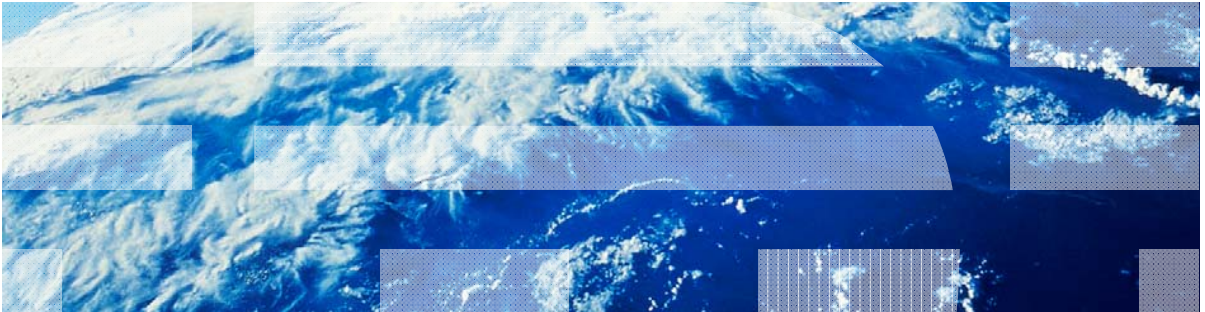




IBM Worklight V6.0.0 Getting Started

Introducing Worklight Server and Application Center on IBM PureApplication System



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Agenda

- Introduction
- Installation of Worklight Pattern Type
- Installation of Worklight Database Workload Standards
- Create and deploy Worklight Virtual Application Pattern
- Work with PureApplication System in Worklight Studio
- Build and deploy by using Command Line Interface
- Deploy Application Center

Overview

- IBM® Worklight® provides the capability to deploy and manage Worklight Server and applications on IBM PureApplication™ System.
- This cloud solution eases the efforts for developers and administrators throughout the whole lifecycle of mobile applications.
- In this module, you learn the basic scenarios of using IBM Worklight on PureApplication System.
- In this module, you also learn how to deploy Application Center onto PureApplication System
 - For information about integrating Tivoli Directory Server, see module *Integrating Tivoli Directory Server on IBM PureApplication System* and the IBM Worklight user documentation.

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- Installation of Worklight Pattern Type
- Installation of Worklight Database Workload Standards
- Create and Manage Worklight Virtual Application Pattern
- Work with PureApplication System in Worklight Studio
- Build and deploy by using Command Line Interface
- Deploy Application Center

Prerequisites

- Before you start the installation, get the IBM Mobile Application Platform Pattern Type **tgz** file from the installation of IBM Mobile Application Platform Pattern .

Upload the Pattern Type file

- Log in to PureApplication System, and ensure that your account has the right to upload a new pattern type.
- Go to **Workload Console > Cloud > Pattern Types**.
- Upload the IBM Mobile Application Platform Pattern Type **tgz** file.

The screenshot shows the IBM PureApplication System interface. The top navigation bar includes 'Welcome', 'Instances', 'Patterns', 'Catalog', 'Cloud', and 'System'. The main content area is titled 'Pattern Types' and contains a search bar and a list of pattern types. A red box with the text '1. Click the + button.' points to a plus sign icon in the top right corner of the 'Pattern Types' section. A modal dialog titled 'Install a pattern type' is open, showing options for 'Local' and 'Remote' installation. A red box with the text '2. Specify the IBM Mobile Application Pattern Type tgz file.' points to the 'Browse' button in the 'Local' section of the dialog.

Accept the license (1 of 2)

- After the upload process completes, go to the uploaded pattern type, and enable it.

2. View the license and accept it.

Pattern Types

Search...

- IBM Messaging Extension for Web Application Pattern 2.0
- IBM Messaging Extension for Web Application Pattern 2.0.0.1
- IBM Mobile Application Platform Pattern Type 5.0
- IBM Mobile Application Platform Pattern Type 5.0.6.0
- IBM Transaction...
- IBM Tran...

IBM Mobile Application Platform Pattern Type

Description: IBM Mobile Application Platform Pattern Type

License Agreement: Not Accepted [License...]

Status: Not Accepted [Enable All...]

