

# Deploying and Testing App on Real TV

This document describes how to deploy, test, debug the application on Real (actual) TV.

## [Exporting Project](#)

This document describes how to export the project from LG IDE for remote debugging on TV.

## [Uploading App on App Test Menu](#)

This document describes how to upload the application on App Test Menu and download the DRM-packaged file on USB.

## [Deploying App on TV](#)

This document describes how to deploy the DRM-packaged application stored in USB onto TV.

## [Debugging App on TV with LG IDE](#)

This document describes how to debug the application on TV with LG IDE.

## [Running App on TV with LG IDE](#)

This document describes how to run the application on TV with LG IDE.

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# Exporting Project

## Caution

Please read the following note first.

1) If Remote Debugging is not needed, remove the 'LG Inspector' folder in the zip file which is exported from "Export App Test" menu. Or, just compress the WebContent folder of your project into zip format. Then, upload the zip file on LG Developer Site > App Test menu.

2) If Remote Debugging is needed, you must export the app with "Export App Test" menu and upload the exported zip file on LG Developer Site > App Test menu.

If an application zip file includes the 'LG Inspector' folder and deployed on TV when developer is not using remote debugging function, the following problems may occur.

- Back and Smart Home button does not work normally.
- Screen freezes after app is launched for the first time and then back button and Home button are pressed sequentially.

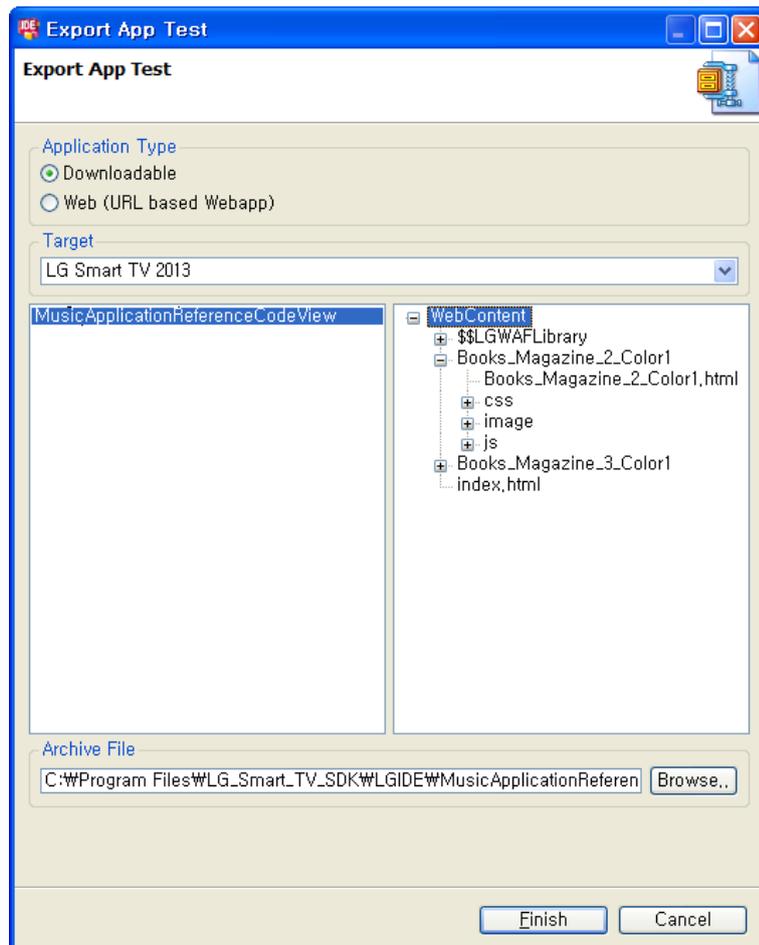
In this case, you should power off the TV and restart the application.

LG IDE provides automatic exporting function for developers to debug the application on a TV remotely.

1. In IDE, select the project and click **[File > Export App Test]**.

Or, click **[Export App Test]** from the right-click menu in your project.

2. In the following window, select application type, target TV and project from the list in the left.



In 'Downloadable' type, select the project on the left. Then, the 'WebContent' folder contents of the project are displayed on the right. Set the destination folder where exported file is stored to 'Archive File'. The file is exported as the name of the selected project by default.

