

IBM MobileFirst Platform Foundation for iOS V7.1.0

*Upgrading MobileFirst Server from
V5.0.6 to V7.1.0*



Note

Before you use this information and the product it supports, read the information in “Notices” on page A-1.

IBM MobileFirst Platform Foundation for iOS V7.1.0

This edition applies to version V7.1.0 of IBM MobileFirst Platform Foundation for iOS and to all subsequent releases and modifications until otherwise indicated in new editions.

This edition was updated last on 2 February 2016.

© **Copyright IBM Corporation 2015, 2016.**

US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

Contents

Upgrading MobileFirst Server from V5.0.6 to V7.1.0 1-1

Running IBM Installation Manager . . . 2-1
Running Installation Manager in graphical mode 2-1
Running Installation Manager in command-line mode 2-2

Updating the application server and the databases 3-1
Installing MobileFirst Server Administration Service, MobileFirst Operations Console, and MobileFirst runtime environment 3-2
 Upgrading the databases. 3-2

Installing the MobileFirst Server Administration Service, MobileFirst Operations Console, and upgrading the MobileFirst runtime environment . 3-8
Upgrading Application Center 3-14
Installing MobileFirst Operational Analytics 3-16

Support and comments 4-1

Notices A-1
Trademarks A-3
Terms and conditions for product documentation A-3
IBM Online Privacy Statement A-4

Index X-1

Upgrading MobileFirst Server from V5.0.6 to V7.1.0

The installation of IBM MobileFirst™ Platform Foundation for iOS V7.1.0 is different from the installation of IBM® Worklight® V5.0.6. The key difference is that the functions of the Worklight project WAR file are split into three WAR files:

MobileFirst Server Administration Service WAR file

The Administration Service handles the management operations such as uploading a new version of an adapter or an app (.wlapp), and changing the active status of an application.

MobileFirst Operations Console WAR file

The console WAR file provides a web graphical interface to the Administration Service. The Administration Service also offers a REST API, and can be controlled with **wladm** command.

MobileFirst runtime WAR file

The runtime WAR file (also called the project WAR file) handles the communication with the mobile apps.

The first two WAR files (the MobileFirst Server Administration Service and MobileFirst Operations Console) are secured by using security roles in the application server.

The data that is stored in the database is also different between the two versions. There is a new set of database tables for the Administration Service. These tables contain some of the data that is stored in the Worklight table in V5.0.6. The data that is related to the push notification is also modified. The upgrade scripts are available to convert the existing data to the new data model for the push notification.

The new architecture requires that an Administration Service WAR file is installed in each server where a runtime WAR file is installed. Also, all servers of a cluster are symmetric, that is they must contain the same runtime WAR file. The servers of a cluster must be federated as a server farm so that any administration change, such as uploading a new version of an adapter, is reflected to all the servers of the runtime environment. On WebSphere® Application Server Network Deployment, however, you can use non-symmetric deployment and it is not needed to federate the servers as a farm. For more information about the supported topologies, see Planning deployment of administration components and runtimes.

The WebSphere Application Server Liberty profile is no longer embedded in the MobileFirst installer. If you use Liberty profile, you can install this application server with its own installer. The installer is provided together with IBM MobileFirst Platform Foundation for iOS electronic assembly.

In addition to these changes in the databases and the components of V7.1.0, you might consider the following differences:

Product renaming

The product is renamed from IBM Worklight to IBM MobileFirst Platform Foundation for iOS in V6.3.0.

Installation changes

V7.1.0 installer no longer deploys MobileFirst components to an

application server. You do that in a second step, either with a graphical tool such as the Server Configuration Tool, with Ant tasks (command-line), or manually.

Changes in deployment scripts

The scripts to deploy adapters or the application in command-line are different. Your deployment scripts need to be updated.

Removed environments

The following environments for hybrid applications are not supported in V7.1.0: Apple OS X Dashboard, Facebook, Google, Windows Phone 7.5, Windows 7, Vista.

Session-independent mode by default

New applications that are developed with V7.1.0 are session-independent by default. This choice can be overridden. For more information, see Session-independent mode.

- This difference might have impact on:
 - Your network infrastructure and the settings of your load balancers.
 - The ability to auto-scale a cluster or server farm. For session-independent applications, you can stop a server without visible impact for the users.
 - Your maintenance procedures. It is no longer true to assume that a cluster that has some servers that are upgraded and other not upgraded to a new configuration or fix pack level, has no impact on existing sessions.

WorklightReports database is deprecated

If you rely on this database for application monitoring, consider installing MobileFirst Operational Analytics. For more information, see Installing the IBM MobileFirst Platform Operational Analytics..

Support for token licensing

Token licensing is introduced in V7.1.0.

- If you have a contract that defines the use of token-based licensing for the product, activate token licensing at upgrade time and configure your application for token licensing.
- If you do not have a contract that defines the use of token-based licensing, do not activate token licensing at upgrade time. With token licensing activated, MobileFirst Server does not start unless it is configured to retrieve tokens from a Rational[®] License Key Server and obtains enough tokens to run.

New network flow

The Administration Service and the runtime environment communicate via JMX inside a server and also between the servers of a WebSphere Application Server Network Deployment cluster or farm (for Apache Tomcat, WebSphere Application Server Liberty profile, or WebSphere Application Server stand-alone). The communication uses the following protocol, depending on the application server:

- SOAP for WebSphere Application Server and WebSphere Application Server Network Deployment
- RMI for Apache Tomcat
- HTTPS for WebSphere Application Server Liberty.

Note: In a Liberty farm, the HTTPS certificate of each server needs to be embedded in its truststore.

The Administration Service and the runtime environment communicate via HTTP (or HTTPS) to serve large artifacts. The connection is opened by the Administration service. If this communication needs to go through a reverse proxy in your data center, you need to perform some configurations after the applications are installed. For more information, see Defining the endpoint of the MobileFirst Administration services.

New startup behavior

At startup, the runtime environment communicates with the Administration Service to get the list of applications and adapters to serve. This operation is called the runtime synchronization. If the operation fails, the runtime environment will not accept queries from the mobile devices. To troubleshoot these startup issues, the trace settings must be activated for the applications at startup.

To upgrade from V5.0.6 to V7.1.0, you uninstall V5.0.6, run IBM Installation Manager, convert your data in the databases to V7.1.0 format, and then install V7.1.0. The high-level procedure is as follows:

1. Prepare a rollback plan. You might want to make a backup of the database before you run the database migration scripts.

Note: Some operations that are run in the migration scripts cannot be undone.

2. If you have applications for Apple OS X Dashboard, Facebook, Google, Windows Phone 7.5, Windows 7, or Vista, prepare a replacement plan. These environments are not supported after you migrate to V7.1.0.
3. Uninstall V5.0.6.
4. If you use Liberty profile that is embedded with V5.0.6, make a new installation of the application server with the installer that is provided in the electronic assembly for V7.1.0.
5. Run IBM Installation Manager.
6. Migrate the database content.
7. Install and configure the MobileFirst Server Administration Service and MobileFirst Operations Console.
8. Migrate the V5.0.6 project WAR File (so that it is compatible with V7.1.0) and deploy it to all servers.
9. Install MobileFirst Operational Analytics on a server other than the one that runs the Administration Service and the runtime environment.
10. Restart the application servers
11. Verify that the installation runs correctly and that the connection between the farm members works well.
12. After the migration is completed, the mobile devices that run your applications can continue to use them. However, to deploy apps or adapters that are developed with V7.1.0, you need to deploy a new Project WAR File. For more information, see Version compatibility.

Running IBM Installation Manager

Before you begin

Prepare a rollback plan. You might want to make a backup of the database before you run the database migration scripts as some operations that are run in the migration scripts cannot be undone.