Required: Web Application Pattern Type (2.0.0.5 or above)

System Plug-ins: Show me all plug-ins in this pattern type

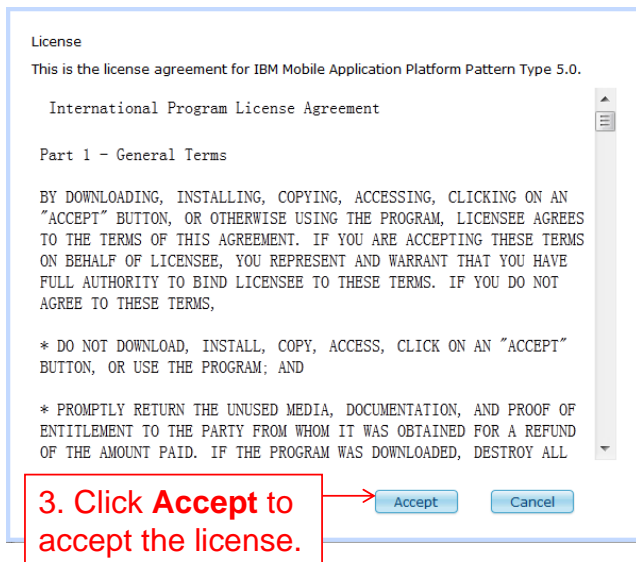
Dependency

1. Notice that the Pattern Type is not enabled after the Installation.

2. View the license and accept it.

Accept the license (2 of 2)

- Accept the license.



License

This is the license agreement for IBM Mobile Application Platform Pattern Type 5.0.

International Program License Agreement

Part 1 - General Terms

BY DOWNLOADING, INSTALLING, COPYING, ACCESSING, CLICKING ON AN "ACCEPT" BUTTON, OR OTHERWISE USING THE PROGRAM, LICENSEE AGREES TO THE TERMS OF THIS AGREEMENT. IF YOU ARE ACCEPTING THESE TERMS ON BEHALF OF LICENSEE, YOU REPRESENT AND WARRANT THAT YOU HAVE FULL AUTHORITY TO BIND LICENSEE TO THESE TERMS. IF YOU DO NOT AGREE TO THESE TERMS,

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3. Click **Accept** to accept the license.

Accept Cancel


Installation complete

- After the installation completes, the pattern is enabled.

IBM Mobile Application Platform Pattern Type

Description:	IBM Mobile Application Platform Pattern Type
License Agreement:	 Accepted [View...] ← 4. The Pattern Type is accepted.
Status:	 Unavailable [Enable...] ← 5. Enable it.
Required:	Web Application Pattern Type (2.0.0.3 or above)
System Plug-ins:	Show me all plug-ins in this pattern type

Dependency

 This pattern type has one or more prerequisites that need to be enabled first. In order to ch pattern type(s) need to be enabled in sequence. Press "Enable All" to enable the pattern ty

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- **Installation of Worklight Database Workload Standards**
- Create and deploy Worklight Virtual Application Pattern
- Work with PureApplication System in Worklight Studio
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Prerequisites

- Before you start the installation, get the **WLRTDB.zip** file and the **WLRPTDB.zip** file from the installation of IBM Mobile Application Platform Pattern .

Create Worklight database workload standards (1 of 2)

- Log in to PureApplication System, and ensure that your account has the right to create custom database workload standards.
- Go to **Workload Console > Catalog > Database Workload Standards**.
- You must create Worklight database workload standard for:
 - Worklight runtime database
 - Worklight reports database

Create Worklight database workload standards (2 of 2)

- Follow the steps indicated here to upload the **WLRTDB.zip** file.
- By using similar steps, upload the **WLRPTDB.zip** file for Worklight reports database.

1. Click +.

2. Specify the name

3. Select **Departmental Transactional**.

4. Specify the **WLRTDB.zip** file.

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Create Worklight Server

- Create a Virtual Application Pattern.
- Drag an Enterprise Application component.
- Upload the **Worklight.ear** file onto it.
 - You can generate this **EAR** file from Worklight Studio or by using the command line interface (CLI).

The screenshot displays the IBM PureApplication System - Virtual Application Builder interface. The left sidebar shows the 'Assets' panel with 'Application Components' expanded, listing 'Enterprise Application' (WebSphere Application Server) and 'Existing Web Service Provider Endpoint'. A red arrow points to the 'Enterprise Application' component. The main workspace shows a 'Server' component being added to a diagram. A red box highlights the 'Enterprise Application' component with the text: '1. Drag a WebSphere Application Server Component.' Another red box highlights the 'Add policy for application' button with the text: '2. Upload the EAR file that is built by Worklight Studio or CLI.' The right sidebar shows the configuration for the 'Worklight Server' application, including fields for 'Name' (Worklight Server), 'EAR file' (artifacts/module_21_1), and various timeout settings: 'Total transaction lifetime timeout (seconds): 120', 'Async response timeout (seconds): 120', and 'Client inactivity timeout (seconds): 60'.

Create Worklight database

- Drag a DB2® component and then apply a database workload standard for Worklight runtime database
 - Ensure that you select the database workload standard that you created in previous steps.

