Rollback EBF Patch from Home and Instance	This step validates the values specified for the input parameters used by the Sybase - Rollback from Home and Instance workflow. It also sets the values of various output parameters that will be consumed by subsequent steps.
Backup Sybase System Tables v2	This step takes backup the system tables and store the backup in the backup directory.
Backup Sybase System Databases v2	This step takes backup the user databases, schemas, and transaction logs and stores them in the backup directory.
Backup Sybase Server Config	This step takes backup the database server level configuration details and stores them in the backup directory.
Backup Sybase Directory v2	This step copies the entire Sybase installation as well as Sybase device files.
Shutdown Sybase Servers v2	This step shuts down the Sybase server prior to rollback of the EBF patch.
Restore Adaptive Server Home	This step rolls back EBF patch applied for Sybase ASE and restores Sybase Home.
Copy Directory	This step takes backup of the Sybase installation folder.
Startup Sybase Servers v2	This step implements the Sybase commands to startup the Sybase servers. It can startup dataserver, backupserver, and monserver if proper input parameter values are provided. It verifies that the servers have been started successfully by checking the process running on the operating system.
Copy Directory	This step takes backup of the Sybase installation folder.

Steps Used in Sybase - Rollback from Home and Instance, continued

Workflow Step	Description
Verify Post Sybase Rollback Patch	This step performs post patch validation for Rollback of EBF/ESD for the current Sybase ASE installation.
Startup Sybase Servers v2	This step implements the Sybase commands to startup the Sybase servers. It can startup dataserver, backupserver, and monserver if proper input parameter values are provided. It verifies that the servers have been started successfully by checking the process running on the operating system.
Run Sybase Post Patch System Scripts	This step executes the Sybase system scripts necessary as configured in the workflow deployment post EBF patch rollback for the Sybase installation on the target server.
Shutdown Sybase Servers v2	This step shuts down the dataserver instance.
Shutdown Sybase Servers v2	This step shuts down the dataserver instance.
Update Sybase Version Tag	This step updates the Sybase Instance.Version metadata information for a Sybase Dataserver Instance.
Backout Rollbacked Sybase ASE Home	This step backouts the rolled back Sybase ASE home.
Copy Directory	This step takes backup of the Sybase installation folder.
Startup Sybase Servers v2	This step invokes the Sybase commands to startup the Sybase servers. It can startup dataserver, backupserver, and monserver if proper input parameter values are provided. It verifies that the servers have been started successfully by checking the process running on the operating system.
Copy Directory	This step takes backup of the Sybase installation folder.
Startup Sybase Servers v2	This step invokes the Sybase commands to startup the Sybase servers. It can startup dataserver, backupserver, and monserver if proper input parameter values are provided. It verifies that the servers have been started successfully by checking the process running on the operating system.

For parameter descriptions and defaults, see [Parameters for Sybase - Rollback Patch from Home and Instance](#) on page 54.

How to Run this Workflow

The following instructions show you how to customize and run the [Sybase - Rollback from Home and Instance](#) workflow in your environment.

(missing or bad snippet)

The workflow provides default values for some parameters. These default values are usually sufficient for a "typical" installation. You can override the defaults by specifying parameter values in the deployment. You can also expose additional parameters in the workflow, if necessary, to accomplish more advanced scenarios. Any parameters not explicitly specified in the deployment will have the default values listed in [Parameters for Sybase - Rollback Patch from Home and Instance](#) on page 54.

Note: Before following this procedure, review the [Prerequisites for this Workflow](#) on page 42, and ensure that all requirements are satisfied.

To use the Sybase - Rollback from Home and Instance workflow:

1. Create a deployable copy of the workflow (see "Create a Deployable Workflow" in *HP DMA Quick Start Tutorial*).
2. Determine the values that you will specify for the following parameters:

Call Wrapper Parameters

Parameter Name	Default Value	Required	Description
Call Wrapper	see description	required	Command that will execute this step (or subsequent steps) as a specific user. For UNIX targets, the default is: <code>/opt/hp/dma/client/jython.sh</code> running as root
Sybase OS User Name	sybase	required	OS user who owns the Sybase ASE installation directory.

