Distributing mobile applications with Application Center

fork and edit tutorial (https://github.ibm.com/MFPSamples/DevCenter/tree/master/tutorials/en/foundation/7.0/moving-production/distributing-mobile-applications-application-center.html) | report issue (https://github.ibm.com/MFPSamples/DevCenter/issues/new)

Overview

IBM MobileFirst Platform Application Center is a **repository of mobile applications** similar to public app stores but focused on the needs of an organization or a team (private app store).

Application Center facilitates sharing mobile applications:

- You can **share feedback and rating** information.
- You can use access control lists to limit who can install applications.

Application Center works with MobileFirst apps and non-MobileFirst apps, and supports any **iOS, Android, BlackBerry 6 or 7**, and **Windows Phone 8** applications. BlackBerry 10 is not supported.

You can use Application Center in different contexts. For example:

- As an enterprise app store across an organization.
- During development to distribute applications within a team.

This tutorial covers the following topics:

- Installing and configuring
- Preparing mobile clients
- Managing applications in the Application Center console
- The Application Center mobile client
- Deploying applications from MobileFirst Studio
- Application Center command-line tools

Installing and configuring

Application Center is installed as part of the installation of MobileFirst Server with IBM Installation Manager.
Prerequisite: Before you install Application Center, you must have installed an application server and a database:

- Application server: Tomcat or WebSphere® Application Server full profile or Liberty profile
- Database: DB2®, Oracle, or MySQL

If you do not have a database installed, the installation process can also install an Apache Derby database. However, using the Derby database is not recommended for production scenarios.

1. IBM Installation Manager guides you through the installation of Application Center with choices of database and application server. Fore more information, see Installing MobileFirst Server (http://ibm.biz/knowctr#SSHS8R_7.0.0/com.ibm.worklight.installconfig.doc/admin/c_installation.html) in the IBM MobileFirst Platform product documentation.
   Because iOS 7.1 supports only the https protocol, the Application Center server must be secured with SSL (at least with TLS v.1) if you plan to distribute apps for devices that run iOS 7.1 or later. Self-signed certificates are not recommended, but can be used for testing purpose, provided that self-signed CA certificates are distributed to devices. See Configuring Secure Sockets Layer (http://engtest01w.francelab.fr.ibm.com:9090/support/knowledgecenter/SSHS8R_7.0.0/com.ibm.worklight.installconfig.doc/appcenter/c_ac_ssl_config.html) in the IBM MobileFirst Platform product documentation.
2. After Application Center is installed with IBM Installation Manager, open the console:
   `http://localhost:9080/appcenterconsole`
3. Log in with this user/password combination: `demo` / `demo`
4. At this point, you can configure user authentication. For example, you can connect to an LDAP repository. For more information, see Configuring the Application Center after installation (http://ibm.biz/knowctr#SSHS8R_7.0.0/com.ibm.worklight.installconfig.doc/appcenter/c_configuration_of_the_applicati.html) in the IBM MobileFirst Platform product documentation.
5. Prepare the mobile client for Android, iOS, BlackBerry, and Windows Phone 8, as explained in Preparing mobile clients (http://ibm.biz/knowctr#SSHS8R_7.0.0/com.ibm.worklight.installconfig.doc/appcenter/c_configuration_of_the_applicati.html).
   The mobile client is the mobile application that you use to browse the catalog and install the application.

Preparing mobile clients

For Android phones and tablets

The mobile client is delivered as a compiled application (APK).
`install_dir/ApplicationCenter/installer/IBMApplicationCenter.apk`

For iPad and iPhone

1. Compile and sign the client application provided in source code. This is mandatory.
2. In MobileFirst Studio, open the IBMAppCenter Project at:

`install_dir/ApplicationCenter/installer`

3. Use **Run As > Run on MobileFirst Development Server** to build the project.
4. Use Xcode to build and sign the application with your Apple iOS Enterprise profile.
   You can either open the resulting native project (in **iphone\native**) manually in Xcode, or right-click the iPhone folder and select **Run As > Xcode project** (which will generate the project and then open it in Xcode).