1. Drag a DB2 component.

2. Apply a database workload standard.

Database Configuration:

- Name:** Worklight Runtime DB
- Database name:** WLRTIME
- Database description:**
- Purpose:** Production
- Source:**
 - Apply a database workload standard
 - WL_REPORTSDB
 - WL_RUNTIME MDB
 - BPM_BP MDB Using for BPM v85 Patterns
 - BPM_PD WDB Using for BPM v85 Patterns
 - BPM_CM NDB Using for BPM v85 Patterns

Configure database connection

- Link Worklight server and DB2.
- Specify the resource that is referenced as **jdbc/WorklightDS**.

The screenshot shows the IBM PureApplication System - Virtual Application Builder interface. The main workspace displays a diagram with two components: 'Worklight Server' (Enterprise Application) and 'Worklight Runtime DB' (Database). A red box labeled '3. Create a link.' points to a link icon between the two components. Another red box labeled '4. Select jdbc/WorklightDS.' points to a dropdown menu in the 'Worklight Runtime DB' component's configuration panel. The configuration panel on the right shows the 'Resource References of Data Source' field with the value 'helloworld.war#jdbc/WorklightDS'. The 'Assets' panel on the left shows a tree view of components, including 'Database Components' and 'Existing Database' entries for DB2, Informatica, Oracle, and IMS.

Configure Report database

- Create and connect the report database by following the same steps as in the previous slide with the following changes:
 - Select the database workload standard for reports database.
 - Select the resource reference as **jdbc/WorklightReportsDS**.

The screenshot displays the IBM Mobile Application Platform configuration interface. The main workspace shows a diagram with a 'Worklight Server' (Enterprise Application) connected to two databases: 'WL Runtime DB' and 'WL Reports DB'. The 'WL Reports DB' is highlighted with a dashed border, and a red arrow points from a text box to it. The text box contains the instruction: 'Repeat the previous steps to create the report database.' The right-hand pane shows the configuration details for the selected 'Database DB2'. The 'Name' field is set to 'WL Reports DB'. The 'Database name' field is set to 'mydb'. The 'Database description' field is empty. The 'Purpose' is set to 'Production'. The 'Source' section shows 'Apply a default database workload sta' and a dropdown menu with 'Departmental Transactional' selected. The description for 'Departmental Transactional' reads: 'For databases primarily used for online transaction processing (OLTP). The database will be optimized for transactional applications. Enr Database'.

Configure Worklight Server

- Finally, drag a Worklight Configuration component, link it to Worklight Server, and specify the security of the Worklight Console.

IBM PureApplication System - Virtual Application Builder

Diagram | List View | Source | untitled * | Pattern Type: IBM Mobile Application Platform Pattern T

Save | Save As | Layout | Undo | Redo

Assets

Add policy for application

Worklight Configuration

Worklight Server

WL Reports DB

1. Drag a Configuration component.

2. Create a link.

3. Specify the login credentials.

Worklight Configuration

Name: Worklight Configuration

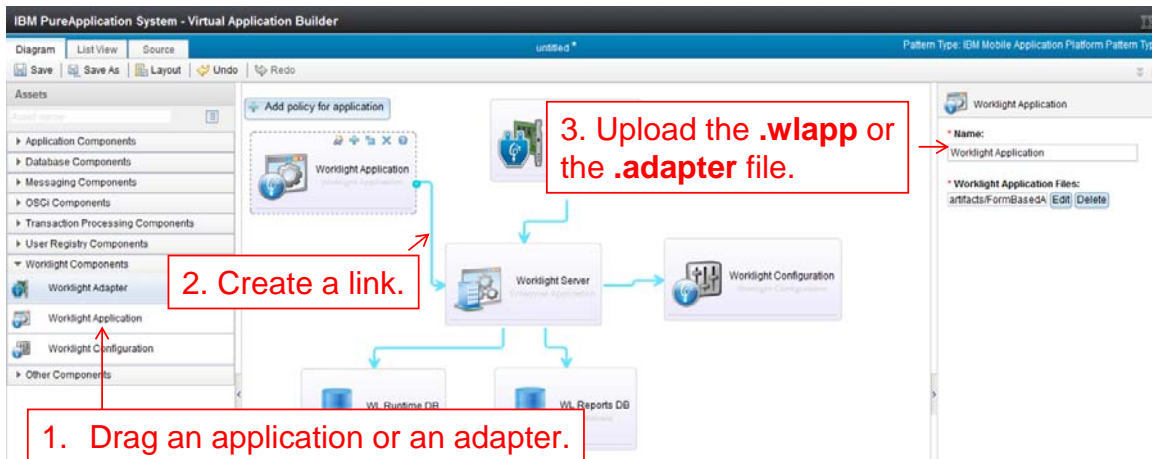
Worklight Console Protection:

Worklight Console Username: worklight

Worklight Console Password:

Create application and adapter

- Now you can create Worklight applications and adapters by dragging the corresponding components, and link them to Worklight Server.
 - For applications, upload the **.wlapp** file.
 - For adapters, upload the **.adapter** file.



