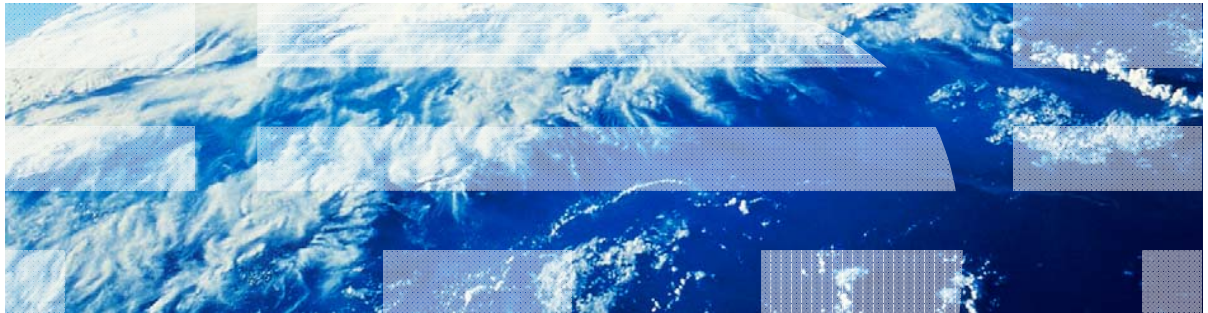


# ***IBM Worklight V6.0.0 Getting Started***

## **Adapter framework overview**



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# Agenda

- Adapters overview
- Creating an adapter
- Deploying an adapter
- Adapter structure



## ***Benefits***

- Universality
  - Supports multiple integration technologies and back-end information systems
- Read-only and transactional capabilities
  - Adapters support read-only and transactional access modes to back-end systems
- Fast development
  - Use simple XML syntax and easily configured with JavaScript™ API
- Security
  - Use of flexible authentication facilities to create connections with back-end systems
  - Adapters offer control over the identity of the connected user
- Scalability
  - Adapters reduce the number of transactions on back-end systems by using cache to store retrieved back-end data
- Transparency
  - Data that is retrieved from back-end applications is exposed in a uniform manner regardless of the adapter type

## ***Adapter anatomy***

- Each IBM Worklight adapter consists of:
  - An XML file, describing the connectivity options and listing the procedures that are exposed to the application or other adapters.
  - A JavaScript file, containing the implementation of procedures that are declared in the XML file.
  - Zero or more XSL files, containing a transformation scheme for retrieved raw XML data.
- Data that is retrieved by an adapter can be returned raw or preprocessed by the adapter itself. In both cases, it is presented to the application as a JSON object.

## ***Adapter anatomy: procedures***

- Procedures provide adapter functions to the application.
- Procedures call back-end services to retrieve data or to perform actions.
- Procedures are declared in XML and are implemented with server-side JavaScript.
- Using server-side JavaScript, a procedure can process the data before or after it calls the service.
- More filtering can be applied to retrieved data with simple XSLT.
- Usually, adapter procedures are implemented in JavaScript, but since an adapter is a server-side entity, it is possible to use Java snippets in the adapter code.

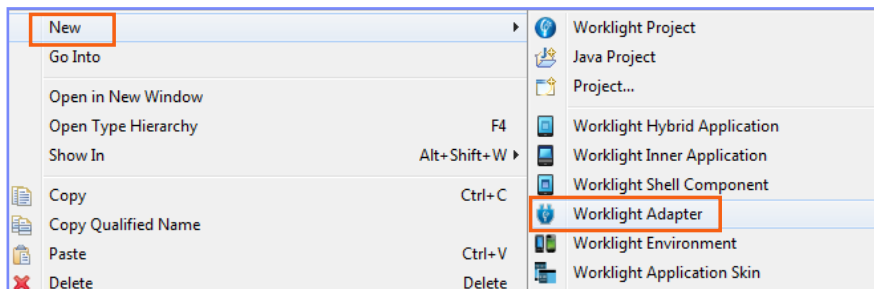
# Agenda

- Adapters overview
- Creating an adapter
- Deploying an adapter
- Adapter structure



