IBM OpenPages with Watson Version 8.3.0

Upgrade Guide for IBM Db2 users



Before using this information and the product it supports, read the information in <u>"Notices" on page 63</u>.

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Product Information

This document applies to IBM OpenPages with Watson Version 8.3.0 and may also apply to subsequent releases.

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Introduction

This guide provides instructions for upgrading OpenPages[®] with Watson[™] deployments that use IBM[®] Db2[®].

Use this guide if you are upgrading OpenPages with Watson in-place. If you are migrating or doing a fresh installation, see the *IBM OpenPages with Watson Installation and Deployment Guide*.

IBM OpenPages with Watson documentation

IBM maintains one set of documentation serving IBM OpenPages with Watson, IBM OpenPages for IBM Cloud Pak for Data, and IBM OpenPages with Watson on Cloud deployments. The IBM OpenPages with Watson documentation describes certain features and functions which may not be available on the cloud.

If you have any questions about the functionality available in the product version that you are using, contact IBM OpenPages Support by using the IBM Support portal.

Accessibility features

Accessibility features help users who have a physical disability, such as restricted mobility or limited vision, to use information technology products. OpenPages documentation has accessibility features. PDF documents are supplemental and include no added accessibility features.

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Chapter 1. Getting started

Read this section to prepare for upgrading OpenPages with Watson deployments.

Installation locations (on prem)

The installation directory is the location of product artifacts after a package, product, or component is installed. The following table lists the conventions that are used to refer to the installation location of installed components and products:

Important: Directory locations that contain spaces are not supported. IBM OpenPages with Watson or any software that is used by it must not be installed into a directory with spaces. For example, do not install database server, database client, or application server software into the Program Files directory.

If you're using IBM OpenPages for IBM Cloud Pak for Data, see the *IBM OpenPages with Watson Administrator's Guide*.

Table 1. Variable notations for installation directories				
Directory	Description			
<installation_server_home></installation_server_home>	<pre>The directory where the IBM OpenPages with Watson installation server is installed. For example: • On Windows: C:\IBM\OPInstall\OP_<version>_Installer • On Linux®: /home/opuser/IBM/OPInstall/ OP_<version>_Installer</version></version></pre>			
<agent_home></agent_home>	The directory where the IBM OpenPages with Watson installation agent is installed on a remote server. For example: • On Windows: C:\IBM\OPAgent • On Linux: /home/opuser/IBM/OPAgent			
<op_home></op_home>	 The directory where OpenPages with Watson is installed. For example: On Windows: C:\IBM\OpenPages On Linux: /opt/opuser/IBM/OpenPages In the installation app, you specify the <op_home> directory in the OP Home Directory field each Application Server card.</op_home> 			
<db2_home></db2_home>	The installation location of the IBM Db2 software. For example: • On Windows: C:\IBM\SQLLIB • On Linux: /home/db2inst1/sqllib			

Table 1. Variable notations for installation directories (continued)				
Directory	Description			
<wlp_home></wlp_home>	The installation location of IBM WebSphere [®] Liberty. For example: • On Windows: < <i>OP_HOME</i> >\wlp • On Linux: < <i>OP_HOME</i> >/wlp			
<wlp_user_home></wlp_user_home>	The location of OpenPages with Watson application files and server configuration files. For example: • On Windows: < <i>OP_HOME</i> >\wlp-usr • On Linux: < <i>OP_HOME</i> >/wlp-usr			
<cognos_home></cognos_home>	The installation location of IBM Cognos [®] Analytics. For example: • On Windows: C:\IBM\cognos\analytics • On Linux: /usr/IBM/cognos/analytics			
<java_home></java_home>	The installation location of IBM SDK, Java [™] Technology Edition or Java Runtime Environment (JRE). IBM SDK example on an application server: • On Windows: C:\IBM\java_8.0_64 • On Linux: /opt/IBM/java_8.0_64 JRE example on a reporting server where IBM Cognos Analytics is installed: • On Windows: C:\IBM\cognos\analytics\ibm-jre\jre • On Linux: /usr/IBM/cognos/analytics/ibm-jre/jre IBM SDK example on a search server: • On Windows: C:\IBM\java_8.0_64\ • On Linux: /opt/IBM/java_8.0_64/			
<cc_home></cc_home>	The installation location of OpenPages with Watson CommandCenter. For example: • On Windows: C:\IBM\OpenPages\CommandCenter • On Linux: /opt/IBM/OpenPages/CommandCenter			

Table 1. Variable notations for installation directories (continued)			
Directory	Description		
<search_home></search_home>	The installation location of global search.		
	The <i><search_home></search_home></i> directory contains the opsearchtools.jar, Apache Solr, and other global search files. The global search indexing directory is also stored in the <i><search_home></search_home></i> directory.		
	For example:		
	 On Windows: C:\IBM\OpenPages\OPSearch 		
	 On Linux: /opt/IBM/0penPages/0PSearch 		
	In the installation app, you specify the <i><search_home></search_home></i> directory in the Search Home Directory field on the Search Server card.		

Changes to the installation process

If you installed previous versions of IBM OpenPages with Watson, you will notice many differences. In version 8.3, the Standard UI is no longer supported and it has been removed from OpenPages.

The following sections describe the main changes that impact installation, upgrade, and migration.

Changes to the installation server and app

- The **File Backup** and **Restore** operations have been removed from the installation app. The filemigration task in the deploy.properties file is no longer supported.
- The **Oracle Text** option has been removed from the Database Server card in the installation app. The oracle_enable_text parameter in the deploy.properties file is no longer used. Instead, enable Oracle Text manually after you install OpenPages.

Alternatively, you can use the database scripts to create the database and have those scripts install Oracle Text as part of the database installation process. However, to install Oracle Text, the database scripts must be run from the database server. Installation of Oracle Text cannot be performed from a remote system.

Application files

The application files are now in taskui.war. The openpages.war and sosa.war have been removed.

During an upgrade, the installation server backs up custom files that are in sosa.war and restores them in taskui.war.

During a migration, you need to back up custom files and restore them manually.

Location for customized JSPs

In 8.2.x, customized JSPs were stored in the following locations:

<OP_HOME>/wlp-usr/shared/apps/op-apps.ear/openpages.war

<OP_HOME>/wlp-usr/shared/apps/op-apps.ear/publishweb.war

<OP_HOME>/wlp-usr/shared/apps/op-apps.ear/sosa.war

Now, store your customized JSPs in the following locations:

<OP_HOME>/wlp-usr/shared/apps/op-apps.ear/publishweb.war

Framework generation

OpenPages no longer uses the IBMOpenPagesFrameworkModelGenerator service. OpenPages now uses the Cognos SDK to generate the framework. Note the following changes:

- BmtScriptPlayer.sh is no longer used.
- The IBMOpenPagesFrameworkModelGenerator service is no longer used.
- If you use Oracle and you use DQM framework models only, the 32-bit Oracle client software is no longer required.

If you are upgrading or migrating and you want to continue to use CQM framework models, the 32-bit Oracle client is still required.

• The files and folders for framework generation are now stored on the OpenPages application servers. The framework, FrameworkGeneration, and wlp folders were removed from the reporting server, along with any files related to the framework.

For example, model query subjects are now stored in *<OP_HOME>*/aurora/framework/conf/mqs. Previously, they were stored on the reporting server in the *<CC_HOME>*/framework/conf/mqs directory.

- Most properties have been removed from the framework.properties file. The remaining properties are
 - datasource
 - database.schema
 - security.namespace
- The cognos.framework.refresh.servlet property was removed from the aurora.properties file.
- The **Framework Port** and **Framework Output Directory** fields were removed from **Report Server** cards in the installation app. Also, the framework_port and framework_output_directory properties were removed from the deploy.properties file.

Location of Java on reporting servers

In OpenPages 8.3 and later, you must use the JRE that is provided with IBM Cognos Analytics for reporting servers. In addition, you no longer need to copy the bcprov-jdk15to18-1.68.jar file from the application server to the reporting servers.

Other changes

If you are upgrading or migrating from 8.1 or earlier, see <u>"Notes for customers upgrading or migrating</u> from 8.1 or earlier" on page 4.

Notes for customers upgrading or migrating from 8.1 or earlier

If you are upgrading or migrating from 8.1.x or an earlier version of IBM OpenPages with Watson, you will notice many differences.

IBM OpenPages with Watson now uses IBM WebSphere Liberty. When you install OpenPages, WebSphere Liberty is automatically installed and configured for you.

The following sections describe the main changes to OpenPages on WebSphere Liberty.

For information about additional changes in 8.3, see "Changes to the installation process" on page 3.

Deployment manager

You no longer need to set up a deployment manager for OpenPages.

When you migrate, the installer server updates the deploy.properties file automatically. You do not need to edit the file to remove the deployment manager. When you open your deployment in the installation app, review each card, enter passwords, and then continue with the migration.

The admin application server is still *AppServer1*.

Nodes and cells

WebSphere Liberty does not use "nodes" or "cells". Each horizontal cluster member is its own instance of WebSphere Liberty. Vertical cluster members share the same instance of WebSphere Liberty.

If you have a shared cell deployment, you can upgrade or migrate to 8.3, and then do some manual steps to remove OpenPages from the cell.

WebSphere installation user (wasuser)

You no longer need the wasuser operating system user account. OpenPages installs WebSphere Liberty with the opuser account.

The WebSphere username and password are no longer required by tools and utilities, such as OPBackup.

File locations

Table 2. File locations				
	Pre-8.2	8.2.0 and later		
Application server runtime	<was_home></was_home>	<op_home>/wlp</op_home>		
OpenPages application files	<op_home>/profiles/ <node>/ installedApps/<cell>/op- apps.ear</cell></node></op_home>	<op_home>/wlp-usr/shared/ apps/op-apps.ear</op_home>		
Server profiles	<op_home>/profiles/ <node>/ servers/<profile></profile></node></op_home>	<op_home>/wlp-usr/servers</op_home>		
	Where <i><profile></profile></i> was configured in the WebSphere Administrative Console			
Server logs	<op_home>/profiles/ <node>/logs/<server></server></node></op_home>	<op_home>/wlp- usr/servers/ <server_name>Server<#>/ logs</server_name></op_home>		

The WebSphere Liberty documentation uses the placeholder fserver.ouput.dir. In OpenPages, the equivalent directory is <0P_HOME>/wlp-usr/servers/<server_name>Server<#>.

For example, \${server.ouput.dir}/logs is the <OP_HOME>/wlp-usr/servers/
<server_name>Server<#>/logs directory on an OpenPages application server.

Environment variables

OpenPages configures the following environment variables for WebSphere Liberty:

• *<WLP_HOME>*: This directory is where WebSphere Liberty is installed on the application server.

• <*WLP_USER_HOME*>: This directory is where OpenPages application files and server configuration files are stored. The application and configuration files are stored in a separate directory to simplify updates to WebSphere Liberty.

Java

You need to install IBM SDK, Java Technology Edition on each application server before you install OpenPages. You can get the IBM SDK from the OpenPages installation package.

Starting and stopping application servers

You use the following scripts to start and stop application servers: startAllServers.sh|.cmd and stopAllServers.sh|.cmd. The stopAllServers.sh|.cmd script no longer requires a username and password.

The following scripts are no longer used:

- startManager.sh|.cmd, stopManager.sh|.cmd
- startNode.sh|.cmd, stopNode.sh|.cmd
- startServer.sh|.cmd, stopServer.sh|.cmd

For Microsoft Windows, the OpenPages service is now called: <*OpenPages_server_name*>Server#. The following services are no longer used:

- IBMWAS<version>Service <OpenPages_dmgr_name>
- IBMWAS<version>Service <OpenPages_node_name>
- IBMWAS<version>Service <OpenPages-node-name>Server<#>

Application server log files

Application server activity, including server startup, is now logged in the following file: <*OP_HOME*>/wlp-usr/servers/<*server_name*>Server<*#*>/logs/messages.log.

The startServer.log and SystemOut.log files are no longer used.

Application server configuration

In previous releases, you used the IBM WebSphere Integrated Solutions Console to configure application server settings. You now use the following files to configure application server properties.

- <OP_HOME>/wlp-usr/servers/<server_name>Server<#>/bootstrap.properties: This file contains server properties, such as the OpenPages application port number.
- <OP_HOME>/wlp-usr/servers/<server_name>Server<#>/configDropins/overrides/ jvm.options: Use this file to customize the options for the JVM, such as Java heap size.
- <OP_HOME>/wlp-usr/servers/<server_name>Server<#>/configDropins/overrides/opapps.xml: Use this file to customize OpenPages, for example to change the context root, configure single sign-on, set up TLS/SSL, and so on.

If you previously customized the web.xml, application.xml, or settings in the IBM WebSphere Integrated Solutions Console, you need to re-apply the configurations in WebSphere Liberty.

Application server tuning

In previous releases, it was necessary to configure the OpenPages application servers to avoid timeouts, Java heap errors, and other issues. You no longer need to do this task. The application server tuning parameters are set when you install OpenPages. You can adjust the settings if needed, however.

Location for customized JSPs

Previously, customized JSPs were stored in the following locations:

```
<0P_HOME>/profiles/<0penPages-node-name>/installedApps/
<0penPages-cell-name>/op-apps.ear/openpages.war
<0P_HOME>/profiles/<0penPages-node-name>/installedApps/
<0penPages-cell-name>/op-apps.ear/publishweb.war
<0P_HOME>/profiles/<0penPages-node-name>/installedApps/
<0penPages-cell-name>/op-apps.ear/sosa.war
Now, store your customized JSPs in the following locations:
<0P_HOME>/wlp-usr/shared/apps/op-apps.ear/publishweb.war
```

<OP_HOME>/wlp-usr/shared/apps/op-apps.ear/taskui.war

Keystore on application servers

The installation process creates a default keystore: <*OP_HOME>/wlp-usr/servers/* <*server_name>Server<#>/resources/security/key.pl2*. The initial password of the keystore is the same as the OpenPagesAdministrator password that you set when you install OpenPages. You can change the keystore password. For more information, see the *IBM OpenPages with Watson Administrator's Guide*.

Workflow Server card removed

The **Workflow Server** card is no longer available in the installation app because the functionality to integrate IBM OpenPages with Watson with IBM Business Process Manager was removed.

Other changes

• The J2EE libraries are stored in <WLP_HOME>/dev/api/spec.

Special characters in passwords

You can use certain special characters in certain passwords.

If you are upgrading or migrating from 8.1.0.1 or earlier, install the 8.3 installation server, complete the upgrade or migration process, and then update passwords to use special characters.

The special characters that you can use in passwords are:

. + - [] * ~ _ # : ?

Note: Spaces are not supported.

You can use these special characters in database user passwords and operating system accounts for database schema owners.