Manage Worklight VAP instance (1 of 2)

- After you create an IBM Worklight VAP, you can deploy it like any other VAP.
- You can manage the running instances by going to **Workload Console > Instances**.
- Select **IBM Mobile Application Platform Pattern Type 5.0** to filter.
- Select your instance, and click **Manage**.

The screenshot displays the IBM PureApplication System Workload Console. The top navigation bar includes 'Welcome', 'Instances', 'Patterns', 'Catalog', 'Cloud', and 'System'. The main content area is divided into two sections: a list of Virtual Application Instances on the left and the details for a selected instance on the right.

Virtual Application Instances List:

- Search: [Search...]
- Filter: IBM Mobile Application Platform Pattern Type 5.0
- module_03_0_HelloWorklightProject (Status: Error)
- module_21_0_FormBasedAuthentication (Status: Error) - Selected

Instance Details (module_21_0_FormBasedAuthentication):

- Name: module_21_0_FormBasedAuthentication
- Created by: deploy25
- Started on: Feb 27, 2013 2:34:43 PM
- Access granted to: [Add more...]
- ID: d-557f957b-f33c-4929-b7b0-9ec2ea4de970
- Status: Launching (Step 4 of 4) 80% (Preparing middleware)
- Deployment Environment profile: envprofile35
- Priority: High

Annotations:

- A red box labeled "1. Select the instance." points to the selected instance in the list.
- A red box labeled "2. Click Manage." points to the 'Manage' button in the instance details header.

Manage Worklight VAP instance (2 of 2)

- Click **Operations**, and select **Worklight**.
- On the right panel, you can do the following operations:
 - Install or update applications and adapters.
 - Set security protection of the Worklight Console.

Virtual Application Console

Maintenance mode deploy

Monitoring Logging **Operations** Links Main Console

Operations

1. Click **Operations**.

AGENT	Fundamental
MAINTENANCE	Worklight Application/Adapter
MONITORING	Security
SSH	Worklight Security
Worklight_Reports_DB-db2.DB2	Worklight Security Configuration
Worklight_Runtime_DB-db2.DB2	Worklight Console Protection: <input checked="" type="checkbox"/>
Worklight_Server-was.ElbServicePlaceholder	Worklight Console Username: worklight
Worklight_Server-was.WAS	Worklight Console Password: *****
Worklight_Server-was.WORKLIGHT	Submit

2. Select **WORKLIGHT**.

3. Configure the login credentials.

4. Click **Submit** to save.

Operation Execution Results

Name	Status	Created Time	Result	Value
No operation results				

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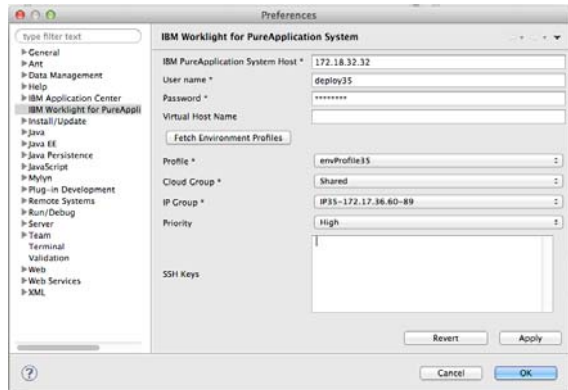
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Set up PureApplication System Preference in Worklight Studio

- The PureApplication System extension is integrated in Worklight Studio.
- Before using the PureApplication System capability, you must set up some preferences.
 - See next slide.