In 'Web (URL based Web app)' type, set the destination folder where exported file is stored to 'Archive File'. The file is exported as the name of 'LGInspector.zip' by default.

Click **[Finish]**.

3. Then, the exported project file (.zip) will be created under the destination folder with 'LG Inspector' folder included.

4. To launch the application on a TV for remote debugging, you must upload the exported file on the [App Test] menu in LG Developer (<http://webostv.developer.lge.com>) and download the DRM-packaged file into the USB.

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**Note**

In Downloadable type, you can test an application on a TV and debug the application on LG IDE.

In Web type, you can test an application on Web and debug the application on LG IDE. In this case, set the URL on the [App Test] menu in LG Developer.

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Refer to the next sections.

# Uploading App on App Test Menu

To test your application on a TV, you have to register your own application on **[App Test]** page first. Once upload is done, the application is DRM packaged. You can download it to USB and test it on a TV.

The LG Smart TV models that have only one USB Port, released before year 2012, cannot be used for testing application. You must check if your device is released since 2012 or has two USB Ports before starting the test.

## Steps for App Testing

Step 1. Upload the application in .zip format on **[App Test]** page.

Step 2. Download the DRM-packaged file into USB from **[App Test]** page.

Step 3. Insert the USB into LG Smart TV and test the application on it.

Step 1. Upload the application in .zip format on [App Test] page.

Refer to [Uploading Web application](#) , [Uploading Flash application](#), [Uploading AIR application](#), and [Uploading Marmalade/Unity application](#).

Step 2. Download the DRM-packaged file into USB from the [App Test] page.

Refer to [Downloading Application on USB](#).

Step 3. Insert the USB into LG Smart TV and test the application on a TV.

Refer to [Inserting USB into LG Smart TV](#).

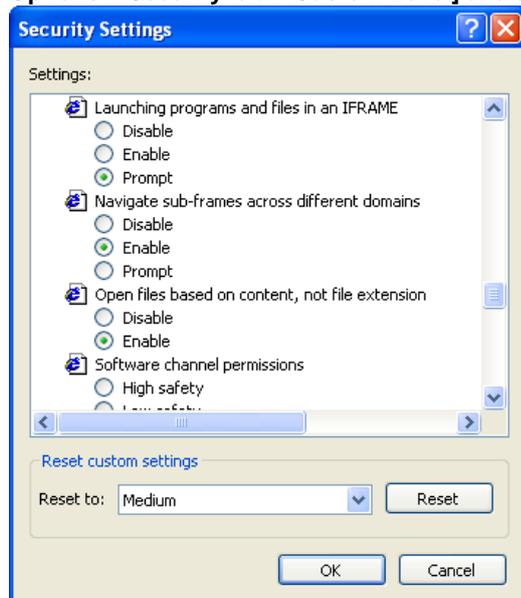
## App Test Menu

Go to **[DISCOVER > Legacy Platform (NetCast) > USB App Test]** menu n LG Developer (<http://webostv.developer.lge.com>). You must login if you are not logged into the website.

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## Note

If you are using Internet Explorer 6, you must change the internet options first. In IE6, go to **[Tools > Internet Options > Security tab > Custom Level]** and change the options as below.



This section includes the following sections.

- [Checking the SDK Version of TV](#)
- [Uploading Web App](#)
- [Uploading Flash App](#)

- [Uploading AIR App](#)
- [Uploading Marmalade/Unity App](#)

## Checking the SDK Version of TV

Before starting application testing on a TV, you need to check the SDK version of TV first. Only **01.05 or higher** version is available for application testing. Also, it is recommended that firmware version of the TV has the latest version.

