

Research In Motion

# How to avoid recompiling a BlackBerry WebWorks during development

For BlackBerry® Smartphones

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09

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## Overview

This tutorial will demonstrate how to structure a BlackBerry® Widget so that you can avoid having to recompile and redeploy it when small changes are made to the web resources it uses (HTML, JavaScript). The BlackBerry® Widget will be configured to load these files from an external location instead of as embedded resources.

In doing this, the Widget can be deployed to a BlackBerry® smartphone and/or simulator and will not need to be re-compiled and re-deployed when small changes are made to the web content.

This practice is recommended for making the development of BlackBerry® Widgets more efficient. It is not recommended to follow this practice when deploying an actual BlackBerry® Widget application because the internal web resources would be vulnerable to modification.

### System Requirements:

- Java Development Kit (JDK) 1.6 or higher
- BlackBerry® smartphone simulator 5.0.0.252 or higher
- BlackBerry® Widget Packager Installed

## Tasks

1. Create a new folder named `avoidRecompile`. Widget files that are to be created during this tutorial will be saved in this folder.

```
C:\Program Files\Research In Motion\BlackBerry Widget  
Packager\avoidRecompile
```

2. Ensure files in the `avoidRecompile` folder can be accessible by an HTTP web request.

```
http://localhost/avoidRecompile/
```

3. Creating the following named `config.xml` file in the `avoidRecompile` folder:

```
<?xml version="1.0" encoding="utf-8" ?>  
<widget xmlns="http://www.w3.org/ns/widgets"  
    xmlns:rim="http://www.blackberry.com/ns/widgets"  
    version="1.0.0">  
    <name>Widget sample: Avoiding recompile</name>  
    <description> Enter your description </description>  
    <author href="http://www.yoursite.com/"  
        email="youremail@domain.com">  
        Company Name - Developer Name  
    </author>  
    <content src="index.html" />  
    <feature id="blackberry.system" />  
</widget>
```

The contents of this file define the properties and behavior of a BlackBerry® Widget. Right now this file indicates that when launched, the BlackBerry® Widget will display the contents of an embedded file named `index.html`.

The “feature” element enables the Widget to have access to the `blackberry.system` namespace in the BlackBerry® Widget API. Any embedded web resources, including the `index.html` file will be able to access the properties and method from the `blackberry.system` namespace. Without it, an exception would occur if the BlackBerry® Widget attempted to access any of the methods or properties found in the `blackberry.system` namespace.

For more information on widget security, please see the tutorial on “How to secure your BlackBerry® Widget”.

4. Change the location from where the BlackBerry® Widget will open its default page. Modify the “content” element in the `config.xml` file. Change this location to the web URL of the `avoidRecompile` folder:

```
<?xml version="1.0" encoding="utf-8" ?>
<widget xmlns="http://www.w3.org/ns/widgets"
        xmlns:rim="http://www.blackberry.com/ns/widgets"
        version="1.0.0">
    <name>Widget sample: Avoiding recompile</name>
    <description> Enter your description </description>
    <author href="http://www.yoursite.com/"
            email="youremail@domain.com">
        Company Name - Developer Name
    </author>
    <content src="http://myDomain/avoidRecompile/index.html" />
    <feature id="blackberry.system" />
</widget>
```

5. Grant the `index.html` file access to resources found under an external domain by adding the following “access” element to the `config.xml` file:

```
<?xml version="1.0" encoding="utf-8" ?>
<widget xmlns="http://www.w3.org/ns/widgets"
```

```
xmlns:rim="http://www.blackberry.com/ns/widgets"
version="1.0.0">
<name>Widget sample: Avoiding recompile</name>
<description> Enter your description </description>
<author href="http://www.yoursite.com/"
email="youremail@domain.com">
Company Name - Developer Name
</author>
<content src="http://myDomain/avoidRecompile/index.html" />
<feature id="blackberry.system" />
<access uri="http://myDomain" subdomains="true">
</access>
</widget>
```

6. Create the following `index.html` file in the `avoidRecompile` folder:

```
<html>
<head>
  <meta name="HandheldFriendly" content="True" />
  <script type="text/JavaScript"
src="http://myDomain/avoidRecompile/scripts.js"></script>
</head>
<body>
<div>
  <a href="#" onclick="displayModel()">
  Click to display your model number
  </a>
</div>
</body>
</html>
```

Notice the path referencing the external JavaScript file is `"http://myDomain/avoidRecompile/script.js"`.

