HP Anywhere

Windows

Software Version: 10.00

HP Anywhere IDE Guide for Developers

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Contents

Why should I create my app using HP Anywhere IDE?

HP Anywhere provides an Eclipse-based IDE that enables you to create, build, run, and debug your own apps.

This IDE provides a complete development environment that covers the entire lifecycle of your app and enables you to create, debug, maintain your app projects. HP Anywhere IDE includes:

- A wizard for creating app projects

- A built-in simulator that you can use to run and debug your apps in any form factor (desktop, tablet, or smartphone) or screen resolution

- A complete, pre-configured, database-free, and debug-ready HP Anywhere server that is customized and optimized for the development environment.

How to build and run your app using HP AnywhereIDE - end-to-end walkthrough

The following steps describe how to build and run an app using HP Anywhere.

1. Make sure that HP Anywhere IDE is installed on your computer.

2. Use the HP Anywhere App Project wizard to create the package and files for your app project. This provides you with a ready-to-run app that includes all of the necessary files, classes, and methods. You can select from the any of the available templates to get you started. For details, see "How do I create an app project in HP Anywhere IDE?" on next page"Appendix 1: App Project Folder Structure" on page 28, and "Appendix 2: Template Descriptions" on page 30.

3. Add your code.

4. Define your app configuration settings. For details, see "How do I define the configuration for my app?" on page 13.

5. Run and debug your app by running it on the built-in HP Anywhere local server or a remote server. For details, see "How do I run my app on the local server?" on page 15 and "How do I debug my app code?" on page 26.

6. When your app is ready, you can give the app content pack .zip file to the HP Anywhere administrator so that he or she can deploy it on the HP Anywhere server and enable it in the catalog. This .zip file has the following naming convention: **<App name>-cp.zip**, and is located in the **<App project>\target** folder.

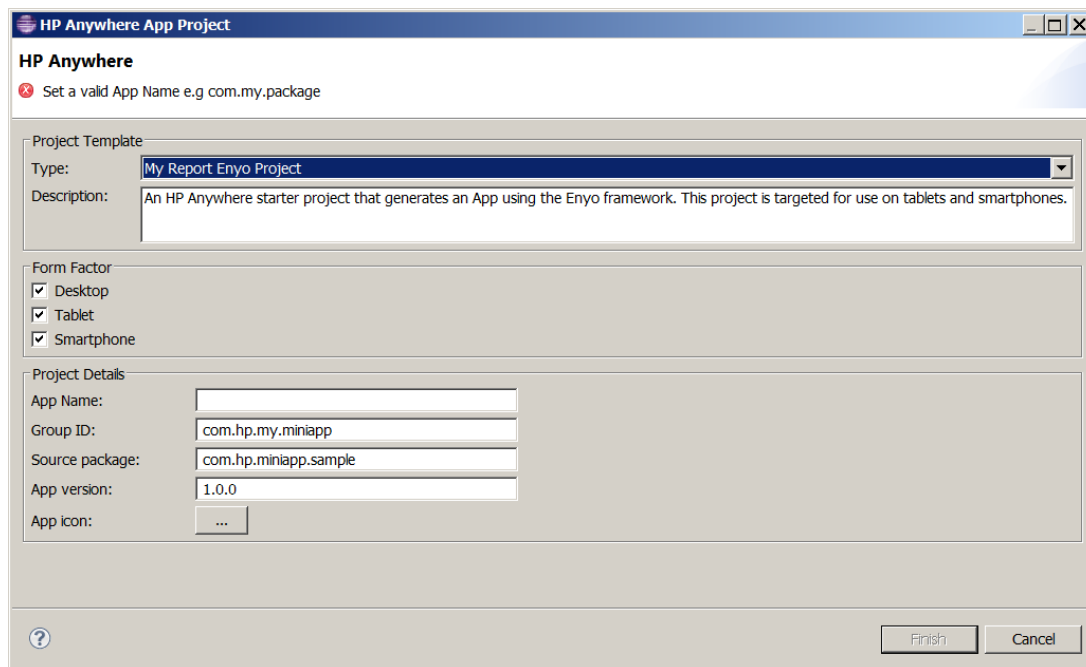# How do I create an app project in HP Anywhere IDE?

You use the HP Anywhere App project wizard to create a new HP Anywhere IDE project containing the files and classes for your app. The

> **Note:** When you create an app using HP Anywhere IDE, an app content pack is generated as a .zip file in the **<App project>\target** folder.
>
> This .zip file has the following naming convention: **<App name>-cp.zip**. You need to give this to the HP Anywhere administrator when the app is ready so that he or she can deploy it on the HP Anywhere server and enable it in the catalog.

To create an HP Anywhere app project in HP Anywhere IDE:

1. **First time only:** Select **Window > Open Perspective > Other > HP IDE**. This updates the menus and layout for HP Anywhere IDE.

2. Select **File** > **New** > **HP Anywhere App Project**. The HP Anywhere App Project wizard opens.

3. In the Form Factor area, select one or more form factors. The following form factors are available:

   - **Desktop**

   - **Tablet**

- **Smartphone**

> **Note:** After you create a project, you can manually add form factors that you did not select while creating the project. For details, see "How do I add or remove form factors in my app project?" on page 11.

4. In the Project Template area, select the type of template from the **Type** drop-down list. The following templates are available:

   - **My Report Enyo Project.** An HP Anywhere starter project that generates an app using the Enyo framework. This project is targeted for use on tablets and smartphones.

   - **Blank Project.** An HP Anywhere starter project that contains the project folder structure without application content.

   - **My Report Sencha Project.** An HP Anywherestarter project that uses the Sencha Touch framework to generate an app that can display a list of reports. This project is targeted for use on tablets and smartphones.

   - **My Report Project.** An HP Anywherestarter project that uses the native framework with JavaScript and HTML code to generate an app that can display a list of reports.

   The **Description** box provides details for the selected template. For more details on these templates, see "Appendix 2: Template Descriptions" on page 30.

5. In the Advanced area, define the following using standard Maven naming conventions:

   - **App Name.** The name of the app, for example, *HelloWorld*. (Use only alphanumeric characters. Special characters and spaces are not allowed.)

   - **Group ID.** A reverse domain name, for example, *com.mycompany.mygroupname*. The group ID is used in the generated POM.XML project file.

   - **Source package.** A valid Java package name, for example, *com.my.mypackage*. The package name represents the folder structure that is generated in the workspace.

   - **App version.** The version string for your app, for example, *1.0.0*.

   - **App icon:** A PNG file that represents your app. The icon is displayed in the app on the My Apps page in HP Anywhere.

6. Click **Finish**. HP Anywhere generates the app project. While the project is being created, you can view the log in the Console tab. (The first time you create a project, this may take some time.) After the project created, you can:

   - View the project folder structure. For details, see "Appendix 1: App Project Folder Structure" on page 28

   - Add code to the app project.