For Blackberry

- To build the BlackBerry version, you must have the BlackBerry Eclipse IDE (or Eclipse with the BlackBerry Java™ plug-in) with the BlackBerry SDK 6.0. The application also runs on BlackBerry OS 7 when compiled with BlackBerry SDK 6.0.
- A BlackBerry project is provided in:
  `install_dir/ApplicationCenter/installer/IBMAppCenterBlackBerry6`

For Windows Phone 8

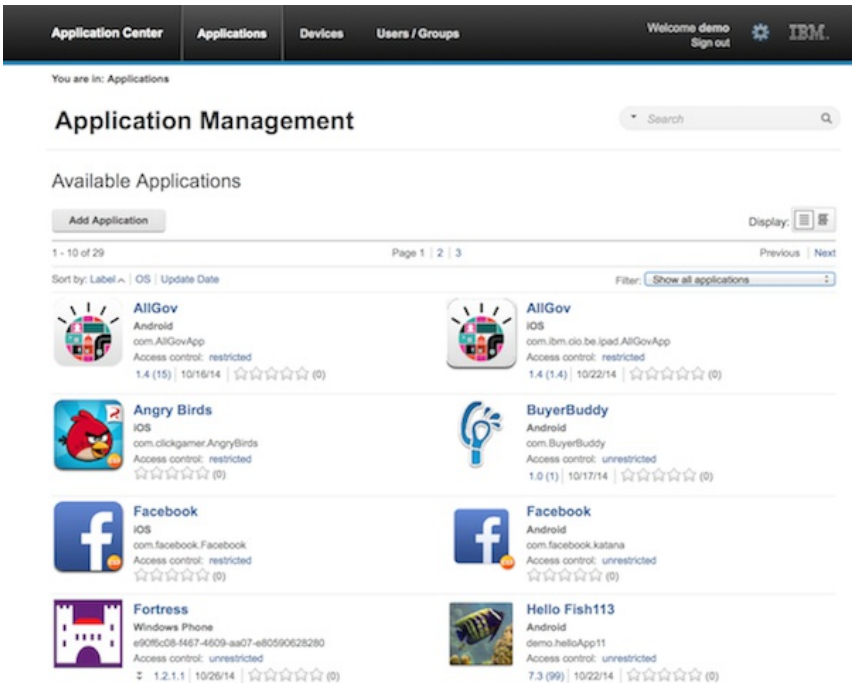
1. Register a company account with Microsoft.
   Application Center manages only company applications that are signed with the company certificate that comes with your company account.
2. Make sure that also the Application Center mobile client is signed with this company certificate.
3. To install company applications on a device, first enroll the device with the company by installing a company enrollment token.
   For more information about company accounts and enrollment tokens, see the Company app distribution for Windows Phone (http://msdn.microsoft.com/library/windows/apps/jj206943(v=vs.105).aspx) page in the Microsoft Developer website (http://dev.windows.com/en-us/develop).

The Windows Phone version of the mobile client is included at:
`install_dir/ApplicationCenter/installer/IBMApplicationCenterUnsigned.xap`
Important: You **cannot** use the unsigned `.xap` file directly. Before you can install it on a device, you must first sign it with your company certificate, which you obtained from Symantec or Microsoft.
For more information about how to sign Windows Phone mobile client applications, see the Microsoft Developer website (http://dev.windows.com/en-us/develop).

For Windows Store Apps for Windows 8 Pro

- The `install_dir/ApplicationCenter/installer/IBMApplicationCenterWindowsStore.zip` file contains the executable of the Application Center client. Distribute this file to the client computer and unzip it. It contains the executable program.
- Installing a Windows Store app (a file of type `appx`) without using Microsoft Windows Store is called *sideloading* an app. To sideload an app, you must comply with the prerequisites in Prepare to Sideload Apps (https://technet.microsoft.com/fr-fr/library/dn613842.aspx). The Windows 8.1 update simplifies the prerequisites for sideloading. For more information, see Sideloading Store Apps to Windows 8.1 Devices (http://blogs.msdn.com/b/micham/archive/2014/05/30/sideloading-store-apps-to-windows-8-1-devices.aspx).