Basic Parameters

Parameter Name	Default Value	Required	Description
Backup Sybase System Databases	Yes	optional	Flag that determines whether to backup Sybase system databases before EBF patch is rolled back. If yes, Sybase system database backup is taken. If no, Sybase system configuration backup is not taken. Valid values are y, yes, true, n, no, or false. Default is yes.
Backup Sybase System Tables	Yes	optional	Flag that determines whether to backup Sybase system tables before EBF patch is rolled back. If yes, Sybase system table backup is taken. If no, Sybase system configuration backup is not taken. Valid values are y, yes, true, n, no, or false. Default is yes.
Sybase Backup Data Directory to Rollback	no default	required	The fully-qualified backup directory of the Sybase ASE data files that was created before applying the recent EBF/ESD Patch. Example: <code>/opt/syb_backup/EBF20953/syb_data</code>
Sybase Backup Directory to Rollback	no default	required	The fully-qualified backup directory of the Sybase ASE binary files that was created before applying the recent EBF/ESD Patch. Example: <code>/opt/syb_backup/EBF20953/sybase</code>

Basic Parameters, continued

Parameter Name	Default Value	Required	Description
Sybase Data Directory after Rollback	no default	required	The fully-qualified directory of the Sybase ASE data files that is created after the rollback.
Sybase Installation Backup Directory	no default	required	The directory where the workflow will back up the current (working) Sybase installation directory, important system tables backup, and server configuration backup. Example: opt/sybase/ase_155_backup_20120829

Advanced Parameters

Parameter Name	Default Value	Required	Description
Backup Server Name	no default	optional	The Backup Server name associated with the Adaptive Server (dataserver). Backup Server is responsible for performing backups (dumps) and restores (loads) on selected databases and transaction logs. If not specified, it will not be rebooted after rolling back the patch.
Clean on Failure	no default	optional	Flag that determines whether to clean up on workflow failure. If yes, downloaded files will be cleaned up on failure of workflow. Valid values are y, yes, true, n, no, or false. Default is yes.
Master Device Name	master.dat	optional	Name of the Sybase system device where the master database is mounted and running. If the default device for the master database is not master.dat, it is required. If using raw device provisioning and the master database is mounted on dev/raw/raw1, then the value can be raw1. The default is master.

Advanced Parameters, continued

Parameter Name	Default Value	Required	Description
Monitor Server Name	no default	optional	The Monitor Server name associated with the Adaptive Server (dataserver). Monitor Server is responsible for monitoring and supervising of Adaptive Server. If not specified, it will not be rebooted after rolling back the patch.
Server Errorlog File Format	%s.log	optional	Adaptive Server errorlog file format. Used to allow a non-standard SAP server errorlog file name. Specify your own format that includes '%s'. The '%s' will be replaced with the Adaptive Server name. For example, if set to errorLog_%s and the server name is 'NY_DS', the workflow will create the errorlog file errorLog_NY_DS. The same convention also applies if any backupserver or monserver are being patched and rebooted. The default is %s.log.
Sybase Installed Home	no default	required	The current Sybase installation directory with absolute path. If Discovery was run before executing the current workflow, the default is populated from the SA core. If user wants to specify installation directory other than the one that is discovered, then it can be specified. Example: /opt/sybase.
Sybase Instance Name	no default	required	The current Sybase ASE Server/instance name. If Discovery was run before executing the current workflow, the default is populated from the SA core. If user wants to specify Sybase ASE Instance/Server other than the one that is discovered, then it can be specified. Example: LN_SERVER.

Advanced Parameters, continued

Parameter Name	Default Value	Required	Description
Sybase Instance Password	no default	required	The current Sybase ASE Server/instance login password. If Discovery was run before executing the current workflow, the default is populated from the SA core. If user wants to specify Sybase ASE Instance/Server login password other than the one that is discovered, then it can be specified. Example: PaS#%&Wor*
Sybase Instance User	no default	required	The current Sybase ASE Server/instance login user. If Discovery was run before executing the current workflow, the default is populated from the SA core. If user wants to specify Sybase ASE Instance/Server login user other than the one that is discovered, then it can be specified. Example: sa.
Sybase Post Patch System Script List	installmaster, instmsgs.ebf, installcommit	optional	Comma-separated list of Sybase provided scripts to be run after rolling back the patch from the Sybase instance. These scripts make the appropriate changes to the system tables and procedures and update the Adaptive Server version. The default is 'installmaster, instmsgs.ebf, or installcommit.