If you use special characters in passwords, you must surround the password in quotation marks. Use the following syntax:

IBM Db2 connection strings

For Db2 databases, when you provide a password in a connection string, use the following syntax:

On Linux, use $\ '$ around the password. For example:

```
clpplus -nw openpage/\'DB~Password\'@host:50000/opx
```

On Windows, use single quotation marks around the password:

clpplus -nw openpage/'DB~Password'@host:50000/opx

IBM Db2 script parameters in CLPPlus

For Db2 databases, when you provide a password in a script parameter, use the following syntax:

On Linux, use one of the following options:

• Use \setminus ' around the password. For example:

clpplus -nw @sql-wrapper CustomIndexing_Step1_AddTextIndexing_to_DB.sql /tmp/log.log c6de0652985e:50000/0PX db2inst1 \'DB~Password\' openpage

• Use \" around the password:

clpplus -nw @sql-wrapper CustomIndexing_Step1_AddTextIndexing_to_DB.sql /tmp/log.log c6de0652985e:50000/0PX db2inst1 \"DB~Password\" openpage

On Windows, use one of the following options:

• Use ' around the password. For example:

```
clpplus -nw @sql-wrapper CustomIndexing_Step1_AddTextIndexing_to_DB.sql
/tmp/log.log server.corp.com:50000/0PX db2admin 'DB~Password' openpage
```

• Use \" around the password:

```
clpplus -nw @sql-wrapper CustomIndexing_Step1_AddTextIndexing_to_DB.sql
    /tmp/log.log server.corp.com:50000/0PX db2admin \"DB~Password\" openpage
```

Db2 utilities

When you run Db2 utilities, such as db2 connect or db2rbind, do not use quotation marks around passwords.

Installation scripts, tools, and utilities

For tools and utilities that take the password as a parameter, use the following syntax:

• On Windows, use double quotation marks around the password.

op-validate-dba-install.bat "DB~Password"

• On Linux, use single quotation marks around the password.

```
./op-validate-dba-install.sh 'DB~Password'
```

Passwords in property files

For .env files and .properties files, do not use any quotation marks around passwords.

Chapter 2. Determine your upgrade path

Use this list to determine your options for upgrading IBM OpenPages with Watson.

If your source environment is at version 7.4.x, 8.0.x, 8.1.x, or 8.2.x

You have two options:

• Upgrade (Also called an "in-place" upgrade or an "over the top" upgrade.)

With this option, you install version 8.3 on top of your existing deployment. See <u>Chapter 3</u>, "Prepare for the upgrade," on page 11.

• Migration upgrade

With this option, you do a fresh installation of 8.3 and then migrate files and data. See the *IBM OpenPages with Watson Installation and Deployment Guide*.

Use this option, for example, if you want to use new hardware.

If your source environment is at version 7.3.x or earlier

You must first migrate to 7.4.x, 8.0.x, 8.1.x, or 8.2.x. You can then upgrade or migrate to 8.3.

10 IBM OpenPages with Watson Version 8.3.0 : Upgrade Guide for IBM Db2 users

Chapter 3. Prepare for the upgrade

Prepare to upgrade IBM OpenPages with Watson.

Note: These topics apply to in-place upgrades only. If you are migrating to 8.3, see the *IBM OpenPages* with Watson Installation and Deployment Guide. For more information about upgrade paths, see <u>Chapter</u> 2, "Determine your upgrade path," on page 9.

Review new features and fixes

Before you upgrade OpenPages, review new features and fixes.

For more information about new features, see the latest version of the New Features Guide.

For additional information about OpenPages, see the latest version of the Release Notes.

You can find information about defect corrections on the Fix List.

Make sure that you review the following information before you upgrade: <u>Critical installation and</u> configuration issues for IBM OpenPages.

Backing up your environment

Before you upgrade, back up IBM OpenPages with Watson.

About this task

When you upgrade, the installation server automatically backs up most files for you. Some files need to be backed up manually, however. You also need to back up the databases, the openpages-storage directory, and any files that you customized, such as reports and JSPs.

Note: Version 8.1 introduced changes to the database statistics collection method for IBM Db2. If you customized the <OP_HOME>/aurora/bin/db2stats/collect-schema-stats.sql script, back up the file if you want to keep your customizations. After the upgrade is complete, you can restore your customizations.

Procedure

- 1. Stop the application servers (admin and non-admin), reporting servers (active and standby), database server, and the search server (if you use global search).
- 2. Back up the OpenPages database. For more information, see "Backing up the OpenPages database (Db2)" on page 12.
- 3. Back up the Cognos content store. For more information, see "Backing up the Cognos database (Db2)" on page 13.
- 4. Back up the openpages-storage directory.

The openpages-storage directory can be located on a server in your deployment or it can be on a separate network share.

The default location is <OP_HOME>/openpages-storage.

5. If you are upgrading from 8.1.x or earlier and you modified the web.xml, application.xml, or if you customized settings in the IBM WebSphere Integrated Solutions Console, make a note of your changes.

After the migration is complete, you need to re-implement your changes.

6. On each application server, as the OpenPages installation user (opuser), create a backup of the top level OpenPages directory. Name the backup OpenPages-*current-version>*. For example, if you are upgrading from version 8.1.0.1, name the backup OpenPages-8101.

Note: Do not remove or rename the OpenPages directory.

If you made changes to the <OP_HOME>/aurora/conf/Server<#>-server.properties and Server<#>-sosa.properties files, you can use the backups to restore you changes after the upgrade.

You can also use this backup directory to restore the current OpenPages version if you need to roll back the upgrade.

7. On each reporting server, as the OpenPages installation user (opuser), create a backup of the top level CommandCenter directory. Name the backup CommandCenter-*current-version>*. For example, if you are upgrading from version 8.1.0.1, name the backup CommandCenter-8101.

Note: Do not remove or rename the CommandCenter directory.

You can use this backup directory to restore the current *CC_HOME* directory if you need to roll back the upgrade.

8. On the search server, as the OpenPages installation user (opuser), create a backup of the top level OpenPages directory. Name the backup OpenPages-Search-<*current-version*>. For example, if you are upgrading from version 8.1.0.1, name the backup OpenPages-Search-8101.

Note: Do not remove or rename the OpenPages directory.

You can use this backup directory to restore the current search server version if you need to roll back the upgrade.

9. If you modified the standard reports that are provided with OpenPages, copy them to a backup folder or to your personal folders.

OpenPages standard reports can be overwritten when you upgrade.

After the upgrade is complete, you can change the reports and restrict access to them.

10. If you customized other files, such as JSPs, back up the files.

Backing up the OpenPages database (Db2)

Create a backup of the OpenPages with Watson database.

Before you begin

If Db2 Text Search is enabled in your source environment, drop the text search indexes and disable Db2 Text Search before you back up the database.

About this task

Use the utilities that are provided with IBM Db2 to back up the database.

Note: You can back up the database by using other methods. For example, you can use a combination of full and incremental backups. If you want to use an alternative method, it is critical that you have the necessary skills available within your organization to complete all aspects of the backup and restore activity.

For information about developing a database backup and restore strategy, see <u>Backup overview</u> in the Db2 documentation.

For more information about the commands that are used in this procedure, see the $\underline{\text{IBM Db2}}$ documentation.

Procedure

- 1. Make sure that no OpenPages with Watson processes are running, such as object reset jobs.
- 2. Shut down all OpenPages components: application servers (admin and non-admin), reporting servers (active and standby), and the search server.

For more information, see the IBM OpenPages with Watson Installation and Deployment Guide.

3. Open a command or shell window and connect to the OpenPages database as the database instance owner.

For Windows users only, you must use the **db2cmd** command in the **Command Prompt** window to initialize the Db2 command line processor (CLP).

- 4. Go to the sqllib directory.
- 5. Force any applications from the database.

Run the following command:

db2 force application all

6. Deactivate the database.

Run the following command:

db2 deactivate database <db_name>

- 7. Create a directory in which to store the backup.
- 8. Do an offline backup by using the db2 backup command.

db2 backup database <db_name> to <backup_directory>

Example:

db2 backup database opx to /home/db2inst1/backup

Backing up the Cognos database (Db2)

Create a backup of the Cognos database. Do this procedure if you use a separate database for Cognos.

About this task

Use the utilities that are provided with IBM Db2 to back up the database.

Note: You can back up the database by using other methods. For example, you can use a combination of full and incremental backups. If you want to use an alternative method, it is critical that you have the necessary skills available within your organization to complete all aspects of the backup and restore activity.

For information about developing a database backup and restore strategy, see <u>Backup overview</u> in the Db2 documentation.

For more information about the commands that are used in this procedure, see the <u>IBM DB2[®]</u> documentation.

Procedure

1. Shut down all OpenPages components: application servers (admin and non-admin), reporting servers (active and standby), and the search server.

For more information, see the IBM OpenPages with Watson Installation and Deployment Guide.

- 2. Ensure that all Cognos components are shut down.
- 3. Open a command or shell window and connect to the Cognos database as the database instance owner.

For Windows users only, you must use the **db2cmd** command in the **Command Prompt** window to initialize the Db2 command line processor (CLP).

- 4. Go to the sqllib directory.
- 5. Force any applications from the database.

Run the following command:

db2 force application all

6. Deactivate the database.

Run the following command:

db2 deactivate database <db_name>

- 7. Create a directory in which to store the backup.
- 8. Do an offline backup by using the db2 backup command.

db2 backup database <db_name> to <backup_directory>

Example:

db2 backup database cognosdb to /home/db2inst2/backup

Backing up solutions helpers, images, and other files

Back up the solutions helpers, images, and custom deliverables.

About this task

Do this task if any of the following conditions apply:

- You installed the solutions schema
- You received custom deliverables from IBM Expert Labs
- You have custom code

Procedure

- 1. Create a backup directory. For example, C:\OpenPages<current_version>\patch\helper_backup.
- 2. Copy your custom helper JSPs, images, and custom code to the backup directory so that you can restore them later.

Upgrade prerequisite software

Before you upgrade, update the software that is required by IBM OpenPages with Watson

Review the software prerequisites for application servers, reporting servers, the database server, and the search server. For more information, see the *IBM OpenPages with Watson Installation and Deployment Guide*.

Important: Do not uninstall IBM WebSphere Application Server Network Deployment. After the upgrade is complete, you can do an optional task to remove it.

Required

- Upgrade to a supported version of IBM Db2. Version 11.5.5 is the minimum supported version for OpenPages 8.3. See "Upgrade Db2" on page 15.
- Update IBM Cognos Analytics to version 11.2.1 or a later continuous release. You can do an in-place upgrade, also called an "over the top" upgrade. See <u>"Upgrading Cognos" on page 24</u>.
- Install IBM SDK, Java Technology Edition on each application server and on the search server. For more information, see <u>"Getting a copy of the IBM SDK (Windows)" on page 25</u> or <u>"Getting a copy of the IBM SDK (Linux)" on page 26</u>.

Optional

• Install IBM Db2 fix packs. You can install the fix packs before or after you upgrade OpenPages.

Also, ensure that your users have a supported browser.

If you use optional apps and components, such as IBM OpenPages SDI Connector for UCF Common Controls Hub, you can update them after you upgrade OpenPages.

Upgrade Db2

If you are using IBM Db2, upgrade to a supported version. Version 11.5.5 is the minimum supported version for IBM OpenPages with Watson 8.3.

If you are using Db2 11.5.x, apply fix pack 11.5.5, 11.5.8, or a later 11.5.x fix pack. For more information, see <u>Applying fix packs in Db2 database environments</u>. You can apply a Db2 11.5.x fix pack before or after you install OpenPages, migrate, or upgrade to 8.3.

If you are using Db2 11.x, upgrade to 11.5. For more information, see <u>"Upgrading Db2 (Linux)" on page 18</u> or <u>"Upgrading Db2 (Windows)" on page 15</u>.

Upgrading Db2 (Windows)

You must upgrade to a supported version of IBM Db2 before you migrate or upgrade to IBM OpenPages with Watson 8.3.

This task provides the basic steps for upgrading IBM Db2. For more information about this process, see the IBM Db2 documentation.

About this task

This task uses the following conventions:

- db2admin: The OpenPages database instance owner
- openpage: The OpenPages database user
- opx: The name of the OpenPages database
- db2inst2: The Cognos database instance owner
- cognosdb: The name of the Cognos content store
- <db_server>: The hostname of the Db2 database server

The steps that you need to do depend on whether you are using your existing database server for OpenPages or using a new database server. If you are using a new database server, you skip the steps about upgrading the database instances and upgrading the databases. Later in the OpenPages migration process, you restore the databases and then upgrade them to the new Db2 version.

Note: When you run Db2 utilities, such as db2 connect or db2rbind, do not use quotation marks around passwords.

Procedure

- 1. Stop the following servers:
 - Stop all OpenPages application servers.
 - Stop the global search services.
 - Stop all IBM Cognos services.
- 2. Check that your system meets the installation prerequisites.
 - For more information, see db2prereqcheck Check installation prerequisites.
 - a) Go to the directory where you extracted the Db2 installation package.
 - b) As the root or sudo user, check the installation requirements.

```
db2prereqcheck -i -v <version>
```

Where <version> is the Db2 version that you want to install.

For example:

db2prereqcheck -i -v 11.5.5.0

If successful, you see the message DBT3533I The db2prereqcheck utility has confirmed that all installation prerequisites were met.

- c) Review the log file.
- d) As the OpenPages instance owner (for example, db2admin), run the pre-upgrade checks:

db2ckupgrade OPX -1 c:\tmp\db2ckupgrade.log -u db2admin -p password

3. Complete the Db2 pre-upgrade tasks for both the OpenPages database and the Cognos content store. For more information, see Pre-upgrade tasks for Db2 servers.

If you get warnings about the discontinued SYSFUN. ASCII1 function, you can ignore them.

- 4. Check the value of the application heap size for the Cognos database.
 - a) Open the Db2 command line processor (CLP).
 - b) Run the following command as the database instance owner. Replace *<cognosdb>* with the name of your Cognos database.

db2 get db cfg for <cognosdb> | findstr APPLHEAPSZ

c) If the value is less than 4096, increase it to a minimum of 4096.

Run the following command as the database instance owner. Replace *<cognosdb>* with the name of your Cognos database.

db2 update db cfg for <cognosdb> using applheapsz 4096

5. Drop the Db2 Text Search index and disable Db2 Text Search.

For more information, see "Dropping the search index and disabling Db2 Text Search" on page 23.

- 6. Back up the OpenPages database and the Cognos content store.
- 7. Run the IBM Db2 installation program.

The installation program installs Db2 and upgrades the existing database instances. For more information, see Upgrading a Db2 server (Windows).

- a) Click Install a Product.
- b) Click Work with Existing.
- c) Select the installation that you use for OpenPages.
- d) Select the **Custom** option.
- e) Expand Server Support and select Db2 Text Search for installation.
- f) If you do not use Tivoli[®] SA MP, clear the **Tivoli SA MP** check box.
- g) Accept the default settings on each page of the wizard until you are prompted for the **db2admin** credentials.
- h) Enter the domain and password for the db2admin user.
- i) Accept the default settings on the remaining pages of the wizard. Click Finish.
- When the installation process completes, check the log files.
- 8. Upgrade your OpenPages database.

For more information, see <u>Upgrading databases</u>.

For example, start the Db2 command line processor (CLP) and run the following commands:

```
set db2instance=db2inst1
db2start
db2 upgrade database opx user db2admin using password
```

9. Upgrade your Cognos content store database.

For more information, see Upgrading databases.

