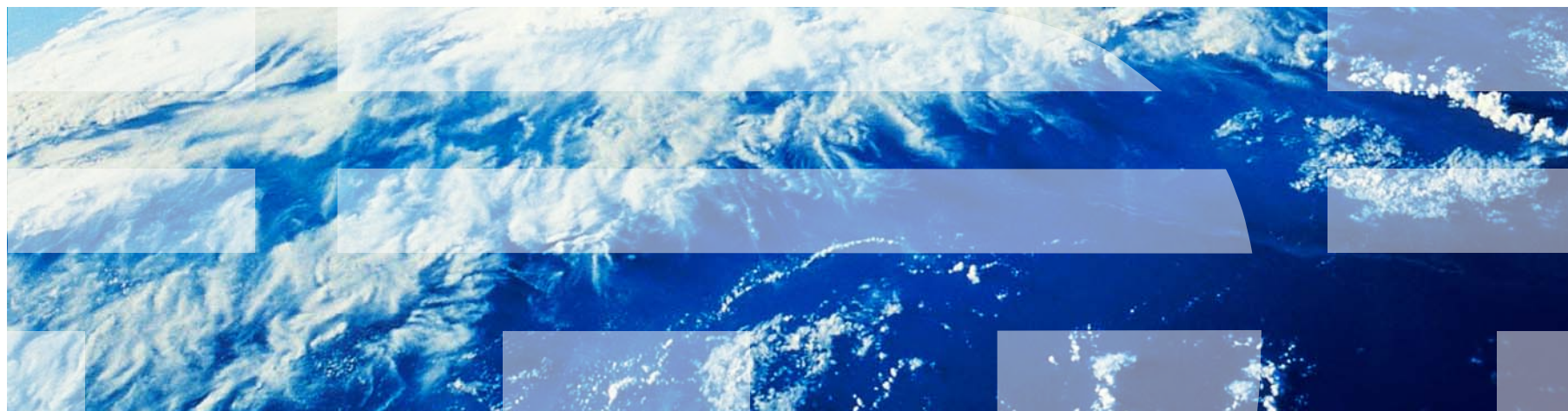


# ***IBM Worklight V6.1.0 Getting Started***

## **Debugging your applications**



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## ***About Client-side Debugging***

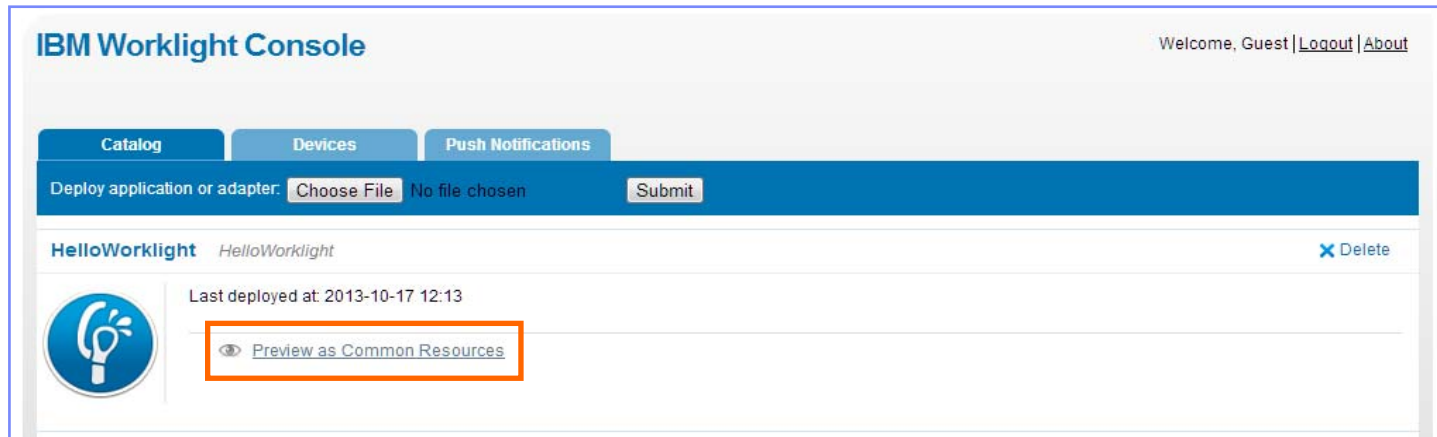
- Debugging is part of the application development process.
- Debugging is a process that consists in finding the cause of defects in the application code and UI.
- IBM Worklight® applications consist of web-based resources and optional native code (such as Java™, Objective-C, and C#).
- You can debug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

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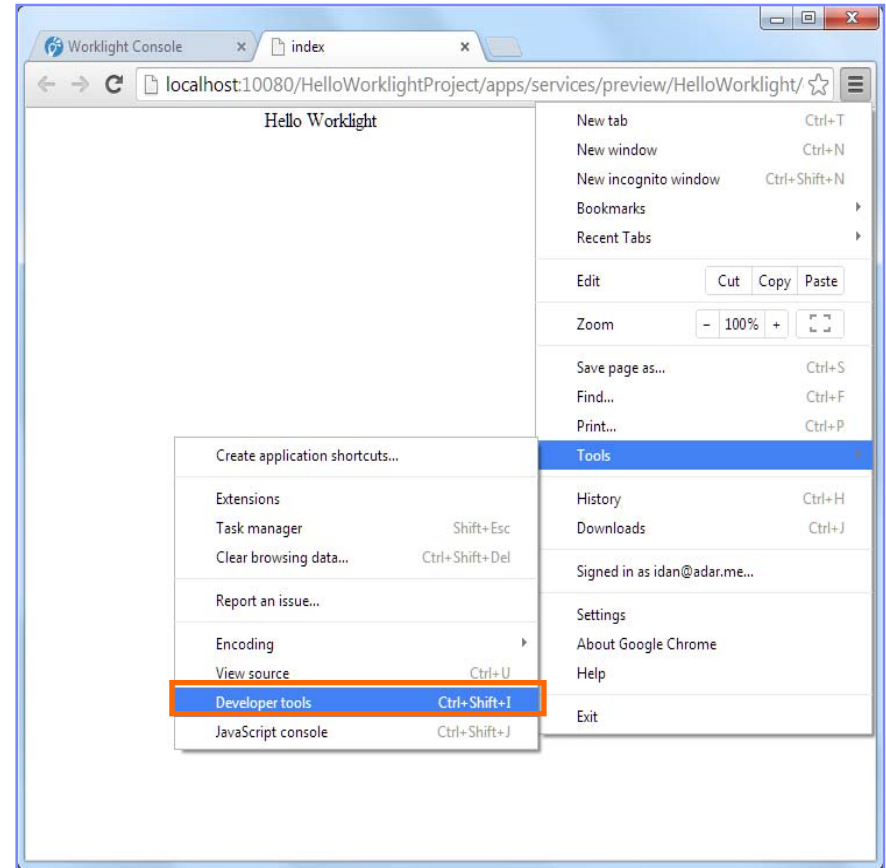
# Debugging on a Desktop Browser

