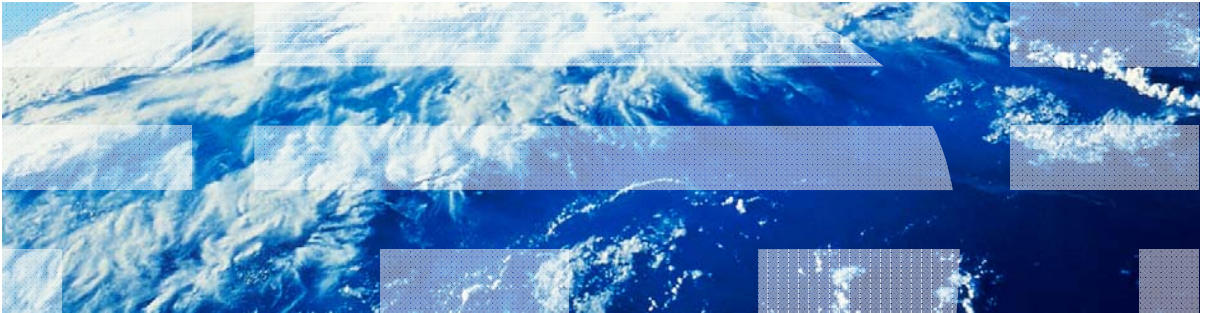


IBM Worklight V5.0.6 Getting Started

Shell development concepts



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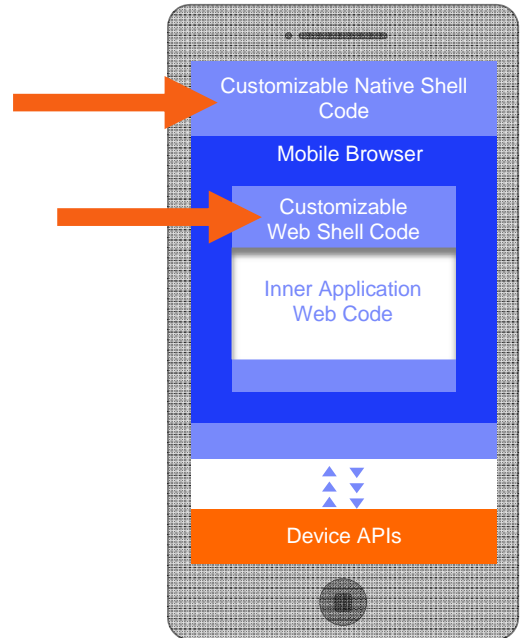
- Overview
- Creating a Shell Component
- Using a Shell Component in a test application
- Creating and using a Shell Bundle in an Inner application

Overview

- The main idea behind shell component methodology is to create two levels of development inside the organization:
 - Developers skilled in native development, implement native and web code-bases that can be used as a starting point for one or more applications. For example:
 - Native functionality to be invoked from JavaScript™ (Cordova plug-ins)
 - Authentication framework
 - Security configuration
 - Web resources that are shared between applications, such as logotypes and themes
 - Developers who have less native development skills but more web expertise receive a ready-to-use shell component and use it as a wrapper to create the organization applications. For example:
 - Business logic
 - UI development
 - Data integration

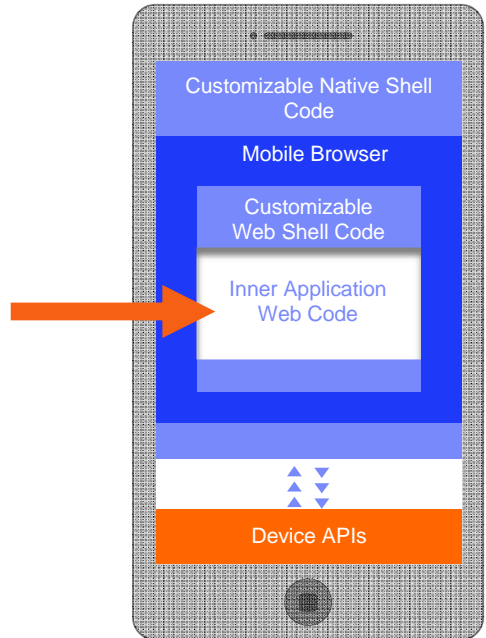
Overview – Architecture of the Shell-based Application

- **Shell component** - a component to be used by inner applications as a code base wrapper. Usually consists of native classes and shell-specific web resources that are going to be used in inner applications. The shell component is implemented by shell developers and sent to inner application developers to use.