   - Run the app. For details, see "How do I run my app on the local server?" on page 15.

How do I add or remove form factors in my app project?

When you create your app project, you specify the form factors (desktop/tablet/smartphone) on which your app can run.

If you do not select all form factors when you create the project, you can add them later by adding folders for the required form factors to your app's package. Similarly, you can remove form factors from your app by removing the relevant project folders.

To add form factors for your app:

1. In the HP Anywhere IDE Package Explorer, expand the main app folder.

2. Copy/paste the folders for an existing form factor (desktop, tablet, or smartphone) in each of the following locations:
   - **src > webapp > app**
   - **src > webapp > css**
   - **src > webapp > images**

2. Rename each of the new folders to the required form factor type (desktop, tablet, or smartphone).

3. Add your client code to the new form factor folders.

4. In **src/resources > descriptor.xml**, create a section for each form factor by copying the following section and replacing the <*existing form factor type*> with the <*new form factor type*>. For example, copy the following section and replace **DESKTOP** with **SMARTPHONE**.

```
⊖        <webResources>
⊖            <webResource>
                 <formFactor>DESKTOP</formFactor>
⊖                <jsNames>
                     <jsName>app.js</jsName>
                 </jsNames>
⊖                <cssNames>
                     <cssName>css/common/app.css</cssName>
                 </cssNames>
                 <iconResource>images/common/default-app.png</iconResource>
             </webResource>
```

To remove form factors:

1. In the HP Anywhere IDE Package Explorer:
   a. Expand the main app folder.

   b. Remove the relevant section from **src/resources > descriptor.xml**. For example, to remove the desktop form factor, delete the following:

```xml
    <webResources>
        <webResource>
            <formFactor>DESKTOP</formFactor>
            <jsNames>
                <jsName>app.js</jsName>
            </jsNames>
            <cssNames>
                <cssName>css/common/app.css</cssName>
            </cssNames>
            <iconResource>images/common/default-app.png</iconResource>
        </webResource>
```

   c. (Optional) In each of the following locations, delete the folders for each form factor (desktop, tablet, or smartphone) that you want to remove:

   - **src > webapp > app**

   - **src > webapp > css**

   - **src > webapp > images**

How do I define the configuration for my app?

After you create your app, you can configure its settings, which are located in the **src/resources** folder.

User Settings

You define these settings for your app's users.

To modify the user settings:

1. In the Package Explorer, navigate to: **/<*app main node*>/src/resources/<*app name*>-user-settings.xml** and double-click the file.

2. In the *app name*>**-user-settings.xml** tab, select the **Design** tab.

3. Right-click **context** and select **Add Child > setting**.

4. Expand the setting node you just added and enter values for the following:
   a. **name**. The ID for this setting.

   b. **namekey**. A setting used for localization.

   c. **integer**. The default setting type. You can modify this by right-clicking and selecting **Replace With > <*value type*>**.
   Possible values:
   boolean
   enumeration
   float
   password
   string
   xml

Administrator Settings

You define these settings for your app's administrators.

To modify administrator settings:

1. In the Package Explorer, navigate to: **/<*app main node*>/src/resources/<*app name*>-admin-settings.xml** and double-click the file.

2. In the *app name*>**-admin-settings.xml** tab, select the **Design** tab.

3. Right-click **context** and select **Add Child > setting**.

4. Expand the setting node you just added and enter values for the following:
   a. **name**. The ID for this setting.

   b. **settingType**. Make sure that **global** is selected.

c. **displayInUI**. Specifies whether the app is visible in the HP Anywhere Administrator
    Console.
    Possible values:
    true
    false

d. **sectionKey**. The name of the group area that is displayed in the Settings tab of the
    Administrator Console (for the app that is selected in the List of Categories column).

e. **integer**. The default setting type. You can modify this by right-clicking and selecting
    Replace With > *<value type>*.
    Possible values:
    boolean
    enumeration
    float
    password
    string
    xml

Data Source Settings

You define the settings that enable the app to communicate with the backend server.

1. In the Package Explorer, navigate to: **/*<app main node>*/src/resources/*<app name>*-ds-provider.xml** and double-click the file.

2. In the ***app name*>-admin-settings.xml** tab, select the **Source** tab.

3. Modify the configuration as needed.

How do I run and view my app?

You can run your app in **debug mode** or **run mode** on either a **local** or **remote** server.

When you run your app, HP Anywhereperforms the following:

1. Starts the HP Anywhere server if it is not already up and running.

2. Deploys your app on the specified server, if needed.

3. Opens HP Anywhere Simulator in a Chrome browser.

When you run your app project for the first time, HP Anywhere IDE compiles the project files, zips them, and deploys them on the HP Anywhere server.

You can view and debug your app on the built-in simulator or on your own mobile device (if the device is in the same LAN and the HP Anywhere client is installed on it). For details, see "How do I run my app on a remote server?" on page 18.

How do I run my app on the local server?

You can run your app on the built-in local server.

To run your app in run mode on the local server:

1. Do one of the following:
   a. In the project explorer, right-click the HP Anywhere project folder and select **Run App**.

   b. Click

   c. In the package explorer or project explorer, right-click the HP Anywhere project folder and select **Run As > Run On Server**.