- 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.



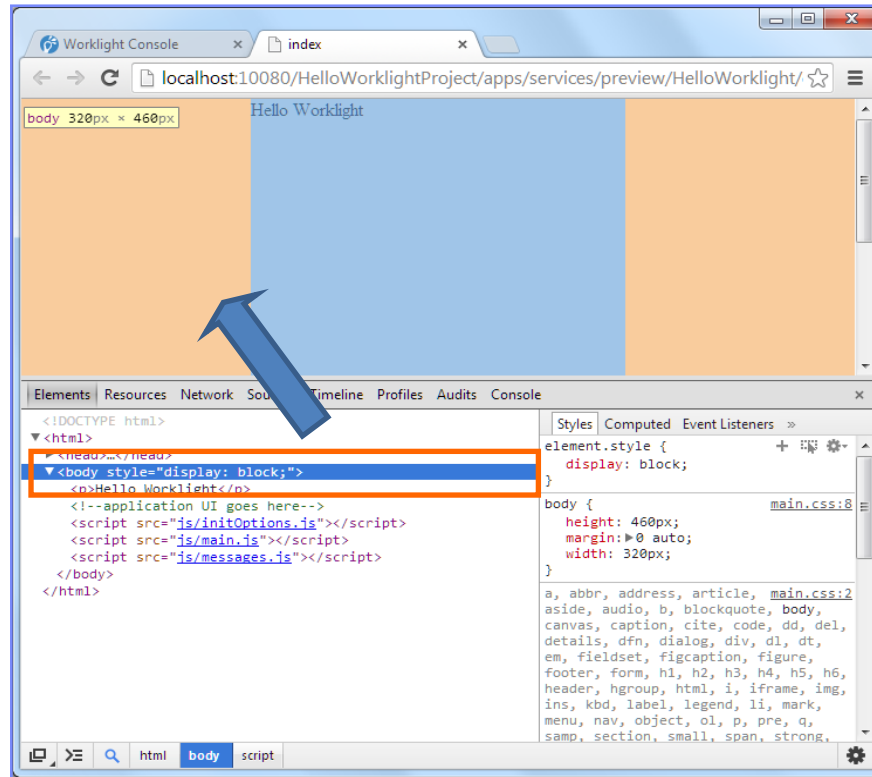
# Debugging on a Desktop Browser

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





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## Debugging with IBM Worklight Debugger

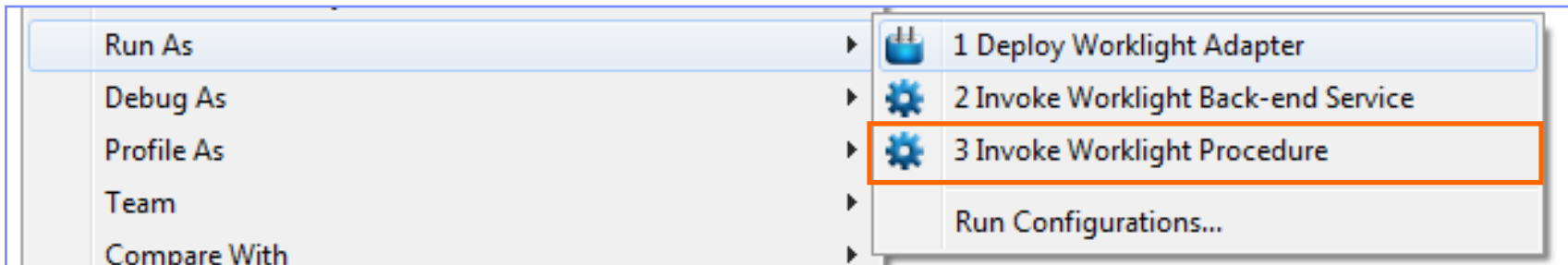
- IBM Worklight provides a `WL.Logger` object that you use to print log messages to the log for the environment used.
- Two of its methods are `WL.Logger.debug()` and `WL.Logger.error()`.
- The `WL.Logger.debug()` and `WL.Logger.error()` APIs are multiplatform. The output destination changes according to the platform on which that application runs on:
  - **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 8** device and **Windows 8** Apps
  - **Xcode console** when it is running on an **iOS** device
- `WL.Logger` contains more methods. See the *Class `WL.Logger`* topic in the IBM Worklight user documentation at <http://pic.dhe.ibm.com/infocenter/wrklight/v6r1m0/topic/com.ibm.worklight.api.ref.doc/html/refjavascript-client/html/WL.Logger.html>.