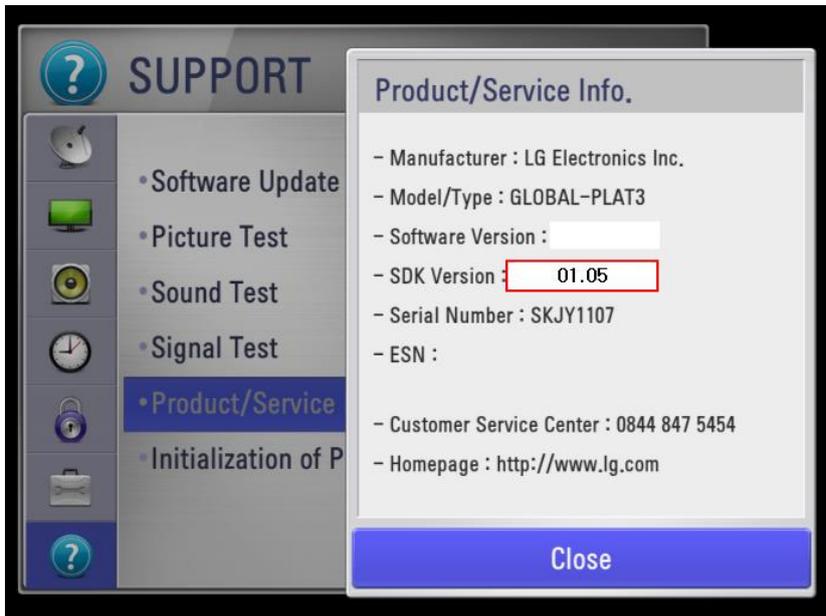
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### Note

Currently, application testing function through App Test menu is supported on LG Smart TV and Smart TV Upgrader (SP820). LG Media products do not support App Test using USB.

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From the [Home] menu of your LG Smart TV, select **[SETUP > SUPPORT > Product/Service]** and check 'SDK Version'.



If the SDK version is lower than 01.05, try software update as below.



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### Note

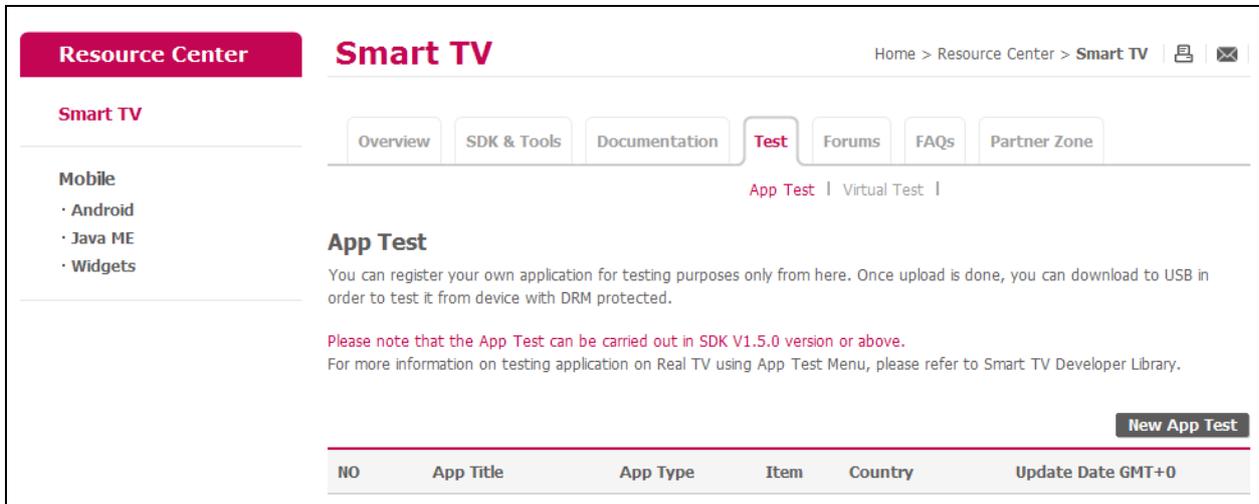
In some countries, software update may not has been applied.

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# Uploading Web App

In App Test page, web applications can be uploaded with following steps.

1. Uploaded applications list is shown. You can check detailed information for each application by clicking it. Click **[New App Test]** to upload a new application.



2. Fill out the blank referring to the following table.

**Basic Information** \*Required Field

Please enter basic App information in English

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**App Title\***

Please enter basic App information in alphanumeric (Max of 100byte)  
ex) 0-9, A-Z, blank and underscore\_

**App Type\*** Web All

If you are not a partner with LG, select All for Sub Type.  
If you are a partner with LG, follow this guideline for Sub Type. If you cannot sure the app types, contact your LGE person in charge and select the guided Sub Type.  
All : All web apps except following specific apps.  
M14+ : M14+ chipset-targeted web apps.  
H15 : H15 chipset-targeted web apps.  
LM15U : LM15U chipset-targeted web apps.