If you have applications for Apple OS X Dashboard, Facebook, Google, Windows Phone 7.5, Windows 7, or Vista, prepare a replacement plan. These environments are not supported after you migrate to V7.1.0.

Uninstall V5.0.6 with Installation Manager.

If you use Liberty profile that is embedded with V5.0.6, make a new installation of the application server with the installer that is provided in the electronic assembly for V7.1.0.

About this task

First, run Installation Manager to install the binary files of IBM MobileFirst Platform Foundation for iOS on your disk to V7.1.0. Then, update the MobileFirst Server components on your application server by following the steps that are described in “Updating the application server and the databases” on page 3-1.

Installation Manager can be run in two ways: by graphical user interface (GUI), or by command-line. The effect of running Installation Manager to upgrade to V7.1.0 depends on the choice that you made at the initial installation.

The product is renamed from IBM Worklight to IBM MobileFirst Platform Foundation for iOS in V6.3.0.

Running Installation Manager in graphical mode

Procedure

1. Run Installation Manager from the user account that is used at the initial installation.

To apply an update, Installation Manager must run with the same list of registry files that are used at the initial installation. The list of Software that is installed and the options that are used during the installation time are stored in those registry files. If you run Installation Manager in administrator mode, the registry files are installed at the system level. In /var folder on UNIX or Linux. In c:\ProgramData folder on Windows. The location is independent from the user who runs Installation Manager (although root is needed on UNIX and Linux). However, if you run Installation Manager in single user mode, the registry files are stored by default in the user's home directory.

2. Select **File > Preferences**.

Enter the repository of IBM MobileFirst Platform Foundation for iOS V7.1.0 and also the repository of the fix pack if you plan to upgrade to a fix pack or interim fix. The fix packs are delivered as delta installers and cannot be installed if the base version is not among the listed repositories.

If you decompress the base installer in *710_installer_directory* folder, the repository file to enter is *710_installer_directory/MobileFirst_Platform_Server/disk1/diskTag.inf*. If you decompress the interim fix file in *ifix_directory* folder, the repository file to enter is *ifix_directory/MobileFirst_Platform_Server/disk1/diskTag.inf*.

3. After the repositories are entered, click **OK** to close the **Preferences** display.
4. Click **Install**. After you accept the license terms of IBM MobileFirst Platform Foundation for iOS V7.1.0, Installation Manager displays a list of packages that are already installed and can be upgraded. The package of Worklight V5.0.6 might be displayed if you still have the installation.

Note: Do not select such a package. Otherwise Installation Manager would uninstall that package and reinstall V7.1.0.

5. Select the Create a New package group option and install V7.1.0 in that new package group.
6. Click **Next**. You must determine whether you need to activate token licensing or not. Token Licensing is a new feature that is introduced in V7.1.0.
 - If you do not have a contract to use token licensing with the Rational License Key Server, click **Do not activate token licensing**.
 - If you activate token licensing, make sure that the Rational License Key Server is configured, and enough tokens can be obtained to run MobileFirst Server and the applications it serves. Otherwise, the MobileFirst Server administration application and the runtime environments cannot be run.
7. In the **Configuration Choice** panel, select **No** to the Install IBM MobileFirst Application Center option. If you plan to use Application Center, install it with Ant tasks. Installing Application Center with Ant tasks, instead of Installation Manager, enables you to decouple updates to the server from updates to the Application Center.
8. Click **Next** until you reach the **Thank You** panel and then proceed with the installation of V7.1.0.

What to do next

“Updating the application server and the databases” on page 3-1

Running Installation Manager in command-line mode

Procedure

1. For a silent installation, use the `install-no-appcenter.xml` file that is listed in Working with sample response files for IBM Installation Manager.
2. Make a copy of the file you selected.
3. Open the copied XML file with a text editor or XML editor. Modify the following elements:
 - a. The repository element that defines the repository list.

Create a repository entry for the repository of IBM MobileFirst Platform Foundation for iOS V7.1.0 and also the repository of the fix pack that you plan to upgrade. The fix packs are delivered as delta installers and cannot be installed if the base version is not among the listed repositories.

If you decompress the base installer in *710_installer_directory* folder, the repository file to enter is *710_installer_directory/MobileFirst_Platform_Server/disk1/diskTag.inf*. If you decompress the

interim fix file in *ifix_directory* folder, the repository file to enter is *ifix_directory/MobileFirst_Platform_Server/disk1/diskTag.inf*.

- b. Uncomment the line `<data key='user.licensed.by.tokens' value='false'/>`. Set the value to true if you have a contract to use token licensing with the Rational License Key Server. Otherwise, set the value to false.

If you activate token licensing, make sure that the Rational License Key Server is configured, and enough tokens can be obtained to run MobileFirst Server and the applications it serves. Otherwise, the MobileFirst Server administration application and the runtime environment cannot be run.

Restriction: After the decision is made to activate token licensing or not, it cannot be modified. If you run an upgrade with the value true, and later another upgrade with the value false, the second upgrade fails.

- c. Review the profile identity and the installation location. Make sure that the profile identity and the installation location do not collide with another installation on your computer.

- This line: `<profile id='IBM MobileFirst Platform Server' installLocation='/opt/IBM/MobileFirst_Platform_Server'>`
- And this line: `<offering id='com.ibm.mobilefirst.foundation.server' version='7.1.0.00-20150913-2345' profile='IBM MobileFirst Platform Server' features='main.feature' installFixes='none' />`
- To review the profile identity and the installation directories that are known to Installation Manager, you can type the command:

```
installation_manager_path/eclipse/tools/imcl listInstallationDirectories -verbose
```

4. Open a session with the user account that is used at the initial installation.

To apply an update, Installation Manager must run with the same list of registry files that are used at the initial installation. The list of Software that is installed and the options that are used during the installation time are stored in those registry files. If you run Installation Manager in administrator mode, the registry files are installed at the system level. In /var folder on UNIX or Linux. In c:\ProgramData folder on Windows. The location is independent from the user who runs Installation Manager (although root is needed on UNIX and Linux). However, if you run Installation Manager in single user mode, the registry files are stored by default in the user's home directory.

5. Run the command `installation_manager_path/eclipse/tools/imcl input <responseFile> -log /tmp/installwl.log -acceptLicense`

Where

- `<responseFile>` is the XML file that you edit in 3 on page 2-2.
- `-log /tmp/installwl.log` is optional. It specifies a log file for the output of Installation Manager.
- `-acceptLicense` is mandatory. It means that you accept the license terms of IBM MobileFirst Platform Foundation for iOS V7.1.0. Without that option, Installation Manager cannot proceed with the update.

What to do next

“Updating the application server and the databases” on page 3-1

Updating the application server and the databases

About this task

IBM MobileFirst Platform Foundation for iOS provides several components that you might have installed. Here is a description of their dependencies to update them:

MobileFirst Server Administration Service, MobileFirst Operations Console, and MobileFirst runtime environment

These three components compose as MobileFirst Server and replace the unique V5.0.6 project WAR file. Make sure that you install and configure the Administration Service and MobileFirst Operations Console with a topology that is supported in the list at Planning deployment of administration components and runtimes.

Although the runtime environment is provided by your development team and built with MobileFirst Platform Command Line Interface for iOS (CLI), it is not necessary to recompile the project and applications with CLI V7.1.0 when you upgrade your server to V7.1.0. It is possible to separate these lifecycles. However, you need to migrate the project WAR file to make it compatible with V7.1.0. The following instructions include the step to migrate the project WAR file so that it is binary compatible with V7.1.0.

You can continue to upload the applications and adapters that are built with V5.0.6 to that runtime environment after you migrate the server to V7.1.0. However, do not upload the applications and adapters that are built with V7.1.0. For more information, see [Version compatibility](#).