This `index.html` file displays a hyperlink that when clicked on will invoke a JavaScript method named “`displayModel`”. This method is defined in the externally referenced file `script.js`.

7. Create the following `scripts.js` file in the `avoidRecompile` folder:

```
function displayModel() {  
    var model = blackberry.system.model;  
    alert('BlackBerry: ' + model);  
}
```

The `displayModel` method uses the `blackberry.system` namespace from the BlackBerry® Widget API to retrieve the model number for the BlackBerry® smartphone on which the application is running.

8. You are now ready to build the widget. Create a ZIP file named `tutorial.zip` containing only the `config.xml` file. Do not include the `index.html` or `scripts.js` files in this ZIP file since we do not want them to be embedded resources.

9. The `avoidRecompile` folder should now contain the following files.

- `config.xml`
- `index.html`
- `scripts.js`
- `tutorial.zip`

10. Navigate to the BlackBerry Widget Packager folder and run the following command to build the BlackBerry® widget.

```
bbwp.exe <path to avoidRecompile folder>\tutorial.zip
```

11. You should see the following output if successful:

```
[INFO]          Parsing option parameters  
[INFO]          Parsing bbwp.properties  
[INFO]          Validating zip archive  
[INFO]          Widget packaging starts...  
[INFO]          Populating source codes...
```

```
[INFO]          Start compiling and building...  
[INFO]          Generating output files...  
[INFO]          Widget packaging is done.
```

12. A folder named “bin” will be created in the avoidRecompile folder containing the following files:

- avoidRecompile.alx
- avoidRecompile.cod
- avoidRecompile.csl
- avoidRecompile.cso
- avoidRecompile.jad
- avoidRecompile.jar
- avoidRecompile.rapc

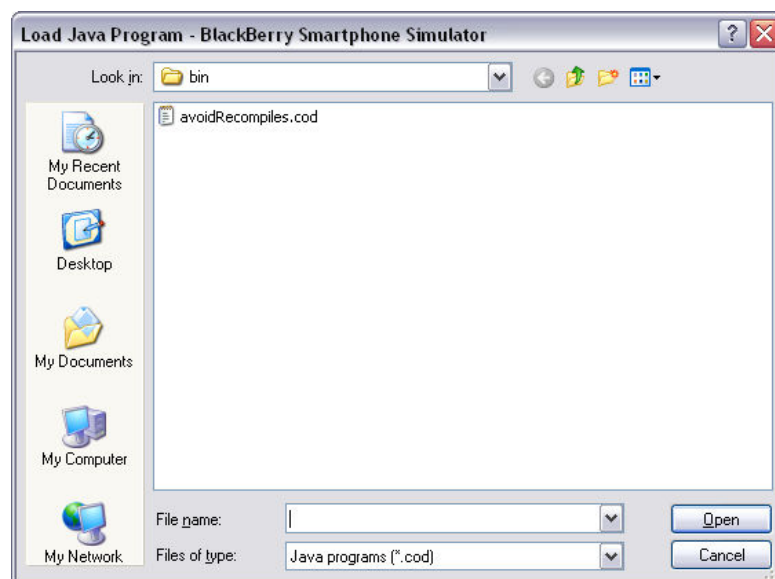
13. Launch a BlackBerry® smartphone simulator version 5.0.0.252 or higher of the handheld software. BlackBerry® Widgets depend on the BrowserField2 API that was introduced in version 5.0 of the Handheld OS.



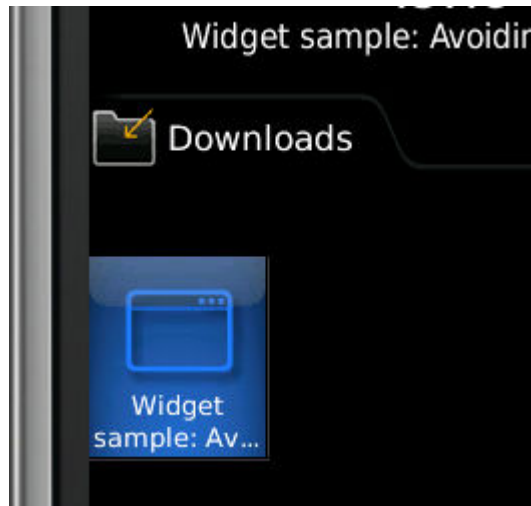
14. From the file menu, select the “Load Java program” menu item.



