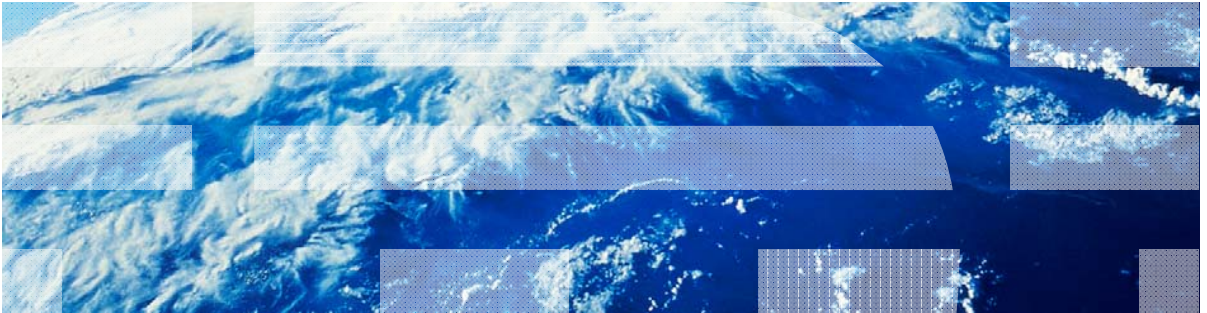


IBM Worklight V5.0.6 Getting Started

Debugging your applications



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- Debugging with IBM Worklight® debugger
- Testing the adapter procedures
- Debugging with Weinre
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- Debugging with Mobile Browser Simulator

About Client-side Debugging

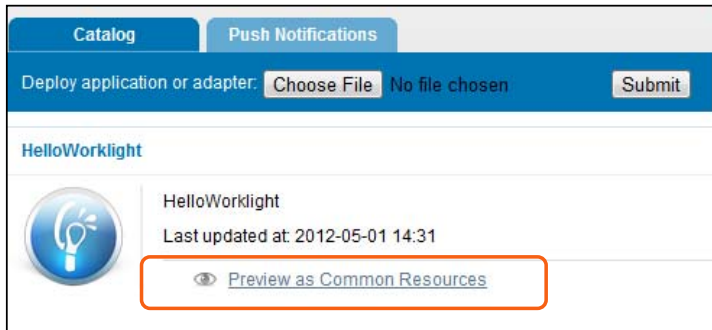
- Debugging is part of the application development process
- Debugging is a process, which consists of finding the cause of defects in the application code and UI
- IBM Worklight® applications consist of web-based resources and optional native code (such as Java™, Objective-C, and C#)
- You can debug native code by using standard tools that are provided by the platform SDK, such as: Xcode, Android Logcat/ADB, Microsoft Visual studio
- This module presents how to debug web-based resources

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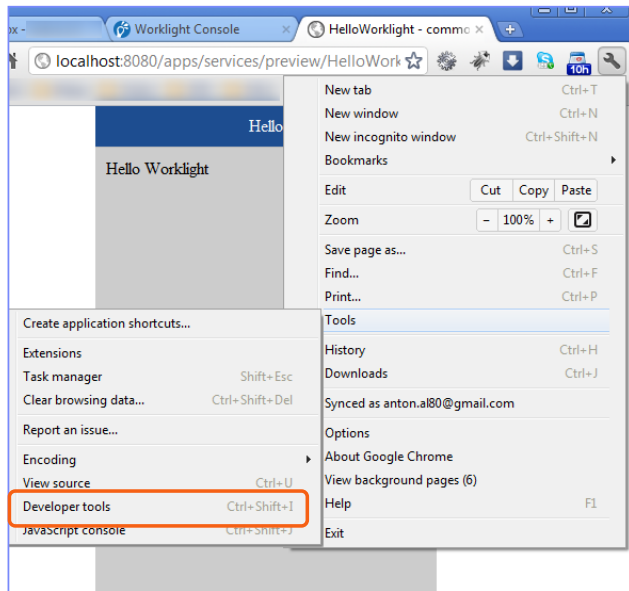
Debugging on a Desktop Browser

- Modern browsers, such as Chrome, Firefox, Safari, Opera, or Internet Explorer, provide an easy and convenient way to debug web apps.
- As seen in the previous modules, during development, you can preview applications in a desktop browser by using the Worklight Console.