**File Upload\*** **URL \***

**File Upload**

- Web App - Available App Types: zip, ipk  
Maximum File Size : 100 MB  
It is recommended to minimize and optimize your app as best as you can. The time required for loading and executing apps decreases as your apps become smaller and compact.

**App Icon\***

Recommended Picture Size : Greater than 200 X 200 pixel, (Square Type Only)  
Available File Type : JPG, GIF, PNG  
Available File Size : 100KB

Attribute	Description
App Title	Enter alphanumeric characters for the application title. The title should be lesser than 100 characters long.
App Type	Select "Web". For Sub Type; If you are not a partner with LG, select "All" for Sub Type.  If you are a partner with LG, follow this guideline for Sub Type. If you cannot sure the app types, contact your LGE person in charge and select the guided Sub Type.

Attribute	Description
	<p>All : All web apps except following specific apps.  M14+(webOS) : M14+ chipset-targeted web apps.  H15(webOS) : H15 chipset-targeted web apps.  LM15U(webOS) : LM15U chipset-targeted web apps.  LM14A(webOS) : LM14A chipset-targeted web apps.</p>
File Upload - URL	<p>For hosted (URL-based) web application, enter the URL of web application server.  Example) "http://www.abc.com/index.html", "http://www.abc.com/"</p> <p>All resources of hosted web application are stored on web server managed by seller. The web application is executed by accessing web server using the URL of the web server. The web server can be implemented with any language.</p>
	<p>For packaged (downloadable) web application, enter the exact relative path of a html file which will be initially executed. The path should be relative to the root path of the compressed file.  Example) "index.html", "./test/index.html", "test/index.html"</p> <hr/> <p><b>Note</b>  Do not use "http://" or URL for packaged web application type.</p>
File Upload – File Upload	<p>For packaged web application, select an application file to upload. (The file extension must be <b>zip</b>)  The packaged web applications are recommended to be 20MB or so but the application is capable of uploading up to 100MB.</p> <hr/> <p><b>Note</b>  For hosted web application, do <b>not</b> enter anything.</p>
App Icon	<p>Enter the app icon in a jpg, gif or png format.  The icon must be under 100KB and greater than 200 x 200 pixels.</p>

4. Click **[Save]**. If you click **[Cancel]**, the page goes back to the App Test main page.
5. Uploaded application information page is displayed.

Balloon 2014-08-13 00:35 GMT+0

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**File Basic Information**

• File type	Web> Web
• Upload File	index.html Balloon
• Icon	 balloon.png

---

**Item**

• Country : Korea

No	Item ID	Item title	Terms of Use	Price	Local Price	Date
1	B0001	apple	Unlimited	\$5	₩5000	2014-08-13 00:35
2	B0002	peach	Unlimited	\$5	₩5000	2014-08-13 00:35
3	B0003	knife	Single Use	\$2	₩2000	2014-08-13 00:35

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**CP Option Information**

- Loading Message :
- Accept Language :
- Progress : 95 %
- DRM Cookie :
- Default Language : en
- Background Color : 1
- Mouse-off Event : 0
- Magic RCU : 1
- Redirection Number : 0

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**Download DRM applied file**

Please read terms and conditions carefully before you start to download application [ [Terms and Conditions](#) ]

You can download DRM applied file.

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- **File Basic Information:** The uploaded file name and app icon image are displayed.
- **Item:** The registered in-app items are displayed.
- **CP Option Information:** The registered CP options are displayed.
- **Download DRM applied file:** Check the [Terms and Conditions] before downloading the application.
- **[Modify], [Delete]** : Click this button to modify the information or delete app file.
- **[List]:** Click this button to goes back to the application list page.

6. Download the DRM-packed file on USB by clicking **[Download]**.  
 For downloading on USB, refer to [Downloading App on USB](#).

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**Note**

The above page will show CP option information with default values even though you did not check on it.

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# Uploading Flash App

In App Test page, Flash applications can be uploaded with following steps.

