

Technical white paper

# Achieve Patch Currency for IBM DB2 Environments Using HP DMA



**HP Database and Middleware Automation version 10.22**

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## Purpose

This paper describes how to use HP Database and Middleware Automation (HP DMA) to create a repeatable, standardized method to quickly and accurately apply IBM DB2 server fix packs on DB2 installations across an enterprise to keep fix packs current.

## Benefits of HP DMA

HP DMA automates many of the daily administrative tasks required to manage the lifecycle of relational databases and J2EE application servers. These tasks are complex, often manual, typically time-consuming, and frequently error-prone. HP DMA improves the efficiency of these administrative tasks, enabling administrators to deliver change faster with higher quality, better consistency, and improved reliability.

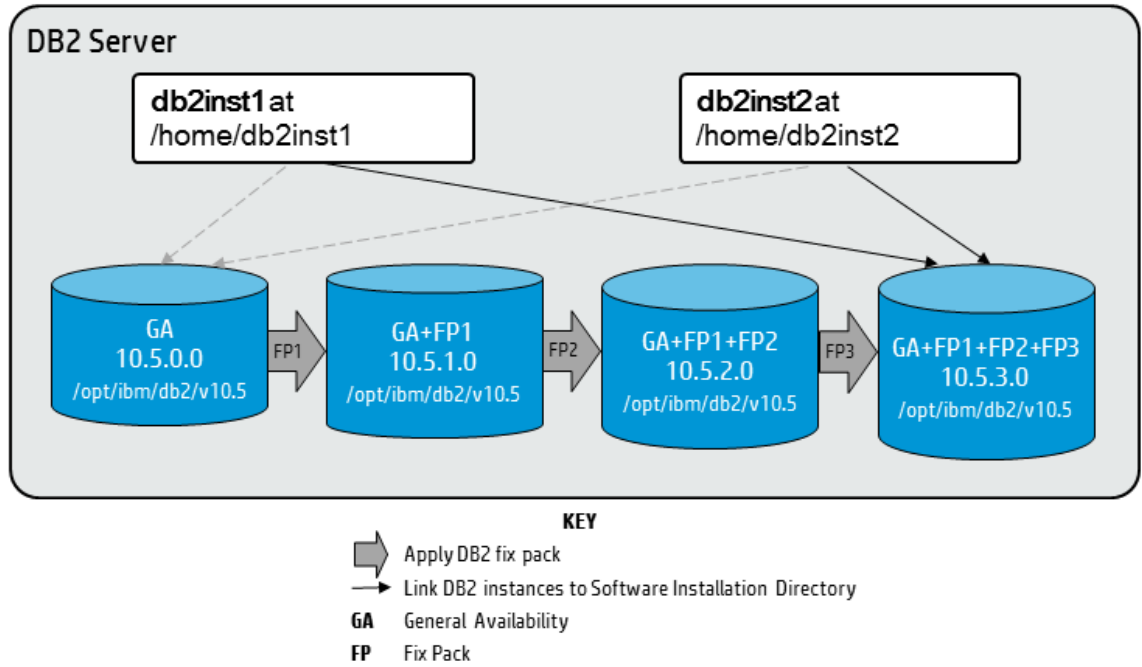
HP DMA equips you to do the following:

- Define and enforce standards for software installation
- Define an installation process once and reuse it repeatedly
- Leverage knowledge enterprise-wide
- Avoid human error

Typically, DB2 fix packs must be applied on all servers. Often this requires patching hundreds or even thousands of DB2 instances. Patching can be time-consuming and error-prone. HP DMA equips you to install DB2 fix packs quickly, easily, and accurately across an enterprise.

## Goal

This paper describes how to apply the supplied fix pack to the DB2 installation—the DB2 Software Installation Directory and all associated Instances:



The diagram shows a DB2 server with two instances. The DB2 instances point to the DB2 Software Installation Directory that is updated over time with subsequent DB2 server fix packs.