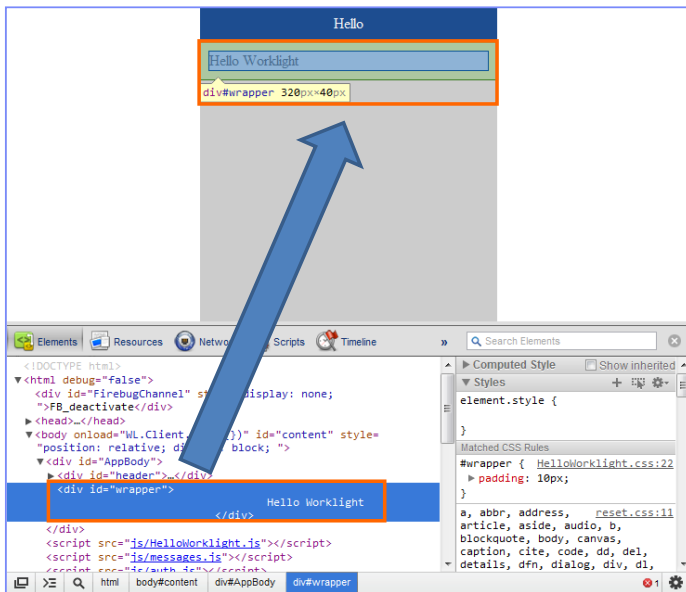
Debugging on a Desktop Browser

- There are many web tools for debugging on various desktop browsers.
- For example:
 - **FireBug** extension for FireFox
 - **Developer tools** for Chrome (press CTRL+SHIFT+I to start)
 - **Developer tools** for Internet Explorer (press F12 to start)
 - **Dragonfly** for Opera



Debugging on a Desktop Browser

- In early application development stages, use these tools to debug your application just like a regular website. You are not required install them on a mobile device.



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Debugging with IBM Worklight Debugger

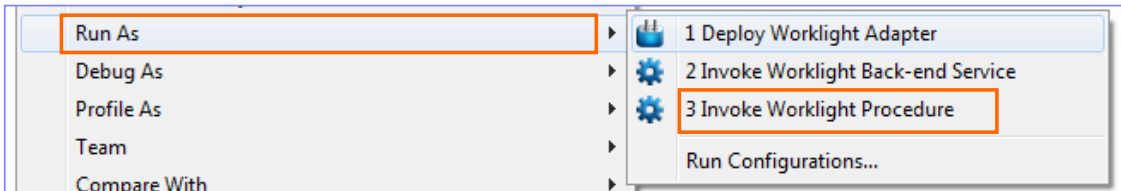
- IBM Worklight provides **WL.Logger.debug()** and **WL.Logger.error()** APIs
- **WL.Logger.debug()** and **WL.Logger.error()** APIs are multiplatform: the output destination changes according to the platform on which that application runs on – for example:
 - **Developer console** when it is running on a **desktop browser**
 - **LogCat** when it is running on Android device
 - **Visual Studio Output** when it is running on a **Windows Phone** device and **Windows Store Apps**
 - **Xcode console** when it is running on a **iOS** device

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Testing the Adapter Procedures

- It is possible to test adapter procedures by using the Worklight Studio
- To test a procedure, click **Invoke Worklight Procedure** from the **Run As** menu