1. Click **[New App Test]** to upload a new application.
2. Follow the next steps.

**Basic Information**  
Please enter basic App information in English \*Required Field

---

**App Title\***  \*OK

Please enter basic App information in alphanumeric (Max of 100byte)  
ex) 0-9, A-Z, blank and underscore\_

**App Type\*** Adobe Flash Flash

Please select your App type to upload

**File Upload\*** **File Upload**  찾아보기...

Flash App - Available File Type : Ids, Zip  
Recommended File Size : up to 20MB (Max 100MB)

**Main Run File**  Search

If there are multiple files to the App, select one to be the main file  
ex) When there are several, swf files

**App Icon\***  찾아보기...

Recommended Picture Size : Greater than 200 X 200 pixel, (Square Type Only)  
Available File Type : JPG, GIF, PNG  
Available File Size : 100KB

**Spec Check List\*** **Optimized Resolution** 1280.720

You can enter the optimized Resolution.

---

Item

Save
Cancel

Attribute	Description
App Title	Enter alphanumeric characters for the application title. The title can be lesser than 100 characters long.
App Type	Select "Adobe Flash" and sub type in application type list.
File Upload	Select an application file to upload. (The file extension must be <b>zip</b> ) Select a main file to run. When you click on [Search], a list of .swf files of the application are shown in the popup.
File Upload – Main Run File	<div style="border: 2px solid gray; padding: 10px; margin: 10px 0;"> <p style="text-align: right; font-size: small;">Close X</p> <p><b>Select File to Run for yout App</b></p> <p><b>Note :</b> For Apps containing multiple files, if you do not select a file or select the wrong file as the main file to run, your App may not function properly.</p> <div style="border: 1px solid gray; padding: 5px; margin: 5px 0;"> <p style="font-size: small;">Baseball.swf</p> </div> <p style="text-align: center; margin-top: 10px;"><span style="border: 1px solid gray; padding: 2px 5px;">Close</span></p> </div>
App Icon	Enter the app icon in a jpg, gif or png format. The icon must be under 100KB and greater than 200 x 200 pixels.
Spec Check List	For Flash or AIR application, you should enter the optimized resolution of the application so that it can run on TV normally.

Attribute	Description
	<div style="border: 1px solid black; padding: 5px;"> <p>Spec Check List*    Optimized Resolution    1280,720 ▾</p> <p style="font-size: small;">You can enter the optimi</p> <div style="border: 1px solid black; padding: 2px;"> <p>--Select--</p> <p>960,540</p> <p style="background-color: #eee;">1280,720</p> <p>1920,1080</p> </div> </div>

3. Click **[Save]**. If you click **[Cancel]**, the page goes back to the App Test main page.

**Note**

For the "Item" option, refer to the [Uploading Web App](#).

4. Uploaded application information page is shown as follows.

Baseball\_AppTest 2013-02-04 05:26 GMT+0

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**File Basic Information**

· File type	Adobe Flash> Flash
· Upload File	Baseball_AppTest /Baseball.swf
· Icon	 baseball.png
· Optimized Resolution	1280,720

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**Download DRM applied file**

Please read terms and conditions carefully before you start to download application [ [Terms and Conditions](#) ]

You can download DRM applied file.

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- **File Basic Information:** The uploaded file name and app icon image are displayed.
- **Item:** The registered in-app items are displayed.
- **Download DRM applied file:** Check the [Terms and Conditions] before downloading the application.
- **[Modify], [Delete]** : Click this button to modify the information or delete app file.
- **[List]:** Click this button to goes back to the application list page.

5. Download the DRM-packed file on USB by clicking **[Download]**.  
 For downloading on USB, refer to [Downloading App on USB](#).

# Uploading AIR App

In App Test page, AIR applications can be uploaded with following steps.

1. Uploaded applications list is shown. You can check detailed information for each application by clicking it. Click **[New App Test]** to upload a new application.
2. Follow the next steps.

**Basic Information**  
Please enter basic App information in English \*Required Field

---

**App Title\***  \*OK

Please enter basic App information in alphanumeric (Max of 100byte)  
ex) 0-9, A-Z, blank and underscore\_

**App Type\***

Please select your App type to upload

**File Upload\***

Flash App - Available File Type : Ids, Zip  
Recommended File Size : up to 20MB (Max 100MB)

**Main Run File**

If there are multiple files to the App, select one to be the main file  
ex) When there are several, swf files

**App Icon\***

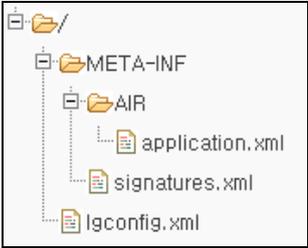
Recommended Picture Size : Greater than 200 X 200 pixel, (Square Type Only)  
Available File Type : JPG, GIF, PNG  
Available File Size : 100KB

**Spec Check List\*** **Optimized Resolution**

You can enter the optimized Resolution.