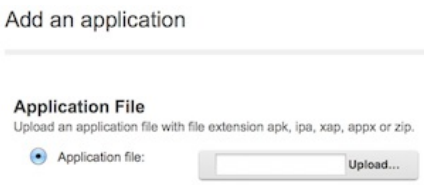
Managing applications in the Application Center console



Use the Application Center console to manage applications in the catalog in the following ways:

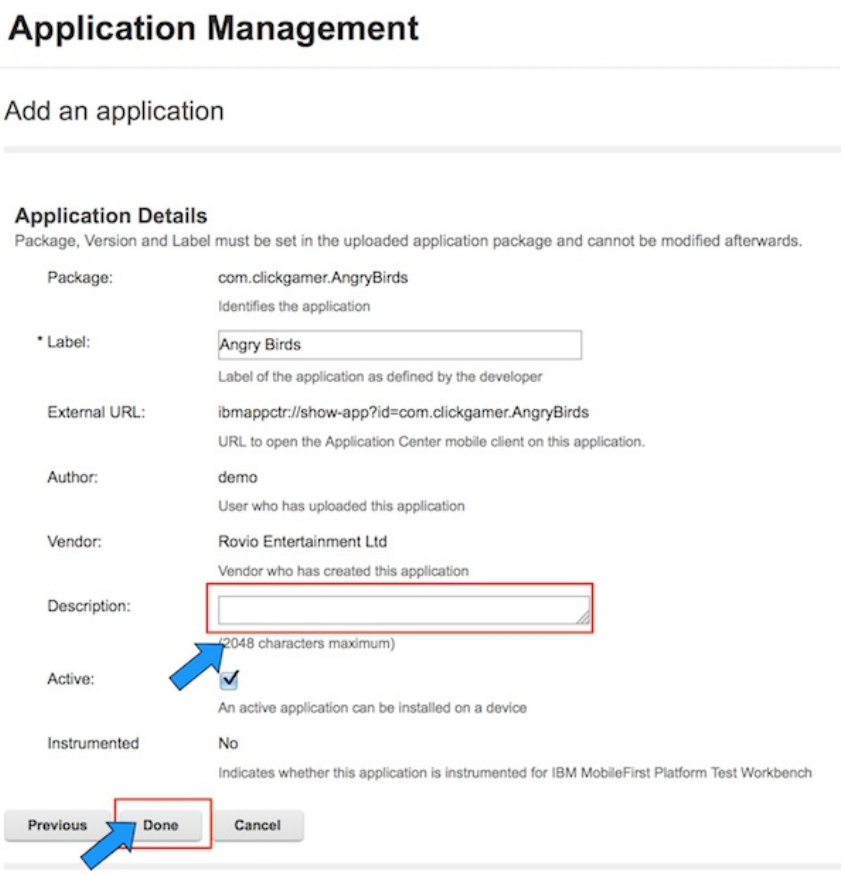
6. Add and remove applications
7. Manage versions of applications
8. Look at the details of an application
9. Restrict the access of an application to specific users or groups of users
10. Read the reviews for each application
11. Review registered users and devices

Adding new applications to the store

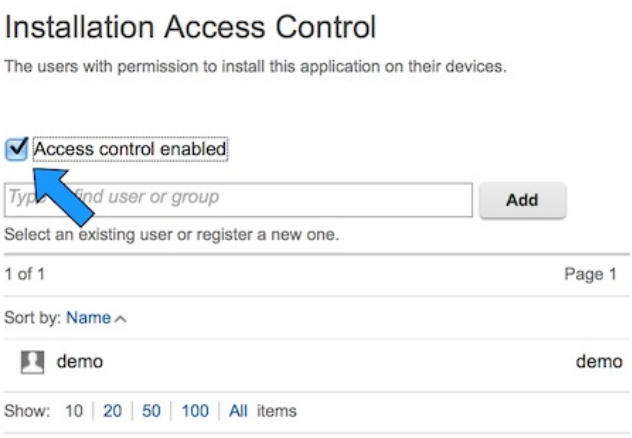


To add new applications to the Store:

1. Open the Application Center console.
2. Click **Add application**.
3. Select an application file:
   - `.ipa`: iOS
   - `.apk`: Android
   - `.zip`: BlackBerry
   - `.xap`: Windows Phone 8
   - `.appx`: Windows Store
4. Click **Next**.
   In the Application Details views, you can review the information about the new application and enter further information such as the description. You can return to this view later for all applications in the catalog.