3. In the workflow editor, expose any additional parameters that you need (see [How to Expose Additional Workflow Parameters](#)). You will specify values for those parameters when you create the deployment.
4. Save the changes to the workflow (click **Save** in the lower right corner).
5. Create a new deployment (see "Create a Deployment" in *HP DMA Quick Start Tutorial* for instructions).
6. On the Parameters tab, specify values for the required parameters listed in step 2. You do not need to specify values for those parameters whose default values are appropriate for your environment.
7. On the Targets tab, specify one or more targets for this deployment.
8. Save the deployment (click **Save** in the lower right corner).
9. Run the workflow using this deployment (see "Run Your Workflow" in *HP DMA Quick Start*

Tutorial for instructions).

To verify the results:

The workflow will complete and report SUCCESS on the Console if it has run successfully. If an error occurs during workflow execution, the error is logged, and the workflow terminates in the FAILURE state.

See the Console page output for error messages that indicate whether problems occurred during the application of the patches.

Optional: If you want to further verify that the patch was successfully applied to the Sybase Database Instances associated with the Sybase Home:

1. Verify the EBF version by querying the global variable (@@version) value. It should match the EBF Patch Number specified.
2. Verify that all databases are online and users are able to log-in.
3. Run basic database consistency check commands, and ensure that no errors are reported.

Sample Scenario

It is very straightforward to run the [Sybase - Rollback from Home and Instance](#) workflow. This topic shows you typical parameter values to use.

Input Parameters for "Prepare Sybase Call Wrapper"

Parameter Name	Example Value	Description
Call Wrapper	jython	The command that executes the step as the OS administrative user (for example, <code>sudo su - root /opt/hp/dma/client/bin/jython.sh</code> for UNIX targets)
Sybase OS User Name	sybase	Sybase Account OS user who owns the Sybase ASE installation directory. Workflow steps will switch to Sybase Account user to perform any administrative tasks where Sybase Account User is necessary.

Input Parameters for "Gather Parameters for Rollback Patch from Home and Instance"

Parameter Name	Example Value	Description
Backup Sybase System Databases	yes	Flag that determines whether to backup sybase system databases before EBF patch is applied. If yes, backup sybase system databases will be done before EBF patching. If no, backup sybase system databases will be skipped.
Backup Sybase System Tables	yes	Flag that determines whether to backup sybase system tables before EBF patch is applied. If yes, backup sybase system tables will be done before EBF patching. If no, backup sybase system tables will be skipped.
Sybase Backup Data Directory to Rollback	/opt/app/syb_backup/EBF20953/syb_data	The fully-qualified robust backup directory of the Sybase ASE data files that was created before applying the recent EBF/ESD Patch.
Sybase Backup Binary Directory to Rollback	/opt/app/syb_backup/EBF20953/sybase	The fully-qualified robust backup directory of the Sybase ASE binary files that was created before applying the recent EBF/ESD Patch.
Sybase Data Directory after Rollback	/opt/app/syb_data	The fully-qualified directory of the Sybase ASE data files that is created after rollback.

Input Parameters for "Gather Parameters for Rollback Patch from Home and Instance", continued

Parameter Name	Example Value	Description
Sybase Installation Backup Directory	/opt/app/syb_backup/ase_157_backup20150508	The directory where the workflow will back up the current (working) Sybase installation directory, important system tables backup, and server configuration backup.

Input Parameters for "Gather Advanced Parameters for Sybase Rollback from Home and Instance"

Parameter Name	Example Value	Description
Backup server Name	BS_200	The Backup Server name associated with the Adaptive Server ('dataserver'). Backup Server is responsible for performing backups (dumps) and restores (loads) on selected databases and transaction logs. If not specified, it will not be rebooted after rolling back the patch.
Clean on Failure	yes	Flag that determines whether to clean up on workflow failure. If yes, downloaded files will be cleaned up on failure of workflow.

Parameters for Sybase - Rollback Patch from Home and Instance

The following tables describe the required and optional input parameters for this workflow.

Input Parameters for Prepare Sybase Call Wrapper

Parameter Name	Default Value	Required	Description
Call Wrapper	see description	required	Command that will execute this step (or subsequent steps) as a specific user. For UNIX targets, the default is: <code>/opt/hp/dma/client/jython.sh</code> running as root
Sybase OS User Name	sybase	required	OS user who owns the Sybase ASE installation directory.