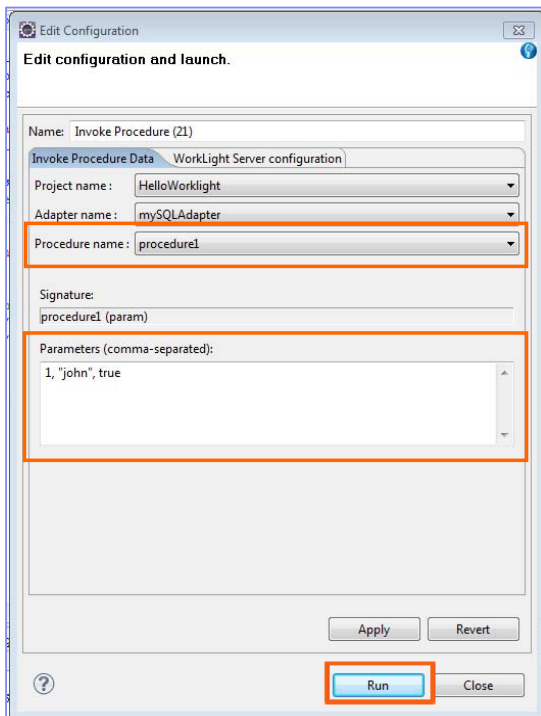


Testing the Adapter Procedures

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

Invocation Result of procedure: 'getFeedsFiltered' from the Worklight Server:

```
{
  "items": [
    {
      "creator": "Danse Cesa",
      "link": "http://www.engadget.com/2011/10/30/telex-roadster-to-return-in-2014-3-series-f",
      "pubDate": "Sun, 30 Oct 2011 05:19:00 EDT",
      "title": "Telex Roadster to return in 2014, 3-Series fighter in the works"
    },
    {
      "creator": "Sean Buckley",
      "link": "http://www.engadget.com/2011/10/30/siri-port-now-talking-to-apple-servers-avoi",
      "pubDate": "Sun, 30 Oct 2011 03:19:00 EDT",
      "title": "Siri port now talking to Apple servers, avoiding Cydia"
    },
    {
      "creator": "Richard Lai",
      "link": "http://www.engadget.com/2011/10/30/lenovos-upcoming-lephone-s2-seen-running-an",
      "pubDate": "Sun, 30 Oct 2011 03:19:00 EDT",
      "title": "Lenovo's upcoming LePhone S2 seen running Android as well as Windows Phone, 1"
    },
    {
      "creator": "Darren Murph",
      "link": "http://www.engadget.com/2011/10/30/facebook-testing-trusted-friends-feature-th",
      "pubDate": "Sun, 30 Oct 2011 01:11:00 EDT",
      "title": "Facebook testing 'Trusted Friends' feature, the password unlock we hope you n"
    }
  ]
}
```



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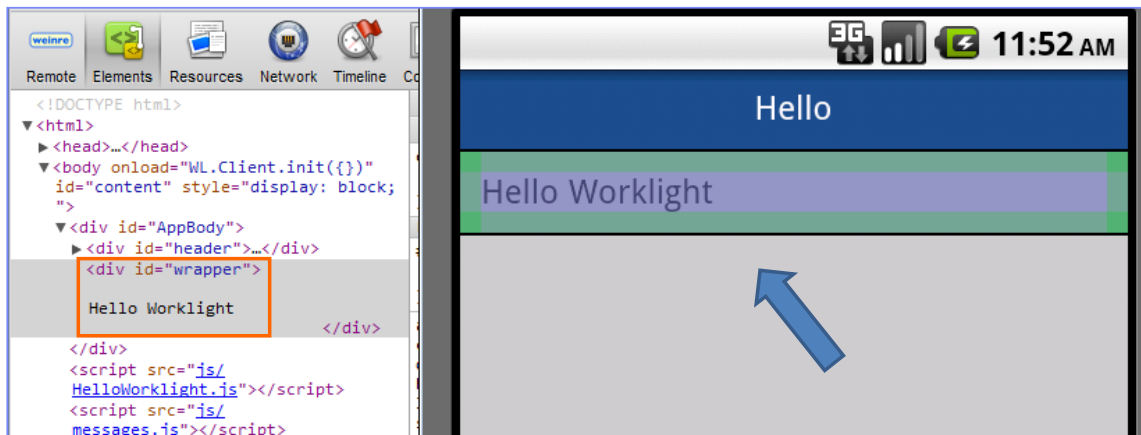
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Debugging with Weinre