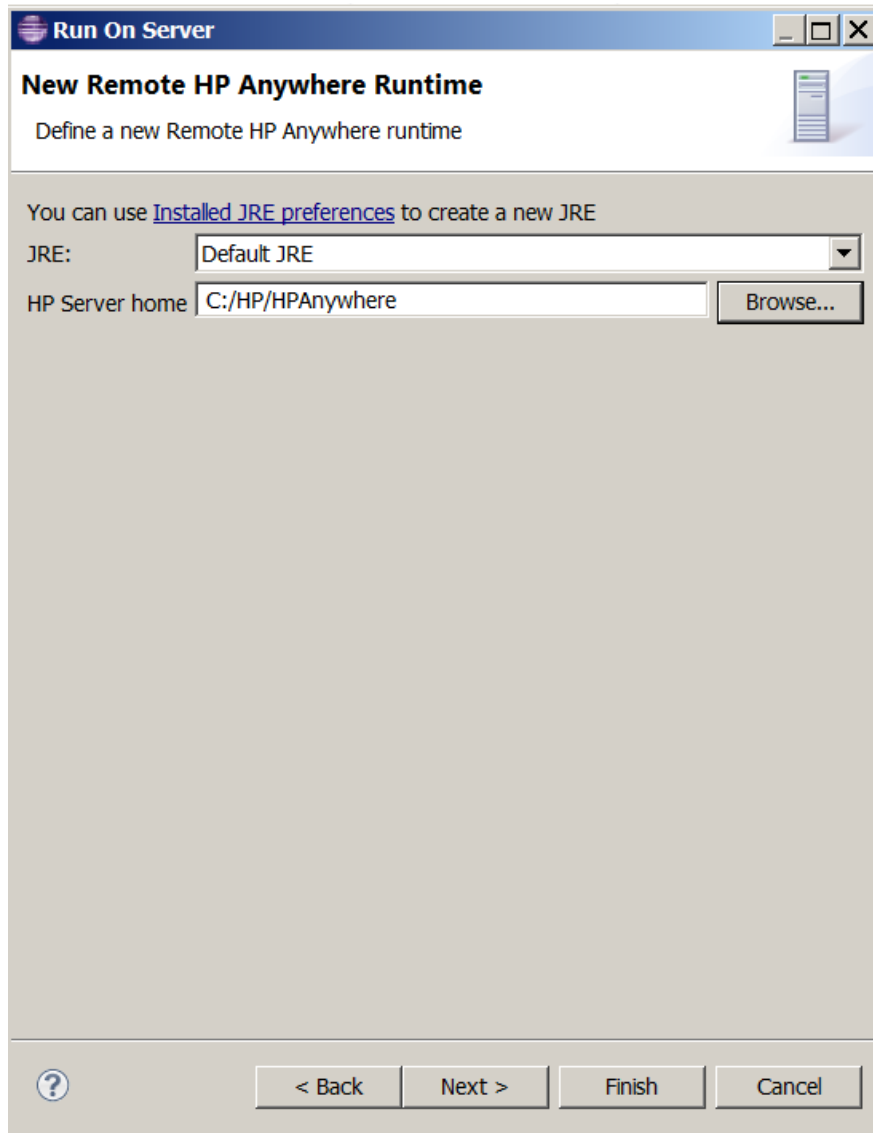The Run On Server dialog box opens.
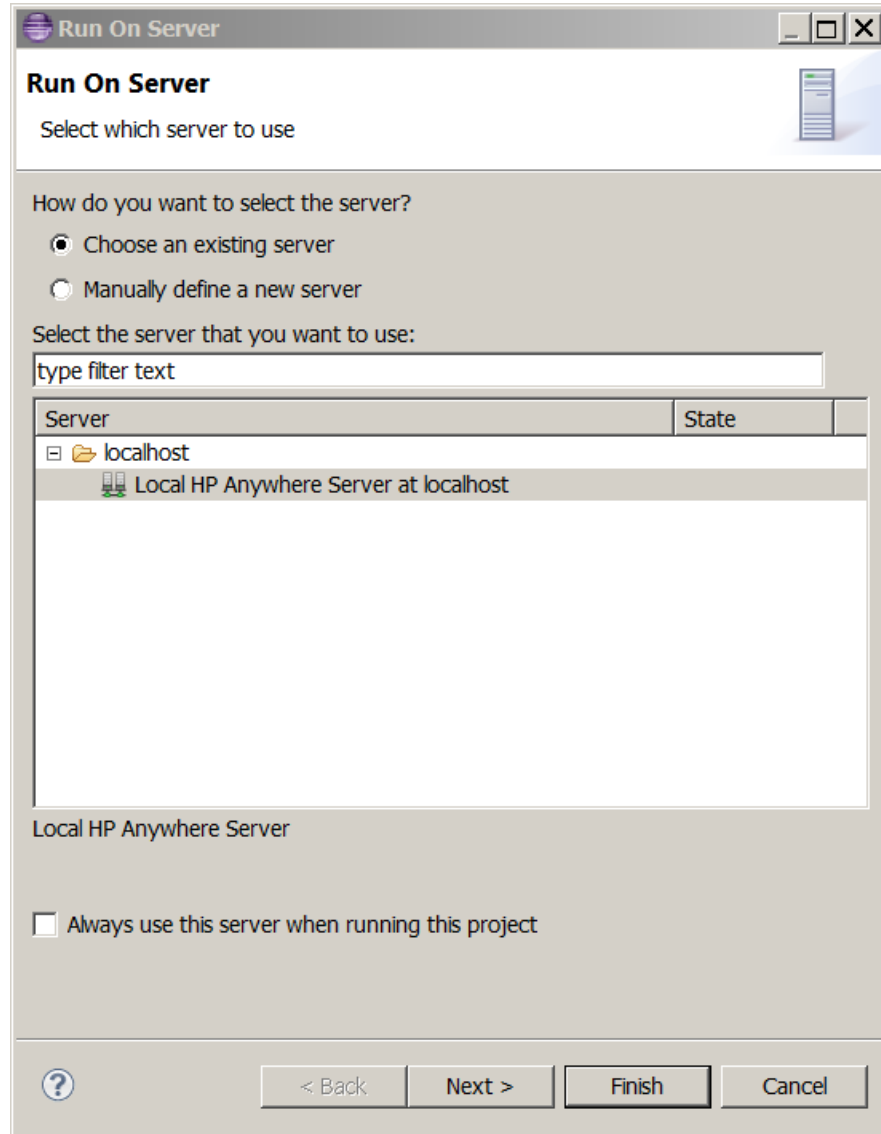
2. Select **Local HP Anywhere Server at localhost** and click **Finish** The server starts and runs your app using the default form factor and resolution. While the app runs, you can view the log in the Console tab.