5. Click **Done** to finish the task.
   The new application is added to the store.



By default, an application can be installed by any authorized user of the store.

Restricting access to a group of users

To restrict access to a group of users:

1. In the catalog view, click the **unrestricted link** that is next to the application name. The Installation Access Control page opens.
2. Select **Access control enabled**. You can now enter the list of users or groups that are authorized to install the application.
3. If you have configured LDAP, add users and groups that are defined in the LDAP repository.

You can also add applications from public app stores such as Google Play or Apple App Store by entering their URLs.

The Application Center mobile client

The App Center mobile client is a mobile application to manage the applications on the device. With the mobile client, you can:

- List all applications from the catalog (for which you have access rights).
- List the favorite applications.
- Install an application or upgrade to a new version.
- Provide feedback and five-star rating for an application.

Adding mobile client applications to the catalog

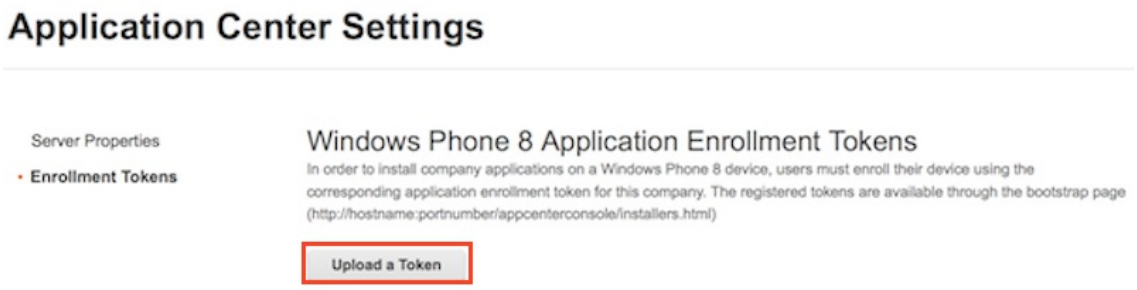
You must add Application Center mobile client applications to the catalog.

1. Open the Application Center console.
2. Click the **Add Application** button to add the mobile client `.apk`, `.ipa`, `.zip`, or `.xap` file.
3. Click **Next** to open the Application Details page.
4. In the Application Details page, select **Installer** to indicate that this application is a mobile client.
5. Click **Done** to add the Application Center app to the catalog.

   The Application Center client for Windows 8 Pro does not need to be added to the catalog. This client is a regular Windows `.exe` program contained in the *`install_dir`*`/ApplicationCenter/installer/IBMApplicationCenterWindowsStore.zip` file. You can simply copy it to the client computer.

Windows Phone 8

On Windows Phone 8, you must also install the enrollment token that you received with your company account to the Application Center console, so that users can enroll their devices. You use the Application Center Settings page, which you can open through the gear icon.



Before you can install the mobile client, you must enroll the device with the company by installing the enrollment token:

1. Open the web browser on the device.

2. Enter the URL: `http://hostname:9080/appcenterconsole/installers.html`
3. Enter the user name and password.
4. Click **Tokens** to open the list of enrollment tokens.
5. Select the company in the list. The details of the company account are displayed.
6. Click **Add Company Account**. Your device is enrolled.

Installing the mobile client on the mobile device

To install the mobile client on the mobile device:

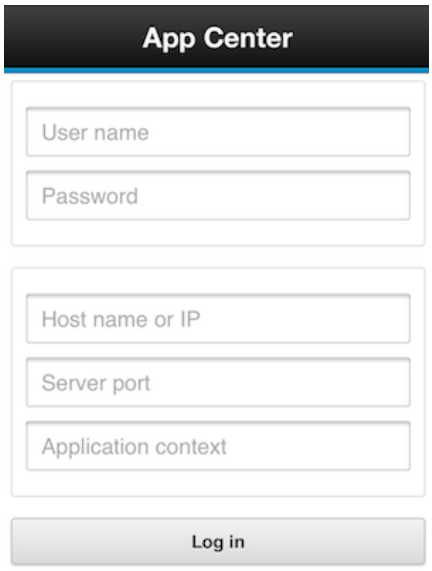
1. Open the web browser on the device.
2. Enter the URL:
   `http://hostname:9080/appcenterconsole/installers.html`
3. Enter the user name and password.
4. Select the Application Center application to start the installation.