To deploy the applications that are built with V7.1.0, you have the following two choices.

- Add a MobileFirst runtime environment with its own database. Do not share the database between different runtimes.
- Replace the deployed runtime environment by a runtime environment that is built with V7.1.0, at the condition that its configuration is compatible with the applications that are built with V5.0.6. For example, a session-independent configuration would not be compatible with the applications that are developed with V5.0.6. For V7.0.0 or earlier, the runtime application is configured for session-dependent mode by default.

Application Center

The installation of this component is optional. This component is independent of the other components. It can be run at a different interim fix level than the others if needed.

MobileFirst Operational Analytics

The installation of this component is optional. The MobileFirst components send data to MobileFirst Operational Analytics via a REST API.

Installing MobileFirst Server Administration Service, MobileFirst Operations Console, and MobileFirst runtime environment

About this task

You can update these components in two ways:

- With the Server Configuration Tool
- With Ant tasks
- Manually

Important:

- Upgrade the database by a database administrator:

In some cases, you might want to upgrade the databases manually. For example, to set some non-default properties to the new tables created. When you run an upgrade with Server Configuration Tool, it looks at the value in the tables (such as `WORKLIGHT_VERSION` for a runtime database) and detects that the tables are already upgraded to V7.1.0. Thus, the tool would not attempt to upgrade them. When you use Ant tasks, do not run the database and `admdatabases` targets if the databases are already updated manually. If you do run them, the Ant tasks would detect that the schema is in V7.1.0.
- WebSphere Application Server specifics:
 - The user that runs the upgrade needs to have at least the privileges of a Configurator role to install new application. In some cases if a user needs to be created, or the application security needs to be activated, an Administrator role is required.
 - The order of operations is important. Make sure that you follow the sequence that is described in the following sections to update the MobileFirst Server Administration component first. Then, the runtime environments. If the runtime environments fail to synchronize with the MobileFirst Server Administration (such as JMX binary incompatibility that is introduced in the fix pack), they would fail to start.
 - If your application server is WebSphere Application Server V7.0, you must add the configuration property `com.ibm.ws.webcontainer.invokerequestlistenerforfilter = true`. For more information about how to add this property, see *Configuring WebSphere Application Server V7.0*. This setting is required for the runtime environment (the Project WAR File) in V7.1.0.
- All application servers must be stopped. All procedures in the following tasks assume that the application servers running the Worklight applications are stopped until the upgrade of all components is complete.

Upgrading the databases

About this task

This task is optional if you upgrade with the Server Configuration Tool. The upgrade of the database does the following things:

1. Create a set of new tables for the Administration Service.
2. Copy some of the data in the Worklight runtime database to the Administration Service database. The data is related to the artifacts (such as the apps and the adapters) that you can manage from MobileFirst Operations Console.

3. Upgrade the content of the Worklight runtime database to V7.1.0. This operation includes removing the data that is transferred to the Administration database, and converting the data that is related to the push notification to a new data model.

Important: Back up the databases for the Worklight runtime environment. The migration scripts delete some data in your database and the operation cannot be undone. If you decide to roll back the upgrade of MobileFirst Server, you need this backup.

Upgrading the databases with Ant tasks

Run the `admdatabases` target to create the `WorklightAdmin`. Then, run the `databases` target to migrate and upgrade the Worklight database.

Before you begin

You need the following privileges to run the Ant tasks:

- CREATE INDEX, CREATE SEQUENCE, CREATE TABLE, CREATE VIEW, REPLACE VIEW, SELECT, DELETE, INSERT, UPDATE, MERGE, DROP VIEW, DROP TABLE, DROP INDEX, DROP SEQUENCE, and ALTER TABLE

The upgrade scripts not only modify the table structure, but also run a data conversion for the push data. You need the privileges such as CREATE VIEW and DROP VIEW that are not required in previous upgrade path. If the DB user is not created by the installation of V6.1.0 or earlier, or it is modified since the creation, verify that you have enough privileges to run the scripts.

Procedure

1. Create an Ant file from the model of the configuration samples that are provided in `product_install_dir/WorklightServer/configuration-samples` folder.

If you plan to create the tables in a database that exists and also use an existing user, use the file that is named as `configure-<appserver>-<dbtype>.xml`.

If you plan to create tables in a database that does not exist, or with a user that does not exist, use the file that is named as `create-database-<dbtype>.xml`.

These files require database administrator credentials to run the operations to create tables and user. When you run the `admdatabases` target, the Ant tasks might need to open an ssh session to the server that runs the database.

You can also find the `redeploy506-<appserver>-<dbtype>.xml` files in `product_install_dir/WorklightServer/configuration-samples` folder. These files are similar to the `configure-<appserver>-<dbtype>.xml` files except that they contain some database values that are set by the installer for V5.0.6. You can use these files if the database settings are not modified after V5.0.6 is installed.

Note: Make sure that you verify the parameters you use are the same as the one you use at the initial installation time. Verify the parameter details such as the server name, the cluster name, the database, the users, and the schemas. If the database parameters are different than the ones that are used at the initial installation, the Ant task might create new empty tables instead of upgrading the tables to the new format. If the application servers parameters are not the same as the ones that used at the initial installation, the Ant task might fail to update the application.

2. Run the `admdatabases` target to create the `WorklightAdmin` database and tables. For example,

```
product_install_dir/shortcuts/ant -f your_ant_file.xml admdatabases
```

3. Run the databases target to migrate and upgrade the Worklight databases. For example,

```
product_install_dir/shortcuts/ant -f your_ant_file.xml databases
```

The target migrates the administration-related content of the Worklight database to the Administration Service database. Then, it deletes the migrated content, converts the data that is related to push notification to the new data structure, and upgrades the tables to the V7.1.0 schema.

Note: You need to run this step 3 on each runtime environment if you have more than one runtime environment.

4. If you use push notification, you must complete some additional manual configuration.

This task requires the use of a database account that can modify the content of the runtime database. It also requires basic knowledge to run SQL scripts on the database. For DB2®, you need to know how to run the DB2 command line processor or the command line program. For Oracle, make sure that you know how to run SQLPlus. This task is only needed for Oracle or DB2. It is not needed for MySQL.

DB2

- a. Change *SCHEMANAME* instances to actual names.
- b. Replace X and Y values based on the given description.

```
SELECT MAX(ID) FROM SCHEMANAME.PUSH_DEVICES;  
SELECT MAX(ID) FROM SCHEMANAME.PUSH_SUBSCRIPTIONS;
```

```
--Value of X = Result of the selected query of PUSH_DEVICES + 1. For example, if SELECT MAX(ID) FROM  
--SCHEMANAME.PUSH_DEVICES returns 100, then X = 101;  
--Value of Y = Result of the selected query of PUSH_SUBSCRIPTIONS + 1. For example, if SELECT MAX(ID) FROM  
--SCHEMANAME.PUSH_SUBSCRIPTIONS returns 100, then Y = 101;
```

```
ALTER SEQUENCE SCHEMANAME.PUSHDEVICE_SEQ RESTART WITH X ;  
ALTER SEQUENCE SCHEMANAME.PUSHSUBSCRIPTION_SEQ RESTART WITH Y ;
```

```
VALUES NEXT VALUE FOR SCHEMANAME.PUSHDEVICE_SEQ;  
VALUES NEXT VALUE FOR SCHEMANAME.PUSHSUBSCRIPTION_SEQ;
```