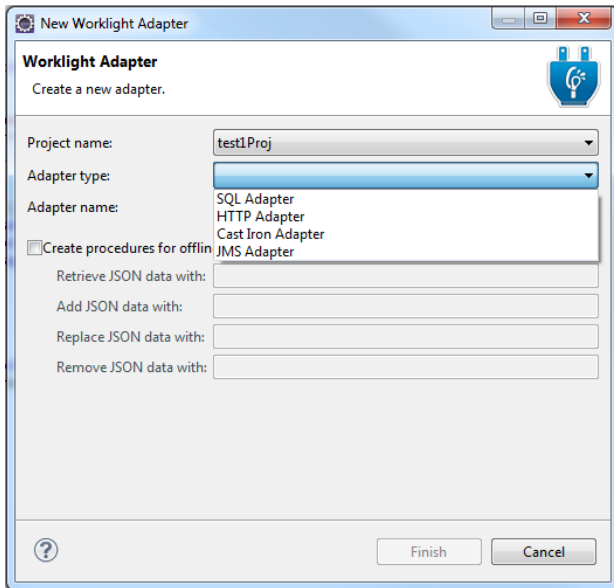
## Creating an adapter

- Right-click the Worklight Project node
- Select New -> Worklight Adapter



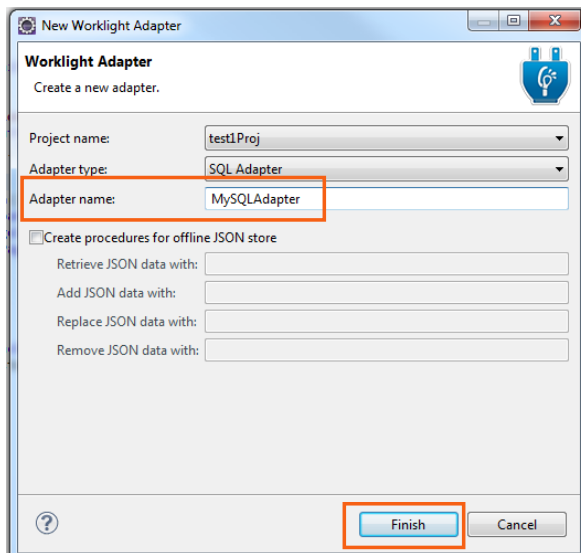
## Creating an adapter

- Select a Worklight project
- Select an Adapter type



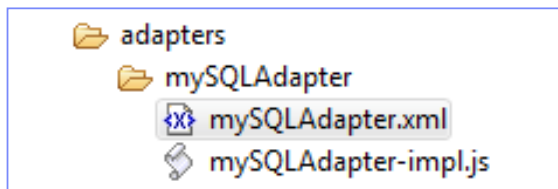
## Creating an adapter

- Select an Adapter type
- Type the Adapter name
  - Applications access the adapter with this name
- Click **Finish**



## Creating an adapter

- Select a Worklight project
- Select an Adapter type
- Type the Adapter name
  - Applications access the adapter with this name
- Click **Finish**
- The result
  - XML files, which declare procedures and connection properties
  - A JavaScript file, which defines procedures and the adapter logic



# Agenda

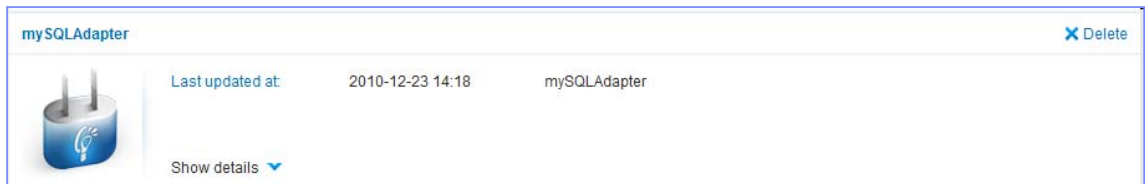
- Adapters overview
- Creating an adapter
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- The adapter structure

## Adapter deployment

- Select an adapter to deploy
- Right-click the adapter and then **Run As > Deploy Worklight Adapter**

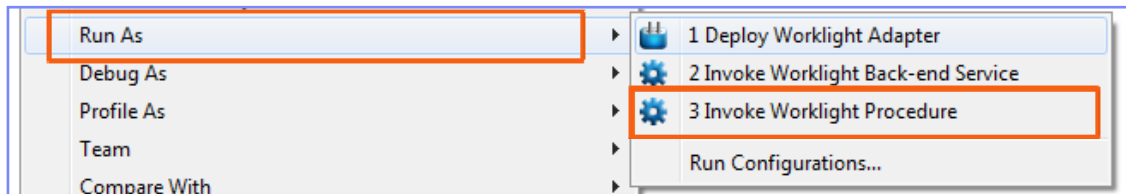


- Worklight Studio archives the adapter code and deploys it onto the Worklight Server
- You can see the deployed adapter in the Worklight Console