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## Testing the Adapter Procedures

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



# Testing the Adapter Procedures

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

Invoke Worklight Procedure

Procedure name:

Signature:

Parameters (comma-separated):

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

```

},
  "responseTime": 268,
  "rss": {
    "channel": {
      "copyright": "Copyright 2013 Cable News Network LP, LLLP.",
      "description": "CNN.com delivers up-to-the-minute news and information on the latest top stories, weather, entertainment, politics and
more.",
      "image": {
        "description": "CNN.com delivers up-to-the-minute news and information on the latest top stories, weather, entertainment, politics and
more.",
        "height": "33",
        "link": "http://edition.cnn.com/AFRICA/index.html?eref=rss_africa",
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    },
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  "item": [

```

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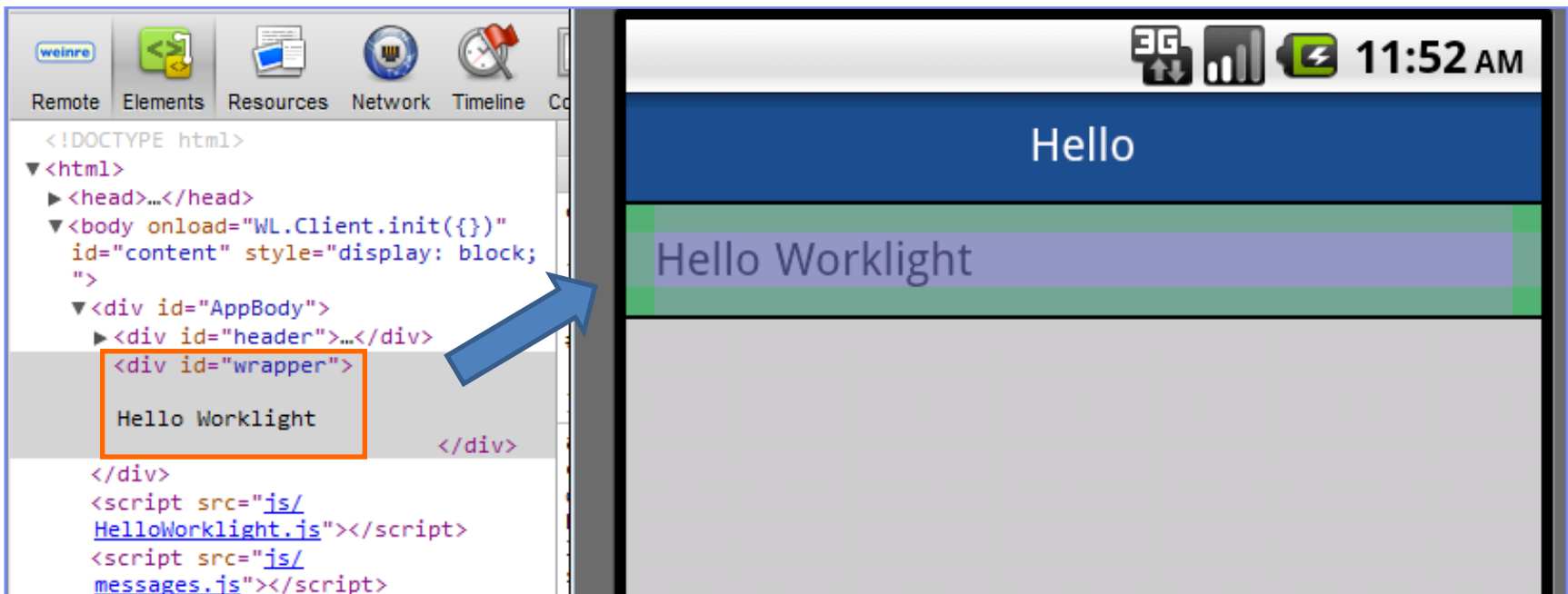
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## *Debugging with Weinre*

- Weinre stands for **Web Inspector Remote**.
  - See <http://people.apache.org/~pmuellr/weinre/>
- Weinre is a debugger for web pages, such as FireBug, except that Weinre is designed to work remotely.
  - In particular, you can use Weinre for 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

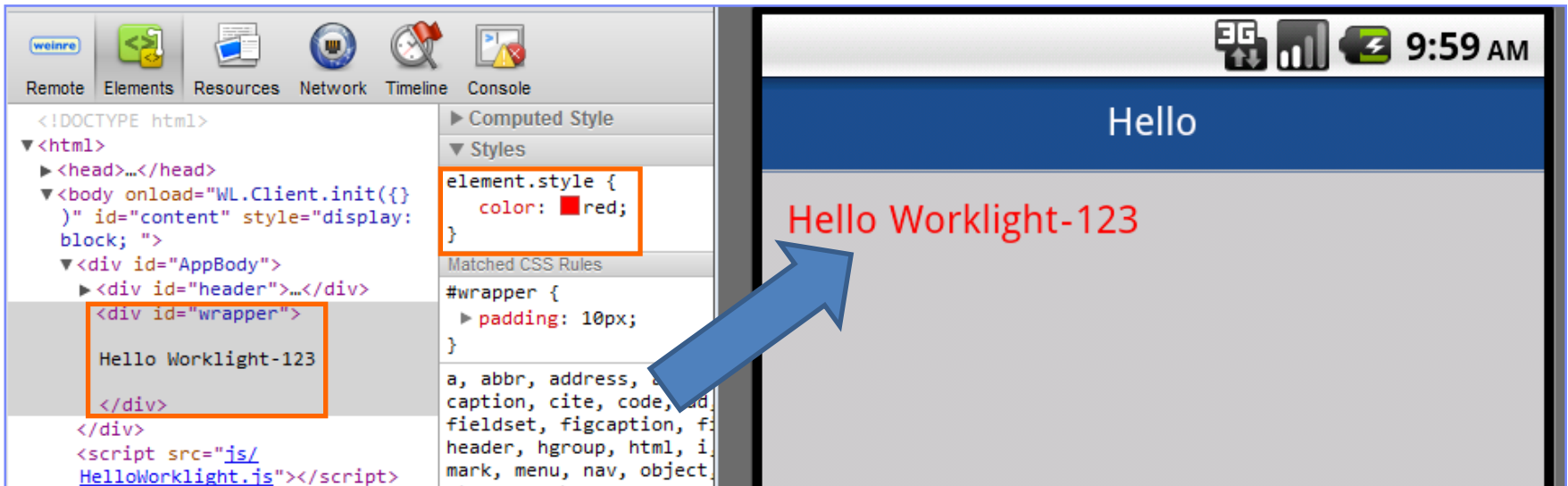
- When you select an element in Weinre, this element is highlighted on the remote device.