For example, start the Db2 command line processor (CLP) and run the following commands:

set db2instance=db2inst2 db2start db2 upgrade database cognosdb user db2admin using password

- 10. Revalidate objects, rebind packages, and redeploy the Java routines for OpenPages in the OpenPages database.
 - a) Start the Db2 command line processor (CLP).
 - b) Run the following command:

set db2instance=db2inst1

- c) Copy the /OP_<version>_Main/OP_<version>_Configuration/Database/DB2/ INSTALL_SCRIPTS directory to the database server.
- d) Go to the directory where you copied the INSTALL_SCRIPTS directory, and then revalidate the database objects.

Run the following commands:

```
db2 connect to OPX user openpage using password
db2 -td@ -f pks_OP_CURRENCY_MGR.sql
db2 -td@ -f pkb_OP_CURRENCY_MGR.sql
clpplus -nw openpage/password@<db_server>:50000/opx @sql-wrapper revalidate.sql
revalidate.log openpage
```

e) Rebind the packages.

For example:

db2rbind opx -l opbind.log all -u db2admin -p password -r any

f) Redeploy the Java routines for OpenPages.

For example:

manageOPJavaRoutines.bat opx opuser "password" remove opdb2udf.jar

manageOPJavaRoutines.bat opx opuser "password" install opdb2udf.jar

11. Revalidate objects and rebind packages in the Cognos content store.

Note: When you run Db2 commands, such as db2 connect or db2rbind, do not use quotation marks around passwords.

- a) Start the Db2 command line processor (CLP).
- b) Run the following command:

set db2instance=db2inst2

c) Revalidate the database objects.

For example:

db2 connect to cognosdb user db2admin using password db2 "call sysproc.admin_revalidate_db_objects()"

d) Rebind packages in the Cognos database.

For example:

db2rbind cognosdb -l cogbind.log -u db2admin -p password

- 12. Optional: Back up the databases.
- 13. Apply the IBM Db2 license.

- a) Extract the quick start activation file for IBM Db2.
- b) Start the Db2 command line processor (CLP).
- c) Go to the directory where the license file, db2ese_u.lic, is stored.
- d) Run the following command:

db2licm -a db2ese_u.lic

- 14. Start all IBM OpenPages with Watson services.
- 15. Configure and enable Db2 Text Search, create the index, and schedule a job to synchronize the index. For more information, see "Utilities for filtering on long string field content in a Db2 database" in the IBM OpenPages with Watson Administrator's Guide.

Upgrading Db2 (Linux)

You must upgrade to a supported version of IBM Db2 before you migrate or upgrade to IBM OpenPages with Watson 8.3.

This task provides the basic steps for upgrading IBM Db2. For more information about this process, see the IBM Db2 documentation.

About this task

This task uses the following conventions:

- db2inst1: The OpenPages database instance owner
- openpage: The OpenPages database user
- opx: The name of the OpenPages database
- db2inst2: The Cognos database instance owner
- · cognosdb: The name of the Cognos content store
- <db_server>: The hostname of the Db2 database server

The steps that you need to do depend on whether you are using your existing database server for OpenPages or using a new database server. If you are using a new database server, you skip the steps about upgrading the database instances and upgrading the databases. Later in the OpenPages migration process, you restore the databases and then upgrade them to the new Db2 version.

Note: When you run Db2 utilities, such as db2 connect or db2rbind, do not use quotation marks around passwords.

Procedure

- 1. Stop the following servers:
 - Stop all OpenPages application servers.
 - Stop the global search services.
 - Stop all IBM Cognos services.
- 2. Mount the IBM Db2 installation media or extract the downloaded installation package onto your file system.
 - a) Log in as the instance owner.
 - b) Create a directory. Do not create it under /sqllib.
 - c) Extract the Db2 installation package to the directory that you created.
- 3. Check that your system meets the installation prerequisites.

For more information, see db2prereqcheck - Check installation prerequisites.

- a) Go to the directory where you extracted the Db2 installation package.
- b) As the root or sudo user, check the installation requirements.

./db2prereqcheck -i -v <version>

Where *<version>* is the Db2 version that you want to install.

For example:

./db2prereqcheck -i -v 11.5.5.0

If successful, you see the message DBT3533I The db2prereqcheck utility has confirmed that all installation prerequisites were met.

- c) Review the log file.
- d) As the OpenPages instance owner (for example, db2inst1), run the pre-upgrade checks:

./db2ckupgrade OPX -1 /tmp/db2ckupgrade.log -u db2inst1 -p password

 Complete the Db2 pre-upgrade tasks for both the OpenPages database and the Cognos database. For more information, see Pre-upgrade tasks for Db2 servers.

If you get warnings about the discontinued SYSFUN. ASCII1 function, you can ignore them.

- 5. Check the value of the application heap size for the Cognos database.
 - a) Run the following command as the database instance owner. Replace <*cognosdb>* with the name of your Cognos database.

db2 get db cfg for <cognosdb> | grep -i APPLHEAPSZ

b) If the value is less than 4096, increase it to a minimum of 4096.

Run the following command as the database instance owner. Replace *<cognosdb>* with the name of your Cognos database.

db2 update db cfg for <cognosdb> using applheapsz 4096

6. Drop the Db2 Text Search index and disable Db2 Text Search.

For more information, see "Dropping the search index and disabling Db2 Text Search" on page 23.

- 7. Back up the OpenPages database and the Cognos database.
- 8. Run the Db2 installation program to upgrade IBM Db2

For more information, see Upgrading a Db2 server (Linux and UNIX).

a) Log on to the database server as the root user. Go to the directory that you created in step 2. Run the db2setup command.

./db2setup

- b) Click Install a Product and New Install.
- c) For the Product, choose DB2 Version 11.5 Server Editions.
- d) Select the **Custom** option.
- e) Do one of the following steps:

If you are moving to a new database server

Check the **Create an instance** checkbox.

For example, if you are migrating to a new version of OpenPages and you want to use a new database server, enable the **Create an instance** option.

If you are using your existing database server

Clear the **Create an instance** checkbox.

For example, if you are upgrading or if you are migrating and you are using your existing database server, clear the checkbox.

f) Expand Server Support and select Db2 Text Search for installation.

- g) If you do not use Tivoli SA MP, clear the **Tivoli SA MP** check box.
- h) Accept the default settings on the remaining pages of the wizard.
- i) When the installation process completes, review the log files.
- j) Click Finish.
- 9. If you are upgrading Db2 on your existing database server, upgrade your OpenPages database instance.

Perform this step as the root user. For more information, see the Db2 documentation.

If you are using a new database server, go to step "14" on page 21.

- a) Stop all Db2 11.x databases.
- b) Edit the /etc/services file and remove any existing entry for the Db2 text service. For example, remove db2j_db2inst1 55000/tcp, which is the default entry.
- c) Upgrade the OpenPages database instance.

Run the db2iupgrade command. For example:

```
cd /opt/ibm/db2/V11.5/instance
./db2iupgrade -u db2fenc1 -j "TEXT_SEARCH,db2j_db2inst1,55000" db2inst1
```

- d) View the log file, for example /tmp/db2iupgrade.log.20620. Verify that the upgrade was successful. Look for the message DBI1070I Program db2iupgrade completed successfully.
- e) Verify the upgrade.

```
cd /opt/ibm/db2/V11.5/bin/
./db2val
```

f) Check the installation level of the OpenPages database instance.

For more information, see db2level - Show Db2 service level command.

db2level

Look for a return value that matches the version that you are installing. For example, look for a return value of DB2 v11.5.5.0.

10. Upgrade your Cognos database instance.

Perform this step as the root user

For more information, see the <u>Db2 documentation</u>.

Note: Do this step after the OpenPages database instance upgrade completes successfully.

a) Upgrade the Cognos database instance.

Run the db2iupgrade command. For example:

cd /opt/ibm/db2/V11.5/instance ./db2iupgrade -u db2fenc1 db2inst2

- b) View the log file, for example /tmp/db2iupgrade.log.18463. Verify that the upgrade was successful. Look for the message DBI1070I Program db2iupgrade completed successfully.
- c) Verify the upgrade.

cd /opt/ibm/db2/V11.5/bin/
./db2val

d) Check the installation level of the Cognos database instance.

For more information, see db2level - Show Db2 service level command.

db2level

Look for a return value that matches the version that you are installing. For example, look for a return value of DB2 v11.5.5.0.

11. If you are using Db2 Administration Server (DAS), upgrade the service.

For more information, see Upgrading the Db2 Administration Server (DAS).

For example:

cd /opt/ibm/db2/V11.5/instance ./dasmigr

The value DBI1070I Program dasmigr completed successfully indicates success.

12. Upgrade your OpenPages database.

Do this step as a user with SYSADM authority.

For more information, see Upgrading databases in the Db2 documentation.

For example:

db2start db2 upgrade database opx user db2inst1 using password

13. Upgrade your Cognos database.

Do this step as a user with SYSADM authority.

For more information, see Upgrading databases in the Db2 documentation.

For example:

```
db2start
```

db2 upgrade database cognosdb user db2inst2 using password

- 14. Configure and enable Db2 Text Search, create the index, and schedule a job to synchronize the index.
 - a) Start Db2 Text Search.

db2ts START FOR TEXT

b) Create the index.

Go to the directory that you created in step 2, go to the TEXT_INDEXING subdirectory, and then run the following command:

```
clpplus -nw @sql-wrapper CustomIndexing_Step1_AddTextIndexing_to_DB.sql
CustomIndexing_Step1_AddTextIndexing_to_DB.log <db_server>:50000/opx db2inst1 'password'
OPENPAGE
```

A warning like the following message is expected and you can ignore it:

MESSAGE = <CIE99>CIE0212W Incomplete enablement of the Text Search server. Reason code = "01"

c) Update the configuration of the text server in the database.

```
cd /home/db2inst1/sqllib/db2tss/bin
TS_AUTH_TOKEN=`configTool printToken | awk 'NR == 2 {print}'`
TS_ENCRYPT_KEY=`configTool printToken | awk 'NR == 4 {print}'`
db2 connect to OPX
db2 select "*" from sysibmts.tsservers | grep $TS_AUTH_TOKEN
if [ $? != 0 ]; then
    echo "*** Registering text search server manually! ***"
    db2 "insert into SYSIBMTS.TSSERVERS (HOST, PORT, TOKEN, key, SERVERTYPE,
SERVERSTATUS)
    values ('<db_server>', 55000, '$TS_AUTH_TOKEN', '$TS_ENCRYPT_KEY', 1, 0)"
fi
```

d) Re-create the text indexes and set up a schedule for refreshing them.

Go to the directory that you created in step 2, go to the TEXT_INDEXING subdirectory, and then run the following command:

clpplus -nw @sql-wrapper CustomIndexing_Step2_IndexCreate.sql CustomIndexing_Step2_IndexCreate.log <db_server>:50000/OPX openpage passw0rd "'*'" "'*'" "0,5,10,15,20,25,30,35,40,45,50,55" 1 && \ clpplus -nw @sql-wrapper CustomIndexing_Step3_IndexRefresh.sql CustomIndexing_Step3_IndexRefresh.log <db_server>:50000/OPX openpage passw0rd "'*'" "'*'" "0,5,10,15,20,25,30,35,40,45,50,55" 1

e) Verify that Db2 Text Search is running.

```
db2 "select count(*) from <openpages_database_user>.propertyvals_clob
where contains(CLOB_VALUE, 'RPS') = 1"
```

The expected result is:

```
1
0
1 record(s) selected.
```

15. Revalidate objects, rebind packages, and redeploy the Java routines for OpenPages in the OpenPages database.

Do these steps as the OpenPages database user. In the following examples, the database user is openpage.

- a) Copy the /OP_<version>_Main/OP_<version>_Configuration/Database/DB2/ INSTALL_SCRIPTS directory to the database server.
- b) Go to the directory where you copied the INSTALL_SCRIPTS directory, and then revalidate the database objects.

Run the following commands:

```
db2 connect to OPX user openpage using password
db2 -td@ -f pks_OP_CURRENCY_MGR.sql
db2 -td@ -f pkb_OP_CURRENCY_MGR.sql
clpplus -nw openpage/password@<db_server>:50000/opx @sql-wrapper revalidate.sql
revalidate.log openpage
```

c) Rebind the packages.

For example:

db2rbind opx -l opbind.log all -u db2inst1 -p password -r any

d) Redeploy the Java routines for OpenPages.

For example:

```
./manageOPJavaRoutines.sh opx openpage 'password'
    remove /home/db2inst1/sqllib/function/jar/OPENPAGE
./manageOPJavaRoutines.sh OPX openpage 'password'
    install /home/opuser/OP/OpenPages/DB2/INSTALL_SCRIPTS/opdb2udf.jar
ls -lrt /home/db2inst1/sqllib/function/jar/OPENPAGE
```

- 16. Revalidate objects and rebind packages in the Cognos database.
 - Do these steps as the instance owner for the Cognos database.
 - a) Revalidate the database objects.

For example:

db2 connect to cognosdb user db2inst2 using password db2 "call sysproc.admin_revalidate_db_objects()"

b) Rebind packages in the Cognos database.

For example:

```
db2rbind cognosdb -l cogbind.log -u db2inst2 -p password
```

- 17. Optional: Back up the databases.
 - For the OpenPages database, run the following commands as the instance owner for the OpenPages database:

```
mkdir db2v11bu
cd db2v11bu
db2 backup database opx to .
```

• For the Cognos database, run the following commands as the instance owner for the Cognos database:

```
mkdir db2v11bu
cd db2v11bu
db2 backup database cognosdb to .
```

18. Apply the IBM Db2 license.

For more information, see db2licm - License management tool command.

- a) Get a license for IBM Db2.
- b) Run the db2licm command.

For example:

db2licm -a <license_file>

Where *<license_file>* is the full path and file name of the IBM Db2 license.

- c) Verify the license by running the db2licm -l command.
- 19. Start all IBM OpenPages with Watson services.

Dropping the search index and disabling Db2 Text Search

If Db2 Text Search is enabled in your source environment, drop the text search indexes, disable the text search service, remove the Db2 administrative task to update the indexes, and disable Db2 Text Search. Do this procedure before you back up the OpenPages database.

Procedure

1. Log on to a system as the OpenPages installation user, for example opuser.

You can use any system with access to CLPPlus that can connect to the database server.

- 2. Drop the Db2 Text Search index.
 - a) Go to the <OP_HOME>/aurora/bin/full-text-index directory.
 - b) Open a command or shell window and run the following command:

```
clpplus -nw @sql-wrapper CustomIndexing_Step5_IndexDrop.sql
    <LOG_FILE_NAME> <DB2_SERVER_NAME>:<DB2_PORT_NUMBER>/<DATABASE_NAME>
    <OP_DB_USER> <OP_DB_PASSWORD> <FORCE_DROP_INDEX>
```

If the *<OP_DB_PASSWORD>* contains special characters, surround the password in quotation marks:

- Windows: "password"
- Linux: 'password'

For example

• Windows:

```
clpplus -nw @sql-wrapper CustomIndexing_Step5_IndexDrop.sql
CustomIndexing_Step5_IndexDrop.log localhost:50000/OPX OPENPAGE "password" Y
```

• Linux:

```
clpplus -nw @sql-wrapper CustomIndexing_Step5_IndexDrop.sql
CustomIndexing_Step5_IndexDrop.log localhost:50000/0PX OPENPAGE 'password' Y
```

For more information, see "Drop a long string index" in the *IBM OpenPages with Watson Administrator's Guide*.