3. When the run finishes, the app opens in a Chrome browser, as shown in the following example. If your project contains code that supports other form factors and resolutions, you can select them from the drop-down arrows above the simulated form factor. You can also double-click the simulated form factor to view more details.
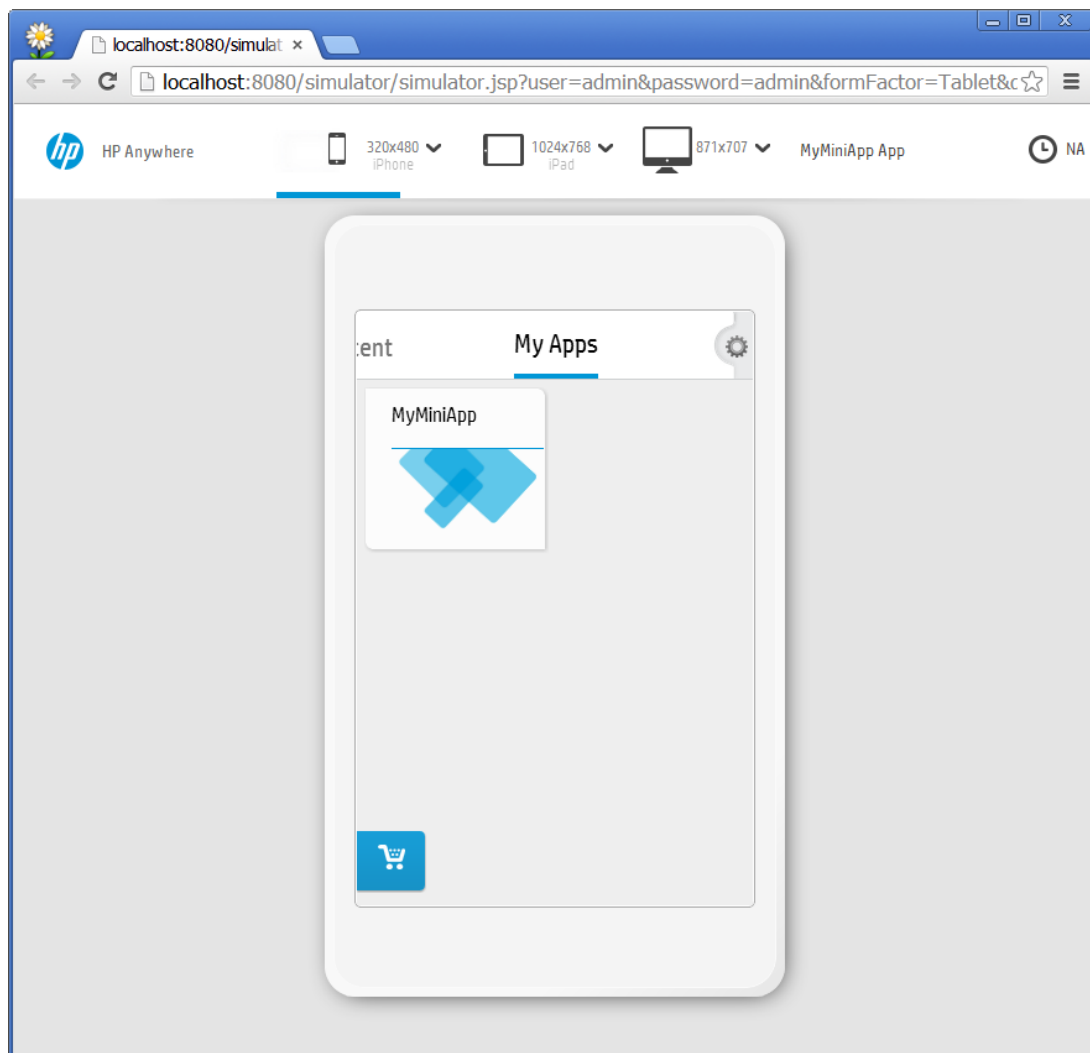
Note: After you run an app, you may need to manually enable it in the catalog.

How do I run my app on a remote server?

You can run your app on a **remote** server. For general details, see "How do I run and view my app?" on page 15.

To run your app in run mode on a remote server:

1. Do one of the following:
   a. In the project explorer, right-click the HP Anywhere project folder and select **Run App**.

   b. Click

   c. In the package explorer or project explorer, right-click the HP Anywhere project folder and select **Run As > Run On Server**.