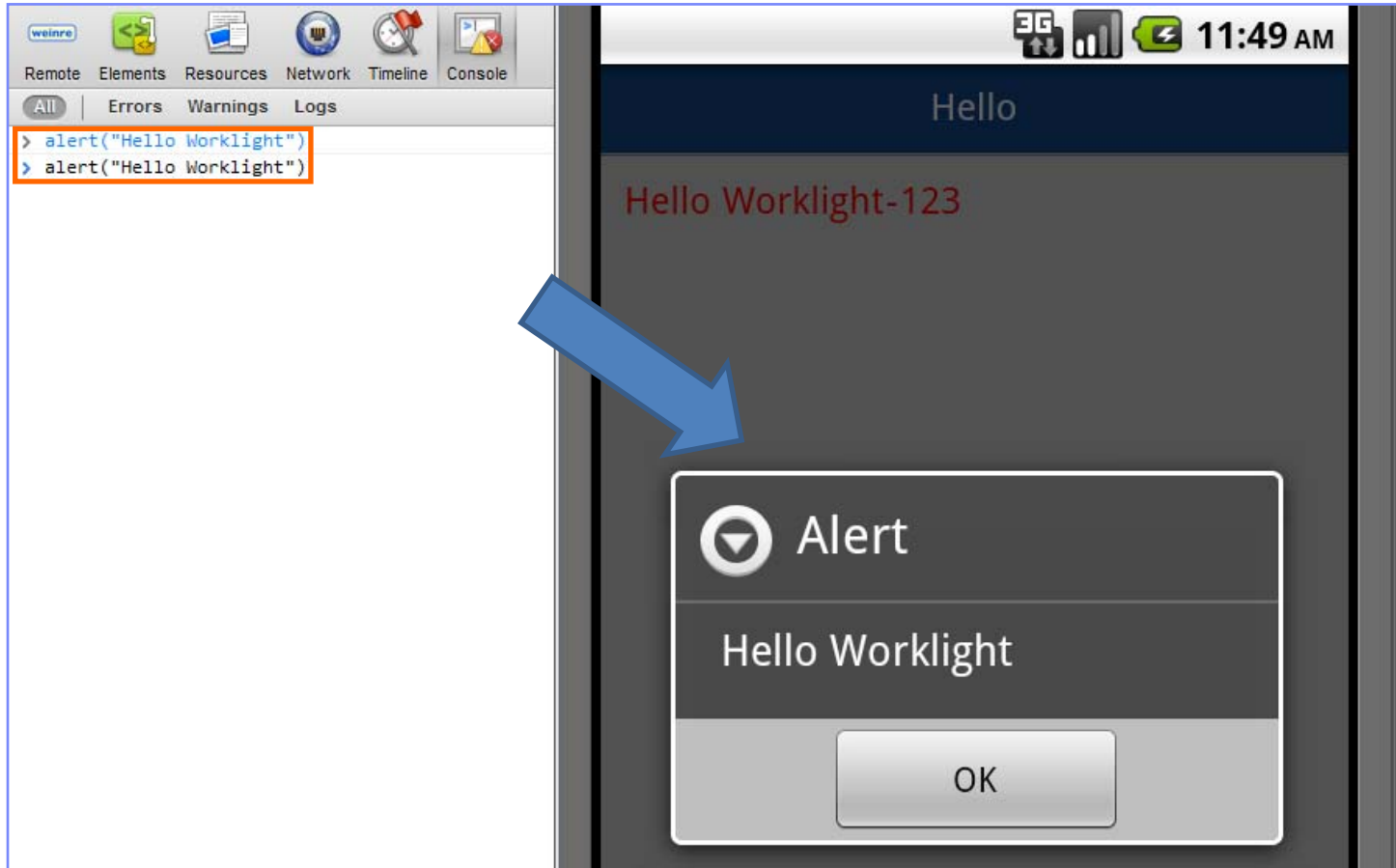
# Debugging with Weinre

- You can change values and CSS properties as you debug.



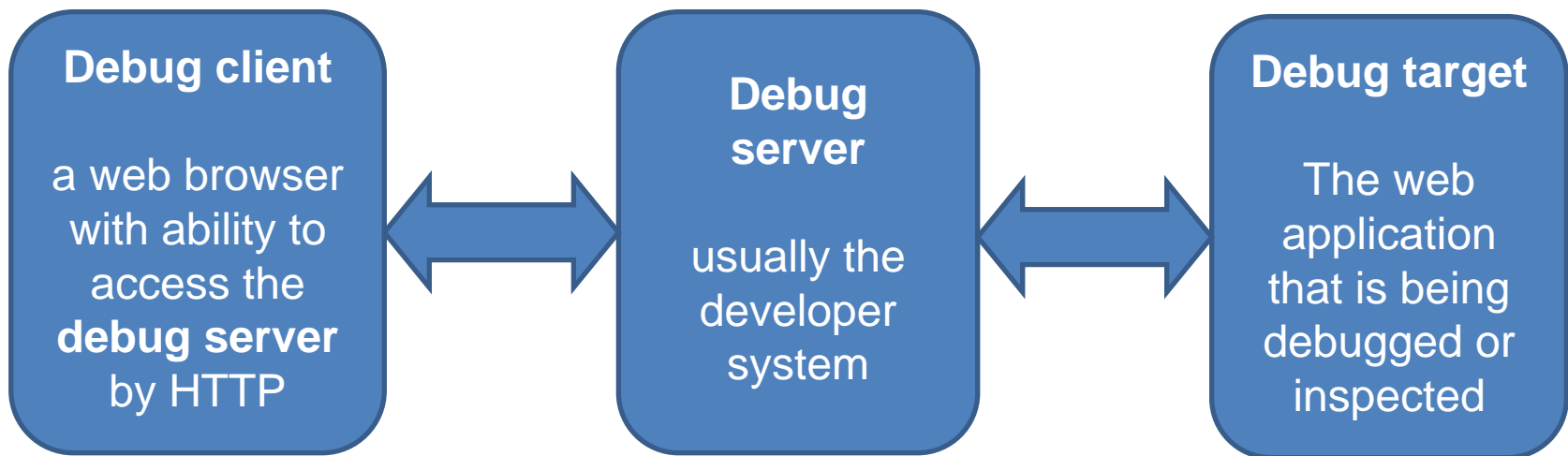
# Debugging with Weinre

- You can run custom JavaScript from a console.