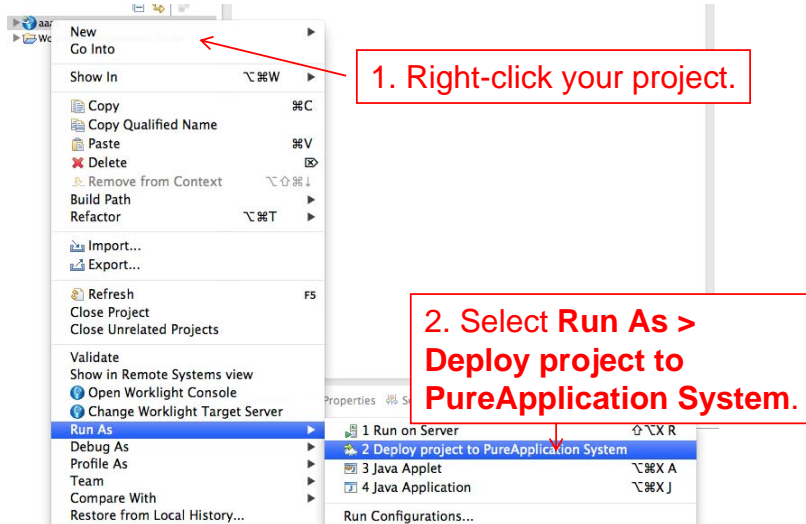
Specify the cloud environment

1. Open the **Preference** window of Eclipse.
2. Go to **IBM Worklight for PureApplication System**.
3. Enter the values of the following fields:
 - **IPAS Host**
 - **User name**
 - **Password**
4. Click **Fetch Environment Profiles**.
5. Select the target profile.
6. Click **Apply** to save the settings.



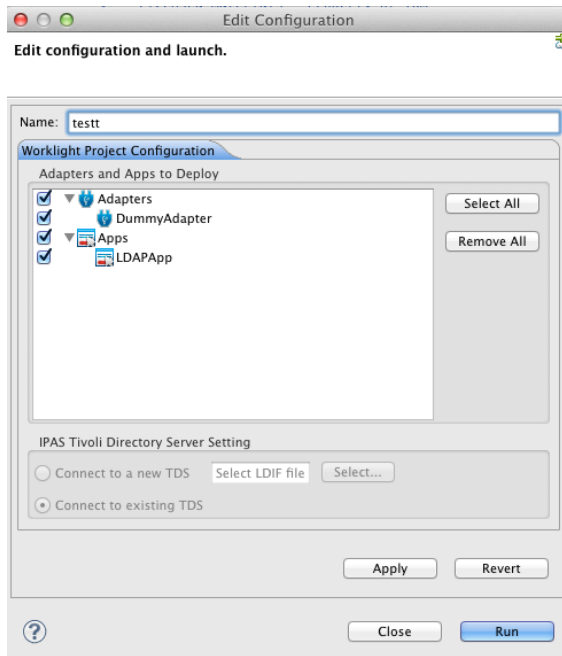
Deploy the Worklight project to PureApplication System

- To deploy your IBM Worklight project to PureApplication System, right-click the project, and then select **Run As > Deploy project to PureApplication System**.



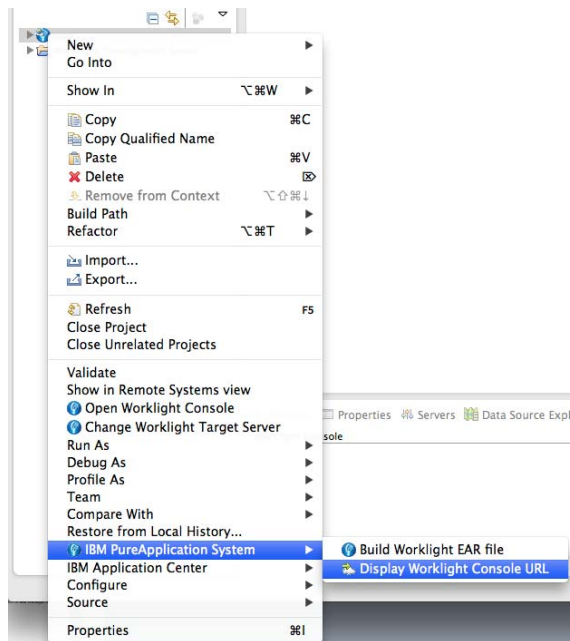
Select the assets to deploy

- In the **Edit Configuration** dialog, select the applications and adapters that you want to deploy.
- Check the status in the Worklight Console.
- A window opens when the deployment is complete.



Get the Worklight Console URL

- You can get the URL of the Worklight Console of the deployed project.
- Right-click your Worklight project, and select **IBM PureApplication System > Display Worklight Console URL**.
- A window displays the URL.



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Prerequisites

- Get the Ant task JAR file from the installation of IBM Mobile Application Platform Pattern .