Input Parameters for Gather Parameters for Rollback Patch Home and Instance

Parameter Name	Default Value	Required	Description
Backup Sybase System Databases	Yes	optional	Flag that determines whether to backup Sybase system databases before EBF patch is rolled back. If yes, Sybase system database backup is taken. If no, Sybase system configuration backup is not taken. Valid values are y, yes, true, n, no, or false. Default is yes.
Backup Sybase System Tables	Yes	optional	Flag that determines whether to backup Sybase system tables before EBF patch is rolled back. If yes, Sybase system table backup is taken. If no, Sybase system configuration backup is not taken. Valid values are y, yes, true, n, no, or false. Default is yes.
Sybase Backup Data Directory to Rollback	no default	required	The fully-qualified backup directory of the Sybase ASE data files that was created before applying the recent EBF/ESD Patch. Example: <code>/opt/syb_backup/EBF20953/syb_data</code>
Sybase Backup Directory to Rollback	no default	required	The fully-qualified backup directory of the Sybase ASE binary files that was created before applying the recent EBF/ESD Patch. Example: <code>/opt/syb_backup/EBF20953/sybase</code>
Sybase Data Directory after Rollback	no default	required	The fully-qualified directory of the Sybase ASE data files that is created after the rollback.

Input Parameters for Gather Parameters for Rollback Patch Home and Instance, continued

Parameter Name	Default Value	Required	Description
Sybase Installation Backup Directory	no default	required	The directory where the workflow will back up the current (working) Sybase installation directory, important system tables backup, and server configuration backup. Example: opt/sybase/ase_155_backup_20120829

Additional Input Parameters for Gather Advanced Parameters for Sybase Rollback Home and Instance

Parameter Name	Default Value	Required	Description
Backup Server Name	no default	optional	The Backup Server name associated with the Adaptive Server (dataserver). Backup Server is responsible for performing backups (dumps) and restores (loads) on selected databases and transaction logs. If not specified, it will not be rebooted after rolling back the patch.
Clean on Failure	no default	optional	Flag that determines whether to clean up on workflow failure. If yes, downloaded files will be cleaned up on failure of workflow. Valid values are y, yes, true, n, no, or false. Default is yes.
Master Device Name	master.dat	optional	Name of the Sybase system device where the master database is mounted and running. If the default device for the master database is not master.dat, it is required. If using raw device provisioning and the master database is mounted on dev/raw/raw1, then the value can be raw1. The default is master.
Monitor Server Name	no default	optional	The Monitor Server name associated with the Adaptive Server (dataserver). Monitor Server is responsible for monitoring and supervising of Adaptive Server. If not specified, it will not be rebooted after rolling back the patch.

Additional Input Parameters for Gather Advanced Parameters for Sybase Rollback Home and Instance, continued

Parameter Name	Default Value	Required	Description
Server Errorlog File Format	%s.log	optional	Adaptive Server errorlog file format. Used to allow a non-standard SAP server errorlog file name. Specify your own format that includes '%s'. The '%s' will be replaced with the Adaptive Server name. For example, if set to errorLog_%s and the server name is 'NY_DS', the workflow will create the errorlog file errorLog_NY_DS. The same convention also applies if any backupserver or monserver are being patched and rebooted. The default is %s.log.
Sybase Installed Home	no default	required	The current Sybase installation directory with absolute path. If Discovery was run before executing the current workflow, the default is populated from the SA core. If user wants to specify installation directory other than the one that is discovered, then it can be specified. Example: /opt/sybase/.
Sybase Instance Name	no default	required	The current Sybase ASE Server/instance name. If Discovery was run before executing the current workflow, the default is populated from the SA core. If user wants to specify Sybase ASE Instance/Server other than the one that is discovered, then it can be specified. Example: LN_SERVER.
Sybase Instance Password	no default	required	The current Sybase ASE Server/instance login password. If Discovery was run before executing the current workflow, the default is populated from the SA core. If user wants to specify Sybase ASE Instance/Server login password other than the one that is discovered, then it can be specified. Example: PaS#%&Wor*

Additional Input Parameters for Gather Advanced Parameters for Sybase Rollback Home and Instance, continued