3. Run the following command to determine if Db2 Text Search is enabled.

select * from all_tables where table_schema = 'SYSIBMTS';

If the command returns any data, Db2 Text Search is enabled. Continue with the next step to disable Db2 Text Search.

4. Log on to the OpenPages database as the db2inst1 user.

db2 connect to opx user opuser using password

5. Run the following command to disable Db2 Text Search.

For more information, see SYSTS_DISABLE procedure - Disable current database for text search.

db2 "call sysproc.systs_disable('','en_US',?)"

Alternatively, use these commands.

```
db2 GRANT SYSTS_ADM TO db2inst1
db2 grant SYSTS_MGR to db2inst1
db2 connect reset
db2ts start for text
export DB2DBDFT=OPX
db2ts DISABLE DATABASE FOR TEXT
```

6. Remove the Db2 administrative task to update the indexes

For more information, see the following topic in the Db2 documentation: <u>Removing a task from the</u> administrative task scheduler.

Upgrading Cognos

Upgrade to a supported version of IBM Cognos Analytics.

About this task

If you are using Cognos 11.0.x or later, you can upgrade Cognos in-place.

Procedure

- 1. Log on to the reporting server as a user with administrative privileges.
- 2. Stop all Cognos services.
- 3. Upgrade IBM Cognos Analytics. See Upgrading your current version of Cognos Analytics 11.
- 4. Update the Java location.

The path is:

- On Windows: C:\IBM\cognos\analytics\ibm-jre\jre
- On Linux: /usr/IBM/cognos/analytics/ibm-jre/jre

For more information, see How to Change the Java Location on an OpenPages Reporting Server.

- 5. Restart the reporting servers.
- 6. Re-import the OpenPages SSL certificates into the Cognos JRE.

For more information, see the IBM OpenPages with Watson Administrator's Guide.

Getting a copy of the IBM SDK (Windows)

Before you install OpenPages, install IBM SDK, Java Technology Edition and set up the system environment variables for Java on each application server and the search server. You can also use the steps to install the IBM SDK on the installation server.

About this task

For application servers, the version of the IBM SDK must be the same on each of the servers.

Procedure

1. Locate the IBM SDK on the IBM OpenPages with Watson installation media.

The path is \OP_<version>_Main\IBM_Java\WIN64\java_8.0_64

2. Copy the IBM SDK to the local hard disk of the server.

You can copy the IBM SDK to any directory on the server.

- For example, copy the IBM SDK to the root of the C drive under C:\IBM.
- 3. Set the system environment variables for Java.
 - a) In the Windows search box, type environment variables, and then click **Edit system** environment variables.
 - b) On the Advanced tab, click Environment variables.
 - c) In the System Variables pane, click New.
 - d) Type JAVA_HOME in the Variable name field.
 - e) Type C:\IBM\java_8.0_64 in the Variable value field.
 - f) Click **OK**.
 - g) Under System variables, select the **Path** variable, and then click **Edit**.
 - h) Type %JAVA_HOME%\bin; at the beginning of the list of paths in the **Variable value** field.
 - i) Click **OK**.

Note: Start a new command prompt to see the changes to the environment variables.

4. Verify the version of Java that is on the server.

Run the java -version command. The result should be similar to the following sample:

```
java version "1.8.0_311"
Java(TM) SE Runtime Environment (build 8.0.7.0 - pwa6480sr7-20211025_01(SR7))
IBM J9 VM (build 2.9, JRE 1.8.0 Windows Server 2016 amd64-64-Bit Compressed References
20211022_15212 (JIT enabled, AOT enabled)
OpenJ9 - 6abb372
OMR - b898db9
IBM - 2f2c48b)
JCL - 20210930_01 based on Oracle jdk8u311-b11
```

If the location of Java changes later, you can update it. For more information, see the following technotes:

- How to Change the Java Location on an OpenPages Application Server
- · How to Change the Java Location on an OpenPages Global Search Server

Tip: You can also change the location of Java on the reporting server. See <u>How to Change the Java</u> Location on an OpenPages Reporting Server.

Getting a copy of the IBM SDK (Linux)

Before you install OpenPages, install IBM SDK, Java Technology Edition and set up the system environment variables for Java on each application server and the search server. You can also use the steps to install the IBM SDK on the installation server.

About this task

For application servers, the version of the IBM SDK must be the same on each of the servers.

Procedure

1. Locate the IBM SDK on the IBM OpenPages with Watson installation media.

The path is /OP_<version>_Main/IBM_Java/Linux64/java_8.0_64.

2. Copy the IBM SDK to the local hard disk of the server.

You can copy the IBM SDK to any directory on the server.

For example, copy the IBM SDK to /opt/IBM/.

3. Grant read, write, and execute permissions on Java to the OpenPages installation user (opuser).

Run the following command:

chmod -R +x /opt/IBM/java_8.0_64

- 4. Set the system environment variables for Java.
 - a) Based on the shell that you are using and the account under which the server will run, edit the .profile or .bashrc file.
 - b) Ensure that JAVA_HOME is set to /opt/IBM/java_8.0_64.
 - c) Ensure that PATH includes \$JAVA_HOME/bin as the first item.

Note: Start a new shell window to see the changes to the environment variables.

5. Verify the version of Java that is on the server.

Run the java -version command. The result should be similar to the following sample:

```
java version "1.8.0_311"
Java(TM) SE Runtime Environment (build 8.0.7.0 - pxa6480sr7-20211025_01(SR7))
IBM J9 VM (build 2.9, JRE 1.8.0 Linux amd64-64-Bit Compressed References
20211022_15212 (JIT enabled, AOT enabled)
OpenJ9 - 6abb372
OMR - b898db9
IBM - 2f2c48b)
JCL - 20210930_01 based on Oracle jdk8u311-b11
```

If the location of Java changes later, you can update it. For more information, see the following technotes:

- How to Change the Java Location on an OpenPages Application Server
- How to Change the Java Location on an OpenPages Global Search Server

Tip: You can also change the location of Java on the reporting server. See <u>How to Change the Java</u> Location on an OpenPages Reporting Server.

Verifying servers before you upgrade

Before you upgrade, verify the status of the servers in your deployment.

Procedure

1. Ensure that no users are logged in to the OpenPages application. Users must not log in until the upgrade is complete.
- 2. If you use single sign-on (SSO) and you configured it to require an SSO login to access the REST API URLs under /grc/api/*, disable SSO.
- Ensure that no database scripts are running.
 Database scripts, other than the upgrade scripts, must not be run until the upgrade is complete.
- 4. Ensure that there are no long running OpenPages processes.

Examples of long running processes include FastMap imports and global search indexing processes.

- 5. If you use global search, ensure that the search services are stopped. For more information, see the *IBM OpenPages with Watson Installation and Deployment Guide*.
- 6. Stop the deployment manager, all OpenPages application servers (admin and non-admin), and all reporting servers (active and standby).

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Chapter 4. Upgrade OpenPages

Complete the following tasks to upgrade IBM OpenPages with Watson.

Note: This list applies to in-place upgrades only. If you are migrating to 8.3, see the *IBM OpenPages with Watson Installation and Deployment Guide*. For more information about upgrade paths, see <u>Chapter 2</u>, "Determine your upgrade path," on page 9.

- Complete the preparation tasks:
 - Download the installation kit from Passport Advantage
 - "Review new features and fixes" on page 11
 - "Backing up your environment" on page 11
 - "Upgrade prerequisite software " on page 14
 - <u>"Verifying servers before you upgrade" on page 26</u>
- Upgrade the OpenPages database manually. For more information, see <u>"Upgrade the OpenPages</u> database (Db2)" on page 29.
- Prepare the installation server. For more information, see <u>"Preparing the installation server" on page 37</u>
- Upgrade IBM OpenPages with Watson. For more information, see "Upgrading OpenPages" on page 47.
- Do the postinstallation tasks for in-place upgrades. For more information, see <u>"Post-upgrade tasks" on page 48</u>.
- Optional: Remove IBM WebSphere Application Server. For more information, see the *IBM OpenPages* with Watson Installation and Deployment Guide.

Upgrade the OpenPages database (Db2)

You upgrade the OpenPages database by running scripts. Use these topics if you are upgrading OpenPages in-place.

You must run all of the upgrade scripts in sequence to upgrade the database schema.

Two of the scripts require DBA privileges: a pre-upgrade script and a post-upgrade script. If you have DBA privileges, you can run all of the scripts. If you do not have DBA privileges, contact your database administrator.

A schema user can run the scripts that do not require DBA privileges.

Note for 7.4.x and 8.0.x customers: The database upgrade scripts modify and drop some database structures to free up space in the database. To complete the process, the PROPERTYVALS table needs to be reorganized. The database upgrade scripts perform the table reorganization automatically. Due to this additional operation, the database upgrade takes longer to complete than in the 7.4/8.0 release. The time to complete the reorganization depends on the size of your PROPERTYVALS table and the hardware capability of your database server.

Pre-upgrade step – Requires DBA privileges

During this step, your database administrator runs a script to prepare the database for the upgrade.

You need both DBADM and SECADM authorities to run this script.

Validate the pre-upgrade step

During this step, you run a script to verify that the pre-upgrade script completed successfully and that the database schema is ready for the upgrade.

Upgrade step

During this step, you run a script to upgrade the database. The script determines the current version of the database schema objects, and then runs the upgrade scripts that are needed to upgrade the database.

Post upgrade step – Requires DBA privileges

During this step, your database administrator runs a script to complete the database upgrade and to set database tuning parameters.

You need both DBADM and SECADM authorities to run this script.

Validate the post-upgrade step

During this step, you run a script to validate the post-upgrade step.

Preparing for the database upgrade (Db2)

Prepare for the upgrade of the database objects.

Procedure

1. Shut down all OpenPages components: application servers (admin and non-admin), reporting servers (active and standby), and the search server (if you use global search).

For more information, see the IBM OpenPages with Watson Installation and Deployment Guide.

- 2. Ensure that the IBM Db2 database server is running.
- 3. Log on to the Db2 database server computer as a user with administrative privileges.
- 4. Go to the /OP_<version>_Main/OP_<version>_Configuration/Database/DB2/ UPGRADE_SCRIPTS directory.
- 5. Verify that you have write permission on the sql-wrapper.sql file. If not, change the permission on the file by using the chmod command.
- 6. Edit the sql-wrapper.sql file.

Restriction: Change only the parameters that are described in this step.

Table 3. Parameters in the sql-wrapper.sql file for Db2 databases		
Property	Description	
opx_db2_instance_owner	The database instance owner for OpenPages.	
	The user you specify must have both DBADM and SECADM authorities	
	If your database administrator is going to run the DBA scripts for you, then you can leave this value empty when you run the non-DBA scripts.	
opx_db2_server_name	The database server name	
opx_db2_port_number	The database port number, for example 50000	
opx_db2_db_name	The name of the OpenPages database.	
opx_db_owner	The schema owner of the OpenPages database.	
opx_dflt_stor_srv_root	The path to the OpenPages storage directory.	
	Example:	
	<pre>define opx_dflt_stor_srv_root='/home/ opuser/0P/0penPages/openpages-storage'</pre>	

Table 3. Parameters in the sql-wrapper.sql file for Db2 databases (continued)		
Property	Description	
opx_override_ver_check	Use the default value, N, unless you are re- running the database upgrade scripts after a failure.	
	If the database upgrade failed in the middle of the schema upgrade process, set this parameter to Y. When you re-run the upgrade script, the upgrade process resumes from the last successful schema upgrade step.	
sqllib_dir	The path to the Db2 client installation directory on the admin application server (App Server1)	
	Example:	
	 Windows: define sqllib_dir='C:\IBM\SQLLIB' Linux: define sqllib_dir='/home/ db2inst1/sqllib' 	

- 7. If you want to run a custom script during the upgrade process, see <u>"Running a custom script during the</u> database upgrade (Db2)" on page 31.
- 8. If your database administrator is going to run the scripts that require DBA privileges, prepare the files for your database administrator.
 - a) Go to the /OP_<version>_Main/OP_<version>_Configuration/Database/DB2/ UPGRADE_SCRIPTS directory.
 - b) Open the op-dba-upgrade-file-list.txt file.
 - c) Send your DBA the sql-wrapper.sql file that you updated along with the files listed in the op-dba-upgrade-file-list.txt file.
 - d) Send your DBA the instructions to run the DBA scripts.
 - "Running the pre-upgrade DBA script (Db2)" on page 32
 - "Running the post-upgrade DBA script (Db2)" on page 35

Running a custom script during the database upgrade (Db2)

If you want to run a custom script during the database upgrade process, edit the sql-wrapper.sql file to specify the script to run.

About this task

You can use the custom_data_upgrade_script parameter to configure a custom script.

The script that you specify is run during the database upgrade step. The custom script is called by the op-database-product-upgrade.sh/bat script after the other upgrade steps, such as DDL changes, PL/SQL code changes, and database level data changes are complete.

Procedure

- 1. Open the sql-wrapper.sql file.
- 2. Verify that the sqllib_dir path is correct. If you are running the custom script from a computer other than the database server, update the path.
- 3. Edit the following parameters:

```
define custom_data_upgrade_script=no-op.sql
```

Replace no-op.sql with the script that you want to run.

4. Place your custom script in the same directory as the sql-wrapper.sql file.

Running the pre-upgrade DBA script (Db2)

Ask your database administrator to run the pre-upgrade script. Or, if you have the required Db2 authorities, you can run the script.

Before you begin

- The IBM Db2 database server is running. All other OpenPages servers are stopped.
- The JAVA_HOME system variable is defined and points to the IBM SDK, Java Technology Edition that is installed with Db2. For example:

```
export JAVA_HOME=/db2/V11.5/java/jdk64
export PATH=$JAVA_HOME/bin:$PATH
```

If you are running the script from another host, ensure that JAVA_HOME is pointing to the IBM SDK, Java Technology Edition that is installed on the computer.

- apache-ant-1.10.12 is deployed to /OP_<version>_Main/OP_<version>_Configuration/ Database/DB2/UPGRADE_SCRIPTS
- The DB2_HOME system variable is defined.

About this task

Run the following script: op-database-dba-upgrade.sh|.bat. The script uses the properties that are defined in the sql-wrapper.sql file.

Procedure

- 1. Log on to the Db2 database server computer as a database administrator (DBA).
- 2. Locate the scripts.

If you are a database administrator, get the scripts from your OpenPages team.

Or, you can get the scripts from the /OP_<version>_Main/OP_<version>_Configuration/ Database/DB2/UPGRADE_SCRIPTS directory.

- 3. Verify that you have execute permission on the scripts in the UPGRADE_SCRIPTS directory and its sub directories.
- 4. Open the sql-wrapper.sql file. Verify that the values are suitable for your environment.

 a) For the opx_db2_instance_owner parameter, specify a user that has the following authorities: If you are upgrading to 8.3, use the Db2 instance owner, which has DBADM and SECADM authorities.

If you are migrating to 8.3:

• Db2 11.5.6 and earlier: Both DBADM and SECADM authorities

You can run the following script to get a list of users that have the necessary authorities:

select grantee from syscat.dbauth where dbadmauth = 'Y' and securityadmauth = 'Y';

• Db2 11.5.7 and later: DBADM, SECADM, and SYSADM authorities

If you want to avoid the SYSADM requirement that was introduced in Db2 11.5.7, an alternative approach is to modify the DB2_ALTERNATE_AUTHZ_BEHAVIOUR registry variable to include the NOT_FENCED_ROUTINE_DBAUTH value. For more information, see the Db2 documentation.