Build VAP by Ant Script (1 of 3)

- Use the following Ant script as a template to build the VAP with Ant:

```
<taskdef resource="com/worklight/ant/defaults.properties"
  classpath="${taskdefClasspath}" />

<target
  name="buildIPAS_VAP"
  depends="buildAll" >

  <vap-builder
    worklightWar="${worklightWar}"
    destinationFolder="${wlProjectDestDir}"
    artifactsFolder="${artifactsFolder}"
    elbHost="${elbHost}" />

</target>
```


Build VAP by ANT Script (2 of 3)

- Specify the following attributes:

Attributes	Description
<i>worklightWar</i>	Required. This file is the Worklight Console WAR file – make sure to include the full file path.
<i>destinationFolder</i>	Optional. The destination folder. Default value: <code>\${projectfolder}/bin</code>
<i>artifactsFolder</i>	Optional. This folder is where adapters and apps are stored by Worklight Studio or CLI.
<i>elbHost</i>	Optional. Host name for elastic load balancer.
<i>createVAPFlag</i>	Optional. If defined and set to true , the Virtual Application Pattern compressed file is generated. Default value: true
<i>isConnectNewTDS</i>	Optional. Use this attribute to define whether there is a need to connect a new Tivoli Directory Server.

- (continued on next slide)

Build VAP by ANT Script (3 of 3)

- Specify the following attributes
 - (continued from previous slide)

Attributes	Description
<i>ldifFile</i>	Optional. Set this attribute if isConnectNewTDS is true to define the LDIF file.
<i>ipasModel</i>	Optional. Possible values are the following ones: • W1500 : when PureApplication System runs on Intel • W1700 : when PureApplication System runs on Power system. If not specified, the default value is W1500 .
<i>ipasHost</i>	Optional. The URL of PureApplication System – required if createVAPFlag is true .
<i>username</i>	Optional. The user name to access the PureApplication System console – required when createVAPFlag is true .
<i>password</i>	Optional. The password to access the PureApplication System console – required when createVAPFlag is true .

Deploy VAP by ANT Script (1 of 2)

- Use the following Ant script as a template to deploy the VAP with Ant:

```
<taskdef resource="com/worklight/ant/defaults.properties"
  classpath="{taskdefClasspath}"/>
<target name="deployVAP" depends="buildVap4IPAS">
  <ipas-deployer
    vapZipFile="{vapFile}"
    ipasHost="{ipasHost}"
    username="{username}"
    password="{password}"
    profileName="{profileName}"
    cloudGroupName="{cloudGroupName}"
    ipGroupName="{ipGroupName}"
    priority="{ipasPriority}" />
</target>
```

Deploy VAP by ANT Script (2 of 2)

- Specify the following attributes:

Attributes	Description
<i>vapZipFile</i>	Required. The path to the *.zip file that the vap-builder built
<i>ipasHost</i>	Required. The URL of PureApplication System
<i>username</i>	Required. The user name that is required to access the PureApplication System console
<i>password</i>	Required. The password that is required to access the PureApplication System console
<i>profileName</i>	Required. The profile name that is used to deploy VAP
<i>cloudGroupName</i>	Required. The cloud group name that is used to deploy VAP
<i>ipGroupName</i>	Required. The IP group name that is used to deploy VAP
<i>priority</i>	Required. The priority that is used to deploy VAP

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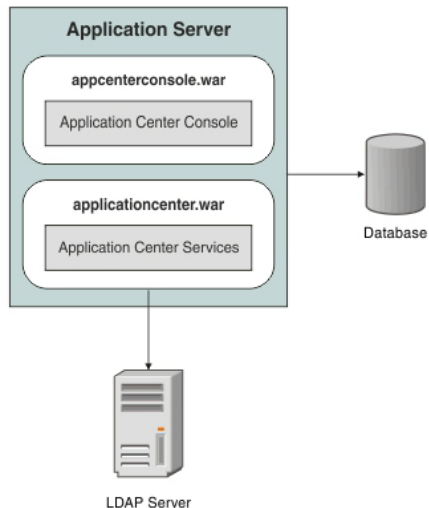
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- **Deploy Application Center**

Introduction to Application Center

- The Application Center is provided as an enterprise application store.
- It is similar to the Apple App Store or Google Play, except that it targets only private usage within a company.
- For more information, see the Application Center topic in the IBM Worklight user documentation.

Typical operation model

- Here is a typical operation model of Application Center:
 - The Application Server hosts the Application Center console and services.
 - The LDAP Server is responsible for authentication and user management.
 - The database is the repository for tracking information such as users, apps, or feedback.