Parameter Name	Default Value	Required	Description
Sybase Instance User	no default	required	The current Sybase ASE Server/instance login user. If Discovery was run before executing the current workflow, the default is populated from the SA core. If user wants to specify Sybase ASE Instance/Server login user other than the one that is discovered, then it can be specified. Example: sas.
Sybase Post Patch System Script List	installmaster, instmsgs.ebf, installcommit	optional	Comma-separated list of Sybase provided scripts to be run after rolling back the patch from the Sybase instance. These scripts make the appropriate changes to the system tables and procedures and update the Adaptive Server version. The default is 'installmaster, instmsgs.ebf, or installcommit.

Chapter 4: Reference Information

This chapter contains the following information:

Topic	Description
Sybase Product Documentation	Links to Sybase database product documentation.
HP DMA Documentation below	Links to additional HP DMA documentation

Sybase Product Documentation

SAP provides an extensive documentation library for Sybase at this location:

<http://infocenter.sybase.com/help/index.jsp>

HP DMA Documentation

For information about using the HP DMA web interface, see the *HP DMA User Guide*, the *HP DMA Administrator Guide*, and the *HP DMA Quick Start Tutorial*.

These documents are part of the HP DMA documentation library, which is available on the HP Software Support web site:

<https://softwaresupport.hp.com/>

Chapter 5: Troubleshooting

These topics can help you address problems that might occur when you install and run the workflows in this solution pack:

- [Target Type](#) below
- [User Permissions and Related Requirements](#) below
- [Discovery in HP DMA](#) on the next page

Target Type

In your deployment, make sure that you have specified the correct type of target. The workflow type and the target type must match. A workflow designed to run against an instance target, for example, cannot run against a server target.

User Permissions and Related Requirements

Roles define access permissions for organizations, workflows, steps, policies, and deployments. Users are assigned to roles, and they gain access to these automation items according to the permissions and capabilities defined for their roles.

Roles are assigned by the HP Server Automation administrator. They are then registered in HP DMA by your HP DMA administrator.

Your HP DMA administrator will ensure that the users in your environment are assigned roles that grant them the permissions and capabilities they need to accomplish their tasks. For example:

- To create a workflow, your role must have *Workflow Creator* capability.
- To view a workflow, your role must have *Read* permission for that workflow.
- To edit a workflow, your role must have *Write* permission for that workflow.
- To view a deployment, your role must have *Read* permission for that deployment.
- To modify a deployment, your role must have *Write* permission for that deployment.
- To run a deployment, your role must have *Execute* permission for that deployment and *Deploy* permission for the organization where it will run.

Capabilities determine what features and functions are available and active in the HP DMA UI for each user role.

For more information, see the *HP DMA Administrator Guide*. This document is available on the HP Software Support web site: <https://softwaresupport.hp.com/>

Discovery in HP DMA

HP DMA uses a process called “discovery” to find information about the servers, networks, and database instances on target machines in your managed environment.

You must explicitly initiate the process of discovery—it is not automatic. See the *HP DMA User Guide* for instructions. This document is available on the HP Software Support web site:

<https://softwaresupport.hp.com/>

Glossary

A

automation items

The umbrella term automation items is used to refer to those items to which role-based permissions can be assigned. Automation items include workflows, deployments, steps, and policies.

B

bridged execution

A bridged execution workflow includes some steps that run on certain targets and other steps that run on different targets. An example of a bridged execution workflow is Extract and Refresh Oracle Database via RMAN (in the Database Refresh solution pack). This workflow extracts the contents of a database on one target (the Source) and creates a new database with the same contents on another target (the Destination). This workflow is useful when you want to clone a database - for example, to move it from a traditional IT infrastructure location into a private cloud. Bridged execution workflows are supported on HP DMA version 9.11 (and later).