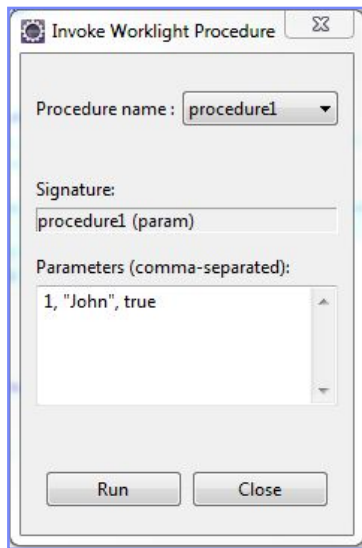
## Testing the adapter procedures

- Use Worklight Studio to test the adapter procedures
- To run a procedure test, click **Invoke Worklight Procedure** from the **Run As** menu



## Testing the adapter procedures

- Select the procedure that you want to test
- Enter comma-separated procedure parameters
- Click **Run**





# Agenda

- Adapters overview
- Creating an adapter
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## ***Reviewing the adapter structure: XML***

```
<wl:adapter name="mySQLAdapter" >
```

```
  <displayName />
```

```
  <description />
```

```
  <connectivity>
```

```
    <connectionPolicy>
```

```
    <loadConstraints>
```

```
  </connectivity>
```

```
  <procedure />
```

```
  <procedure />
```

```
  .....
```

```
</wl:adapter>
```

The adapter Name is a required attribute.

## Reviewing the adapter structure: XML

```
<wl:adapter name="mySQLAdapter" >
```

```
  <displayName />
```

```
  <description />
```

```
  <connectivity>
```

```
    <connectionPolicy>
```

```
    <loadConstraints>
```

```
  </connectivity>
```

```
  <procedure />
```

```
  <procedure />
```

```
  .....
```

```
</wl:adapter>
```

*Optional:* Name is displayed in the Worklight Console

## Reviewing the adapter structure: XML

```
<wl:adapter name="mySQLAdapter" >  
  <displayName />  
  <description />  
  <connectivity>  
    <connectionPolicy>  
    <loadConstraints>  
  </connectivity>  
  <procedure />  
  <procedure />  
  .....  
</wl:adapter>
```

*Optional:* Additional information is displayed in the Worklight Console

## ***Reviewing the adapter structure: XML***

```
<wl:adapter name="mySQLAdapter" >  
  <displayName />  
  <description />  
  <connectivity>  
    <connectionPolicy>  
    <loadConstraints>  
  </connectivity>  
  <procedure />  
  <procedure />  
  .....  
</wl:adapter>
```

### **Connectivity**

- Defines the connection properties and load constraints of the back-end system
- When the back-end system requires user authentication, this element defines how user credentials are obtained

## ***Reviewing the adapter structure: XML***

```
<wl:adapter name="mySQLAdapter" >  
  <displayName />  
  <description />  
  <connectivity>  
    <connectionPolicy>  
    <loadConstraints>  
  </connectivity>  
  <procedure />  
  <procedure />  
  .....  
</wl:adapter>
```

### **Procedures**

Declare a service for accessing a back-end application. One entry for each adapter procedure.

## Reviewing the adapter structure: JavaScript

- Each procedure declared in the adapter XML file must have a corresponding function in the JS file.
- WL.Server API defines a procedure logic in JavaScript.

```
17 <procedure name="procedure1"/>  
18 <procedure name="procedure2"/>
```

XML File



```
8 var procedure1Statement =  
9   WL.Server.createSQLStatement("select COLUMN1, COLUMN2 from TABLE1 where COLUMN3 = ?");  
10 function procedure1(param) {  
11   return WL.Server.invokeSQLStatement({  
12     preparedStatement : procedure1Statement,  
13     parameters : [param]  
14   });  
15 }
```

JS File

## ***Check yourself questions***

- A Worklight adapter is used to:
  - Adapt the application to various environments; iOS, Android, and so on.
  - Connect to various back-end systems
  - Make sure that client application works directly with a corporate back-end system
  - Make sure that client application is not running on a JailBroken or Rooted device
- What type of adapter is not provided by Worklight?
  - SQL adapter to connect to SQL-based servers
  - HTTP adapter to communicate with web-based services
  - Cast Iron adapter
  - SIP adapter for VoIP communications
- Each Worklight adapter consists of:
  - Single XML file with adapter settings, single JS file with adapter implementation
  - Single XML file with adapter settings, multiple JS files with adapter implementation
  - Multiple XML files with adapter settings, multiple JS files with adapter implementation
  - Multiple XML files with adapter settings, single JS file with adapter implementation



## Check yourself questions

- A Worklight adapter is used to:
  - Adapt the application to various environments; iOS, Android, and so on
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