On **Android** devices, you must open the Android Download application and select **IBM App Center** for installation.

Logging in to the mobile client

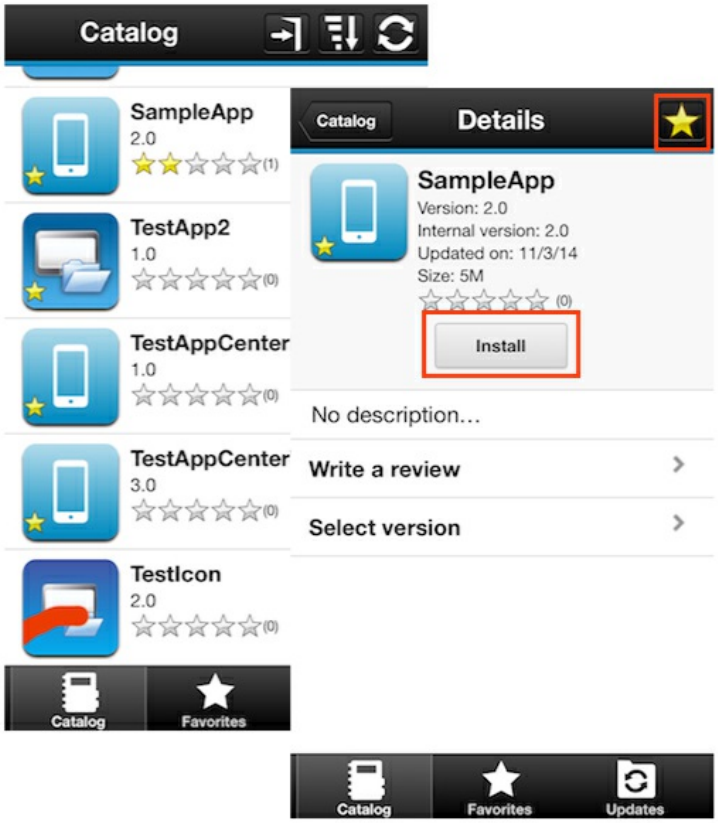
To log in to the mobile client:

1. Enter your credentials for access to the server.
2. Enter the host name or IP address of the server.
3. In the **Server port** field, enter the port number if it is not the default one (`9080`).
4. In the **Application context** field, enter the context: `applicationcenter`.



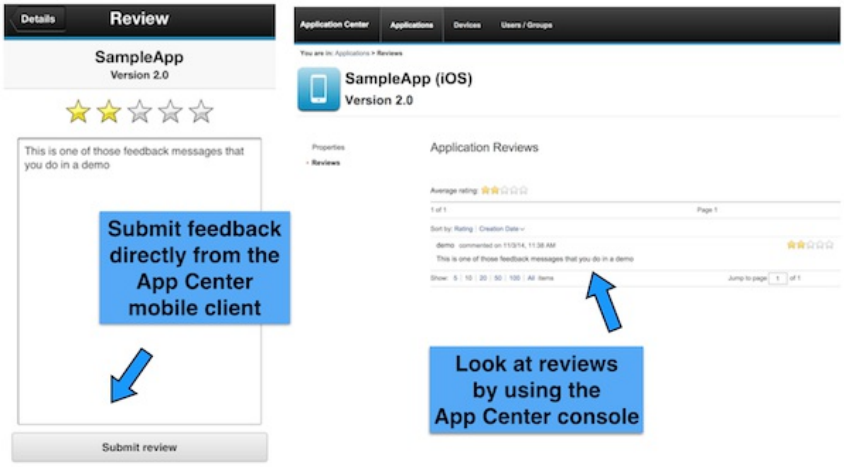
Application Center mobile client views

- The **Catalog** view displays the list of available applications.
- Selecting an application opens the **Details** view on the application. You can install applications from the Details view.
- You can mark applications as favorites by using the star icon in the Details View.