   The Run On Server dialog box opens.
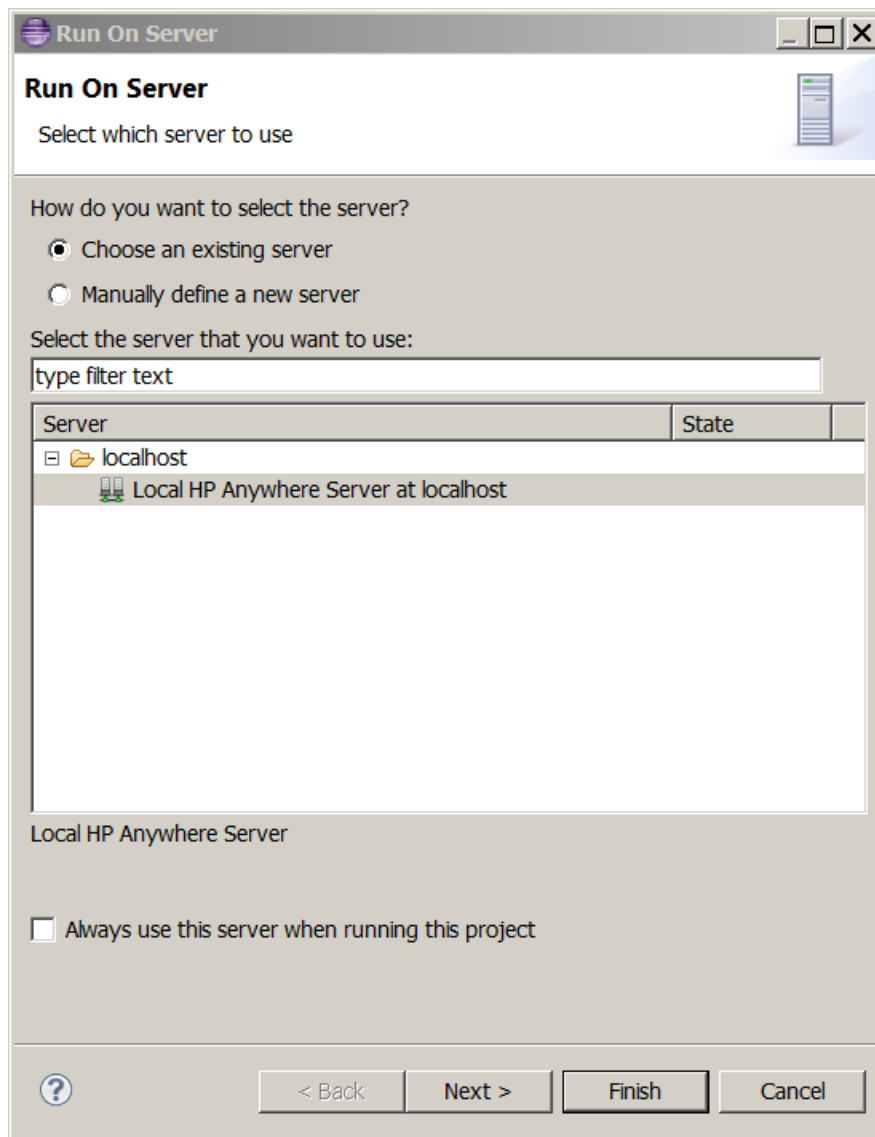
2. Select **Manually define a new server**. The dialog box enables you to specify a different server.
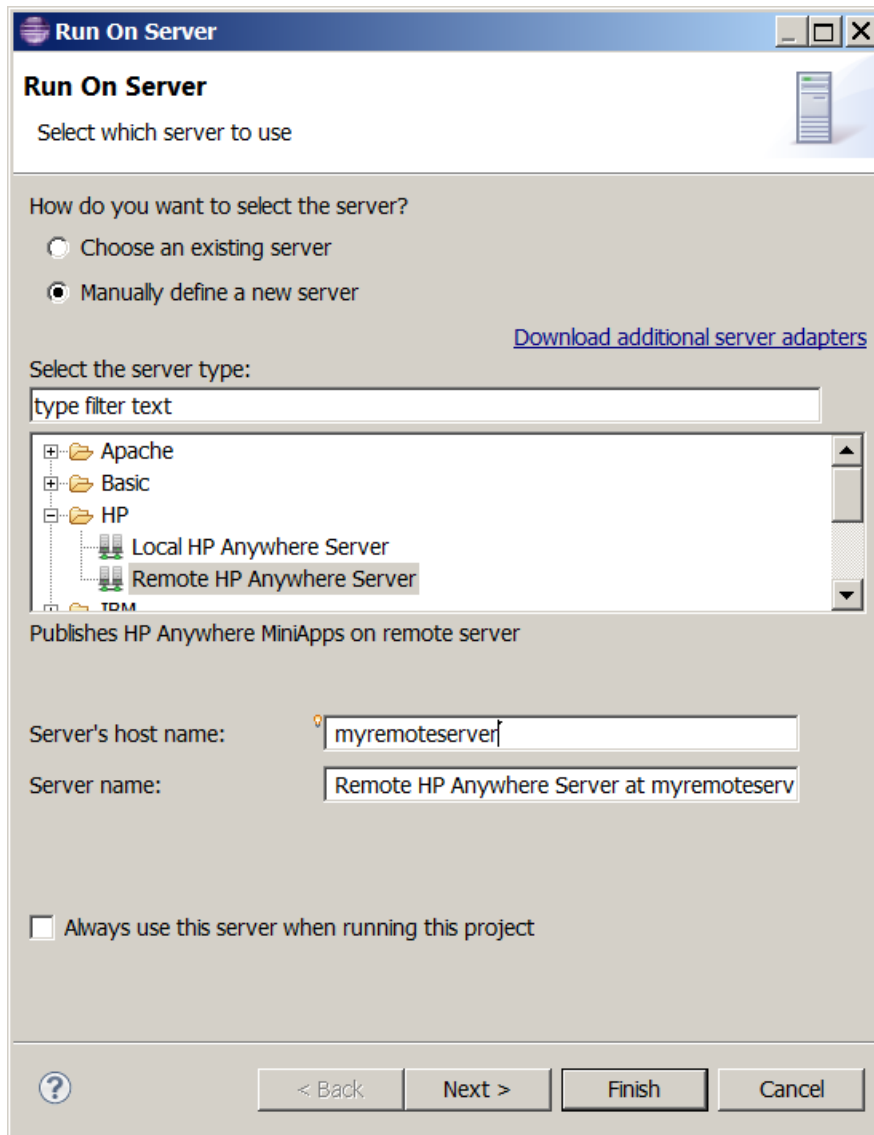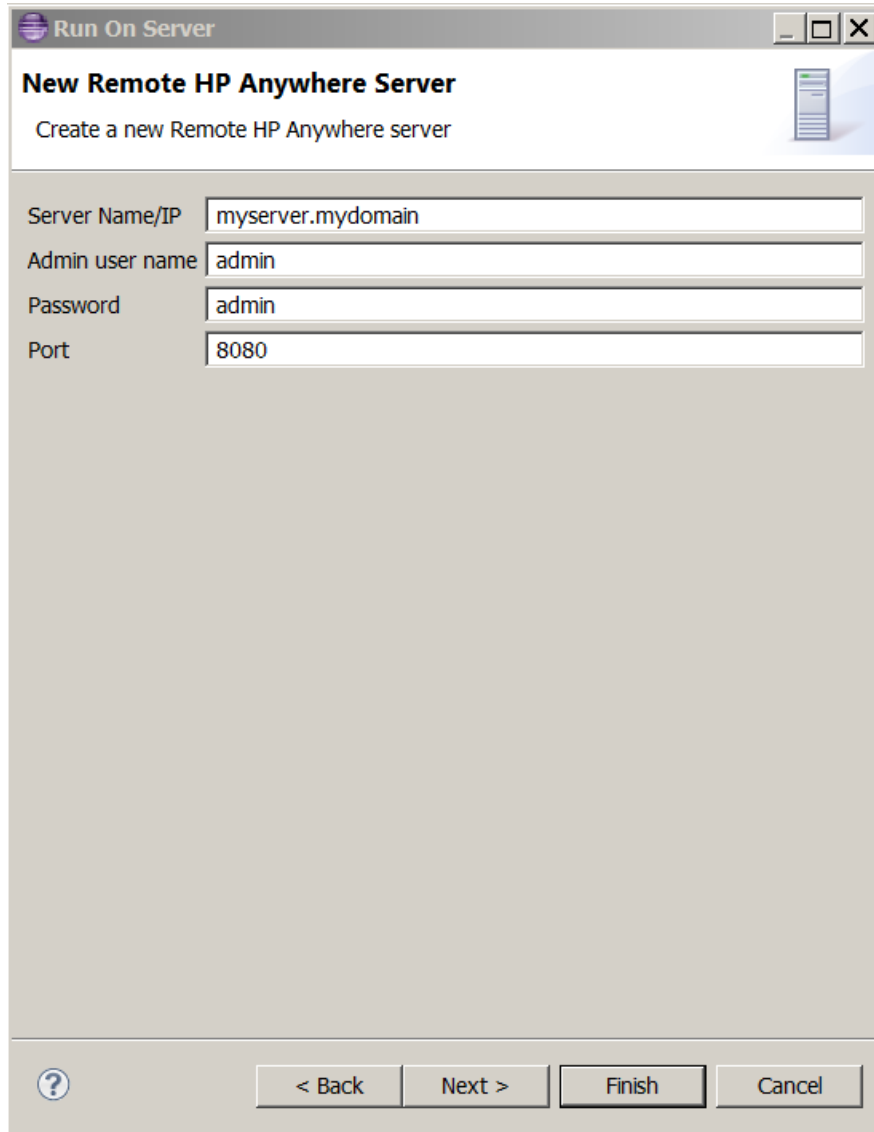
a. Select **Remote HP Anywhere Server**.

b. In the **Server's host name** box, specify the remote server's name or IP address.

c. (Optional) In the **Server name** box, modify the server name.

d. (Optional) Select the **Always use this server when running this project** check box if you always want to run your app only on this server.