Prerequisites

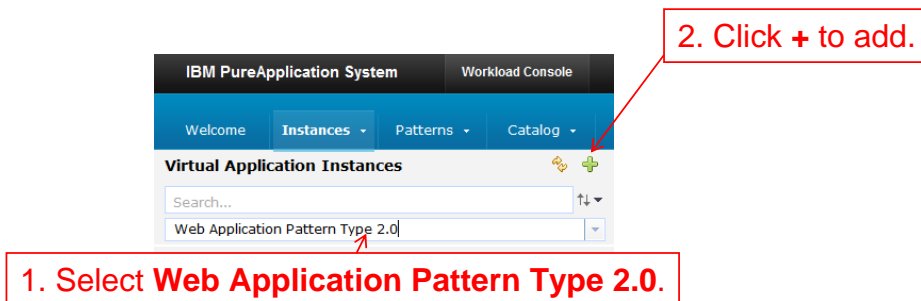
- Before you start to deploy Application Center to PureApplication System, ensure that it is installed.
- The Application Center is part of IBM Worklight Server. You can install it either through IBM Installation Manager or through manual installation. For more information, see the IBM Worklight user documentation.
 - Take note of the IBM Worklight installation folder **{worklight_install_folder }**.
 - When you install the Worklight Server with the Installation Manager, the Application Center artifacts are installed in the **{worklight_install_folder }/ApplicationCenter**.
- You must have an PureApplication System environment with privilege to create Virtual Application Pattern and run Virtual Application instances.

Get Application Center EAR file

- Since IBM Worklight V5.0.6, the App Center is divided into two WAR files: the Console and the Services.
- The pre-built EAR file is available in **{worklight_install_folder}/ApplicationCenter/console**.
- The paths of the WAR files in this EAR file are as follows:
 - Console: /applicationconsole
 - Services: /applicationcenter
- For information about how to build this EAR file yourself, see the IBM Worklight user documentation.

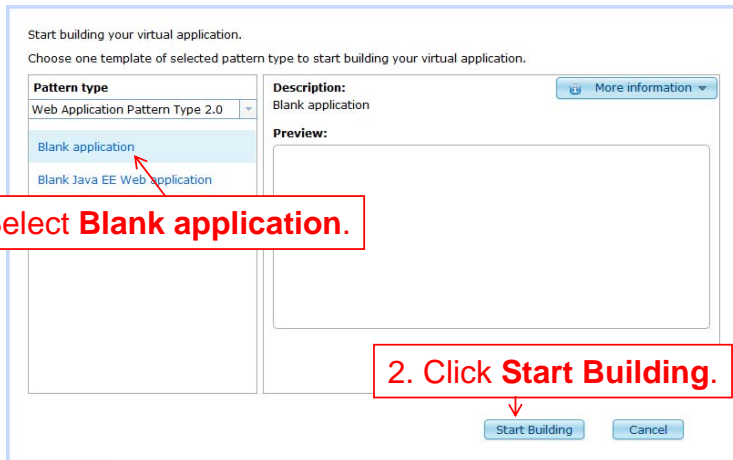
Create Virtual Application Pattern (1 of 2)

- Log in to PureApplication System
- Go to **Workload Console > Patterns > Virtual Applications.**
- In the list on the left, select **Web Application Pattern Type 2.0**, and then click **+**.



Create Virtual Application Pattern (2 of 2)

- In the dialog, select a template to start from, then click **Start Building**.
 - Select the template that is convenient for you.
 - You must create one web application component, one database component, and one user registry component.
 - For this module, select the **Blank Application** template.



Add an Enterprise Application Component

- On the Diagram pane on the left, expand **Application Components**.
- Drag an **Enterprise Application** component.
- On the property pane on the right, select the component, and specify the **EAR file** for the application center.

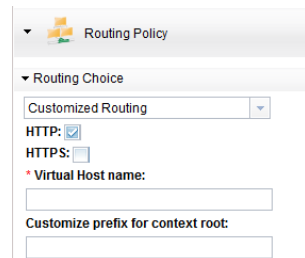
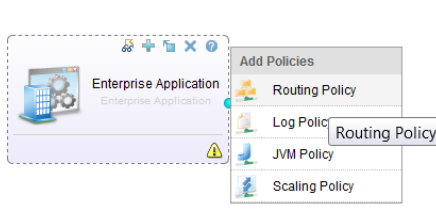
The screenshot shows the IBM PureApplication System - Virtual Application Builder interface. The top bar includes tabs for Diagram, List View, and Source, with the current view set to Diagram. The main workspace is titled 'untitled *' and shows a diagram with a single 'Enterprise Application' component. The left pane, labeled 'Assets', has 'Application Components' expanded, showing 'Enterprise Application' selected. The right pane, labeled 'Hints', shows the properties for the selected 'Enterprise Application' component, with the 'EAR file' field set to 'artifacts/appcenter.ear'. Two red boxes with arrows highlight the 'Enterprise Application' component in the Assets pane and the 'EAR file' field in the Hints pane.

1. Drag and Drop a WAS Component.

2. Specify the EAR file.

Add a Routing Policy

- From the menu of the Enterprise Application component, click the **+** (add) icon, and then select **Routing Policy**.
- In the property pane of the Routing Policy component, specify the **Virtual Host name**.