- b) If you customized the table space names, update the define opx_dflt_* parameters with the custom table space names.
- 5. Run the following command:
 - On Linux:

```
./op-database-dba-upgrade.sh pre '<dba_password>'
```

• On Windows:

op-database-dba-upgrade.bat pre "<dba_password>"

Note: Quotation marks are required around a password only if the password contains special characters. See "Special characters in passwords" on page 7.

6. Verify that the return code is 0, indicating success.

You can also check the log file, op-database-dba-pre-upgrade.log.

What to do next

Validate the pre-upgrade DBA script.

Validating the pre-upgrade DBA step (Db2)

Run the script to validate the pre-upgrade DBA steps.

Before you begin

- The IBM Db2 database server is running. All other OpenPages servers are stopped.
- The JAVA_HOME system variable is defined and points to the IBM SDK, Java Technology Edition that is installed with Db2. For example:

```
export JAVA_HOME=/db2/V11.5/java/jdk64
export PATH=$JAVA_HOME/bin:$PATH
```

If you are running the script from another host, ensure that JAVA_HOME is pointing to the IBM SDK, Java Technology Edition that is installed on the computer.

- apache-ant-1.10.12 is deployed to /OP_<version>_Main/OP_<version>_Configuration/ Database/DB2/UPGRADE_SCRIPTS
- The DB2_HOME system variable is defined.

Procedure

- 1. Log on to the IBM Db2 database server computer as the OpenPages application user, opuser.
- 2. Go to the /OP_<version>_Main/OP_<version>_Configuration/Database/DB2/ UPGRADE_SCRIPTS directory.
- 3. Verify that you have execute permission on the scripts in UPGRADE_SCRIPTS and its subdirectories.
- 4. Open the sql-wrapper.sql file. Verify that the values are suitable for your environment.
- 5. Run the following command:
 - On Linux:

```
./op-database-product-upgrade.sh preupgrade '<op_password>'
```

• On Windows:

```
op-database-product-upgrade.bat preupgrade "<op_password>"
```

Note: Quotation marks are required around a password only if the password contains special characters. See <u>"Special characters in passwords" on page 7</u>.

6. Verify that the script completed successfully.

Look for the following message: Status: Success or a return code of 0.

You can also check the log file, op-validate-dba-pre-upgrade.log.

What to do next

Run the script to upgrade the database objects.

Upgrading the database (Db2)

Run the script to upgrade the database schema objects and data.

Before you begin

- The IBM Db2 database server is running. All other OpenPages servers are stopped.
- The JAVA_HOME system variable is defined and points to the IBM SDK, Java Technology Edition that is installed with Db2. For example:

```
export JAVA_HOME=/db2/V11.5/java/jdk64
export PATH=$JAVA_HOME/bin:$PATH
```

If you are running the script from another host, ensure that JAVA_HOME is pointing to the IBM SDK, Java Technology Edition that is installed on the computer.

- apache-ant-1.10.12 is deployed to /OP_<version>_Main/OP_<version>_Configuration/ Database/DB2/UPGRADE_SCRIPTS
- The DB2_HOME system variable is defined.

Procedure

- 1. Log on to the IBM Db2 database server computer as the OpenPages application user, opuser.
- 2. Go to the /OP_<version>_Main/OP_<version>_Configuration/Database/DB2/ UPGRADE_SCRIPTS directory.
- 3. Verify that you have execute permission on the scripts in the UPGRADE_SCRIPTS directory and its subdirectories.
- 4. Open the sql-wrapper.sql file. Verify that the values are suitable for your environment.
- 5. Run the following command:
 - On Windows:

op-database-product-upgrade.bat upgrade "<op_schema_owner_password>"

• On Linux:

./op-database-product-upgrade.sh upgrade '<op_schema_owner_password>'

Note: Quotation marks are required around a password only if the password contains special characters. See <u>"Special characters in passwords" on page 7</u>.

6. Verify that the return code is 0, indicating success.

You can also check the log file, op-database-product-upgrade.log.

What to do next

Ask your database administrator to run the post-upgrade DBA script.

Running the post-upgrade DBA script (Db2)

Ask your database administrator to run the post-upgrade script. Or, if you have the required Db2 authorities, you can run the script.

Before you begin

- The IBM Db2 database server is running. All other OpenPages servers are stopped.
- The JAVA_HOME system variable is defined and points to the IBM SDK, Java Technology Edition that is installed with Db2. For example:

```
export JAVA_HOME=/db2/V11.5/java/jdk64
export PATH=$JAVA_HOME/bin:$PATH
```

If you are running the script from another host, ensure that JAVA_HOME is pointing to the IBM SDK, Java Technology Edition that is installed on the computer.

- apache-ant-1.10.12 is deployed to /OP_<version>_Main/OP_<version>_Configuration/ Database/DB2/UPGRADE_SCRIPTS
- The DB2_HOME system variable is defined.
- The op-database-product-upgrade.sh|.bat script completed successfully.

About this task

Run the following script: op-database-dba-upgrade.sh|.bat. The script uses the parameters that are defined in the sql-wrapper.sql file.

Procedure

- 1. Log on to the IBM Db2 database server computer as a database administrator (DBA).
- 2. Locate the scripts that are required.

If you are a database administrator, get the scripts from your OpenPages team.

Or, you can get the scripts from the /OP_<version>_Main/OP_<version>_Configuration/ Database/DB2/UPGRADE_SCRIPTS directory.

- 3. Verify that you have execute permission on the scripts in UPGRADE_SCRIPTS and its subdirectories.
- 4. Open the sql-wrapper.sql file. Verify that the values are suitable for your environment.

If you are upgrading to 8.3, use the Db2 instance owner for opx_db2_instance_owner.

If you are migrating to 8.3:

• Db2 11.5.6 and earlier: The user that you specify must have both DBADM and SECADM authorities

You can run the following script to get a list of users that have the necessary authorities:

select grantee from syscat.dbauth where dbadmauth = 'Y' and securityadmauth = 'Y';

• Db2 11.5.7 and later: The user that you specify must have DBADM, SECADM, and SYSADM authorities

If you want to avoid the SYSADM requirement that was introduced in Db2 11.5.7, an alternative approach is to modify the DB2_ALTERNATE_AUTHZ_BEHAVIOUR registry variable to include the NOT_FENCED_ROUTINE_DBAUTH value. For more information, see the Db2 documentation.

- 5. Run the following command:
 - On Linux:

./op-database-dba-upgrade.sh post '<dba_password>'

• On Windows:

op-database-dba-upgrade.bat post "<dba_password>"

Note: Quotation marks are required around a password only if the password contains special characters. See "Special characters in passwords" on page 7.

6. Verify that the return code is 0, indicating success.

You can also check the log file: op-database-dba-post-upgrade.log.

What to do next

Validate the post-upgrade DBA step.

Validating the post-upgrade DBA step (Db2)

Run the script to validate the post-upgrade DBA steps.

Before you begin

- The IBM Db2 database server is running. All other OpenPages servers are stopped.
- The JAVA_HOME system variable is defined and points to the IBM SDK, Java Technology Edition that is installed with Db2. For example:

```
export JAVA_HOME=/db2/V11.5/java/jdk64
export PATH=$JAVA_HOME/bin:$PATH
```

If you are running the script from another host, ensure that JAVA_HOME is pointing to the IBM SDK, Java Technology Edition that is installed on the computer.

- apache-ant-1.10.12 is deployed to /OP_<version>_Main/OP_<version>_Configuration/ Database/DB2/UPGRADE_SCRIPTS
- The DB2_HOME system variable is defined.

Procedure

- 1. Log on to the IBM Db2 database server computer as the OpenPages application user, opuser.
- 2. Go to the /OP_<version>_Main/OP_<version>_Configuration/Database/DB2/ UPGRADE_SCRIPTS directory.
- 3. Verify that you have execute permission on the scripts in UPGRADE_SCRIPTS and its subdirectories.
- 4. Open the sql-wrapper.sql file. Verify that the values are suitable for your environment.
- 5. Run the following command:
 - On Linux:

./op-database-product-upgrade.sh postdba '<op_password>'

• On Windows:

op-database-product-upgrade.bat postdba "<op_password>"

Note: Quotation marks are required around a password only if the password contains special characters. See <u>"Special characters in passwords" on page 7</u>.

6. Verify that the script completed successfully.

Look for the following message: Status: Success or a return code of 0.

You can also check the log file, op-validate-dba-post-upgrade.log.

7. Remove the passwords from the sql-wrapper.sql file for security purposes.

Results

The OpenPages database is upgraded.

Preparing the installation server

Install the 8.3 installation server and migrate your deployments and users to the new installation server.

Note: The installation server cannot be upgraded in-place. You need to install the 8.3 installation server into a new directory.

You have two options:

- You can install the installation server and migrate your deployments and users during the installation process.
- You can install the installation server and migrate your deployments and users later.

If you manage the installation agents manually, you also need to install the 8.3 agent software on each remote server. If you want to keep the existing agent software on a remote server, for backup purposes for example, do the following steps:

- 1. Stop the pre-8.3 agent if it is running.
- 2. Install the 8.3 agent software in a new directory.
- 3. In the 8.3 installation app, update the **Agent Directory** field on the server card to point to the new directory.
- 4. Click Validate.

Note: You can install different versions of the installation server on the same host. If you do so, you must use a different port number and directory for each installation server. You can specify the port number of the 8.3 server during the setup process.

Setting up the installation server on Windows

You can set up the installation server on a server in your deployment or on a separate computer. Use a computer that can communicate with the servers in your OpenPages environment.

After you set up the installation server, you can use the OpenPages installation app to create and manage deployments.

Note: If you already set up the installation server and you want to update it with a fix pack, see <u>"Update</u> the installation server and agents" on page 42.

Before you begin

The computer where you set up the installation server must meet the following requirements:

- IBM SDK, Java Technology Edition or Java Runtime Environment (JRE) is installed.
- Java is included in the PATH system environment variable.

You might also want a PDF reader application on the computer. When you install or upgrade OpenPages, you can download validation reports in PDF format.

Procedure

- 1. Download the OpenPages 8.3 package from Passport Advantage.
- 2. Log on to the computer as an administrator.
- 3. If an earlier version of the installation server is running, stop it.
- 4. Do one of the following steps:
 - Update the antivirus policy on the installation server computer to allow Node.js.

- Disable antivirus software on the installation server computer. You can re-enable it after you install the installation server.
- 5. Create a new directory.

If you have more than one version of the installation server on the same host, use a separate directory for each version.

For example, C:\IBM\OPInstall<version>.

6. Locate the installation files.

The files are stored in \OP_<version>_Main\OP_<version>_Installer.

- 7. Copy the contents of the $OP_{version}$ installer directory to the directory that you created.
- 8. Change directory to <installation_server_home>\OP_<version>_installer\install\Windows.
- 9. Open a command prompt as an administrator.

10. Run the installation script.

You can use the following optional arguments:

- /p:<password> Sets the password for the initial installation app user, called admin. If you exclude the argument, the install.bat script prompts you for the password.
- /n: <port> Sets the port that the installation server runs on when you start it. If you have multiple installation servers that run on the same hardware, ensure that each installation server uses a different port number. Specify an integer in the range 0 - 65535. If you exclude this argument, the default port number (8443) is used.
- /m: <old_directory> Migrates existing deployments and installation server user accounts to the 8.3 installation server. Use this argument if you have 7.4, 8.0.x, or 8.1.x deployments that you want to use with the new installation server. For <old_directory>, enter the full path to the 7.4, 8.0.x, or 8.1.x installation server home directory. Alternatively, you can migrate deployments and users after you install the 8.3 installation server. For more information, see <u>"Migrating deployments</u> and installation server users" on page 44.
- /s Prevents the installation server from starting after the install.bat completes. If you exclude this argument, the installation server starts automatically after the install.bat script completes.

Syntax:

install.bat -acceptLicense [/p:password] [/m:<old_directory>] [/n:<port>] [/s]

- 11. If you did not use the /p parameter, type a password and then press Enter.
- 12. After the installation completes, re-enable the antivirus software on the installation server. Do this step if you disabled the antivirus software in step "4" on page 37.
- 13. Update the installation server to the latest fix pack version. See <u>"Update the installation server and agents" on page 42</u>.

Results

The OpenPages installation server is installed.

If you used the /s argument, start the installation server. For more information, see the *IBM OpenPages* with Watson Installation and Deployment Guide.

You can now log in. For the user name, type admin. For the password, type the password that you set when you ran the install.bat script. For more information, see the *IBM OpenPages with Watson Installation and Deployment Guide*.

Note: If you used the /m argument but some deployments or users were not migrated, do not run the install.bat script again. Instead, repeat the migration without reinstalling. See <u>"Migrating</u> deployments and installation server users" on page 44.

Setting up the installation server on Linux

You can set up the installation server on a server in your deployment or on a separate computer. Use a computer that can communicate with the servers in your OpenPages environment.

After you set up the installation server, you can use the OpenPages installation app to create and manage deployments.

Important: If you use Windows servers in your deployment, set up the OpenPages installation server on a Windows computer. See <u>"Setting up the installation server on Windows" on page 37</u>.

Note: If you already set up the installation server and you want to update it with a fix pack, see <u>"Update</u> the installation server and agents" on page 42.

Before you begin

The computer where you set up the installation server must meet the following requirements:

- IBM SDK, Java Technology Edition or Java Runtime Environment (JRE) is installed.
- Java is included in the PATH system environment variable.
- JAVA_HOME is set.

You might also want a PDF reader application on the computer. When you install or upgrade OpenPages, you can download validation reports in PDF format.

About this task

This video demonstrates how to set up the installation server. The steps are similar for 8.3: <u>https://</u>youtu.be/OiyuKjYyPrg.

Procedure

- 1. Log on to the computer as an administrator.
- 2. If an earlier version of the installation server is running, stop it.
- 3. Do one of the following steps:
 - Update the antivirus policy on the installation server computer to allow Node.js.
 - Disable antivirus software on the installation server computer. You can re-enable it after you install the installation server.
- 4. Create a directory.

If you have more than one version of the installation server on the same host, use a separate directory for each version.

For example, /home/opuser/IBM/OPInstall<version>.

- 5. Locate the installation files.
 - The files are stored in /OP_<version>_Main/OP_<version>_Installer.
- 6. Copy the contents of the OP_<version>_Installer directory to the directory that you created.
- 7. Change directory to /home/opuser/IBM/OPInstall/OP_<*version*>_Installer/install/Linux.
- 8. Grant the +rwx permission to the user on the installation server directory, subdirectories, and scripts.
- 9. Open a shell and run the setup script.

You can use the following optional arguments:

- -p <password> Sets the password for the initial installation app user, called admin. If you exclude the argument, the install.bat script prompts you for the password.
- -n <port> Sets the port that the installation server runs on when you start it. If you have multiple installation servers that run on the same hardware, ensure that each installation server

uses a different port number. Specify an integer in the range 0 - 65535. If you exclude this argument, the default port number (8443) is used.