Oracle

- a. Change *SCHEMANAME* instances to actual names.
- b. Replace X and Y values (based on the given description) while running the query.

```
SELECT MAX(ID) FROM SCHEMANAME.PUSH_DEVICES;  
SELECT MAX(ID) FROM SCHEMANAME.PUSH_SUBSCRIPTIONS;
```

```
SELECT LAST_NUMBER FROM ALL_SEQUENCES WHERE SEQUENCE_NAME='PUSHDEVICE_SEQ';  
SELECT LAST_NUMBER FROM ALL_SEQUENCES WHERE SEQUENCE_NAME='PUSHSUBSCRIPTION_SEQ';
```

```
--Take note of the resulting value of each query above to use in the following X and Y calculations
```

```
--Value of X = (MAX(ID) OF PUSH_DEVICES - LAST_NUMBER OF PUSHDEVICE_SEQ) + 20. For example, if SELECT MAX(ID) FROM  
--SCHEMANAME.PUSH_DEVICES returned 100 and SELECT LAST_NUMBER FROM ALL_SEQUENCES  
--(where SEQUENCE_NAME='PUSHDEVICE_SEQ' is 50), then X=100-50+20 = 70
```

```
--Value of Y = (MAX(ID) OF PUSH_SUBSCRIPTIONS - LAST_NUMBER OF PUSHSUBSCRIPTION_SEQ) + 20. For example, if SELECT  
--MAX(ID) FROM SCHEMANAME.PUSH_SUBSCRIPTIONS returned 100, then Y = 101 and SELECT --LAST_NUMBER  
--FROM ALL_SEQUENCES (where SEQUENCE_NAME='PUSHSUBSCRIPTION_SEQ' is 50), then Y=100-50+20 = 70
```

```
ALTER SEQUENCE SCHEMANAME.PUSHDEVICE_SEQ INCREMENT BY X ;  
SELECT SCHEMANAME.PUSHDEVICE_SEQ.NEXTVAL FROM dual;  
ALTER SEQUENCE SCHEMANAME.PUSHDEVICE_SEQ INCREMENT BY 1;
```



```
ALTER SEQUENCE SCHEMANAME.PUSHSUBSCRIPTION_SEQ INCREMENT BY Y ;
SELECT SCHEMANAME.PUSHSUBSCRIPTION_SEQ.NEXTVAL FROM dual;
ALTER SEQUENCE SCHEMANAME.PUSHSUBSCRIPTION_SEQ INCREMENT BY 1;
```

MySQL

No action is required.

Upgrading the databases manually

The upgrade and database creation scripts are in *product_install_dir/WorklightServer/databases*.

Procedure

1. Create the administration database.
 - For DB2, see Setting up your DB2 database manually for the MobileFirst Server administration.
 - For MySQL, see Setting up your MySQL database manually for the MobileFirst Server administration.
 - For Oracle, see Setting up your Oracle database manually for the MobileFirst Server administration.
2. Select the script, depending on your database, to upgrade the Runtime databases.
 - a. Upgrade the database from V5.0.6 to V6.0.0 by using one of the following scripts:
 - upgrade-worklight-506-60-db2.sql
 - upgrade-worklight-506-60-mysql.sql
 - upgrade-worklight-506-60-oracle.sql
 - b. Then, upgrade the database from V6.0.0 to V6.1.0.
 - upgrade-worklight-60-61-db2.sql
 - upgrade-worklight-60-61-mysql.sql
 - upgrade-worklight-60-61-oracle.sql
 - c. Use the data migration tool to migrate the content that is related to the administration from the Worklight Runtime database to the administration database.

When you upgrade from IBM Worklight V6.1.0 or older, before you call the script *WorklightServer/databases/upgrade-worklight-61-62-<dbms>.sql*, run the data migration tool to migrate the administration database to the new administration database. Then, run the SQL scripts from V6.2.0 to the current release to update the WRKLGHT database schema. If you forgot to run the data migration tool before you run the SQL script, *WorklightServer/databases/upgrade-worklight-61-62-<dbms>.sql* is likely to fail, and indicates that the data migration was not run. In that case, the WRKLGHT schema is not updated, or the production data might be corrupted or lost.

The data migration tool is included in the *product_install_dir/WorklightServer/worklight-ant-deployer.jar* file.

Before you run the tool in command-line, make sure that the library *worklight-ant-deployer.jar* of the MobileFirst version that you installed is in your current directory, or that your CLASSPATH variable references the directory it is in. An example on a Unix/Linux machine:

```
# Go to the directory library that worklight-ant-deployer.jar is in
$ cd $product_install_dir/WorklightServer
# Print the usage
$ java -cp worklight-ant-deployer.jar com.ibm.worklight.config.dbmigration.MigrationTool usage
```

Usage:

```
java -cp worklight-ant-deployer.jar com.ibm.worklight.config.dbmigration.MigrationTool [options]
```

Options:

```
-p <project>      The name of the project to create.
-sourceurl        The path to the source database.
-sourceschema     The name of the schema of the source database.
-sourcedriver     The fully qualified driver class name of the source
                 database. This driver must be in the class path.
-sourceuser       The user name of the source database.
-sourcepassword   The password of the source database.
-sourceproperty <key> <value> Adds additional OpenJPA properties to the connection
                 of the source database.
-targeturl        The path to the target database.
-targetschema     The name of the schema of the target database.
-targetdriver     The fully qualified driver class name of the target
                 database. This driver must be in the class path.
-targetuser       The user name of the target database.
-targetpassword   The password of the target database.
-targetproperty <key> <value> Adds additional OpenJPA properties to the connection
                 of the target database.
```

Example with DB2 as DBMS

```
$ java -cp worklight-ant-deployer.jar com.ibm.worklight.config.dbmigration.MigrationTool
-p worklight
-sourceurl jdbc:db2://proddb.example.com:50000/WRKLGHT
-sourceschema WLRT
-sourcedriver com.ibm.db2.jcc.DB2Driver
-sourceuser wuser1
-sourcepassword wuser1_pswd
-targeturl jdbc:db2://proddb.example.com:50000/WLADMIN
-targetschema ADMIN
-targetdriver com.ibm.db2.jcc.DB2Driver
-targetuser wuser2
-targetpassword wuser2_pswd
```

To run the data migration tool, you must add the database drivers to the class path. For example, to migrate a DB2 database, you must add the db2jcc4.jar file and the license JAR file (for example db2jcc_license_cu.jar), to the class path:

```
$ java -cp worklight-ant-deployer.jar:/path/to/db2jcc4.jar:/path/to/db2jcc_license_cu.jar
com.ibm.worklight.config.dbmigration.MigrationTool usage
```

Note:

- The name of the project to create (worklight in the example) must be the context root where the MobileFirst runtime component (project WAR file) is deployed. For example, if the runtime component is deployed in the application server with a context root /worklight, then the project name must be worklight. The applications will be assigned to this project name. When a runtime component starts, it contacts the administration service to get the applications and the adapters it needs to serve. The runtime component uses its project name, computed by removing the initial / from its context root, to indicate which applications it needs. If the project name is not the same as the context root without the initial slash, then the migrated applications and the adapters are not visible by the runtime component.
 - For MySQL databases, the schema options '-sourceschema' and '-targetschema' must be left unspecified. The name of the schema to use will be the name of the database specified in the connection URL.
- d. Upgrade the database from V6.1.0 to V6.2.0.
- upgrade-worklight-61-62-db2.sql

- upgrade-worklight-61-62-mysql.sql
 - upgrade-worklight-61-62-oracle.sql
- e. Upgrade the database from V6.2.0 to V6.3.0.
 - upgrade-worklight-62-63-db2.sql
 - upgrade-worklight-62-63-mysql.sql
 - upgrade-worklight-62-63-oracle.sql
 - f. Upgrade the database from V6.3.0 to V7.0.0.
 - upgrade-worklight-63-70-db2.sql
 - upgrade-worklight-63-70-mysql.sql
 - upgrade-worklight-63-70-oracle.sql
 - g. Lastly, upgrade the database from V7.0.0 to V7.1.0.
 - upgrade-worklight-70-71-db2.sql
 - upgrade-worklight-70-71-mysql.sql
 - upgrade-worklight-70-71-oracle.sql

Note: If several runtime environments (also know as the project WAR files) are installed, you have several instances of that database, one per runtime environment.