- Weinre stands for **Web Inspector Remote**
 - See <http://people.apache.org/~pmuellr/weinre/>
- Weinre is a debugger for web pages, like FireBug, except that it is designed to work remotely
 - In particular, it allows debugging of web pages on mobile devices such as iPhone or Android
- You can use Weinre to inspect and debug web resources such as HTML, JavaScript™, CSS, and Network traffic on a remote mobile handset
- Weinre has a built-in JavaScript console that you can use as an extra powerful tool for web-based mobile application debugging

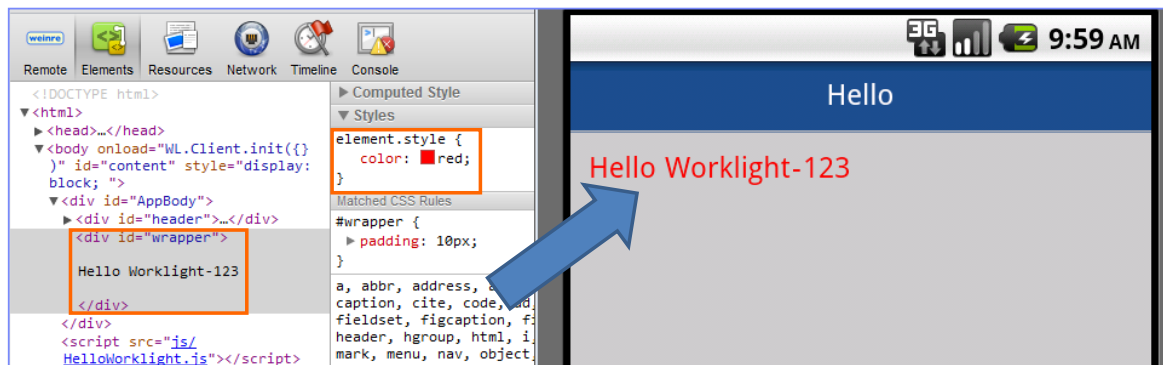
Debugging with Weinre

- Selecting an element in Weinre highlights it on the remote device



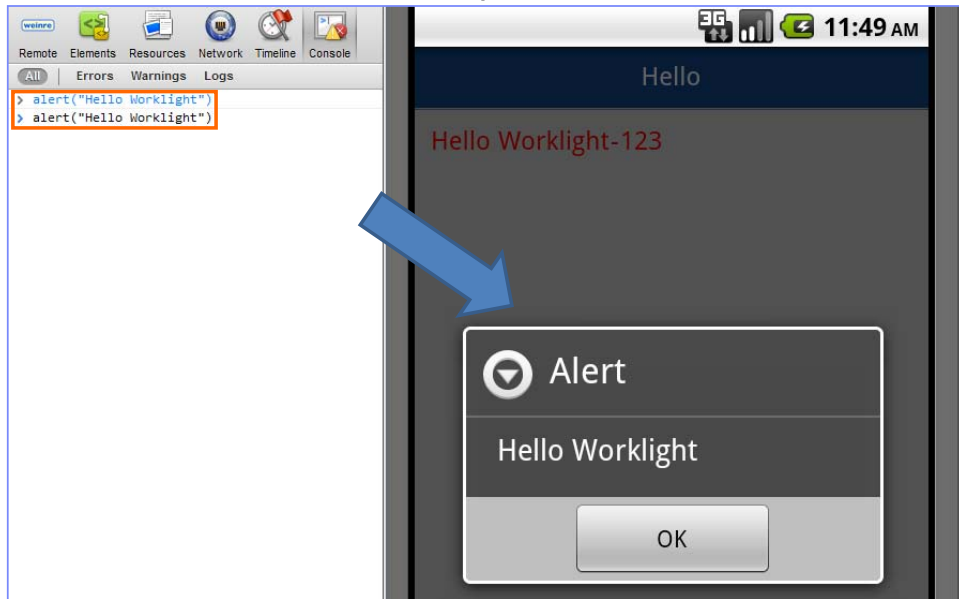
Debugging with Weinre

- You can change values and CSS properties as you debug



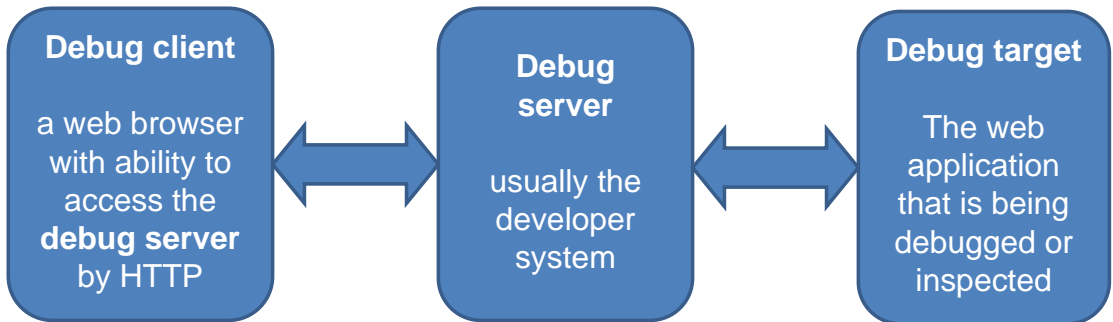
Debugging with Weinre

- You can execute custom JavaScript from a console



Debugging with Weinre: Set-up

- To set up Weinre, first download it from
 - <http://people.apache.org/~pmuellr/weinre/>
- The Weinre architecture includes:



- The debug server can run on either a Windows or Mac platform and requires a Java™ Virtual Machine (JVM) to be available

Debugging with Weinre: Windows Set-up

- To run Weinre from the JAR file found in the downloaded package, run the following command from the command prompt:

```
java -jar weinre.jar --httpPort 8888 --boundHost -all-
```

- This command starts a Weinre server on port 8888:

```
C:\dev\weinre>java -jar weinre.jar --httpPort 8888 --boundHost -all-  
2011-11-07 14:08:17.993:INFO::jetty-7.x.y-SNAPSHOT  
2011-11-07 14:08:18.022:INFO::Started SelectChannelConnector@0.0.0.0:8888  
2011-11-07 14:08:18.023:INFO:weinre:HTTP server started at http://localhost:8888
```

- You must specify port 8888 because the default Weinre port 8080 collides with the one that is used by the Worklight Server

Debugging with Weinre: Mac Set-up

- To configure the Weinre debug server, create a **`~/.weinre/server.properties`** file
- Add the following lines to the created file:
 - `boundHost: -all-`
 - `httpPort: 8888`
- Start Weinre Server .app from the downloaded Mac Package
- You must specify port 8888 because the default Weinre port collides with the one that is used by the Worklight Server

Debugging with Weinre: Debug Target

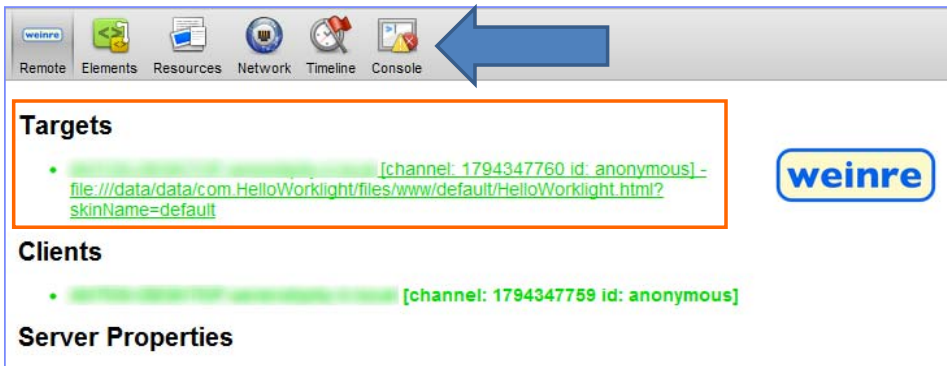
- Make sure that the Weinre server that you set up is accessible from the device that you are using for debugging
- Add the following line to your web application (Debug Target):

```
<script src='http://192.168.53.40:8888/target/target-script-min.js'></script>
```