- The **Favorites** view lists the favorite applications. This list is available on all the devices of a particular user.
- The **Updates** view lists all available updates. In the Updates view, you can navigate to the Details view. You can select a newer version of the application or take the latest available version. If Application Center is configured to send push notifications, you might be notified of updates by push notification messages.

From the mobile client, you can rate the application and send a review. Reviews can be viewed on the console or on the mobile device.

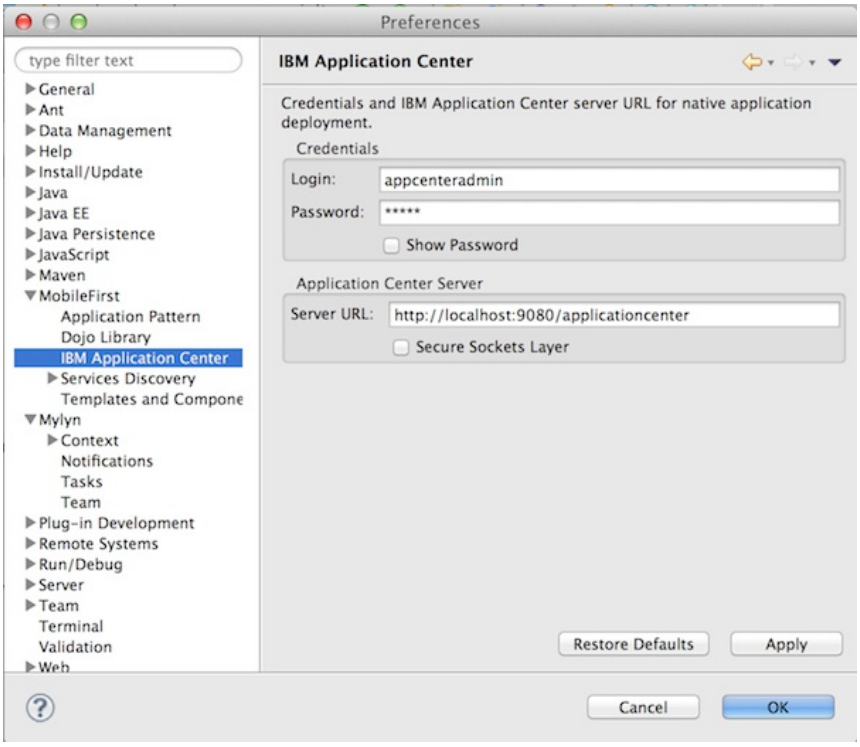


Deploying applications from MobileFirst Studio

Applications can be deployed to Application Center directly from MobileFirst Studio. You start by setting the publication preferences.

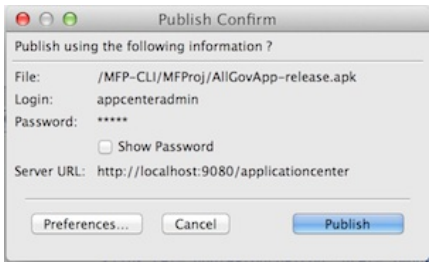
Setting preferences

1. In MobileFirst Studio inside Eclipse, open the **Eclipse Preferences** view.
2. Select **MobileFirst > IBM Application Center** and specify the server URL, your login, and your password.



Deploying files

To deploy APK files or IPA files to the Application Center:



1. Right-click the file in the MobileFirst Studio workspace.
2. Select **IBM Application Center** / **Publish Application**.
3. Confirm by clicking **Publish**.

Application Center command-line tools

The `install_dir/ApplicationCenter/tools` directory contains all the files that are required to use the command-line tool or Ant tasks to manage the applications in the store:

- `applicationcenterdeploytool.jar`: the upload command-line tool.
- `json4jar`: the library for the JSON format that is required by the upload tool.
- `build.xml`: a sample Ant script that you can use to upload a single file or a sequence of files to Application Center.
- `acdeploytool.sh` and `acdeploytool.bat`: Simple scripts to call Java with the `applicationcenterdeploytool.jar` file.

For example, to deploy an application `app.apk` file to the store in `localhost:9080/applicationcenter` with user ID `demo` and password `demo`, write:

```
Java com.ibm.appcenter.Upload -s http://localhost:9080 -c applicationcenter -u demo -p demo app.apk
```