---

Item

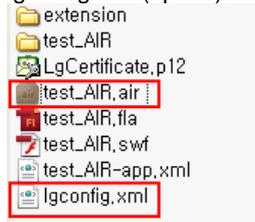
Attribute	Description
App Title	Enter alphanumeric characters for the application title. The title can be lesser than 100 characters long.
App Type	Select "Adobe AIR" and sub type in application type list.
File Upload	Select an application file to upload. (The file extension must be <b>zip</b> )
File Upload – Main Run File	Select a main file to run. When you click on <b>[Search]</b> , a list of .xml files of the application are shown in the popup. Select "META-INF/AIR/application.xml" from this list, then, the popup disappears.
	
App Icon	Enter the app icon in a jpg, gif or png format. The icon must be under 100 KB and greater than 200 x 200 pixels.
Spec Check List	For AIR application, you should enter the optimized resolution of the application so that it can run on TV normally.

Attribute	Description
Spec Check List*	Optimized Resolution 1280,720 You can enter the optimized resolution

**Note**

When AIR application is uploaded for App Test in LG Developer or Seller Lounge, the applications should be packaged as below.

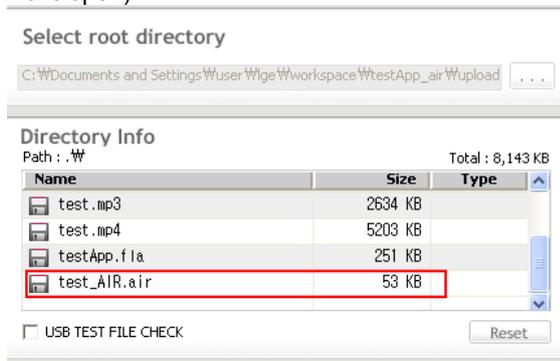
1. If you are using LG Smart TV SDK V2.1.1, run **[Step-2 Build and Run Over Emulator]** from the Command menu of Adobe Flash CS. And files and folders are created as below. Among them, copy .air file (mandatory) and lgconfig.xml (option) into a folder to be packaged.



2. Copy other content files and folders necessary to run application into a folder to be packaged.



3. Select a packaged folder in Digital Signing Tool and proceed packaging.(App Test is possible with .zip file in LG Developer.)



For more information, refer to "LG Flash, AIR Application Development Guide" in the [\[DISCOVER > Legacy Platform \(NetCast\) > Technical Notes\]](#) at LG Developer site.

3. Click **[Save]**. If you click **[Cancel]**, the page goes back to the App Test main page.

4. The view of uploaded application information is similar to those of Flash Application on App Test.

5. Download the DRM-packed file on USB by clicking **[Download]**.

For downloading on USB, refer to [\[Downloading App on USB\]](#).

## Uploading Marmalade/Unity App

In App Test page, Marmalade and Unity applications can be uploaded as the same as the Flash Application.

For uploading Marmalade/Unity applications for app test, refer to [\[Uploading Flash App\]](#).

# Deploying App on Real TV

Once you have uploaded your application on **[App Test]** page at LG Developer website, you can download the DRM-packaged application into USB to deploy it on LG Smart TV.

The LG Smart TV models that have only one USB Port, released before year 2012, cannot be used for deploying the application. You must check if your device is released since 2012 or has two or more USB Ports before start to deploy.

Follow to the next steps:

1. [Downloading App on USB](#)
2. [Inserting USB into LG Smart TV](#)

## Downloading App on USB

1. Create **lgapps\installed** folder in USB.
2. Go to **[App Test]** menu and select the application to deploy on a TV. Download the DRM-packaged file (.zip) on your PC. Then, unzip it.
3. You will see a folder named with a number, for example "8". This number is an application ID. Copy this folder under "**lgapps\installed**" folder in USB.