## Prerequisites

Before performing the procedures in this paper, your environment must meet the following minimum requirements:

- A server running AIX 6.1 or 7.1 or Red Hat Enterprise Linux 5 or 6. The operating system platform must be certified for the pertinent DB2 fix pack version.
- DB2 server software—version 9.5, 9.7, 10.1, or 10.5—is installed on the target and is ready to be patched.
- The infrastructure required for applying the fix pack is in place (see [Additional requirements](#) below).
- All DB2 Instances are on the same initial fix pack version.
- Patch media:
  - The DB2 server fix pack file from IBM.
  - Patch installation media must be mounted locally or available for download from the software repository.<sup>1</sup>

**Note:** HP DMA only applies DB2 server fix packs, not universal fix packs.

- Storage: A staging directory with 7-8 gigabytes available to unpack the binary file and to apply the fix pack and archive—requires about double the size of the current DB2 installation on the disk.
- The operating system kernel parameters and virtual and shared memory are properly configured to avoid any failure while applying the DB2 fix pack.
- License for HP DMA.
- License for DB2 Database version 9.5, 9.7, 10.1, or 10.5.

## Additional requirements

For additional requirements, see the following IBM documentation:

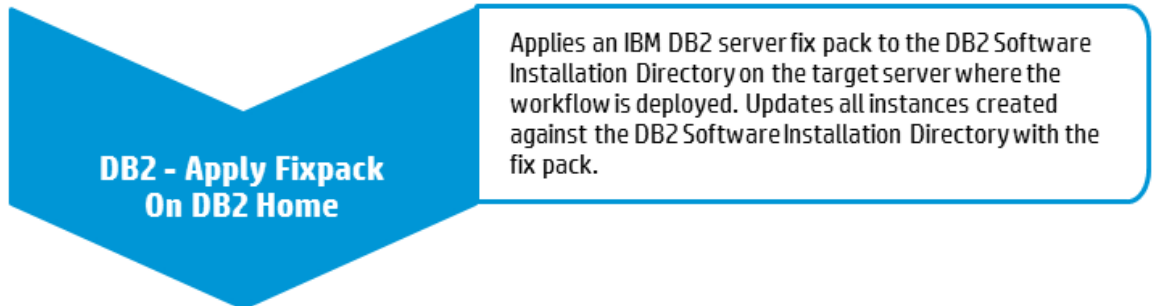
DB2 version	IBM documentation
9.5	<a href="#">DB2 Version 9.5 Fix Pack</a>
9.7	<a href="#">DB2 Version 9.7 Fix Pack</a>
10.1	<a href="#">DB2 Version 10.1 Fix Pack</a>
10.5	<a href="#">DB2 Version 10.5 Fix Pack</a>

<sup>1</sup>For additional information, see [Alternative methods for specifying input files](#).

## Process Overview

Applying a DB2 Fix Pack to a DB2 installation with HP DMA is a simple, one-step process. All required checks and steps have been implemented in a single HP DMA workflow.

Use the following HP DMA workflow to standardize the process of applying a DB2 fix pack:



**Note:** This workflow applies the DB2 server fix pack to the DB2 Software Installation Directory and ALL Instances associated with the DB2 Software Installation Directory. (You cannot use this workflow to apply a fix pack to a subset of the instances associated with a DB2 Software Installation Directory.)

This workflow does not update the DB2 databases with the newly applied DB2 fix pack. You will need to do that manually after you run the workflow. For more information, see [How can I patch the DB2 databases?](#)

The examples given are appropriate for applying a DB2 10.5 fix pack on an AIX server.

The following section provides detailed information required to run the workflow.

**Note:** For additional information, see [How to run an HP DMA workflow.](#)

## Workflow: DB2 - Apply Fixpack on DB2 Home

This section provides detailed information required to run the DB2 - Apply Fixpack on DB2 Home workflow.

### Solution pack

This workflow requires the HP DMA Database Patching Solution Pack.