Overview – Architecture of the Shell-based Application

- **Inner application** – web resources (HTML / JavaScript / CSS) that are run inside the shell component.
- **Test application** – The shell component is not executable by itself. After it is created, an inner application is automatically added to the project by Worklight® Studio. This application is used by the shell developer to test the shell component functionality.



Agenda

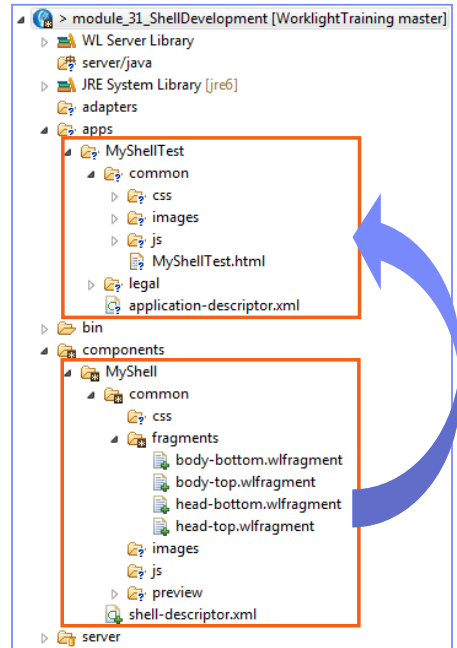
- Overview
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Creating a Shell Component

- This training module covers the basics of creating and using a shell component and an inner application.
- A prerequisite for successful completion of this and subsequent training modules is a solid knowledge of Worklight hybrid application development concepts.
- Make sure that you have a solid understanding of Worklight development principles, specifically iOS and Android development
- This module covers shell development concepts, using a common folder.
- Following modules cover Android and iOS shell development.

Creating a Shell Component

- A *shell component* is a building block that is used to create inner applications.
- Add a shell component to your project and name it **MyShell**.
- Note that the **MyShellTest** application was automatically created for you; this is a test application as described in the Overview section. You can use it to test and debug the shell component.



Creating a Shell Component

- The `shell-descriptor.xml` file contains shell component metadata and application-specific properties
- Application-specific properties that are set in the shell descriptor are used in all inner applications
- `shell-descriptor.xml` can be edited in either Design or Source mode

The screenshot shows the 'Shell Descriptor Editor' window. The 'Overview' tab is active, displaying a list of components: 'Shell "MyShell"', 'Android phones and tablets', and 'iphone'. The 'Details' tab shows the configuration for 'MyShell', including the 'Id' field set to 'MyShell' and the 'Version' field set to '1.0'. Below the editor, the XML content of the `shell-descriptor.xml` file is displayed.

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<!-- Licensed Materials - Property of IBM
      5725-G92 (C) Copyright IBM Corp. 2006, 2012. All Rights Reserved.
      US Government Users Restricted Rights - Use, duplication or
      disclosure restricted by GSA ADP Schedule Contract with IBM Corp. -->
<!-- Attribute "id" must be identical to shell component folder name -->
<shell xmlns="http://www.worklight.com/shell-descriptor" id="MyShell" platformVersion="5.0" version="1.0">
  <iphone version="1.0"/>
  <android version="1.0"/>
</shell>
```

Agenda

- Overview
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Using Shell Component in Test application

- Follow these instructions to develop a functioning shell component.
- Create a `myshell.js` file in the `MyShell\common\js` folder.
- Add the following function to it:

```
function sayHelloFromShell(){  
    alert("Hello from Shell");  
}
```

- Modify the `body-top.wlfragment` file and add the following lines to it.