Add a database component

- On the left pane, expand **Database Components**.
- Drag a database (for this module, select **Database DB2**).
- Click the database and, on the property panel, specify the **Schema file**.
 - You can get the **create-appcenter-{db}.sql** in the **{worklight_install_folder}/ApplicationCenter/database** folder.

The screenshot illustrates the steps to add a database component in the IBM Worklight console. On the left, the 'Assets' pane shows the 'Database Components' folder expanded, with 'Database DB2' selected. A red arrow points from this selection to the main workspace. In the workspace, a diagram shows an 'Enterprise Application' component connected to 'Routing Policy' and 'JVM Policy' components. A 'Database' component is being added to the diagram. A red box with the text '1. Drag a DB2 component.' points to the 'Database' component in the diagram. On the right, the 'Properties' panel for the 'Database' component is shown. A red box with the text '2. Specify the Schema file.' points to the 'Schema file' field, which is set to 'artifacts/create-appce'. The 'Name' field is set to 'Departmental Transactional' and the 'Description' field contains text about OLTP and data warehousing. The 'Database version' is set to 'hux' and the 'Database size (GB)' is set to '30'. The 'Database compatibility mode' is set to 'DB2 (default)'. The 'Schema file' field is highlighted with a red box and a red arrow pointing to the text '2. Specify the Schema file.'

Connect the application and the database

- From the Enterprise Application component, click and hold the solid circle on the right edge, move the mouse to the database component, and then release.
 - You created a connection (link) between the web application and the database.
- Click the connection line, and specify the data source as **jdbc/AppCenterDS**.



Add a user registry component

- On the left pane, expand **User Registry Components**.
- Drag a User Registry component.
- Select the User Registry component, and, on the property pane, specify the values of the **Base DN** and **LDIF file** fields.

The screenshot illustrates the configuration process in the IBM WebSphere console. On the left, the 'Assets' pane shows the 'User Registry' component selected under 'User Registry Components'. A red arrow points from this selection to the first step: '1. Drag a User Registry component.' The main workspace shows a diagram where an 'Enterprise Application' is connected to a 'Database' and a 'User Registry' component. A second red arrow points from the 'User Registry' component in the diagram to the second step: '2. Specify the values of the Base DN and LDIF file fields.' The right pane shows the configuration properties for the 'User Registry' component, with the 'Base DN' and 'LDIF file' fields highlighted by red boxes and arrows.

1. Drag a User Registry component.

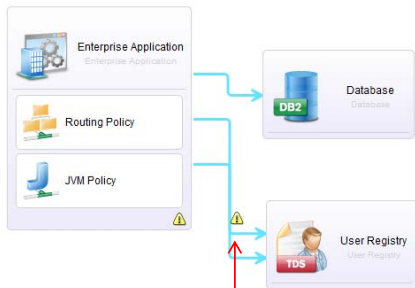
2. Specify the values of the Base DN and LDIF file fields.

Configuration properties for the User Registry component:

- Base DN:** o=acme.cus
- LDIF file:** artifacts/ldap-counter [Edit] [Delete]
- Custom schema file:** [Edit]
- Admin DN password:** [New password] [Verify password]
- Instance password:** [New password] [Verify password]
- User filter:** (objectclass=ePerson)
- Group filter:** (/!objectclass=cn=un/NameVnbiarta)

Connect the application and the user registry

- Create two links between the Enterprise Application and the User Registry component.
- Configure the user role mapping for these links:
 - For the first link, set the **Role name** to **appcenteradmin**, and set **Mapping special subjects** to **All AuthenticatedUsers**.
 - For the second link, set the **Role name** to **appcenteruser**, and set **Mapping special subjects** to **All AuthenticatedUsers**.



1. Create 2 links.

Enterprise Application → User Registry

Enterprise Application → User Registry

* Role name:

User role mapping:

Group role mapping:

* Mapping special subjects:
 None
 AllAuthenticatedUsers
 Everyone

Enterprise Application → User Registry

Enterprise Application → User Registry

* Role name:

User role mapping:

Group role mapping:

* Mapping special subjects:
 None
 AllAuthenticatedUsers
 Everyone

2. Specify the **Role name**.

Save and deploy

- Save the virtual application. You can give it a name.
- Back to the **Virtual Application Patterns** page, you now see the pattern that you created.
- Click **Deploy**.

Virtual Application

*** Name:**

Description:

The screenshot shows the Worklight Application Center interface. On the left, under 'Virtual Application Patterns', the 'Worklight Application Center' entry is highlighted with a red box. On the right, the details for this application are shown, including fields for Application ID, Description, Created by, Updated by, Created on, Updated on, Preview, and Access granted to. A red arrow points from the 'Worklight Application Center' entry to the 'Deploy' button in the top right corner of the details panel.

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