3. The reports database is deprecated in V7.1.0. However, if you still plan to use them, select the script, depending on your database, to upgrade the Reports database for the runtime environment.
 - a. Upgrade the database from V6.0.0 to V6.1.0 by using one of the following scripts:
 - upgrade-worklightreports-60-61-db2.sql
 - upgrade-worklightreports-60-61-mysql.sql
 - upgrade-worklightreports-60-61-oracle.sql
 - b. Upgrade the database from V6.1.0 to V6.2.0.
 - upgrade-worklightreports-61-62-db2.sql
 - upgrade-worklightreports-61-62-mysql.sql
 - upgrade-worklightreports-61-62-oracle.sql
 - c. Upgrade the database from V6.2.0 to V6.3.0.
 - upgrade-worklightreports-62-63-db2.sql
 - upgrade-worklightreports-62-63-mysql.sql
 - upgrade-worklightreports-62-63-oracle.sql
 - d. Upgrade the database from V6.3.0 to V7.0.0.
 - upgrade-worklightreports-63-70-db2.sql
 - upgrade-worklightreports-63-70-mysql.sql
 - upgrade-worklightreports-63-70-oracle.sql
 - e. Lastly, upgrade the database from V7.0.0 to V7.1.0.
 - upgrade-worklightreports-70-71-db2.sql
 - upgrade-worklightreports-70-71-mysql.sql
 - upgrade-worklightreports-70-71-oracle.sql

Note: If you are not using the reports feature, do not upgrade the databases. Make sure that your applications do not export data to the reports database by setting the value of the JNDI property (**reports.exportRawData**) to false.

4. If you use push notification, you must complete some additional manual configuration.

DB2

- a. Change *SCHEMANAME* instances to actual names.
- b. Replace X and Y values based on the given description.

```
SELECT MAX(ID) FROM SCHEMANAME.PUSH_DEVICES;  
SELECT MAX(ID) FROM SCHEMANAME.PUSH_SUBSCRIPTIONS;
```

```
--Value of X = Result of the selected query of PUSH_DEVICES + 1. For example, if SELECT MAX(ID) FROM  
--SCHEMANAME.PUSH_DEVICES returns 100, then X = 101;  
--Value of Y = Result of the selected query of PUSH_SUBSCRIPTIONS + 1. For example, if SELECT MAX(ID) FROM  
--SCHEMANAME.PUSH_SUBSCRIPTIONS returns 100, then Y = 101;
```

```
ALTER SEQUENCE SCHEMANAME.PUSHDEVICE_SEQ RESTART WITH X ;  
ALTER SEQUENCE SCHEMANAME.PUSHSUBSCRIPTION_SEQ RESTART WITH Y ;
```

```
VALUES NEXT VALUE FOR SCHEMANAME.PUSHDEVICE_SEQ;  
VALUES NEXT VALUE FOR SCHEMANAME.PUSHSUBSCRIPTION_SEQ;
```

Oracle

- a. Change *SCHEMANAME* instances to actual names.
- b. Replace X and Y values (based on the given description) while running the query.

```
SELECT MAX(ID) FROM SCHEMANAME.PUSH_DEVICES;  
SELECT MAX(ID) FROM SCHEMANAME.PUSH_SUBSCRIPTIONS;
```

```
SELECT LAST_NUMBER FROM ALL_SEQUENCES WHERE SEQUENCE_NAME='PUSHDEVICE_SEQ';  
SELECT LAST_NUMBER FROM ALL_SEQUENCES WHERE SEQUENCE_NAME='PUSHSUBSCRIPTION_SEQ';
```

```
--Take note of the resulting value of each query above to use in the following X and Y calculations
```

```
--Value of X = (MAX(ID) OF PUSH_DEVICES - LAST_NUMBER OF PUSHDEVICE_SEQ) + 20. For example, if SELECT MAX(ID) FROM  
--SCHEMANAME.PUSH_DEVICES returned 100 and SELECT LAST_NUMBER FROM ALL_SEQUENCES  
--(where SEQUENCE_NAME='PUSHDEVICE_SEQ' is 50), then X=100-50+20 = 70
```

```
--Value of Y = (MAX(ID) OF PUSH_SUBSCRIPTIONS - LAST_NUMBER OF PUSHSUBSCRIPTION_SEQ) + 20. For example, if SELECT  
--MAX(ID) FROM SCHEMANAME.PUSH_SUBSCRIPTIONS returned 100, then Y = 101 and SELECT --LAST_NUMBER  
--FROM ALL_SEQUENCES (where SEQUENCE_NAME='PUSHSUBSCRIPTION_SEQ' is 50), then Y=100-50+20 = 70
```

```
ALTER SEQUENCE SCHEMANAME.PUSHDEVICE_SEQ INCREMENT BY X ;  
SELECT SCHEMANAME.PUSHDEVICE_SEQ.NEXTVAL FROM dual;  
ALTER SEQUENCE SCHEMANAME.PUSHDEVICE_SEQ INCREMENT BY 1;
```

```
ALTER SEQUENCE SCHEMANAME.PUSHSUBSCRIPTION_SEQ INCREMENT BY Y ;  
SELECT SCHEMANAME.PUSHSUBSCRIPTION_SEQ.NEXTVAL FROM dual;  
ALTER SEQUENCE SCHEMANAME.PUSHSUBSCRIPTION_SEQ INCREMENT BY 1;
```

MySQL

No action is required.

Installing the MobileFirst Server Administration Service, MobileFirst Operations Console, and upgrading the MobileFirst runtime environment

About this task

The runtime environment that is referred by this procedure is the project WAR file. This WAR file is provided by your development team and built with MobileFirst Platform Command Line Interface for iOS (CLI). It is not necessary to recompile the project and applications with CLI V7.1.0 when you upgrade your server to

V7.1.0. It is possible to separate these lifecycles. However, you need to migrate the project WAR file to make it compatible with V7.1.0. The following instructions include the step to migrate the project WAR file so that it is binary compatible with V7.1.0.

You can continue to upload the applications and adapters that are built with V5.0.6 to that runtime environment after you migrate the server to V7.1.0. However, do not upload the applications and adapters that are built with V7.1.0. For more information, see [Version compatibility](#).

To deploy the applications that are built with V7.1.0, you have the following two choices.

- Add a MobileFirst runtime environment with its own database. Do not share the database between different runtimes.
- Replace the deployed runtime environment by a runtime environment that is built with V7.1.0, at the condition that its configuration is compatible with the applications that are built with V5.0.6. For example, a session-independent configuration would not be compatible with the applications that are developed with V5.0.6. For V7.0.0 or earlier, the runtime application is configured for session-dependent mode by default.

Installing with the Server Configuration Tool

Before you begin

The database user for the WORKLIGHT database needs the following privileges to perform the upgrade:

- CREATE INDEX, CREATE SEQUENCE, CREATE TABLE, CREATE VIEW, REPLACE VIEW, SELECT, DELETE, INSERT, UPDATE, MERGE, DROP VIEW, DROP TABLE, DROP INDEX, DROP SEQUENCE, and ALTER TABLE

The upgrade scripts not only modify the table structure, but also run a data conversion for the push data. You need the privileges such as CREATE VIEW and DROP VIEW that are not required in previous upgrade path. If the DB user is not created by the installation of V6.1.0 or earlier, or it is modified since the creation, verify that you have enough privileges to run the scripts.

About this task

This procedure upgrades the databases as well if it is not manually done before. The Server Configuration Tool looks at the value in the XXX_VERSION table. For example, WORKLIGHT_VERSION for a runtime database.