- Change the server URL to the one that you are working with

Debugging with Weinre: Debug Client

- Browse to <http://<your-server-url-or-ip>:8888/client/>
- Open the web application that you want to debug (the one to which you added a Weinre <script> element)
- Wait for the **Debug Target** to connect, and start debugging with Weinre



Debugging with Weinre

- You can find more information, including installation manual, running instructions and educational videos, at the Weinre home page.
 - See <http://people.apache.org/~pmuellr/weinre/>

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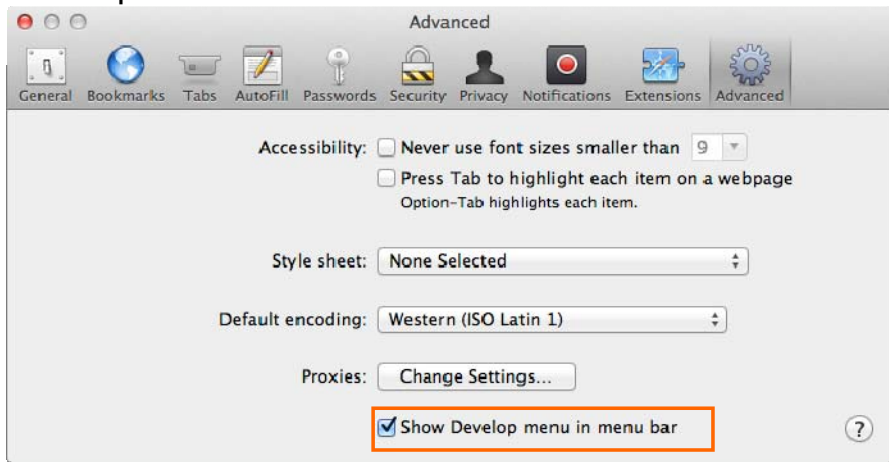
Debugging with iOS Remote Web Inspector

- In iOS6, Apple introduced a remote web inspector for debugging web applications on iOS devices.
- In order to enable it, go to Settings > Safari > Advanced and turn the Web Inspector ON.



Debugging with iOS Remote Web Inspector

- Connect the iOS device to a Mac. You need Safari version 6.0 or higher.
- In Safari Preferences > Advanced check the “Show Develop menu in menu bar” check box.



Debugging with iOS Remote Web Inspector

- Go to Safari > Develop > your iDevice ID > your application HTML file.
- Now you can inspect the DOM. You can modify CSS, and run JavaScript commands, just like in the desktop inspector.

The screenshot displays the Web Inspector interface for an iOS device. The left pane shows the DOM tree with the following HTML structure:

```

<!DOCTYPE html>
<!-- Licensed Materials - Property of IBM 5725-G92 (C)
Copyright IBM Corp. 2008, 2012. All Rights Reserved. US
Government Users Restricted Rights - Use, duplication or
disclosure restricted by GSA ADP Schedule Contract with
IBM Corp. -->
<html>
  <head></head>
  <body id="content" onload="WL.Client.Init({})" style="
display: block;">
    <div class="tab id="feedTab" style="display: none;">
      <div class="tab id="feedDescriptionTab" style="display: none;">
        <div class="tab id="aboutTab" style="display: none;">
          </div>
          <script src="js/worklightStarter.js"></script>
          <script src="js/Utils.js"></script>
          <script src="js/messages.js"></script>
        </body>
      </html>
    
```

The right pane shows the mobile browser view of the application, displaying a news feed with articles such as "Acer C7 Chromebook review" and "Samsung announces Galaxy Note II".

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Debugging with the Mobile Browser Simulator

- You can also use the IBM Worklight mobile browser simulator to preview and debug Worklight applications in Android, iPhone, and iPad environments.

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