## Debugging with Weinre: Set-up

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



- The debug server can run on either a Windows or Mac operating system 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 file that you created:
  - `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***

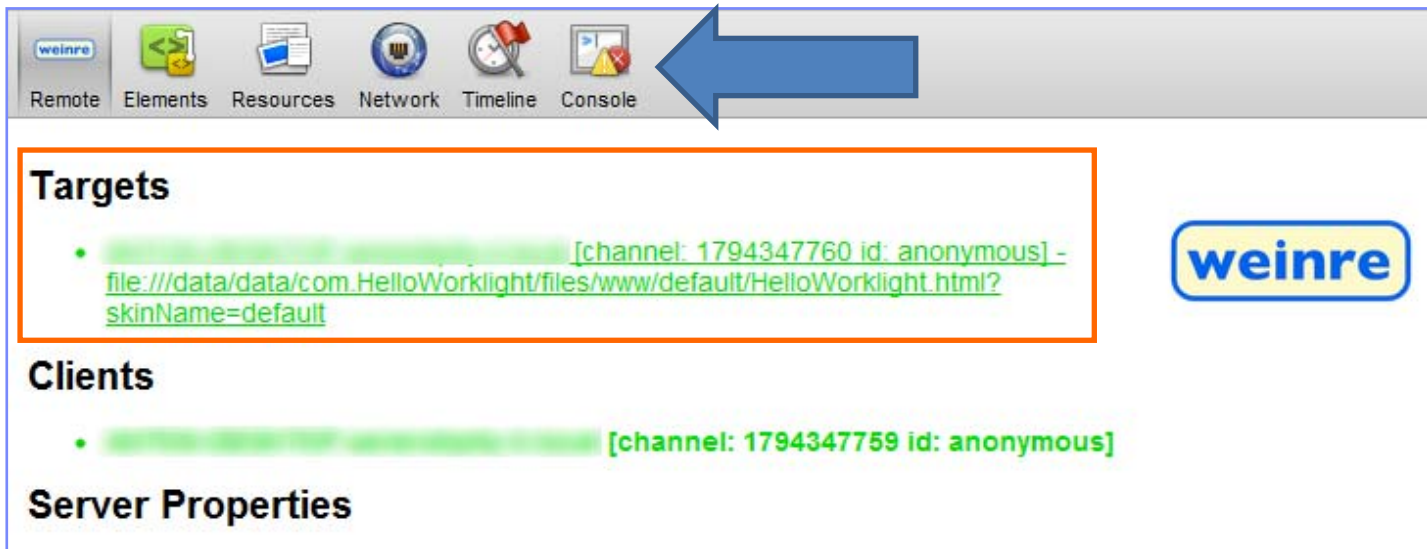
- Make sure that the Weinre server that you set up is accessible from the device that you are using for debugging.
- Add the following line to your web application (Debug Target):

```
<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***