Important: Back up the databases for the Worklight runtime environments. The migration scripts delete some data in your database and the operation cannot be undone. If you decide to roll back the upgrade of MobileFirst Server, you need this backup.

Procedure

1. Start the Server Configuration Tool from the V7.1.0 product installation.

To verify that the Server Configuration Tool runs the version that you want to upgrade to, open the menu **Help > About the Server Configuration Tool**. A dialog appears with the build number. It must match the version that you install with Installation Manager. For example, make sure that the build number of the Server Configuration Tool is **7.1.0.00.20151005-1721** if V7.1.0 and the interim fix **7.1.0.0-IF201510051721** are installed.

2. Select **File > New Configuration**.
3. Enter a name for the configuration. For example, MFP Install.
4. In the **Database Selection** Panel, select the database that contains your V5.0.6 data.
5. In the **Database Settings** Panel, enter the settings for the database that contains your V5.0.6 data.
6. In the **Database Additional Settings** panel, enter the schema or database name for the administration database.
If the tables are created by a database administrator (DBA) earlier, make sure that you give the same settings as the one used by the DBA. Otherwise, the Server Configuration Tool creates new tables somewhere else.
7. In the **Application Server Settings** panel, enter the settings of the application server where you want to deploy V7.1.0.
8. In the **Analytics Settings** panel, keep the Enable the connection to the Analytics Server option cleared. If you later install MobileFirst Operational Analytics, you can enable the connection by setting some JNDI properties.
9. Click **Deploy**.
This step deploys the Administration Service and MobileFirst Operations Console to your application server. It creates the tables in the administration database if needed.
10. Select your configuration in the left view and click **File > Add MobileFirst Runtime Environment...**
11. Enter a name for this runtime environment.
12. Enter your project WAR File. It can be the V5.0.6 project WAR file. The Server Configuration Tool will migrate it to be compatible with V7.1.0.
13. In the **Database Additional Settings** panel, enter the schema or the database that contains your V5.0.6 data.
14. Click **Deploy**.
It is not needed to enter anything in the **Database creation request** panel. If you need to, this means the database parameters that you have entered correspond to a database that does not exist or cannot be accessed by the user you provided.
The Server Configuration Tool migrates the runtime database to the administration database (if not done earlier), and upgrades it to V7.1.0. It then deploys the project WAR file to the application server.
15. If you use push notification, you must complete some additional manual configuration.
This task requires the use of a database account that can modify the content of the runtime database. It also requires basic knowledge to run SQL scripts on the database. For DB2, you need to know how to run the DB2 command line processor or the command line program. For Oracle, make sure that you know how to run SQLPlus. This task is only needed for Oracle or DB2. It is not needed for MySQL.

DB2

- a. Change *SCHEMANAME* instances to actual names.
- b. Replace X and Y values based on the given description.

```
SELECT MAX(ID) FROM SCHEMANAME.PUSH_DEVICES;
SELECT MAX(ID) FROM SCHEMANAME.PUSH_SUBSCRIPTIONS;
```

```
--Value of X = Result of the selected query of PUSH_DEVICES + 1. For example, if SELECT MAX(ID) FROM
--SCHEMANAME.PUSH_DEVICES returns 100, then X = 101;
```

--Value of Y = Result of the selected query of PUSH_SUBSCRIPTIONS + 1. For example, if SELECT MAX(ID) FROM --SCHEMANAME.PUSH_SUBSCRIPTIONS returns 100, then Y = 101;

```
ALTER SEQUENCE SCHEMANAME.PUSHDEVICE_SEQ RESTART WITH X ;
ALTER SEQUENCE SCHEMANAME.PUSHSUBSCRIPTION_SEQ RESTART WITH Y ;
```

```
VALUES NEXT VALUE FOR SCHEMANAME.PUSHDEVICE_SEQ;
VALUES NEXT VALUE FOR SCHEMANAME.PUSHSUBSCRIPTION_SEQ;
```

Oracle

- a. Change *SCHEMANAME* instances to actual names.
- b. Replace X and Y values (based on the given description) while running the query.

```
SELECT MAX(ID) FROM SCHEMANAME.PUSH_DEVICES;
SELECT MAX(ID) FROM SCHEMANAME.PUSH_SUBSCRIPTIONS;
```

```
SELECT LAST_NUMBER FROM ALL_SEQUENCES WHERE SEQUENCE_NAME='PUSHDEVICE_SEQ';
SELECT LAST_NUMBER FROM ALL_SEQUENCES WHERE SEQUENCE_NAME='PUSHSUBSCRIPTION_SEQ';
```

--Take note of the resulting value of each query above to use in the following X and Y calculations

--Value of X = (MAX(ID) OF PUSH_DEVICES - LAST_NUMBER OF PUSHDEVICE_SEQ) + 20. For example, if SELECT MAX(ID) FROM --SCHEMANAME.PUSH_DEVICES returned 100 and SELECT LAST_NUMBER FROM ALL_SEQUENCES --(where SEQUENCE_NAME='PUSHDEVICE_SEQ' is 50), then X=100-50+20 = 70

--Value of Y = (MAX(ID) OF PUSH_SUBSCRIPTIONS - LAST_NUMBER OF PUSHSUBSCRIPTION_SEQ) + 20. For example, if SELECT --MAX(ID) FROM SCHEMANAME.PUSH_SUBSCRIPTIONS returned 100, then Y = 101 and SELECT --LAST_NUMBER --FROM ALL_SEQUENCES (where SEQUENCE_NAME='PUSHSUBSCRIPTION_SEQ' is 50), then Y=100-50+20 = 70

```
ALTER SEQUENCE SCHEMANAME.PUSHDEVICE_SEQ INCREMENT BY X ;
SELECT SCHEMANAME.PUSHDEVICE_SEQ.NEXTVAL FROM dual;
ALTER SEQUENCE SCHEMANAME.PUSHDEVICE_SEQ INCREMENT BY 1;
```

```
ALTER SEQUENCE SCHEMANAME.PUSHSUBSCRIPTION_SEQ INCREMENT BY Y ;
SELECT SCHEMANAME.PUSHSUBSCRIPTION_SEQ.NEXTVAL FROM dual;
ALTER SEQUENCE SCHEMANAME.PUSHSUBSCRIPTION_SEQ INCREMENT BY 1;
```

MySQL

No action is required.

16. Optional: If you have a reverse proxy and all network traffic in your data center go through that proxy, you must configure the endpoints. For more information, see Defining the endpoint of the MobileFirst Administration services.

Upgrading with Ant tasks Before you begin

You must upgrade the databases before you run this procedure. For more information, see “Upgrading the databases” on page 3-2.

About this task

Run the `admininstall` target to install the Administration Service WAR file. Then, run the `install` target to update the runtime WAR file and the `worklight-jee-library.jar` library. Restart the application server for these updates to take effect.

Procedure

1. If you upgrade the databases with Ant tasks and use an Ant file such as `configure-<appserver>-<dbtype>.xml` or `redeploy506-<appserver>-<dbtype>.xml`, you can reuse this Ant file for this upgrade task. Otherwise, read the following steps to create an Ant file:

- a. Create an Ant file from the model of the configuration samples that are provided in `product_install_dir/WorklightServer/configuration-samples` folder.

Use the file that is named as `configure-<appserver>-<dbtype>.xml`.

You can also find the `redeploy506-<appserver>-<dbtype>.xml` files in `product_install_dir/WorklightServer/configuration-samples` folder. These files are similar to the `configure-<appserver>-<dbtype>.xml` files except that they contain some database values that are set by the installer for V5.0.6. You can use these files if the database settings are not modified after V5.0.6 is installed.