- -m <old_directory> Migrates existing deployments and installation server user accounts to the 8.3 installation server. Use this argument if you have 7.4, 8.0.x, or 8.1.x deployments that you want to use with the new installation server. For <old_directory>, enter the full path to the 7.4, 8.0.x or 8.1.x installation server home directory. Alternatively, you can migrate deployments and users after you install the 8.3 installation server. For more information, see <u>"Migrating deployments and</u> installation server users" on page 44.
- -s Prevents the installation server from starting after the install.sh script completes. If you
 exclude this argument, the installation server starts automatically after the install.sh script
 completes.

Syntax:

```
./install.sh --acceptLicense [-p password] [-m <old_directory>] [-n <port>] [-s]
```

- 10. If you did not use the -p parameter, type a password and then press Enter.
- 11. Close the shell window.
- 12. After the installation completes, re-enable the antivirus software on the installation server. Do this step if you disabled the antivirus software in step "3" on page 39.
- Update the installation server to the latest fix pack version.
 See "Update the installation server and agents" on page 42.

Results

The OpenPages installation server is installed.

If you used the -s argument, start the installation server. For more information, see the *IBM OpenPages* with Watson Installation and Deployment Guide.

You can now log in. For the user name, type admin. For the password, type the password that you set when you ran the install.sh script. For more information, see the *IBM OpenPages with Watson Installation and Deployment Guide*.

Note: If you used the -m argument but some deployments or users were not migrated, do not run the install.sh script again. Instead, repeat the migration without reinstalling. See <u>"Migrating deployments</u> and installation server users" on page 44.

Installing agents manually

The installation server can automatically install the agent software on remote servers. But you can install the agent software manually, if you prefer.

Before you begin

The computer where you install the agent software must meet the following requirements:

- IBM SDK, Java Technology Edition or Java Runtime Environment (JRE) is installed.
- Java is included in the PATH system environment variable.

About this task

When you specify the deployment properties for a remote server, you are asked to provide the user name and password of an administrator account on the remote server. The installation server uses these credentials to install the agent software on the remote server. However, your organization might have policies that restrict the use of administrator credentials. In this case, you can install the agent software manually before you install IBM OpenPages with Watson.

The overall process involves the following steps:

- 1. Install the agent software manually and start the agent on each remote server, except the database server. The agent software is not needed on the database server.
- 2. In the installation app, enter the deployment properties for the remote servers.
 - Enable the **Remote Deploy** option.
 - Leave the Local User Name and Local User Password fields empty.
 - In the **Agent Directory** field, type the full path to the directory on the remote server where you installed the agent software. This directory is the *<agent_home>* directory.

Procedure

- 1. Log on to the remote server as an administrator.
- 2. Do one of the following steps:
 - Update the antivirus policy on the remote server to allow Node.js.
 - Disable antivirus software on the remote server. You can re-enable it after you install the agent software.
- 3. Create a directory.

For example:

- Windows: C:\IBM\OPAgent
- Linux: /home/opuser/IBM/OPAgent

This directory will be the *<agent_home>* directory for the remote server.

- 4. Copy the agent installation software to the remote server.
 - a) Locate the following file on the installation server: <installation_server_home>/opinstaller-agent.zip.
 - b) Copy op-installer-agent.zip to the <agent_home> directory that you created on the remote server.
 - c) Extract the op-installer-agent.zip file into the <agent_home> directory.
- 5. Open a shell or command window. If you are using Windows, open the command window as an administrator.
- 6. Go to the <agent_home>/install/<OS> directory.
- 7. Run the following script to install the agent software:
 - Windows:

install.bat -acceptLicense [/n <port>] [/s]

You can use the following optional arguments:

- /n:<port> Sets the port that the installation agent runs on when you start it. Specify an integer in the range 0 65535. If you exclude this argument, the default port number (8443) is used.
- /s Prevents the installation agent from starting after the install.bat script completes. If you exclude this argument, the installation agent starts automatically after the install.bat script completes.
- Linux:

```
chmod 755 install.sh
./install.sh --acceptLicense [-n <port>] [-s]
```

You can use the following optional arguments:

- n <port> – Sets the port that the installation agent runs on when you start it. Specify an integer in the range 0 - 65535. If you exclude this argument, the default port number (8443) is used.

- s Prevents the installation agent from starting after the install.sh script completes. If you
 exclude this argument, the installation agent starts automatically after the install.sh script
 completes.
- 8. When the script completes, close the shell or command window.
- 9. Start the agent.

See "Starting the installation agent manually" on page 45.

10. Update the agent software to the latest fix pack version.

For more information, see "Update the installation server and agents" on page 42.

11. Repeat these steps on each remote server, except the database server.

What to do next

When you enter the server properties in the installation app or in the deploy.properties file, do the following steps:

- Enable the **Remote Deploy** option.
- In the **Agent Directory** field, type the full path to the <*agent_home*> directory on the remote server.
- Leave the Local User Name and Local User Password fields empty.

Ensure that the agents are started before you do any installation tasks. See <u>"Starting the installation agent</u> manually" on page 45.

Update the installation server and agents

Update the 8.3 installation server to use the latest 8.3.x version.

The latest version of the installation server is provided in the fix pack installation kit.

Do the following tasks:

- Update the installation server.
- If you installed the agent software manually on remote servers, update the agent software on each remote server.

Updating the installation server

Before you install a new version of IBM OpenPages with Watson (a release, fix pack, or interim fix), update the 8.3 installation server to the latest 8.3.x fix pack version.

Before you begin

The 8.3 installation server must already be installed. If you're upgrading or migrating, install the 8.3 installation server, and then update it to the latest 8.3.x version.

About this task

This video demonstrates how to update the installation server: https://youtu.be/FghmmHO5Ug8.

Procedure

- 1. Download the latest OpenPages fix pack from Fix Central.
- 2. Log on to the OpenPages installation server computer as the user who installed the installation server.

Alternatively, you can log in as any user who has full permissions on the installation server directories and who can run Node.js.

3. Locate the openpages_installer_<*version*>.zip file in the fix pack kit. The file is stored in /OP_<*version*>_Main/OP_<*version*>_Installer.

- 4. Copy the file to the <Installation_server_home>/src/assets/maintenance directory on the installation server.
- 5. Stop the installation server if it is running.
- 6. Update the installation server.
 - a) Open a command prompt as an administrator or open a shell window.
 - b) Go to the <Installation_server_home> directory and run the following command:

npm run upgrade

- 7. Start the installation server.
- 8. Verify the update. Log in to the installation app, open any deployment, and click **About** to see the version number.
- 9. If you installed the agent software manually on the remote servers in your deployment, update the agent software on each remote server.

For more information, see "Updating agents manually" on page 43.

Note: Do not click Validate until you have updated the agent software on each remote server.

If the installation server installed the agent software on your remote servers, you do not need to update the agents manually. The installation server updates the agents automatically when you click **Validate**.

Updating agents manually

Use this procedure to update the agent software manually to an 8.3.0.x fix pack version.

Before you begin

The 8.3 installation server and agents must already be installed. If you're upgrading or migrating, install the 8.3 installation server and agents, and then update them to the latest 8.3.x version.

About this task

The installation server can automatically update the agent software on remote servers. But you can update the agent software manually, if you prefer.

When you specify the deployment properties for a remote server, you are asked to provide the user name and password of an administrator account on the remote server. The installation server uses these credentials to update the agent software on the remote server. However, your organization might have policies that restrict the use of administrator credentials. In this case, you can update the agent software manually before you install IBM OpenPages with Watson or apply a fix pack.

The overall process involves the following steps:

- 1. Update the installation server. See "Updating the installation server" on page 42.
- 2. Update the agent software manually and start the agent on each remote server, except the database server. The agent software is not needed on the database server.
- 3. In the installation app, enter the deployment properties for the remote servers.
 - Enable the **Remote Deploy** option.
 - You can leave the Local User Name and Local User Password fields empty.
 - In the **Agent Directory** field, type the full path to the directory on the remote server where the agent software is installed. This directory is the *<agent_home>* directory.
- 4. Validate your deployment and continue with the installation of OpenPages or the fix pack.

Procedure

1. Log on to the remote server as the user who installed the agent software.

Alternatively, you can log in as any user who has full permissions on the agent directories and who can run Node.js.

2. Stop the agent.

For more information, see "Stopping the installation agent manually" on page 46.

- 3. Copy the installation file to the remote server.
 - a) Locate the following file in the 8.3.0.x fix pack kit: openpages_installer_<version>.zip The file is stored in /OP_<version>_Main/OP_<version>_Installer.
 - b) Copy openpages_installer_<*version*>.zip to the <*agent_home*>/src/assets/ maintenance directory on the installation server.

Do not extract the file.

4. Update the agent software.

On Windows:

- a) Verify that no command prompts or applications, such as Windows Explorer, are accessing the <*agent_home*> directory or its subdirectories.
- b) Open a command prompt as an administrator.
- c) Go to the <agent_home> directory
- d) Run the following command.

npm run upgrade

```
On Linux:
```

- a) Open a shell and go to the *<agent_home>* directory.
- b) Run the following command.

npm run upgrade

When the process completes, the following message is displayed:

Installer upgrade is successful...

5. Start the agent.

See "Starting the installation agent manually" on page 45.

6. Repeat these steps on each remote server, except the database server.

What to do next

When you fill in the server properties, do the following:

- Enable the **Remote Deploy** option.
- In the **Agent Directory** field, type the full path to the <*agent_home*> directory on the remote server.
- You can leave the Local User Name and Local User Password fields empty.

Note: If you leave the **Local User Name** and **Local User Password** fields empty, you must start the agents manually. See <u>"Starting the installation agent manually</u>" on page 45.

Migrating deployments and installation server users

You can migrate deployments and user accounts from a 7.4.x, 8.0.x, or 8.1.x installation server to the 8.3 IBM OpenPages with Watson installation server.

About this task

Do this task if the following conditions are met:

- You have a 7.4.x, 8.0.x, or 8.1.x installation server (the source installation server).
- You set up the 8.3 installation server (the target installation server).

- When you set up the 8.3 installation server, you did not migrate deployments and user accounts from the source installation server by using the /m (Microsoft Windows) or -m (Linux) argument.
 - Or, you migrated, but some deployments or user accounts did not get migrated.

When you migrate, keep the following points in mind:

- Deployments and users that already exist in the 8.3 installation server are not migrated.
- User accounts in the source installation server that are missing passwords are not migrated.
- A deployment is not migrated if any validation, installation, or configuration processes are running.

Procedure

- 1. If the installation app is open, log out and close the browser window.
- 2. Stop the 7.4.x, 8.0.x, or 8.1.x installation server.

Windows

- Stop the ibmopenpagesgrcplatforminstaller<*version*>.exe (7.4 or 8.0) or ibmopenpageswithwatsoninstaller<*version*>.exe (8.1) service.
- Or, go to the <installation_server_home> directory of the installation server that you want to stop. Open a command prompt as an administrator, and then run the following command:

npm run stop

Linux

- a. Open a shell and go to the <installation_server_home> directory of the installation server that you want to stop, for example /home/opuser/IBM/OPInstall/ OP_<version>_Installer.
- b. Run the following command:

npm run stop

- 3. Log on to the computer where you set up the 8.3 installation server.
- 4. Migrate deployments and user accounts to the 8.3 installation server.
 - a) Open a shell or command window and go to the <installation_server_home> directory, for example /home/opuser/IBM/OPInstall/OP_<version>_Installer.
 - b) Run the following command:

Replace *<old_directory>* with the full path to the 7.4.x, 8.0.x, or 8.1.x installation server home directory.

```
npm run migration <old_directory>
```

If a deployment or user account is not migrated, fix any issues, and then run the migration again.

Starting the installation agent manually

You can start the agent on a remote server manually.

About this task

When you specify the deployment properties for a remote server, you are asked to provide the user name and password of an administrator account on the remote server. The installation server uses these credentials to start and stop the agent software on the remote server. If you do not specify login credentials in the deployment properties and you install the agent software manually, you need to start and stop the agent manually. You cannot use the installation app to start or stop the agent.

You might also choose to start and stop agents manually if you prefer to use the command line.

Procedure

1. Log on to the remote server as the user who installed the agent software.

Alternatively, you can log in as any user who has full permissions on the agent directories and who can run Node.js.

2. Start the installation agent.

Windows

Do one of the following steps:

- Start the ibmopenpageswithwatsoninstaller<version>.exe service.
- Go to the <*agent_home*>\install\Windows directory. Right-click the startup.bat file and click **Run As Administrator**.

Linux

- a. Open a shell and go to the <agent_home>/install/Linux directory.
- b. Run the following command:

./startup.sh

Results

The installation agent is running.

Stopping the installation agent manually

You can stop the agent on a remote server manually.

About this task

When you specify the deployment properties for a remote server, you are asked to provide the user name and password of an administrator account on the remote server. The installation server uses these credentials to start and stop the agent software on the remote server. If you do not specify login credentials in the deployment properties and you install the agent software manually, you need to start and stop the agent manually. You cannot use the installation app to start or stop the agent.

You might also choose to start and stop agents manually if you prefer to use the command line.

Procedure

1. Log on to the remote server as the user who installed the agent software.

Alternatively, you can log in as any user who has full permissions on the agent directories and who can run Node.js.

- 2. Stop the installation agent.
 - Windows: Stop the ibmopenpageswithwatsoninstaller<*version*>.exe service. Or, open a command prompt as an administrator, go to the *<agent_home>* directory, and run the following command:

npm run stop

• Linux: Go to the <agent_home> directory and run the following command:

npm run stop

Results

The installation agent is stopped.

Upgrading OpenPages

Upgrade to get the latest fixes and features.

Before you begin

- Complete the following preparation tasks:
 - Download the installation kit from Passport Advantage®
 - "Review new features and fixes" on page 11
 - "Backing up your environment" on page 11
 - "Verifying servers before you upgrade" on page 26
- If you installed the agents on remote servers manually, ensure that the agents are running.
- If your application servers cannot access the internet and you updated WebSphere Liberty features manually in the past, do steps 1-6 in the following task: Updating WebSphere features manually.
- Upgrade the OpenPages database. For more information, see <u>"Upgrade the OpenPages database (Db2)"</u> on page 29.
- Ensure that IBM Cognos Configuration is not running.
- Ensure that the deployment manager, all OpenPages application servers (admin and non-admin), and the search server are stopped.
- Ensure that all reporting servers (active and standby) are running.

About this task

Use the installation server to upgrade OpenPages.

Procedure

- 1. Log in to the OpenPages installation app. For more information, see the *IBM OpenPages with Watson Installation and Deployment Guide*.
- 2. Open the deployment that you want to upgrade.

If your deployment is already open, refresh the page.

- 3. Review the settings on each server card.
- 4. Click the **Deployment Task** list and select **Upgrade**, and then select the version that you want to install.

If **Upgrade** is not displayed in the **Deployment Task** list, click **Validate**.

Deployment Task	View I	log here					
Upgrade	~	8.2	~	SAVE	VALIDATE	INSTALL	
Server Informatio	on						
	Upgrade	Deployment Task View View View View View View View View	Deployment Task View log here Upgrade × 8.2 Server information •	Deployment Task View log here Upgrade ~ 8.2 ~ Server information	Upgrade × 8.2 × SAVE Server information	Upgrade × 8.2 × VALIDATE Server information Server information Server information Server information	Upgrade × 82 × SAVE VALIDATE INSTALL Server information

Figure 1. Selecting the upgrade task

5. On each application server card, verify that **Java Home Directory** is set to the IBM SDK, Java Technology Edition that you installed on the application server.