- For more information about Weinre, including installation manual, running instructions, and educational videos, go to the Weinre home page at <http://people.apache.org/~pmuellr/weinre/>.



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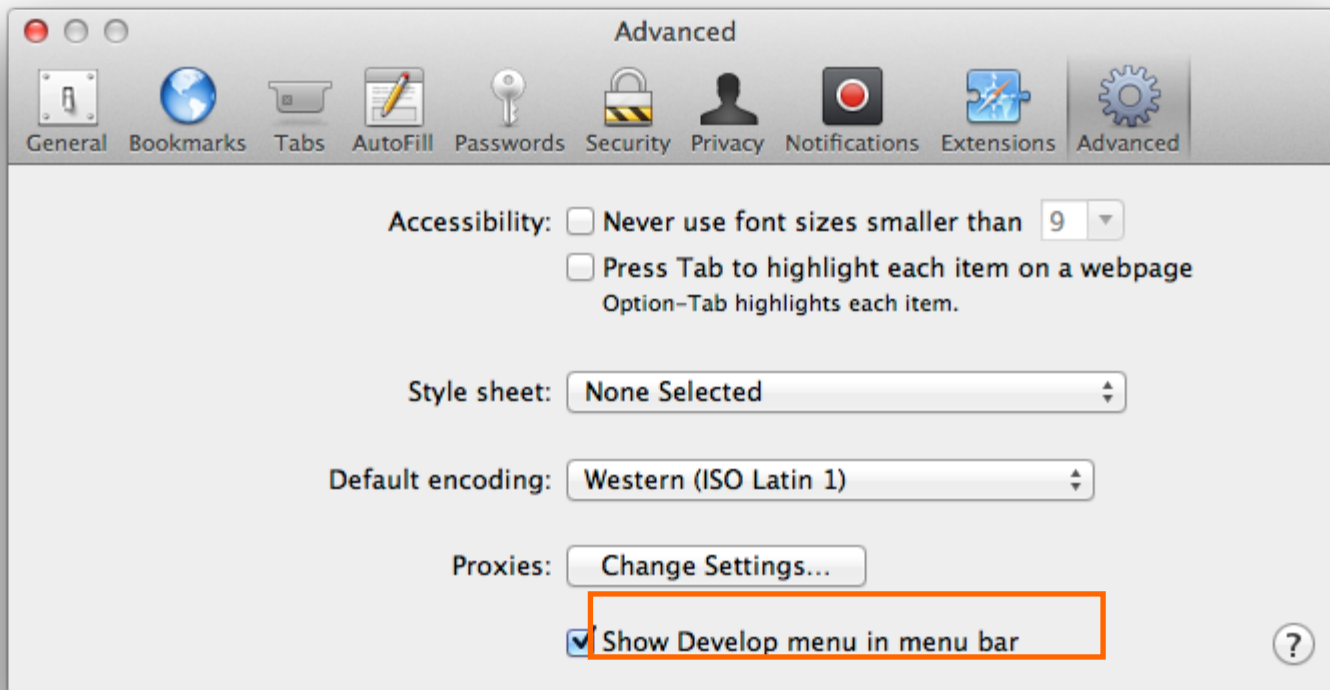
# Debugging with iOS Remote Web Inspector

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



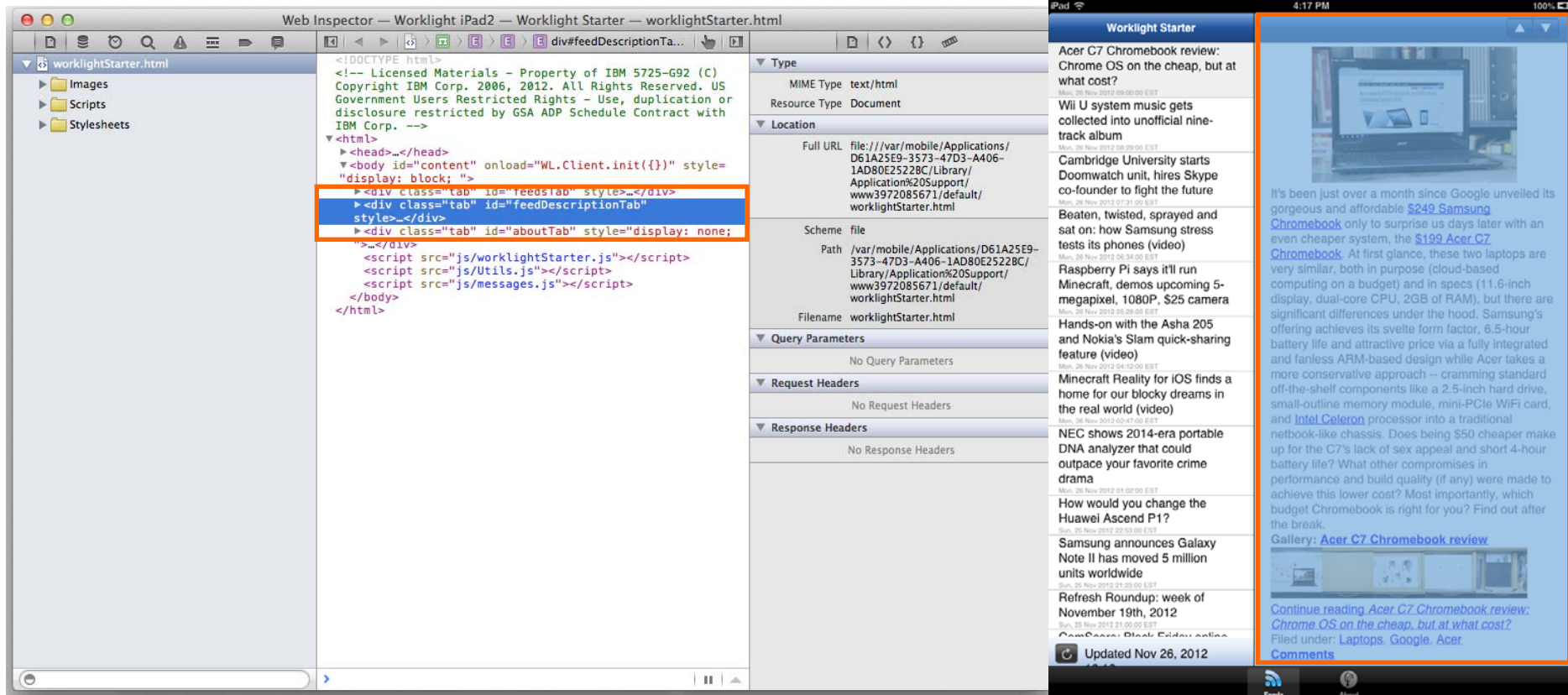
## Debugging with iOS Remote Web Inspector

- Connect the iOS device to a Mac. You must have Safari version 6.0 or higher.
- In Safari, go to **Preferences > Advanced**, and select 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 the CSS, and run JavaScript commands, just like in the desktop inspector.

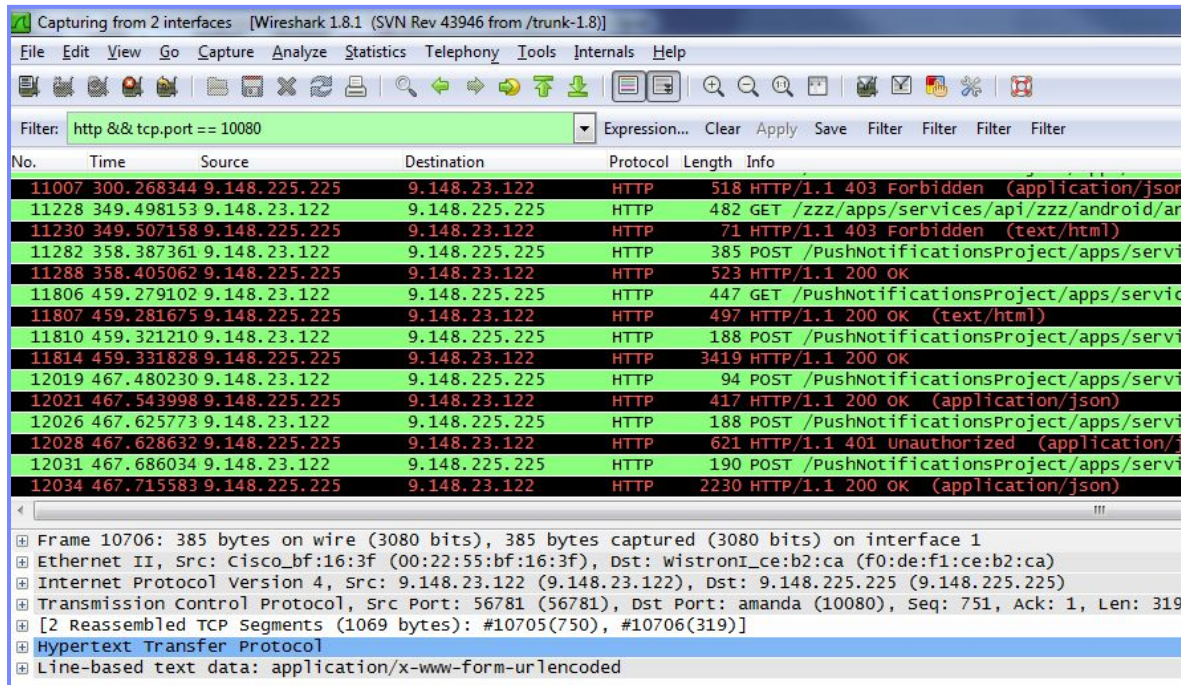