3. Click **Next**. The JRE preferences page opens.

Set the **HP Server home** path to <installation folder>, for example:
C:/HP/HPAnywhere

4. Click **Next**. The login details page opens. Modify the default values, as needed.

5. Click **Next**. The Add and Remove page opens.
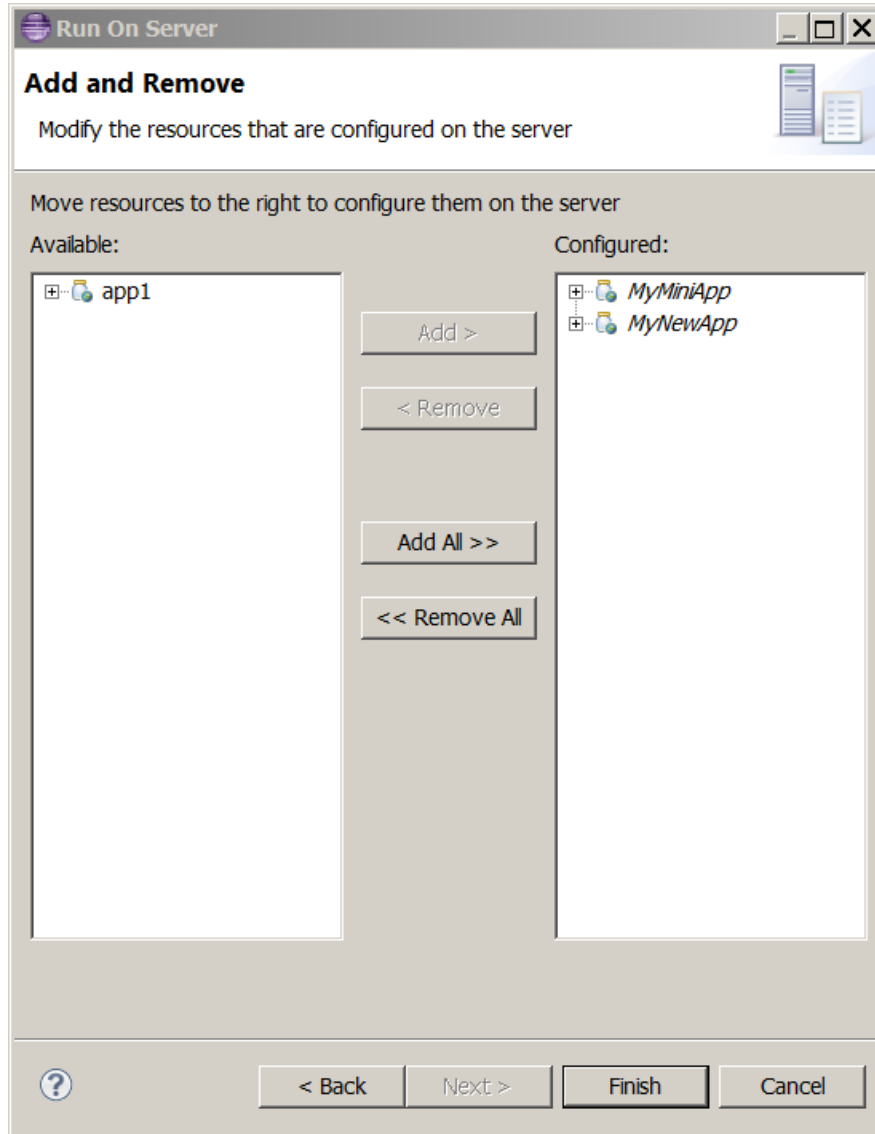
(Optional) You can add or remove projects to run on this server, as needed.

6. Click **Finish**. The server starts and runs your app on the specified remote server using the default form factor and resolution. While the app runs, you can view the log in the Console tab.

> **Note:** If Chrome generates a profile-related error message, close the message and continue to the next step.

7. When the run finishes, the app opens in a Chrome browser, as shown in the following example. If your project contains code that supports other form factors and resolutions, you can select them from the drop-down arrows above the simulated form factor. You can also double-click the simulated form factor to view more details.
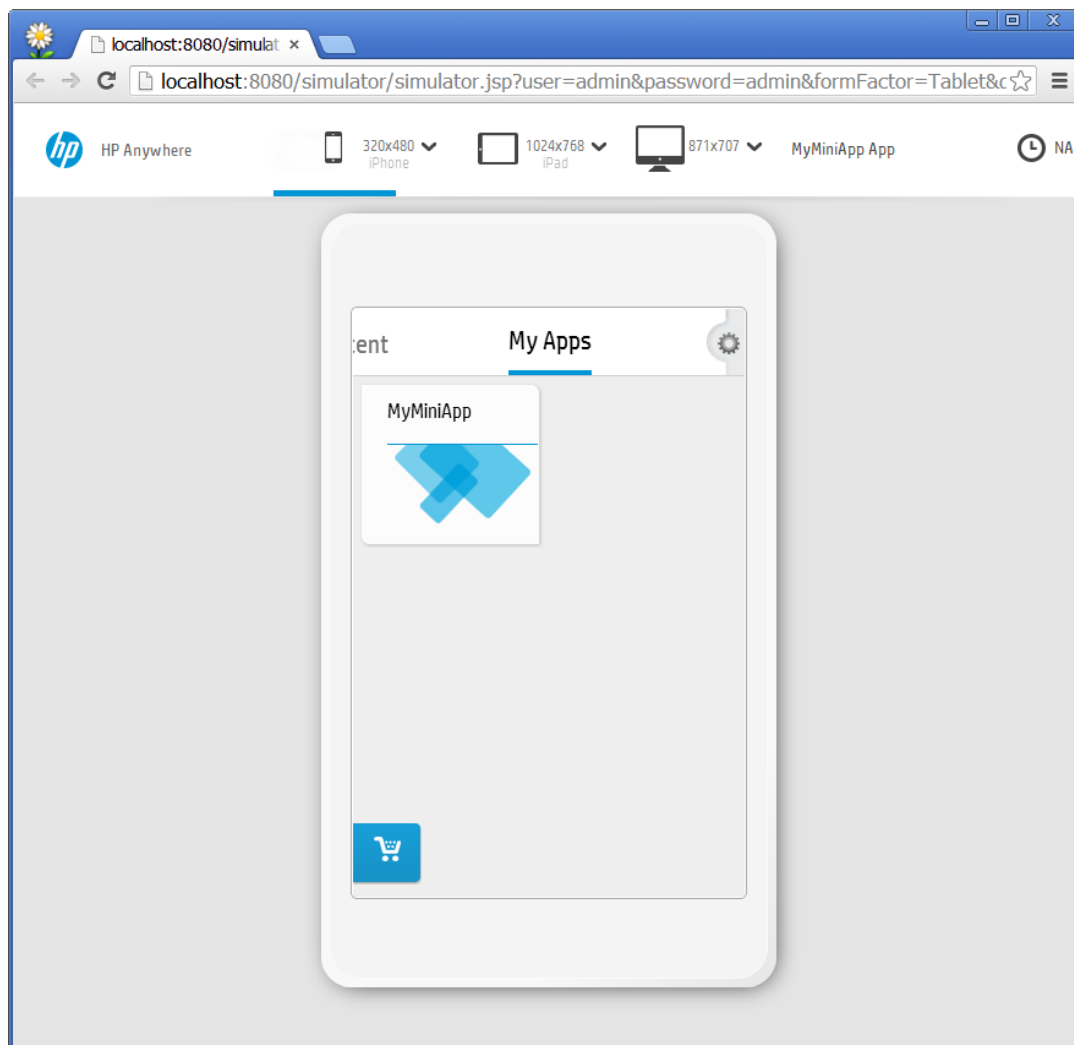
Note: After you run an app, you may need to manually enable it in the catalog.