If you previous used the Java that is installed with IBM WebSphere Application Server Network Deployment, you might need to update the **Java Home Directory** field.

6. Click Validate.

7. Click Install.

Tip: You can log out and close the browser window. The **Install** process continues to run. When you log in to the installation app again, the app shows the status of your deployment. You can also close the browser window during the **Configure** process.

8. Click Configure.

What to do next

Do the post-installation tasks. For more information, see "Post-upgrade tasks" on page 48.

Post-upgrade tasks

After you upgrade IBM OpenPages with Watson, you must complete some additional tasks.

- Update the Db2 instance settings. See "Updating Db2 instance settings" on page 48.
- If you are upgrading from 8.1 or earlier, see "Updating optional apps" on page 49.
- Restore application server configuration settings and customizations. See <u>"Restore custom application</u> server settings" on page 50.
- If you use global search, re-create the index. See "Recreating the index for global search" on page 50.
- Update the platform and solutions reports. See <u>"Updating reports" on page 51</u>.
- Update the Questionnaire Template, Section Template, SubSection Template, and Question Template to add new fields and field groups.

For more information, see "Updating questionnaire object types (Db2)" on page 52.

- If you used system views in your source environment, you might need to do some remediation. System views are updated during a migration, but the schema is not. When you open a view, you might see errors such as "The field *<field_name>* is required." Edit the views to resolve errors, for example by removing or adding the fields, field groups, or field dependencies that are not in your schema.
- If you use LDAP, you need to re-enable it. See "Enable LDAP after upgrading or migrating" on page 53.
- Update the reporting schema. See "Updating the reporting schema" on page 56.
- Regenerate the reporting framework.

Depending on your environment, you might need to regenerate the reporting framework. For more information, see <u>"Regenerating the reporting framework" on page 56</u>.

Updating Db2 instance settings

After you migrate or upgrade IBM OpenPages with Watson, you need to update settings for the Db2 instance.

Procedure

- 1. Log on to the database server as the Db2 instance owner, for example db2inst1 on Linux or db2admin on Windows.
- 2. Run the db2set command.

The command returns a list of Db2 profile variables and their values, for example:

```
DB2_DEFERRED_PREPARE_SEMANTICS=YES
DB2_ATS_ENABLE=YES
DB2_COMPATIBILITY_VECTOR=ORA
DB2_OPTPROFILE=YES
DB2_NUM_CKPW_DAEMONS=0
DB2_REDUCED_OPTIMIZATION=JULIE
DB2_EVALUNCOMMITTED=ON
DB2_EXTENDED_OPTIMIZATION=NO_HVCHECK_ALL,IXOR
DB2_SKIPDELETED=ON
DB2COMM=SSL,TCPIP
```

```
DB2_PARALLEL_IO=*
DB2AUTOSTART=YES
```

- 3. In the results from step 2, look for DB2COMPOPT, and then do one of the following steps:
 - If DB2COMPOPT is not listed, run the following command to set it:

db2set DB2COMPOPT=N0_SCALAR2OJ_ROW

• Or, if DB2COMPOPT is listed, run the following command to update its value:

db2set DB2COMPOPT=<*existing_values*>,N0_SCALAR20J_ROW

4. Run db2set again and verify your changes to DB2COMPOPT.

For example:

```
DB2_DEFERRED_PREPARE_SEMANTICS=YES

DB2_ATS_ENABLE=YES

DB2_COMPATIBILITY_VECTOR=ORA

DB2_OPTPROFILE=YES

DB2_NUM_CKPW_DAEMONS=0

DB2_REDUCED_OPTIMIZATION=JULIE

DB2_EVALUNCOMMITTED=ON

DB2_EXTENDED_OPTIMIZATION=NO_HVCHECK_ALL,IXOR

DB2_SKIPDELETED=ON

DB2_COMMPOPT=NO_SCALAR2OJ_ROW

DB2COMM=SSL,TCPIP

DB2_PARALLEL_IO=*

DB2AUTOSTART=YES
```

- 5. In the results from step 4, look for DB2_EXTENDED_OPTIMIZATION, and then do one of the following steps:
 - If the results show DB2_EXTENDED_OPTIMIZATION=NO_HVCHECK_ALL, IXOR, run the following command to update the variable:

db2set DB2_EXTENDED_OPTIMIZATION=NO_HVCHECK_ALL,IXOR,"MAX_CSE_SGSIZE 20"

• Or, run the following command to update the variable without overwriting its existing values:

db2set DB2_EXTENDED_OPTIMIZATION=<*existing_values*>, "MAX_CSE_SGSIZE 20"

6. Run db2set again and verify your changes to DB2_EXTENDED_OPTIMIZATION.

For example:

```
DB2_DEFERRED_PREPARE_SEMANTICS=YES

DB2_ATS_ENABLE=YES

DB2_COMPATIBILITY_VECTOR=ORA

DB2_OPTPROFILE=YES

DB2_NUM_CKPW_DAEMONS=0

DB2_REDUCED_OPTIMIZATION=JULIE

DB2_EVALUNCOMMITTED=ON

DB2_EXTENDED_OPTIMIZATION=NO_HVCHECK_ALL,IXOR,MAX_CSE_SGSIZE 20

DB2_SKIPDELETED=ON

DB2COMPOPT=NO_SCALAR2OJ_ROW

DB2COMM=SSL,TCPIP

DB2_PARALLEL_T0=*

DB2AUTOSTART=YES
```

7. Restart the Db2 instance. You must restart the instance tor the changes to take effect.

Updating optional apps

If you use optional apps, such as IBM OpenPages connectors, you need to do some additional upgrade tasks,

Use the following table to determine what you need to do.

Table 4. Upgrade tasks for optional apps		
App or component	Upgrade tasks	
 IBM OpenPages connectors IBM OpenPages SDI Connector for UCF Common Controls Hub IBM QRadar[®] connector 	If you are upgrading from 8.1 or earlier, install IBM Security Directory Integrator 7.2.0.3 and update the configuration. See the IBM OpenPages with Watson Installation and Deployment Guide	

Note: If you used IBM Business Process Manager in a prior release, remove the integration. For more information, see Removing the IBM BPM integration from OpenPages with Watson.

Restore custom application server settings

After you upgrade, restore application server configuration settings and customizations.

If you made changes to the following files in your pre-upgrade environment, re-implement your changes after the upgrade.

- <OP_HOME>/aurora/conf/aurora.properties
- <OP_HOME>/aurora/conf/Server<#>-server.properties
- <OP_HOME>/aurora/conf/Server<#>-sosa.properties

If you are upgrading from 8.1.x and you modified the web.xml file, application.xml file, or if you customized settings in the IBM WebSphere Integrated Solutions Console, re-implement the changes in WebSphere Liberty.

For example, see the following topics in the IBM OpenPages with Watson Administrator's Guide:

- · Shortening the URL for OpenPages with Watson
- Enabling secure session cookies in WebSphere Liberty
- Configuring extended access logging on WebSphere Liberty

If single sign-on (SSO) was configured in the source system, you need to update the SSO configuration in your target environment. For more information, see the *IBM OpenPages with Watson Installation and Deployment Guide*.

Restoring solutions helpers, images, and other files

Restore custom solutions helpers, images, and other custom deliverables that you backed up.

About this task

If you backed up the following items, restore them:

- Solutions schema
- Custom deliverables from IBM Expert Labs
- Custom code

Recreating the index for global search

You can re-create the index for global search.

About this task

Important: If you have upgraded or migrated to IBM OpenPages with Watson 8.3.0 or later versions from 8.2.0.x or earlier versions, you must re-create the index for global search. If you do not re-create the index, global search will not function.

If you need to troubleshoot a problem with re-creating the index for global search, or if you prefer using a CLI, you can still use the command line to re-create the index. For more information, see <u>How to</u> automate Solr tasks?

Procedure

- 1. Log on to OpenPages with Watson as a user with administrative privileges.
- 2. Click 🔯 > System Configuration > Global Search and click Disable.
- 3. Click **Drop** to drop the search index.

Wait for the drop process to complete.

4. Click **Create** to re-create the search index.

Updating reports

After you upgrade or migrate, update your IBM Cognos Analytics reports.

Do the following steps:

If you migrated to 8.3

- Import the OpenPages Platform V6 package
- Import the **OpenPages Solutions V6** package. For more information, see <u>"Importing the solutions</u> report package" on page 55.
- If you want to use custom reports from your source environment, import them into your 8.3 environment. For more information, see <u>Moving your content with a deployment archive</u> in the Cognos documentation. Next, update any CrossTrack links in the reports.
- Update CrossTrack links in the solutions V6 reports, platform V6 reports, and any custom reports.

If you upgraded to 8.3

- Import the **OpenPages Solutions V6** package. For more information, see <u>"Importing the solutions</u> report package" on page 55.
- Update CrossTrack links in the solutions V6 reports, platform V6 reports, and any custom reports.

Updating CrossTrack links in reports

This release includes updated JavaScript for CrossTrack links in platform and solution reports.

Update the reports that you want to continue using in 8.3:

- Update the reports in the **OpenPages Platform v6** folder to use the updated JavaScript for CrossTrack links. You might be able to use some of the reports in the **OpenPages Platform Reports** folder instead, depending on your schema.
- Update solutions reports with the updated JavaScript. for CrossTrack links.
- If you have custom reports, update them to use the updated JavaScript. for CrossTrack links..

For more information, see the following topics in the IBM OpenPages with Watson Report Author's Guide:

- Adding CrossTrack Links to standalone and parent reports
- Adding CrossTrack Links to drill-through reports

Report folders

After you complete these tasks, you have the following folders in IBM Cognos Analytics:

Team Content > OpenPages Platform Reports

This folder contains the 8.3 platform reports.

• Team Content > OpenPages Platform V6

This folder contains the pre-8.3 platform reports.

• Team Content > OpenPages Solutions V6

This folder contains the pre-8.3 solutions reports.

Updating questionnaire object types (Db2)

Version 8.3 includes enhancements to questionnaires. Update the Questionnaire Template, Section Template, SubSection Template, and Question Template with the new fields and field groups.

About this task

You need to do this task if you upgraded or migrated to 8.3.

Procedure

- 1. Stop the application servers (admin and non-admin), reporting servers (active and standby), and the search server.
- 2. Log on to the IBM OpenPages with Watson database as the database user, for example, openpage.
- 3. Locate the update script on the installation media: /OP_8.3_Main/OP_8.3_Configuration/ Platform/Upgrade/DB2/83_Db2_Post_Install.sql
- 4. Run the 83_Db2_Post_Install.sql script.

a. If you are using Windows, start the Db2 command line processor (CLP).

b. Run the following commands:

\$ db2 connect to <db_name> user <op_db_user> using <op_db_password> \$ db2 -td/ -vf 83_Db2_Post_Install.sql > 83_Db2_Post_Install.log

Table 5. Parameters in the update-storage.sql script (Db2)		
Parameter	Description	
<db_name></db_name>	The name of the OpenPages database instance.	
<op_db_user></op_db_user>	OpenPages user name for accessing the OpenPages database.	
<op_db_password></op_db_password>	The OpenPages password for accessing the OpenPages database.	
	If the password contains special characters, surround the password in quotation marks:	
	• Windows: 'password'	
	• Linux: \'password'\	

5. Verify the changes.

Run the following command:

```
$ db2 "Select a.Name From ASSETTYPES a, ASSETTYPESBUNDLEDEFS ab, BUNDLEDEFS bd Where
a.Assettypeid = ab.Assettypeid And ab.Bundledefid = bd.Bundledefid And bd.Name = 'OPSS-Qtemp-
Config'"
```

Results:

```
NAME
QuestionnaireTemplate
SectionTemplate
SubSectionTemplate
QuestionTemplate
4 record(s) selected.
$
```

6. Restart the application servers (admin and non-admin), reporting servers (active and standby), and the search server.

Enable LDAP after upgrading or migrating

If you used LDAP in your previous version of IBM OpenPages with Watson, you must re-enable LDAP.

For more information, see the IBM OpenPages with Watson Administrator's Guide.

Post-upgrade tasks for solutions

After you upgrade OpenPages, you might need to do some postinstallation tasks to update OpenPages solutions.

- Optional: For the following solutions, you can replace computed fields with calculations:
 - IBM OpenPages Internal Audit Management
 - IBM IBM OpenPages IT Governance

For more information, see <u>"Replacing computed fields with calculations and URL launcher fields" on</u> page 53.

• Back up your solutions reports and then import the solutions report package to update the reports. For more information, see "Importing the solutions report package" on page 55.

Note:

Version 8.3 includes many updates to solutions. These updates are available in fresh installations only. Solutions are not updated when you upgrade because solutions are designed to work with the object model (object types, object relationships, fields, and so on) of a specific version. Since OpenPages is highly configurable, the object model can be changed easily. The upgrade process cannot assume that your existing object model is unchanged and that the changes for the 8.3 solutions can be integrated into your object model.

If you want to update solutions contact your IBM representative or IBM partner to discuss a services engagement.

Replacing computed fields with calculations and URL launcher fields

IBM OpenPages Internal Audit Management and IBM OpenPages IT Governance used computed fields in prior releases. You can update the fields to use GRC calculations and links instead of computed fields. The fields are replaced with new fields that use the same names. This task is optional.

About this task

Note: If you migrated from 8.2.x and you completed this task in your source environment, you do not need to do this task again.

This task makes the following changes to your environment:

- Replaces the following computed fields with calculated fields:
 - Auditable Entity: OPSS-AudEnt: Weighted Risk Score
 - Audit: OPSS-Aud: Actual T&E
 - Audit: OPSS-Aud: Actual Hours
 - Plan: OPSS-Plan: Actual Hours
 - Plan: OPSS-Plan: Actual T&E
- Replaces the following computed fields with URL launcher (Link) fields:
 - Audit: OPSS-Aud: Close Audit
 - Audit: OPSS-Aud: Plans
 - Control Plan: OPSS-RiskEnt: Baselines

- Resource: OPSS-Res: Resource Links
- Adds a primary parent to Preference objects. This updated is required by the Auditable Entity Weighted Risk Score calculation.

If you want to review the changes before you implement them, see the files that are listed in step 1.

Procedure

- 1. Copy the following files from the installation media to the application server. Or, if you run ObjectManager from a remote system, such as your laptop, copy the files to the remote system.
 - IAM_ITG_computed_field_replacement-op-config.xml
 - IAM_computed_field_preference_updates.xls

The files are located in the /OP_<version>_Main/OP_<version>_Configuration/Modules/ IAM_ITG directory.

Note: If you are using the 8.3.0.0 version of this XML file, you need to modify it. The file contains an <objectProfiles> element that needs to be removed before you load the file. The element has been removed from later versions of the file.

2. Open a command line.

If you are using Microsoft Windows, open a command prompt with the Run as Administrator option.

3. Go to the <OP_HOME>/bin directory.

Or, if you're running ObjectManager from a remote system, go to the openpages-toolsclient/bin directory.