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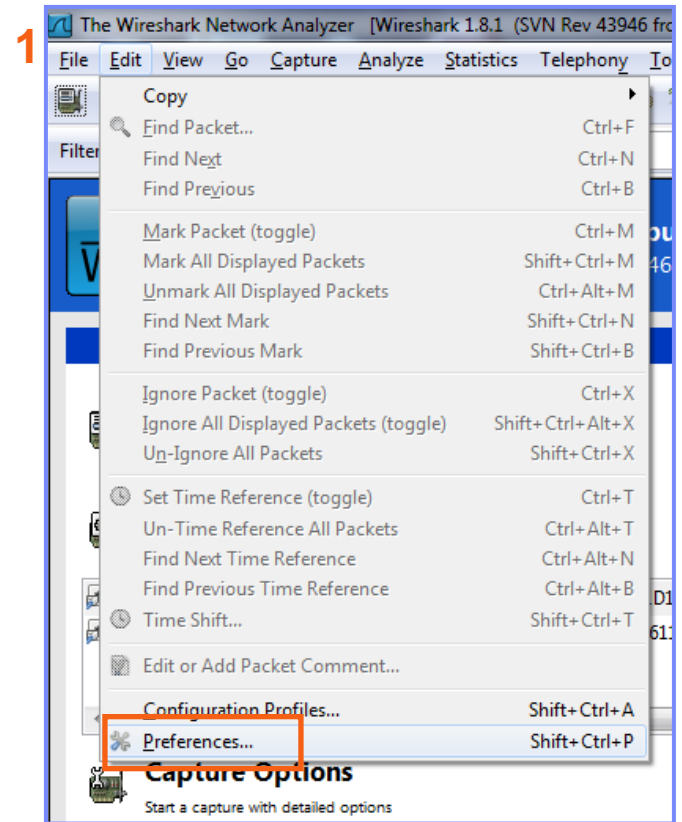
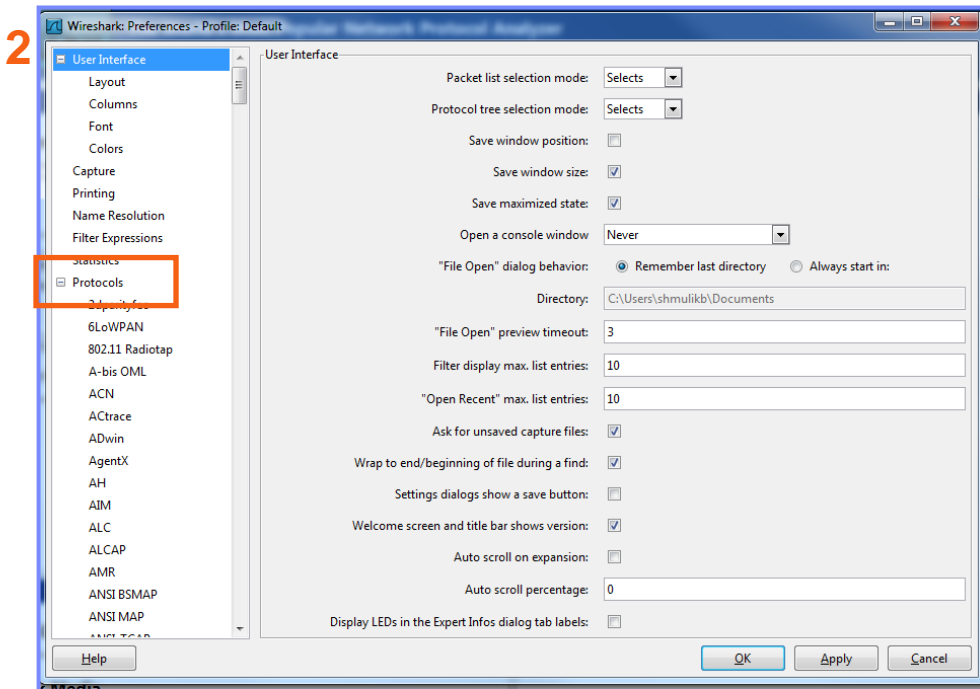
# Debugging with Wireshark

- Wireshark is a network protocol analyzer that you can use to see what happens on your network at a microscopic level.
- With Wireshark, you can filter the range of traffic that you want to follow.



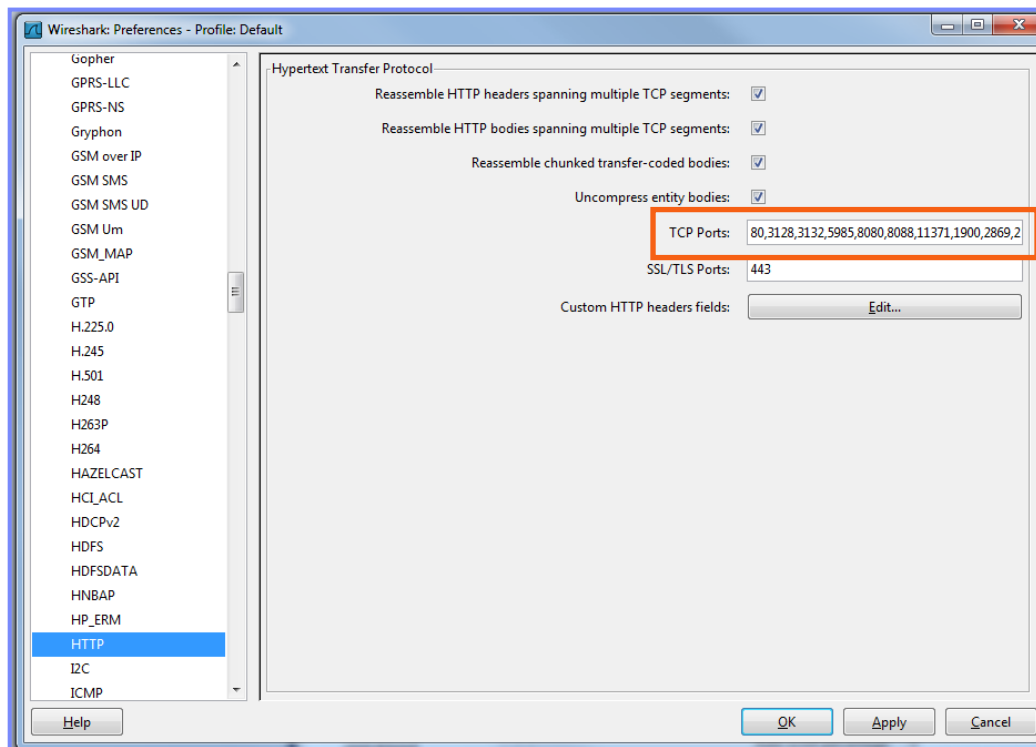
# Debugging with Wireshark

- Open **Edit > Preferences.**
- Expand **Protocols.**



# Debugging with Wireshark

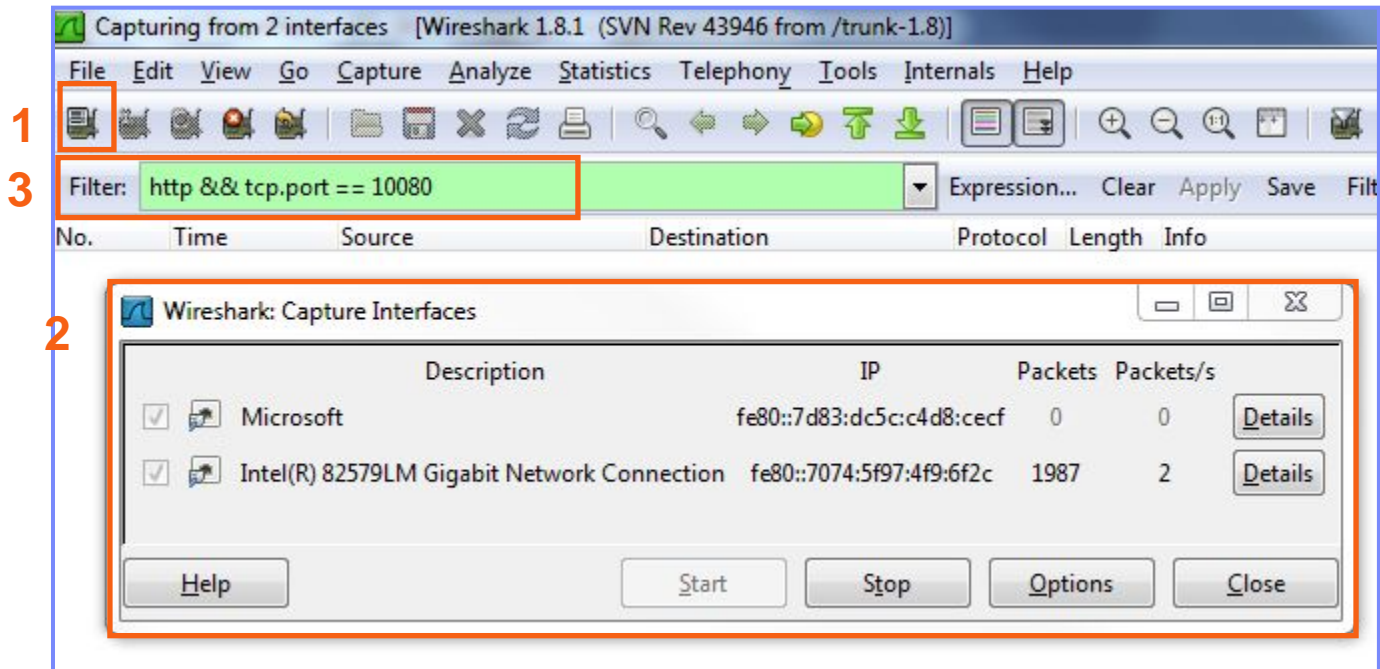
- Select **HTTP** and add port 10080 to the **TCP Ports** list.





# Debugging with Wireshark

1. Click the left button, which lists the available capture interfaces.
2. Select the capture interface that you want to follow.
3. Create a filter (protocol && TCP Port).



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## *Debugging with Mobile Browser Simulator*

- You can also use the IBM Worklight Mobile Browser Simulator to preview and debug IBM Worklight applications in Android, iPhone, and iPad environments.
- The Mobile Browser Simulator also simulates Cordova APIs, so you can test these APIs without having to use an emulator, simulator, or device.
- **Note:** this simulation **does not replace** tests on a physical device.

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