```
<h1>This is a header that will be visible in all inner applications that use this Shell</h1>  
<script src="js/myshell.js"></script>
```

Using Shell Component in Test application

- Modify the `MyShellTest.js` file in the `apps/MyShellTest/common/js` folder.
- Invoke the function that you previously added in the shell component.

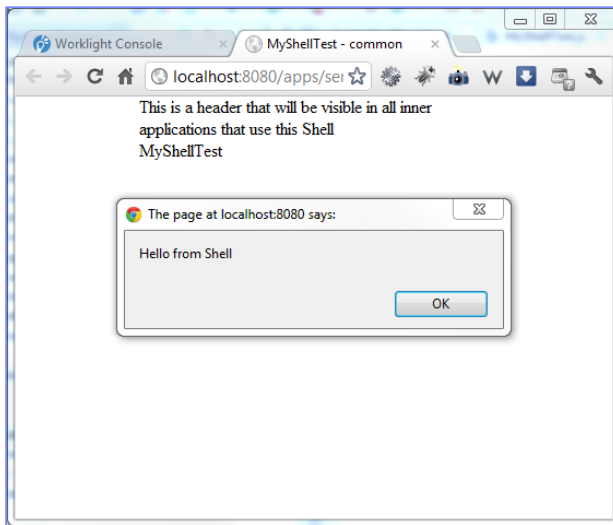
```
function wlCommonInit(){  
    sayHelloFromShell();  
}
```

- Note that the `sayHelloFromShell()` function is not a part of the inner application, but is from the shell component.
- Build and deploy the `MyShellTest` application.
- When you have built and deployed your application, you will find it in Worklight Console as a regular hybrid application.



Using Shell Component in Test application

- Preview your Test application. Note that it contains web resources from both the shell component and the inner application.



Agenda

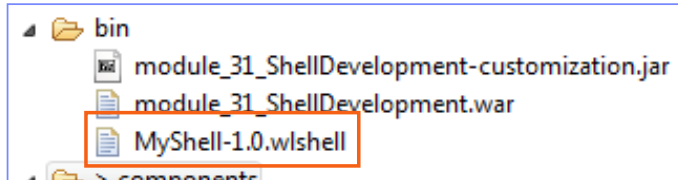
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Creating and using a Shell Bundle

- When the shell developer builds a shell component a `.wshell` file is created in the project `bin\` folder. This file is called a *shell bundle* and can be sent to inner application developers to use.
- A shell developer working with a test application is not required to explicitly create a shell bundle. The test application references the shell component source code directly from the location that is specified in its `application-descriptor.xml` file
- However, when the shell developer wants to send the shell component to the inner application developer the need to create a shell bundle arises.

Creating and using a Shell Bundle

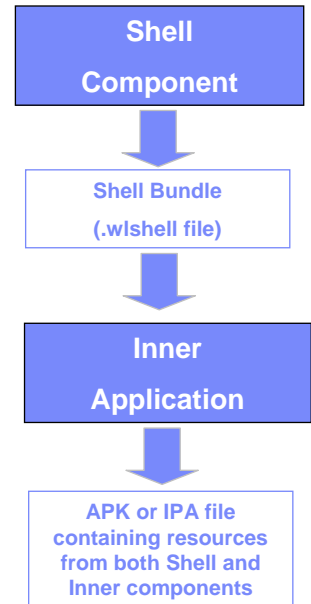
- To create a shell bundle, right-click a shell component folder and select **Run > Build Shell Component**.
- The `.wshell` file is created in the `bin\` folder of your project, as described previously.



- This file can be sent to inner application developers.

Creating and using a Shell Bundle

- The inner application developer must copy the shell bundle file to a Worklight project.
- When inner application developers create a new inner application, they must specify the location of a shell bundle file.
- If a new shell bundle file is received from shell component developers, inner application developers must replace the existing shell bundle file and rebuild their applications.



Next training modules

- Shell development for iOS and Android environments is covered in subsequent training modules.
- Ensure that you have a solid understanding of this training module before you move to the next ones.

Check yourself questions

- In which case should the shell development approach be taken?
 - The company has only two developers
 - The company wants to create a number of mobile applications sharing the common native code base and authentication mechanism
 - The company wants to create a native iOS and Android application, but its resources are limited
 - The company has distributed development teams that are situated on different continents but requiring to share the source code
- Which of the following should not be a part of the Shell component?
 - Authentication module
 - Native functionality JavaScript wrapper
 - Application UI components
 - Company logotype that should be shared between several applications
- When a shell developer completes developing the shell components, what is the correct way to distribute it to inner application developers?
 - Compressing the Worklight project and emailing it to inner application developers
 - Committing the Worklight project to a source control management system and telling inner application developers to use source code from it
 - The shell developer should not distribute the shell component to inner application developers. They should send their inner applications to the shell developer in order to build them
 - Sending the `worklight` shell bundle file to inner application developers

Check yourself questions

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