### Parameters to expose

None

### Input parameters

When you deploy the DB2 - Apply Fixpack on DB2 Home workflow, specify input parameter values for the following steps.

**Note:** Bold text in the following tables indicates that you must specify a value for the parameter.

### Step: Gather Parameters for DB2 Apply Fixpack

Parameter	Description	Example Value
<b>DB2 Fixpack Software Binaries</b>	Required: Name of the DB2 fix pack binary file that you want to apply. Obtained from IBM.  If the file is not found in Download Location (the default is <code>/tmp</code> ), it will be downloaded from the software repository. <sup>1</sup>	<code>v10.5fp3_aix64_server.tar.gz</code>
<b>DB2 Installation Location</b>	Required: Fully-qualified path where DB2 is installed on the target machine.	<code>/opt/ibm/db2/V10.5</code>
Trust SSL Certificates	Deprecated: HP DMA no longer uses this workflow parameter to determine whether the workflow will trust any Secure Sockets Layer (SSL) certificate used to connect to the HP DMA web server. HP DMA now uses the <code>com.hp.dma.conn.trustAllCertificates</code> parameter in the <code>dma.xml</code> file.	
<b>Web Service Password</b>	Required: Password for the HP DMA Discovery web service API.	●●●
<b>Web Service User</b>	Required: User who is capable of modifying the managed environment by using the HP DMA Discovery web service API.	<code>dmawebuser</code>

<sup>1</sup>For additional information, see [Alternative methods for specifying input files](#).



**Step: Gather Advanced Parameters for DB2 Install Fixpack**

Parameter	Description	Example Value
Download Location	Optional: The directory where input files already exist or to which files will be downloaded from the software repository. <sup>1</sup>	/tmp
Staging Directory	Optional: Fully-qualified path of the directory where the DB2 installer will be extracted from the archive. Will be cleaned up at end of workflow execution. Default: If no input is provided /tmp/db2_fixpack will be created.	

<sup>1</sup>For additional information, see [Alternative methods for specifying input files.](#)

## FAQs

### What can cause the workflow to fail?

The workflow will fail if the DB2 server fix pack is not available on the target or in the software repository. To solve this problem, obtain the DB2 server fix pack from IBM, store the file either on the target or in the software repository (for additional information see [Alternative methods for specifying input files](#)), and then specify the filename in the DB2 Fixpack Software Binaries parameter before running the workflow.

### How can I patch the DB2 databases?

The DB2 - Apply Fixpack on DB2 Home workflow only patches the DB2 Software Installation Directory and the associated instances. To update the DB2 databases with the newly applied DB2 fix pack, perform the following after running the workflow:

```
db2 CONNECT TO <dbname>
```

Here, <dbname> is the name of the DB2 database.

```
db2 BIND INSTHOME\sql1lib\bnd\db2schema.bnd BLOCKING ALL GRANT PUBLIC SQLERROR CONTINUE
db2 BIND INSTHOME\sql1lib\bnd\@db2ubind.lst BLOCKING ALL GRANT PUBLIC ACTION ADD
db2 BIND INSTHOME\sql1lib\bnd\@db2cli.lst BLOCKING ALL GRANT PUBLIC ACTION ADD
```

### Can I use HP DMA to apply DB2 universal fix packs?

No. HP DMA can only apply DB2 LUW server fix packs to DB2 LUW server installations.

### Can I use HP DMA to patch DB2 universal databases?

No. HP DMA can only apply DB2 LUW server fix packs to DB2 LUW server installations.

### Can I use HP DMA to apply a DB2 fix pack if the instances have different initial fix pack versions?

No. All DB2 instances must have the same initial fix pack version in order to use the DB2 - Apply Fixpack on DB2 Home workflow.



## Appendix A: Alternative methods for specifying input files

HP DMA provides alternative methods for specifying input files, either downloaded from the software repository or stored directly on the target server(s).

### Method 1: The input files are in the software repository

1. Obtain the pertinent input files.

For example, download the DB2 server fix pack file from IBM.