Note: Make sure that you verify the parameters you use are the same as the one you use at the initial installation time. Verify the parameter details such as the server name, the cluster name, the database, the users, and the schemas. If the database parameters are different than the ones that are used at the initial installation, the Ant task might create new empty tables instead of upgrading the tables to the new format. If the application servers parameters are not the same as the ones that used at the initial installation, the Ant task might fail to update the application.

- b. Verify the path of the project WAR File (the runtime path).

If the path is not to the most current project WAR file that is deployed to the application server, update the path. This WAR file is to be migrated (to be binary compatible with the `worklight-jee-library.jar` of the fix pack or interim fix) and redeployed to the application server. The base name of the project WAR file must be the same as the one that is previously installed.

- c. Optional: Follow the instructions that are described in Manually creating and configuring the reports database if you plan to use the deprecated WorklightReports feature after you complete the upgrade with Ant tasks. Manual configuration is needed because the Ant files in `product_install_dir/WorklightServer/configuration-samples` do not install the Worklight Reports database by default.

2. Run the `admininstall` target to install the MobileFirst Server Administration Service and MobileFirst Operations Console WAR files. For example,

```
product_install_dir/shortcuts/ant -f your_ant_file.xml admininstall
```

3. Run the `install` target to update each MobileFirst runtime environment. For example,

```
product_install_dir/shortcuts/ant -f your_ant_file.xml install
```

This `install` target makes a copy of the project WAR file that is specified in the **worklight.project.war.file** property and migrates the copy so that it is binary compatible with the `newworklight-jee-library.jar` library. The `install` target installs this copy of the WAR file into the application server and updates the `worklight-jee-library.jar` library.

4. Configure the user authentication for MobileFirst Server administration as described in Configuring user authentication for MobileFirst Server administration.

5. If you have a reverse proxy and all network traffic in your data center go through that proxy, you must configure the endpoints. For more information, see Defining the endpoint of the MobileFirst Administration services.
6. Repeat this operation for all the servers of a farm.

Upgrading manually

Before you begin

You must upgrade the databases before you run this procedure. See “Upgrading the databases” on page 3-2.

Procedure

1. Install the MobileFirst Server Administration Service and MobileFirst Operations Console as described at Manually installing MobileFirst Server administration.

Note: Skip the "Setting up your XXX database manually for the MobileFirst Server administration" operation that is under the "Configuring the XXX database manually for the IBM MobileFirst Platform Server administration" topic. This operation is done earlier when you upgrade the databases.

2. Locate the WAR and JAR files. The new versions of these files that you need to update are in *product_install_dir/WorklightServer* folder.
3. Replace the *worklight-jee-library.jar* library.
4. Migrate the project WAR file (MobileFirst runtime WAR file) so that it is binary compatible with the upgraded *worklight-jee-library.jar* library.
 - a. Find the most current version of the project WAR file that is published by your development team.
 - b. Migrate the project WAR file as described in Migrating a project WAR file for use with a new MobileFirst Server.
5. Install the migrated project WAR file to your application server. For more information, see Deploying a project WAR file and configuring the application server manually.
6. On WebSphere Application Server Network Deployment, do a full synchronization of the servers.

Configuring your server farm

You must perform this task regardless you install the applications manually, with Server Configuration Tool, or with Ant tasks.

You need to update the configuration if you configure a server farm to run IBM MobileFirst Platform Foundation for iOS in V5.0.6.

In V7.1.0, the servers of a cluster, if they are not running on a WebSphere Application Server Network Deployment cluster, need to be federated as a server farm. In this case, any administration change, such as uploading a new version of an adapter, can be reflected to all the servers of the runtime environment.

The high-level procedure to configure the server farm is as follows:

1. Declare some JNDI properties in MobileFirst Server Administration Service to declare the farm topology and other information to enable the other farm members to contact it via JMX. The information is then shared via the administration database.

2. For WebSphere Application Server Liberty profile and WebSphere Application Server, the authentication to stateless applications such as MobileFirst Operations Console uses LTPA tokens, you must ensure that all servers have the same LTPA keys.

For more information about the configuration, see [Configuring a server farm](#).

To verify the farm configuration, you can look at the **Server Farm Nodes** tab in MobileFirst Operations Console. For more information, see [Lifecycle of a server farm node](#).

Special configurations

Procedure

1. If Activate Token Licensing is selected when you run Installation Manager to upgrade the product installation to V7.1.0, you need to configure your server for token licensing. Select Activate Token Licensing only if you have a contract to use token licensing.
2. If your application server is WebSphere Application Server V7.0, you must add the configuration property `com.ibm.ws.webcontainer.invokerequestlistenerforfilter = true`. For more information about how to add this property, see [Configuring WebSphere Application Server V7.0](#). This setting is needed for the runtime environment (the Project WAR File) in V7.1.0.

Updating your deployment scripts

In V7.1.0, the `app-deployer` and `adapter-deployer` Ant tasks no longer exist. The apps and adapters cannot be deployed with these Ant tasks. Use `wladm` in command-line, or as Ant tasks. For more information, see the following topics:

- [Administering MobileFirst applications through Ant](#)
- [Administering MobileFirst applications through the command line](#)
- [REST API Administration Services](#)

Upgrading Application Center

About this task

You can update this component in two ways:

- With Ant tasks
- Manually

It is not required to upgrade Application Center if you install with Installation Manager.

Important:

- Upgrade the database by a database administrator:

In some cases, you might want to upgrade the databases manually. For example, to set some non-default properties to the new tables created. This is not possible if you upgrade Application Center with Installation Manager since the database scripts are only available after you run Installation Manager. However, if you upgrade the Application Center manually before you run Installation Manager, it would detect that the tables are upgraded to V7.1.0. Installation Manager looks at the value in the table (such as `APPCNTR_VERSION`) and would not attempt to upgrade them. When you use Ant tasks, do not run the database target if the databases are already updated manually. If you do run them, the Ant tasks would detect that the schema is in V7.1.0.

- WebSphere Application Server specifics:
 - The user that runs the upgrade needs to have at least the privileges of a Configurator role to install new application. In some cases if a user needs to be created, or the application security needs to be activated, an Administrator role is required.
- Upgrade the databases:
 - Back up the databases for Application Center. The migration scripts delete some data in your database and the operation cannot be undone. If you decide to roll back the upgrade of Application Center, you need this backup.
 - If you upgrade manually, the upgrade scripts can be found in *product_install_dir/ApplicationCenter/databases* folder.
 1. Select the script, depending on your database, to upgrade the database from V5.0.6 to V6.0.0.
 - upgrade-appcenter-506-60-db2.sql
 - upgrade-appcenter-506-60-mysql.sql
 - upgrade-appcenter-506-60-oracle.sql
 2. Upgrade the database from V6.0.0 to V6.1.0.
 - upgrade-appcenter-60-61-db2.sql
 - upgrade-appcenter-60-61-mysql.sql
 - upgrade-appcenter-60-61-oracle.sql
 3. Upgrade the database from V6.1.0 to V6.2.0.
 - upgrade-appcenter-61-62-db2.sql
 - upgrade-appcenter-61-62-mysql.sql
 - upgrade-appcenter-61-62-oracle.sql
 4. Upgrade the database from V6.2.0 to V6.3.0.
 - upgrade-appcenter-62-63-db2.sql
 - upgrade-appcenter-62-63-mysql.sql
 - upgrade-appcenter-62-63-oracle.sql
 5. Upgrade the database from V6.3.0 to V7.0.0.
 - upgrade-appcenter-63-70-db2.sql
 - upgrade-appcenter-63-70-mysql.sql
 - upgrade-appcenter-63-70-oracle.sql
 6. Lastly, upgrade the database from V7.0.0 to V7.1.0.
 - upgrade-appcenter-70-71-db2.sql
 - upgrade-appcenter-70-71-mysql.sql
 - upgrade-appcenter-70-71-oracle.sql
 - If you upgrade with Ant tasks, do the following steps:
 1. Create an Ant file by using one of the *configure-applicationcenter-
<appserver>-<dbtype>.xml* files in *product_install_dir/
ApplicationCenter/configuration-samples* folder. Take the file that corresponds to your application server and database.
 2. Edit the file and enter the properties at the top of the file.
 3. Verify that the parameters you use are the same as the one you use at the initial installation time.