C

capability

Capabilities are collections of related privileges. There are three capabilities defined in HP DMA. Login Access capability enables a user to log in to the web interface. This capability does not guarantee that this user can view any organizations or automation items—permissions are required to access those items. Workflow Creator

capability enables a user to create new workflows and make copies of other workflows. Administrator capability enables a user to perform any action and view all organizations. If you have Administrator capability, you do not need Workflow Creator capability. The Administrator can assign any of these capabilities to one or more roles registered roles.

connector

HP DMA includes a Connector component that enables it to communicate with HP Server Automation. You must configure the Connector before you can run a workflow against a target.

cross-platform

Cross-platform database refresh involves converting the data from one type of byte ordering to another. This is necessary, for example, if you want to load a database dump file on a little-endian Linux target that was created on a big-endian Solaris server.

custom field

Custom Fields are used to customize workflows or show information about the environment. Custom Fields can be used in workflow steps to automatically supply information that is specific to an organization, server, instance, or database.

D

deployment

Deployments associate a workflow with a target environment in which a workflow runs. You can customize a deployment by specifying values for any workflow parameters that are designated - User Selected - in the workflow. You must save a deployment before you can run the workflow. You can re-use a saved deployment as many times as you like.

F

function

Functions are reusable pieces of code that can be included in automation steps. Any common routine or operation that multiple steps perform is a good candidate for a function. Functions can be tagged with keywords indicating the language in which they are written and the operating system with which they work. Functions are "injected" into the step code just prior to step execution.

I

input parameters

A workflow has a set of required parameters for which you must specify a value. The required parameters are a subset of all the parameters associated with that workflow. The remaining parameters are considered optional. You can specify a value for an optional parameter by first exposing it using the workflow editor and then specifying the value when you create a deployment.

M

mapping

An input parameter is said to be "mapped" when its value is linked to an output parameter from a previous step in the workflow or to a metadata field. Mapped parameters are not visible on the Deployment page. You can "unmap" a parameter by specifying - User Selected - in the workflow editor. This parameter will then become visible on the Deployment page.

O

organization

An organization is a logical grouping of servers. You can use organizations to separate development, staging, and production resources - or to separate logical business units.

P

parameters

Parameters are pieces of information - such as a file system path or a user name - that a step requires to carry out its action. Values for parameters that are designated User Selected in the workflow can be specified in the deployment. Parameters that are marked Enter at Runtime in the deployment must be specified on the target system when the workflow runs.

policy

Policies are reusable sets of attributes that can be used as parameter values in deployments. Deployments can reference policy attributes to change the automation behavior. Policies provide values for input parameters. They can contain fixed values or reference Custom Fields. Policies enable HP DMA to manage groups of hundreds or thousands of servers at a time without the need to configure each individual server.

R

raw devices

In Sybase ASE version 15, you can create and mount database devices on raw bound devices. This enables Sybase ASE to use direct memory access from your address space to the physical sectors on the disk. This can improve performance by reducing memory copy operations from the user

address space to the operating system kernel buffers.

role

Each HP DMA user has one or more roles. Roles are used to grant users permission to log in to and to access specific automation items and organizations. Roles are defined in HP Server Automation. Before you can associate a role with an automation item or organization, however, you must register that role in HP DMA.

S

smart group

Smart Groups are dynamic groups of servers, instances, or databases defined by some criteria. They are used to specify targets for deployments. As information about an environment object changes, its membership in the groups is re-evaluated.

software repository

The software repository is where the workflow will look for any required files that are not found on the target server. If you are using HP DMA with HP Server Automation (SA), this repository is the SA Software Library.

solution pack

A solution pack contains one or more related workflow templates. These templates are read-only and cannot be deployed. To run one of the workflows included in a solution pack, you must first create a deployable copy of that template and then customize that copy for your environment. Solution packs are organized by function - for example: database patching or application server provisioning.

steps

Steps contains the actual code used to perform a unit of work detailed in a workflow.

T

target instance

In the context of MS SQL database refresh, the term "target instance" refers to the SQL Server instance where the database that will be restored resides.

W

workflow

A workflow automates the process followed for an operational procedure. Workflows contain steps, which are linked together to form business logic for a common task. Workflows connect existing tasks in order to perform a new business process by building on existing best practices and processes.

workflow editor

The workflow editor is the tool that you use to assemble steps into workflows. You can map each input parameter to output parameters of previous steps or built-in metadata (such as the server name, instance name, or database name). You can also specify User Selected to expose a parameter in the deployment; this enables the person who creates the deployment to specify a value for that parameter.

workflow templates

A workflow template is a read-only workflow that cannot be deployed. To run one of the workflows included in a solution pack, you must first create a deployable copy of the workflow template and then customize that copy for your environment.