# How do I view my app on HP Anywhere Simulator?

You can use the HP Anywhere Simulator to view your app in any form factor.

Note: You must run the app project at least once before you can open it in the HP Anywhere Simulator, and the server must already be running.

To view your app project on HP Anywhere Simulator:

1. Do one of the following:
   a. In the project explorer, right-click the project and select **View App In Simulator**.

   b. Click .

   The app opens in a Chrome browser on the last server on which you ran this project.
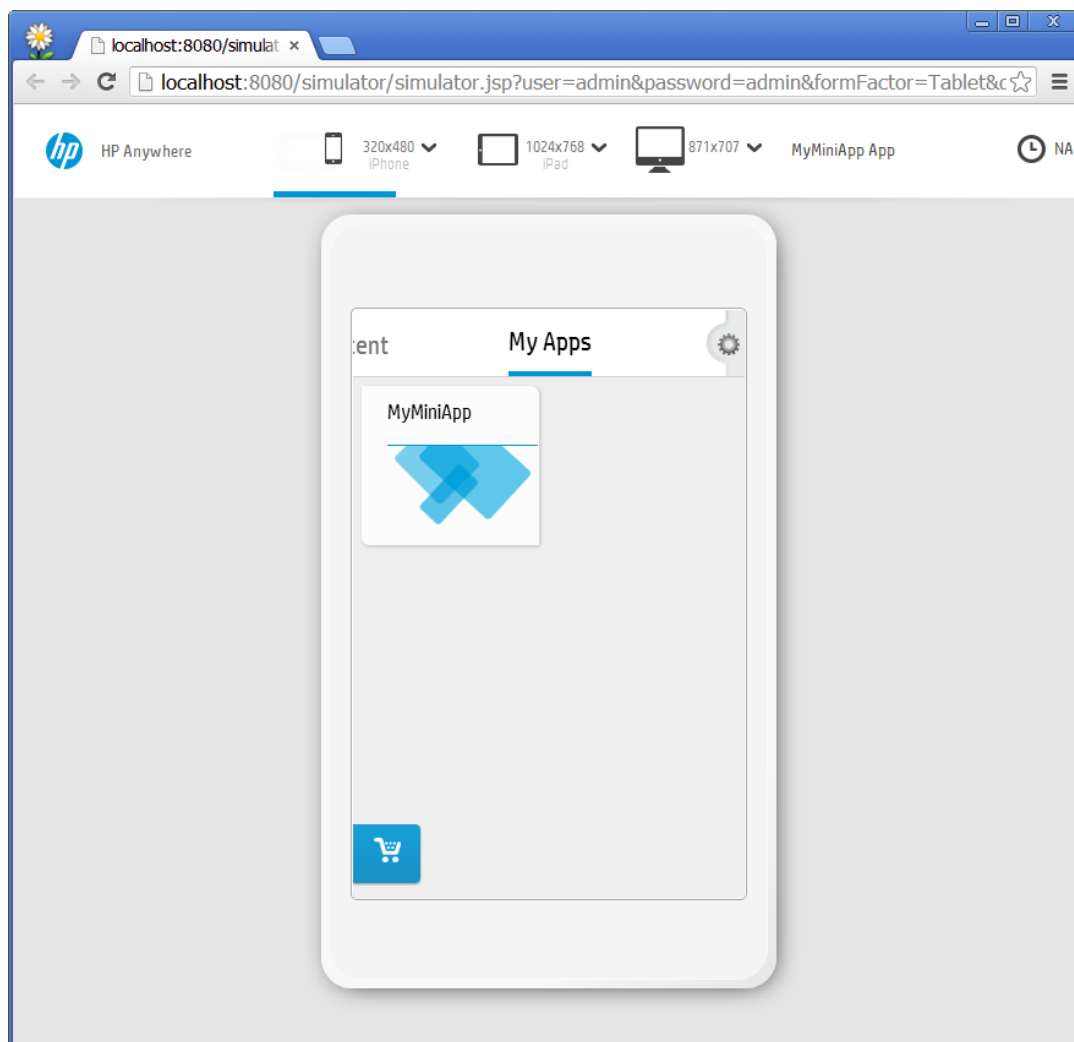
> **Note:** The HP Anywhere Simulator bar at the top of the window times out and hides automatically to enable you to use the full real estate. To restore the bar, click the blue line under the bar.

In the HP Anywhere Simulator bar, select the relevant form factor:

- **Smartphone**

- **Tablet**

- **Desktop** (opens in a new tab or window)