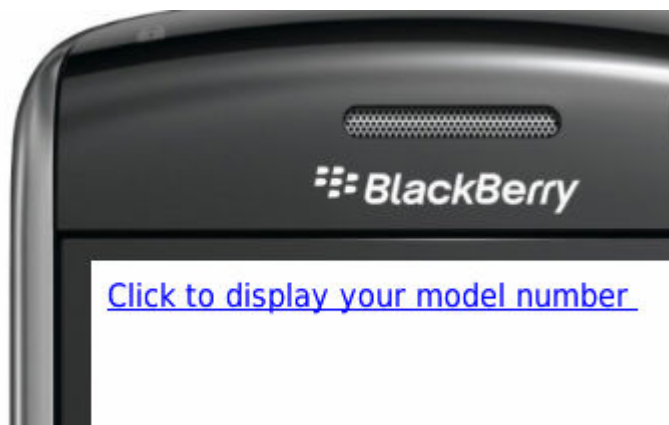
15. A popup window will open where you are prompted to select a COD file. Navigate to the avoidRecompile\bin folder and select the avoidRecompile.cod file.



16. The BlackBerry® Widget will be loaded in the BlackBerry® smartphone simulator and can be found in the “Downloads” folder. Launch your BlackBerry® Widget from the “Downloads” folder.

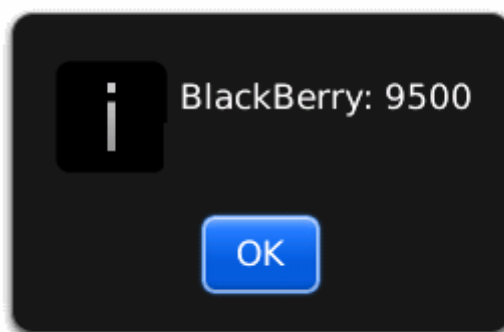


17. The BlackBerry® widget will launch, and open the `index.html` file retrieved from the `http://myDomain/avoidRecompile` location.



18. Click on the hyperlink displayed within the BlackBerry® Widget. A popup window will display showing the model number of the BlackBerry® smartphone simulator.

[Click to display your model number](#)

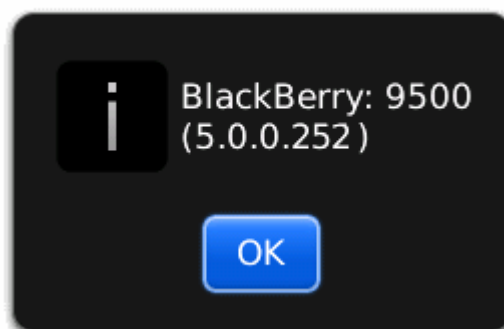


19. At this point, you can change the contents of the `index.html` and `scripts.js` file found in the `avoidRecompile` folder and they will be reflected in the widget without having to rebuild and redeploy it to the BlackBerry® smartphone simulator. In order to see your changes, you may have to re-open the page which may involve restarting the application.
20. Close the BlackBerry® Widget application.
21. Modify the `scripts.js` file found in the `avoidRecompile` folder to include logic that displays the version number.

```
function displayModel() {  
    var model = blackberry.system.model;  
    var version = blackberry.system.softwareVersion;  
    alert('BlackBerry: ' + model + '(' + version + ')');  
}
```

22. Save the `scripts.js` file.
23. Return to the BlackBerry® smartphone simulator, click on the “Click to display your model number” hyperlink. Without having to rebuild and recompile your BlackBerry® Widget, the changes made to JavaScript are now visible.

[Click to display your model number](#)



## Notes

- This practice is recommended for making the development of BlackBerry® Widgets more efficient. It is not recommended to follow this practice when deploying an actual BlackBerry® Widget applications because the internal web resources would be vulnerable to modification.

## Links

**BlackBerry Widgets Web Site:**

<http://www.blackberry.com/developers/widgets>

**BlackBerry Developers Web Site:**

<http://na.blackberry.com/eng/developers/>

**BlackBerry App World:**

<http://na.blackberry.com/eng/developers/appworld.jsp>

**Developer Video Library:**

<http://na.blackberry.com/eng/developers/resources/videolibrary.jsp>

**Documentation:**

<http://na.blackberry.com/eng/support/docs/developers/?userType=21>

**Knowledge Base Articles:**

<http://www.blackberry.com/knowledgecenterpublic/livelink.exe/fetch/2000/348583/customview.html?func=ll&objId=348583>

**Forums:**

<http://supportforums.blackberry.com/rim/?category.id=BlackBerryDevelopment>