2. Import the files into the software repository. For additional information, see [How to import a file into the software repository](#).
3. When you create the workflow deployment, specify the filenames and/or directory names for the pertinent input parameters—the files should not exist on the target server(s).
4. When the deployment is executed, HP DMA determines that the input files do not exist on the target server(s) in the specified (or default) download location and then downloads them from the software repository. If the input files need to be processed (for example, unzipped), the new files are placed in the specified (or default) extract location.
5. All downloaded, extracted, and staged files are removed upon successful completion of the workflow.

### Method 2: The input files are stored on each target server

1. Obtain the pertinent input files.

For example, download the DB2 server fix pack file from IBM.

2. Copy the files to each target server into the specified (or default) download location.
3. When you create the workflow deployment, specify the filenames and/or directory names for the pertinent input parameters.
4. When the deployment is executed, HP DMA determines that the input files exist on the target server(s) in the specified (or default) download location. If the input file needs to be processed (for example, unzipped), the new files are placed in the specified (or default) extract location.
5. All extracted and staged files (and any downloaded files) are removed upon successful completion of the workflow.

## Appendix B: How to import a file into the software repository

Many HP DMA workflows are capable of downloading files from the software repository on the HP DMA server to the target server(s) where the workflow is running. The following procedure shows how to import a file into the software repository so that it can be downloaded and deployed by a workflow.

HP DMA uses the HP Server Automation (SA) Software Library as its software repository.

**Tip:** Be sure to use unique file names for all files that you import into the software repository.

To import a file into the SA Software Library:

1. Launch the SA Client from the Windows Start Menu.

By default, the SA Client is located in Start → All Programs → HP Software → HP Server Automation Client.

If the SA Client is not installed locally, follow the instructions under “Download and Install the HP SA Client Launcher” in the *HP Server Automation Single-Host Installation Guide* available at: [softwaresupport.hp.com](http://softwaresupport.hp.com)

2. In the navigation pane in the SA Client, select Library → By Folder. Select (or create) the folder where you want to store the file. Click **Import Software**.
3. In the Import Software dialog, browse to the file (or files) to import, select the character encoding, and then click **Open**. For the Type, select **Unknown**. Select (or browse to) the folder where you want to store the files. For the Platform, select all the operating systems. Click **Import**.
4. Click **Close** after the import completes.

## Appendix C: How to run an HP DMA workflow


The following steps outline the general instructions to run an HP DMA workflow:

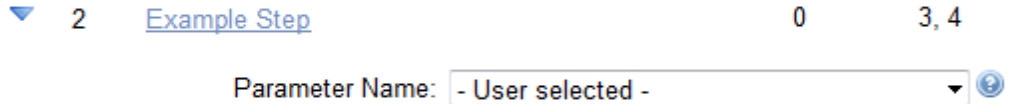
1. Import the specified HP DMA solution pack (if it is not already available).
2. Create a deployable copy of the workflow: Specify a name, add roles, optionally expose parameters (for additional information, see [How to expose hidden parameters](#)), and then **Save**.
3. Create a deployment: Specify a name, schedule, targets, and input parameters, and then **Save**.
4. Execute the deployment to run the workflow.
5. View the results to verify that the workflow ran correctly (refer to the online workflow documentation).

**Note:** For more information about running HP DMA workflows, see the *HP DMA Quick Start Tutorial* available at: [softwaresupport.hp.com](https://softwaresupport.hp.com)

## Appendix D: How to expose hidden parameters

If you need to expose any hidden parameters, perform the following additional steps when you create a deployable copy of the workflow:

1. Click the Workflow tab.
2. Click the blue arrow  next to the pertinent step to expand the list of input parameters.
3. For the parameter that you want to expose, select **- User selected -** from the drop-down list. For example:



4. Repeat steps 2 and 3 for all the parameters that you would like to expose.
5. Save the copy of the workflow.

**To learn more about HP Database and Middleware Automation visit**  
[hp.com/go/dma](http://hp.com/go/dma)

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December 2014