> **Note:** Only the form factors you specified when creating the project are enabled in the HP Anywhere Simulator bar.
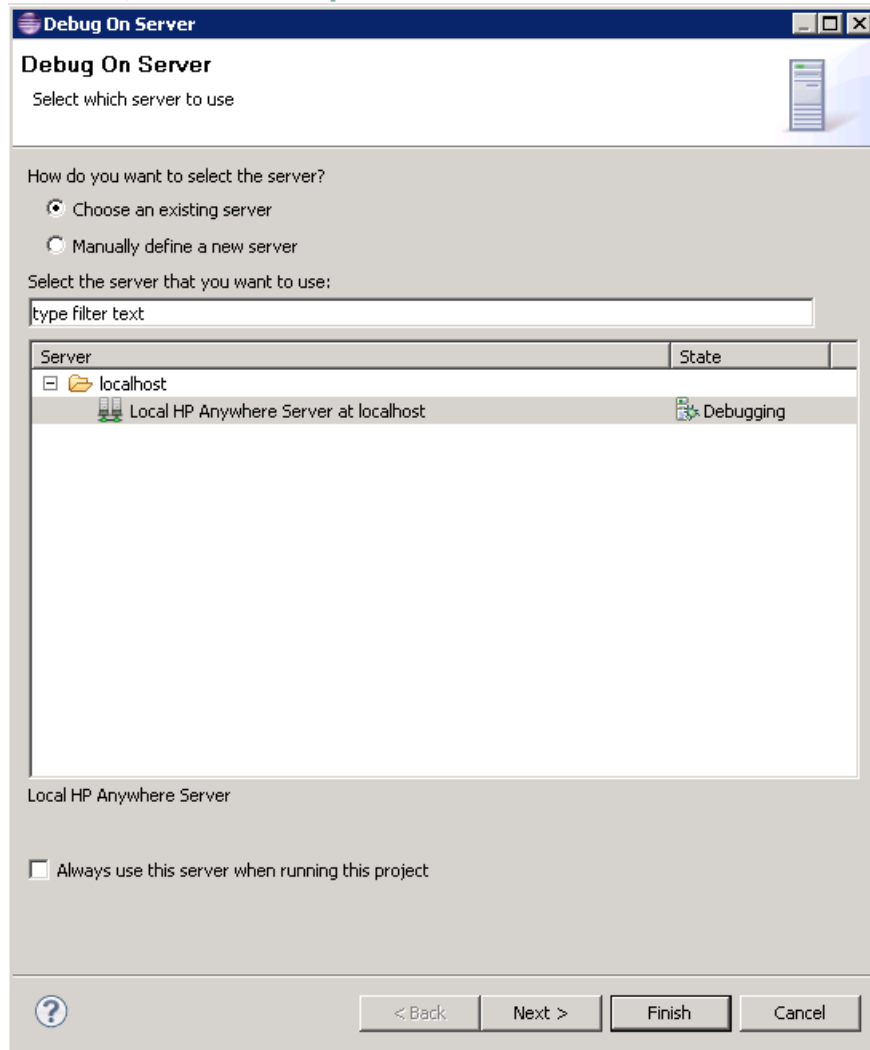
Click the arrow adjacent to the required form factor and select the required screen resolution.
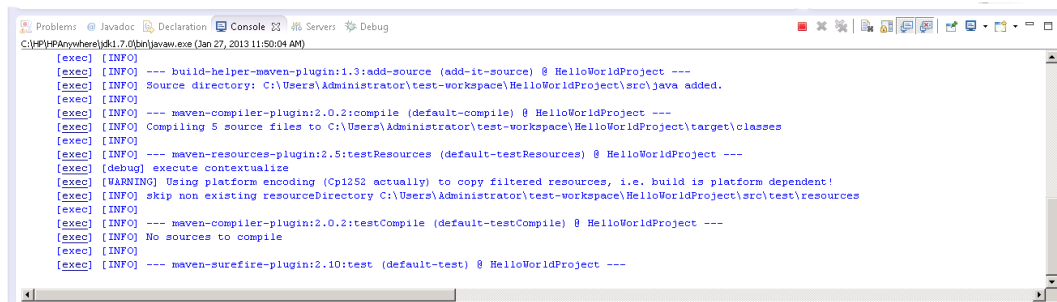
How do I debug my app code?

You can run your app in debug mode.

To debug your app:

1. In HP Anywhere IDE, right-click the app project folder and select **Debug As > Debug On Server**. The Debug On Server dialog box opens.

2. Select **Local HP Anywhere Server at localhost** and click **Finish**. The server starts and runs your app on the local server. As the app runs, you can view the log in the Console tab, as shown in the following example:
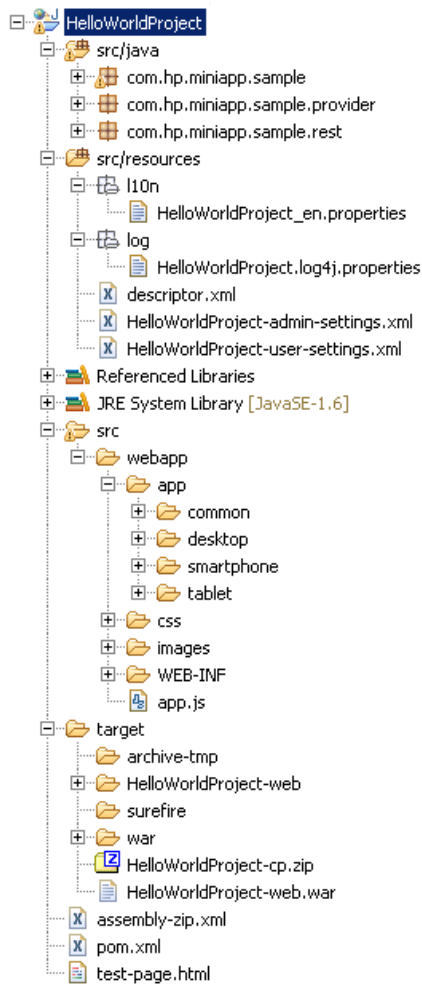

3. When the run is complete, the app opens in a Chrome browser. The development tools are displayed at the bottom of the page.

4. Debug your code:
   a. Debug your Java code as you would in Eclipse (using breakpoints, and so on).

   b. Debug your JavaScript client code in the Chrome browser.

Appendix 1: App Project Folder Structure

By default, each app project has the following package structure:

```
HelloWorldProject
    src/java
        com.hp.miniapp.sample
        com.hp.miniapp.sample.provider
        com.hp.miniapp.sample.rest
    src/resources
        l10n
            HelloWorldProject_en.properties
        log
            HelloWorldProject.log4j.properties
        descriptor.xml
        HelloWorldProject-admin-settings.xml
        HelloWorldProject-user-settings.xml
    Referenced Libraries
    JRE System Library [JavaSE-1.6]
    src
        webapp
            app
                common
                desktop
                smartphone
                tablet
            css
            images
            WEB-INF
            app.js
        target
            archive-tmp
            HelloWorldProject-web
            surefire
            war
            HelloWorldProject-cp.zip
            HelloWorldProject-web.war
        assembly-zip.xml
        pom.xml
        test-page.html
```

Project name	The non-modifiable name of the app project, as defined in the HP Anywhere app Project wizard.
src/java	The Java code used by the app.
src/resources	The app's configuration files (for example, settings, data source, and localization files).
Referenced Libraries	Third-party libraries that are available for the app (project dependencies).
JRE System Library	The JRE libraries that are available for the app.
src	The JavaScript client code, which is divided into folders per form factor. The **common** folders contain JavaScript code that is used by all defined form factors.

target	The target files that are created when your app runs. This folder is empty when your app project is created.
	When the app is ready for release, you can give the **<App project>\target\<App name>-cp.zip** file to your HP Anywhere administrator for deployment to the catalog.

Appendix 2: Template Descriptions

HP Anywhere IDE provides starter projects that you can use as a basis for your own app projects. All of the project templates include the required project folder structure. The **My Report** projects also include code so that you can use to create an app that communicates with a REST API and generates a list of reports.

Template	Description
My Report Enyo Project	An HP Anywhere starter project that generates an app using the Enyo framework. This project is targeted for use on tablets and smartphones.
Blank Project	An HP Anywhere starter project that contains the project folder structure without application content.
My Report Sencha Project	An HP Anywherestarter project that uses the Sencha Touch framework to generate an app that can display a list of reports. This project is targeted for use on tablets and smartphones.
My Report Project	An HP Anywherestarter project that uses the native framework with JavaScript and HTML code to generate an app that can display a list of reports.