4. Run the following command to load the updated fields.

Replace <*loader-file-path*> with the location of the IAM_ITG_computed_field_replacement-opconfig.xml file.

ObjectManager.cmd|sh l c <OpenPages Administrator user> <OpenPages Administrator password> <loader-file-path> IAM_ITG_computed_field_replacement

If you encounter any errors, review the log file, <loader-file-path>/ObjectManager.log.

- 5. Update the display type of the fields that were converted to URL launcher fields.
 - a) Log in to OpenPages as a user with administrative privileges.
 - b) Click 📴 > Solution Configuration > Object Types.
 - c) Click the Audit object type.
 - d) In the OPSS-Aud field, group, update the following fields to use the Link display type:
 - Close Audit
 - Plans
 - e) Repeat these steps for the following fields:
 - Control Plan: OPSS-RiskEnt: Baselines
 - Resource: OPSS-Res: Resource Links
- 6. Use FastMap to load the Preference object changes:
 - a) Click 🕮 > FastMap Import.
 - b) Click Choose File and select the IAM_computed_field_preference_updates.xls file.
 - c) Click **Import data**.
 - d) Review the verification report, and then click **Import data**.

Importing the solutions report package

If you upgraded or migrated, import the solutions reports to update them.

For more information about importing content, see the *IBM Cognos Analytics Administration and Security Guide*.

Procedure

- 1. Back up the following file if it exists: <*COGNOS_HOME*>/deployment/ OpenPages_Solutions_V6.zip.
- 2. Get the latest version of the solutions report package.
 - a) Locate the solutions package file for the database that you are using. The file is located in the following directory:
 - IBM Db2: OP_<version>_Main/OP_<version>_Configuration/Platform/ Upgrade/DB2/OpenPages_Solutions_V6.zip
 - Oracle: OP_<version>_Main/OP_<version>_Configuration/Platform/Upgrade/ Oracle/OpenPages_Solutions_V6.zip
 - b) Copy the OpenPages_Solutions_V6.zip file to the following directory on the Cognos server: <*COGNOS_HOME*>/deployment. Overwrite the existing file.
- 3. From a browser, log on to the IBM Cognos Analytics.

By default, the URL is http://<hostname>:<port>/ibmcognos/bi

Where *<hostname>* is the name of the Cognos server and *<port>* is the Cognos gateway port number (80 by default).

- 4. Click Manage > Administration Console to open the IBM Cognos Administration page.
- 5. Click the Configuration tab and click Content Administration.

Tip: To access this area in IBM Cognos Administration, you must have the required permissions for the **Administration** secured feature.

- 6. On the toolbar, click New Import.
- 7. From the Deployment archive list, select OpenPages_Solutions_Reports.
- 8. Click Next.
- 9. Type a unique name, an optional description, and a screen tip for the deployment archive, select the folder where you want to save it, and then click **Next**.
- 10. In the **Public folders, directory and library content** box, select **OpenPages Solutions Reports**, and then click **Next**.
- 11. On the Specify the general options page, accept the default options and click Next.
- 12. On the Review the summary page, review the settings and click Next.
- 13. On the Select an action page, click Finish.
- 14. Click **Replace the existing entry**, and then click **OK**.
- 15. On the Run with options page, click Run.
- 16. On the **IBM Cognos software** page, click **OK**.
- 17. To view the imported packages and reports, click the **Home** icon, and select the folder where you imported them.

What to do next

Update the reports to use the updated JavaScript . for CrossTrack links.

For more information, see the following topics in the IBM OpenPages with Watson Report Author's Guide:

- Adding CrossTrack Links to standalone and parent reports
- Adding CrossTrack Links to drill-through reports

Updating the reporting schema

Update the reporting schema.

Before you begin

Ensure that no reports, backups, or other jobs are running. Do not run any reports, backups, or other jobs during the schema update process.

About this task

When you update the reporting schema, any custom indexes you previously defined are automatically re-created by using the latest definition that is found in the appropriate registry entry. This capability is enabled by default, but it can be disabled. For more information about the settings for creating indexes, see the *IBM OpenPages with Watson Administrator's Guide*.

Procedure

- 1. Log in to OpenPages as a user with administrative privileges.
- 2. Click 📴 > Enable System Admin Mode.
- 3. Click 🔯 > System Configuration > Reporting Schema.
- 4. Click Update.
- 5. Click **Refresh** until the process is 100% complete.
- 6. Disable SAM. Click 🕮 > Disable System Admin Mode.

Regenerating the reporting framework

After you upgrade IBM OpenPages with Watson, you might need to regenerate the reporting framework.

Version 8.3 adds a number of new system fields and object types. If you plan to use the new capabilities and want to be able to access the new fields and object types in reports, regenerate the reporting framework.

You also need to regenerate the reporting framework if any of the following cases applies to you:

- You use more than one URL to access OpenPages. When you regenerate the framework, select **Framework Model**, **Custom Query Subjects**, and **All Models**.
- You added new fields and you want to use the new fields in reports.

Regenerate the reporting framework after you complete all other installation and upgrade tasks.

For more information, see the IBM OpenPages with Watson Administrator's Guide.

Upgrading Detail Views to Admin Views

When you upgrade or migrate from an earlier version of OpenPages to version 8.3, you can upgrade your Detail Views to Admin Views.

For more information about Admin Views, see the *Admin Views* topic in the *IBM OpenPages with Watson Administrator's Guide*.

Procedure

- 1. Click 🔯 > Solution Configuration > Views.
- 2. Click **Generate Admin views**. A dialog box is displayed that explains how to use the feature. Follow the instructions in the dialog box to upgrade your Detail Views.



Figure 2. The Generate Admin views dialog box

Using custom Creation views with the Loss Event Entry application

In releases before OpenPages 8.3, the selection and order of the fields in the Loss Event Entry application was controlled by the Creation views that were specified in the Loss Event Entry Configuration tool. In OpenPages 8.3, views are now chosen by using view rules and priorities rather than using views that are specified explicitly. The out-of-the-box Creation views are SysView-New-LossEvent-LEE, SysView-New-LossImpact-LEE and SysView-New-LossRecovery-LEE. They all have view rules that make them apply only to users that use the Loss Event Entry profile. These views were created based on the previous versions of the out-of-the-box Creation views.

If you had customized the Creation Views used for the Loss Event Entry application, you can re-create your custom views by copying the existing views and then applying your customizations to the copies. Ensure that you use a view rule so that the view you create only applies to the Loss Event Entry profile.

Configure new features

Review the following list of changes and new features.

Application permissions

Review the following application permissions. Add them to your role templates to give users access to the features and functionality.

Table 6. Application permissions added or changed in 8.3		
Feature	Application permissions	
View application logs by using the 🔯 > Other > Logs menu item.	All Permissions > SOX > Administration > Logs	

Table 6. Application permissions added or changed in 8.3 (continued)		
Feature	Application permissions	
Configure classifiers by using the 📴 > Integrations > Mapping and Taxonomy Suggestions menu item.	All Permissions > SOX > Administration > Watson Mapping and Taxonomy Suggestions	
View background processes by using the 🔯 > Other > Background Processes menu item.	The All Permissions > API > Administration > Background Process > Get Process Info application permission now also gives access to the Background Processes menu item	
Publish reports to IBM Cognos Analytics and manage report pages and templates.	All Permissions > Publishing	

Custom triggers and helpers

If you use /OpenPages/Solutions/PCM/Attestation/Email Sender Name or /OpenPages/ Solutions/PCM/Attestation/Email Sender Address in any of your custom code, these settings will be removed in a future release. To ensure your code continues to work, perform the following steps:

- Modify your code by replacing /OpenPages/Solutions/PCM/Attestation/Email Sender Name with /Applications/Common/Email/Mail From Name and /OpenPages/ Solutions/PCM/Attestation/Email Sender Address with /Applications/Common/ Email/Mail From Address.
- 2. Ensure that /Applications/Common/Email/Mail From Name and /Applications/Common/ Email/Mail From Address are set correctly for email notifications.

If you have custom triggers, if they use the from.address attribute and that attribute is empty or has a value of donotreply@openpages.com, the value is replaced by the value in the registry setting / Applications/Common/Email/Mail From Address.

Additional tasks for upgrades

You might want to complete additional tasks for an OpenPages upgrade.

Performing a silent upgrade

You can upgrade from the command line.

Before you begin

Complete the following preparation tasks:

- "Review new features and fixes" on page 11
- "Backing up your environment" on page 11
- "Upgrade prerequisite software " on page 14
- "Verifying servers before you upgrade" on page 26
- "Upgrade the OpenPages database (Db2)" on page 29
- "Preparing the installation server" on page 37
- If you installed the agent software on remote servers manually, ensure that the agent software is updated and that the agents are running.

Procedure

1. Log on to the installation server computer as the user who installed the installation server.

Alternatively, you can log in as any user who has full permissions on the installation server directories and who can run Node.js.

- 2. Go to the <Installation_server_home>/src/deployment/<deployment name> directory.
- 3. Edit the deploy.properties file.
 - a) Change the value of the task property to upgrade.
 - b) Change the value of the maintenance_version property to 8.3.
 - c) Update the value of the install_db property. Set it to done.

For more information, see the IBM OpenPages with Watson Installation and Deployment Guide.

- d) Save and close the file.
- 4. Run the silent installation from the command line.
 - a) Open a command prompt or open a shell window as an administrator.
 - b) Go to the <Installation_server_home> directory.
 - c) Run the following command:

npm run silent <deployment name> acceptLicense

Note: Do not close the command prompt or shell window until after the process completes.

5. Check the logs to ensure that the installation is successful.

Rolling back an upgrade

If you backed up your environment before you upgraded, you can roll back the upgrade.

Before you begin

To roll back an upgrade, you need the following backup files:

- The backup directories that you created before you upgraded.
- The backup of the openpages-storage directory that you created before you upgraded.
- The database backup that you created before you upgraded.
- Any other backup files that you created before the upgrade, such as custom reports, JSPs, and so on.
- If you upgraded from 8.1 or earlier, you did not uninstall IBM WebSphere Application Server Network Deployment,

You also need the versions of the supporting software, such as IBM Cognos Analytics, that you used prior to the upgrade.

About this task

The following procedure applies to in-place upgrades, not migration upgrades.

In these steps, the backup directories use the name OpenPages8001Backup. Specify the name that you chose when you created the backup directories.

Procedure

1. Stop all servers:

- OpenPages application servers (admin and non-admin)
- IBM Cognos servers (active and standby)
- OpenPages search server

For more information, see the IBM OpenPages with Watson Installation and Deployment Guide.

- 2. For application servers:
 - a) If you are using Microsoft Windows, delete the Windows services for OpenPages 8.3.
 - b) If you are using vertical cluster members, run the following command on each of them:

sc delete <server name>

- c) Restore the backup directories that were created before the upgrade.
- 3. For the database server:
 - a. If the database software was upgraded, reinstate the previous database software version.
 - b. Restore the database using the database backup that was created before the database upgrade.
- 4. For all other servers, restore the backup directories that were created before the upgrade.

After all servers are restored and all third-party products are at the versions required by the previous OpenPages deployment, the previous OpenPages deployment works without further actions.

- 5. Restore the backup of the openpages-storage directory that you created before the upgrade.
- 6. Restore any other backup files that you created before the upgrade, such as custom reports, JSPs, and so on.
- 7. Start all servers:
 - OpenPages application servers
 - IBM Cognos servers
 - OpenPages search server

For more information, see the IBM OpenPages with Watson Installation and Deployment Guide.

Manually loading the configuration data for an upgrade

When you upgrade IBM OpenPages with Watson to version 8.3, IBM OpenPages with Watson automatically loads the application data and enables user access to the standard IBM Cognos Analytics reports. In limited situations, you can manually upgrade the loader configuration data.

Before you begin

IBM OpenPages with Watson must be installed.

The OpenPages services must be running.

About this task

If the upgrade loader files that are executed during the upgrade have errors, you can correct the issues that caused the errors and then run the upgrade loader files manually.

Procedure

- 1. Log on to the OpenPages admin application server as a user with administrative privileges.
- Go to the <OP_HOME>/installer/maintenance/upgrade-8.3/addon_module/loaderdata directory.
- 3. Make a backup copy of the schema_loader_properties.sh|.bat file.
- 4. Open the original schema_loader_properties file in a text editor.
- 5. In the following line, update the password for the OpenPages Super Administrator to clear text.

SET OPXUserName=<Super_Administrator_user_name>
SET OPXUserPassword=********

The default user name is OpenPagesAdministrator.

The password for the OPXUserName user is masked by asterisks (***). Replace the mask with clear text.

- 6. Save and close the file.
- 7. Go to the <OP_HOME>/bin directory.
- 8. Edit the ObjectManager.properties file and update the following settings as shown:

```
configuration.manager.vendor.mode=true
configuration.manager.force.update.object.strings=false
configuration.manager.force.update.application.strings=false
configuration.manager.disable.triggers=true
```

- 9. Save and close the file.
- 10. Depending on your upgrade path, run the scripts in the order that is listed:

Upgrade path	Windows files to run
7.4 or 8.0.0.1 to 8.3	 openpages-op800x-to-8100-loader-data.bat openpages-op810x-to-8200-loader-data.bat openpages-op820x-to-8300-loader-data.bat op-sysviews-loader.bat op-sampleWorkflows-upgrade-loader.bat
8.0.0.2 or a later 8.0.0.x fix pack to 8.3	 openpages-op800x-to-8100-loader-data.bat openpages-op810x-to-8200-loader-data.bat openpages-op820x-to-8300-loader-data.bat op-sysviews-loader.bat
8.1.x to 8.3	 openpages-op810x-to-8200-loader-data.bat openpages-op820x-to-8300-loader-data.bat op-sysviews-loader.bat
8.2.x to 8.3	openpages-op820x-to-8300-loader-data.batop-sysviews-loader.bat

Upgrade path	Linux files to run
7.4 or 8.0.0.1 to 8.3	 openpages-op800x-to-8100-loader-data.sh openpages-op810x-to-8200-loader-data.sh openpages-op820x-to-8300-loader-data.sh op-sysviews-loader.sh op-sampleWorkflows-upgrade-loader.sh
8.0.0.2 or a later 8.0.0.x fix pack to 8.3	 openpages-op800x-to-8100-loader-data.sh openpages-op810x-to-8200-loader-data.sh openpages-op820x-to-8300-loader-data.sh op-sysviews-loader.sh
8.1.x to 8.3	 openpages-op810x-to-8200-loader-data.sh openpages-op820x-to-8300-loader-data.sh op-sysviews-loader.sh

Upgrade path	Linux files to run
8.2.x to 8.3	openpages-op820x-to-8300-loader-data.shop-sysviews-loader.sh

- 11. Go to the *<OP_HOME>*/bin directory.
- 12. Edit the ObjectManager.properties file and update the following settings as shown:

configuration.manager.vendor.mode=false
configuration.manager.disable.triggers=false

- 13. Save and close the file.
- 14. Go to the <OP_HOME>/installer/maintenance/upgrade-8.3/addon_module/loaderdata directory.
- 15. Open the schema_loader_properties file in a text editor.
- 16. In the following line, hide the clear text password for the OpenPages Super Administrator by changing it to asterisks (***).

SET OPXUserPassword=******

- 17. Save and close the file.
- 18. Restart the OpenPages services.
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