Check the parameter details such as the server name, the cluster name, the database, the users, and the schemas. If the database parameters are different than the ones that are used at the initial installation, the Ant task might create new empty tables instead of upgrading the tables to the new

format. If the application servers parameters are not the same as the ones that used at the initial installation, the Ant task might fail to update the application.

Installing manually Procedure

1. Follow the instructions at Deploying the Application Center WAR files and configuring the application server manually.
2. Configure Application Center. For more information, see Configuring Application Center after installation.

Installing with Ant tasks Procedure

1. Reuse the Ant file that is used to upgrade the database.
2. Run the `install` target to deploy Application Center to your application server. For example,

```
product_install_dir/shortcuts/ant -f your_ant_file.xml install
```
3. Configure Application Center. For more information, see Configuring Application Center after installation.

Installing MobileFirst Operational Analytics Procedure

Install MobileFirst Operational Analytics V7.1.0 as described in Installing the IBM MobileFirst Platform Operational Analytics.

Support and comments

For the entire IBM MobileFirst Platform documentation set, training material and online forums where you can post questions, see the IBM website at:

<http://www.ibm.com/mobile-docs>

Support

Software Subscription and Support (also referred to as Software Maintenance) is included with licenses purchased through Passport Advantage® and Passport Advantage Express. For additional information about the International Passport Advantage Agreement and the IBM International Passport Advantage Express Agreement, visit the Passport Advantage website at:

<http://www.ibm.com/software/passportadvantage>

If you have a Software Subscription and Support in effect, IBM provides you assistance for your routine, short duration installation and usage (how-to) questions, and code-related questions. For additional details, consult your IBM Software Support Handbook at:

<http://www.ibm.com/support/handbook>

Comments

We appreciate your comments about this publication. Please comment on specific errors or omissions, accuracy, organization, subject matter, or completeness of this document. The comments you send should pertain to only the information in this manual or product and the way in which the information is presented.

For technical questions and information about products and prices, please contact your IBM branch office, your IBM business partner, or your authorized remarketer.

When you send comments to IBM, you grant IBM a nonexclusive right to use or distribute your comments in any way it believes appropriate without incurring any obligation to you. IBM or any other organizations will only use the personal information that you supply to contact you about the issues that you state.

Thank you for your support.

If you would like a response from IBM, please provide the following information:

- Name
- Address
- Company or Organization
- Phone No.
- Email address

Notices

This information was developed for products and services offered in the US. This material might be available from IBM in other languages. However, you may be required to own a copy of the product or product version in that language in order to access it.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

*IBM Director of Licensing
IBM Corporation
North Castle Drive, MD-NC119
Armonk, NY 10504-1785
US*

For license inquiries regarding double-byte character set (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

*Intellectual Property Licensing
Legal and Intellectual Property Law
IBM Japan Ltd.
19-21, Nihonbashi-Hakozakicho, Chuo-ku
Tokyo 103-8510, Japan*

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM websites are provided for convenience only and do not in any manner serve as an endorsement of those

websites. The materials at those websites are not part of the materials for this IBM product and use of those websites is at your own risk.

IBM may use or distribute any of the information you provide in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

*IBM Director of Licensing
IBM Corporation
North Castle Drive, MD-NC119
Armonk, NY 10504-1785
US*

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this document and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement or any equivalent agreement between us.

The performance data and client examples cited are presented for illustrative purposes only. Actual performance results may vary depending on specific configurations and operating conditions.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to actual people or business enterprises is entirely coincidental.

COPYRIGHT LICENSE:

This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs. The sample programs are provided "AS IS", without warranty of any kind. IBM shall not be liable for any damages arising out of your use of the sample programs.

Each copy or any portion of these sample programs or any derivative work must include a © (your company name) (year).
Portions of this code are derived from IBM Corp. Sample Programs.
© Copyright IBM Corp. _enter the year or years_.

Trademarks

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the web at "Copyright and trademark information" at www.ibm.com/legal/copytrade.shtml.

Adobe, the Adobe logo, PostScript, and the PostScript logo are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States, and/or other countries.

Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.

Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.

Java™ and all Java-based trademarks and logos are trademarks or registered trademarks of Oracle and/or its affiliates.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Node.js is a trademark of Joyent, Inc. and is used with its permission. This documentation is not formally endorsed by or affiliated with Joyent.

Other company products or service names may be trademarks or service marks of others.

This document may not be reproduced in whole or in part without the prior written permission of IBM.

Terms and conditions for product documentation

Permissions for the use of these publications are granted subject to the following terms and conditions.

Applicability

These terms and conditions are in addition to any terms of use for the IBM website.

Personal use

You may reproduce these publications for your personal, noncommercial use provided that all proprietary notices are preserved. You may not distribute, display or make derivative work of these publications, or any portion thereof, without the express consent of IBM.

Commercial use

You may reproduce, distribute and display these publications solely within your enterprise provided that all proprietary notices are preserved. You may not make derivative works of these publications, or reproduce, distribute or display these publications or any portion thereof outside your enterprise, without the express consent of IBM.

Rights

Except as expressly granted in this permission, no other permissions, licenses or rights are granted, either express or implied, to the publications or any information, data, software or other intellectual property contained therein.

IBM reserves the right to withdraw the permissions granted herein whenever, in its discretion, the use of the publications is detrimental to its interest or, as determined by IBM, the above instructions are not being properly followed.

You may not download, export or re-export this information except in full compliance with all applicable laws and regulations, including all United States export laws and regulations.

IBM MAKES NO GUARANTEE ABOUT THE CONTENT OF THESE PUBLICATIONS. THE PUBLICATIONS ARE PROVIDED "AS-IS" AND WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY, NON-INFRINGEMENT, AND FITNESS FOR A PARTICULAR PURPOSE.

IBM Online Privacy Statement

IBM Software products, including software as a service solutions, ("Software Offerings") may use cookies or other technologies to collect product usage information, to help improve the end user experience, to tailor interactions with the end user or for other purposes. In many cases no personally identifiable information is collected by the Software Offerings. Some of our Software Offerings can help enable you to collect personally identifiable information. If this Software Offering uses cookies to collect personally identifiable information, specific information about this offering's use of cookies is set forth below.

Depending upon the configurations deployed, this Software Offering may use session cookies that collect session information (generated by the application server). These cookies contain no personally identifiable information and are required for session management. Additionally, persistent cookies may be randomly generated to recognize and manage anonymous users. These cookies also contain no personally identifiable information and are required.

If the configurations deployed for this Software Offering provide you as customer the ability to collect personally identifiable information from end users via cookies and other technologies, you should seek your own legal advice about any laws applicable to such data collection, including any requirements for notice and consent. For more information about the use of various technologies, including cookies, for these purposes, see IBM's Privacy Policy at <http://www.ibm.com/privacy> and IBM's Online Privacy Statement at <http://www.ibm.com/privacy/details> the section entitled "Cookies, Web Beacons and Other Technologies" and the "IBM Software Products and Software-as-a-Service Privacy Statement" at <http://www.ibm.com/software/info/product-privacy>.

Index

U

- upgrading
 - Application Center 1-1
- upgrading (*continued*)
 - MobileFirst Operational
 - Analytics 1-1
 - MobileFirst Server 1-1
- upgrading (*continued*)
 - V5.0.6 1-1
 - V7.1.0 1-1