## Inserting USB into LG Smart TV

1. Sign in to LG Smart TV with ID and password of LG Apps TV. Then, insert the USB into TV.



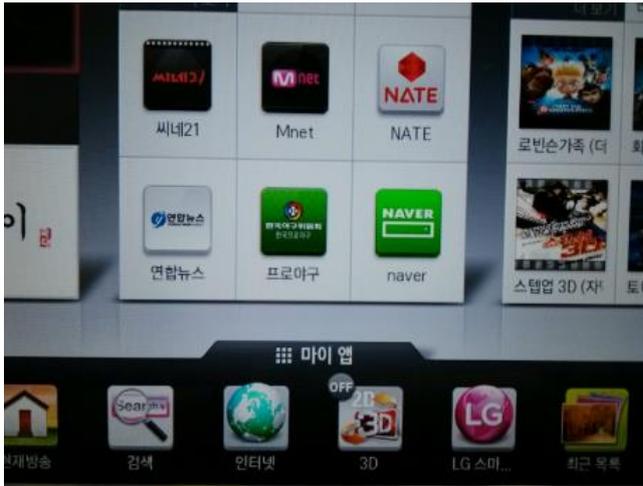
---

### Note

If the Country Setting on TV is not set to your own country, the login icon for LG Smart TV cannot be displayed. Thus, you cannot test your application on TV without changing the Country Setting.

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2. Click [MyApps] on the bottom of TV screen.



3. In MyApps page, press arrow (▶) on the screen or [CH Down] button from IR Remote to see your application.



4. You can see and test your application running on a TV.

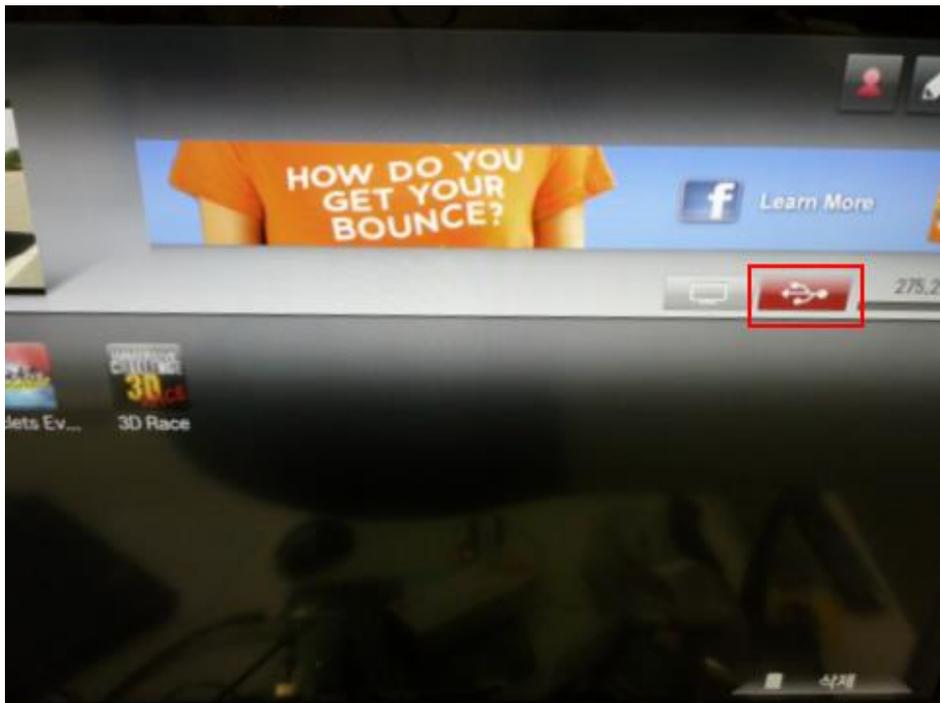


#### Note

When testing application on a TV, the DRM-packaged application must receive the key from SDP for decryption. But the key may be delayed or not received depending on the network status. In this case, you can try to input USB again.

Also, applications on USB have the different decryption keys. If one application was displayed on TV but the other applications were not displayed on TV, it means the one application received the key only for decryption.

5. In LG Smart TV released in 2012 and 2013, you should click on the following USB icon in MyApps page after inserting the USB into the TV.



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**Note**

- Once an application is installed through USB, it is executable on maximum 5 devices with same LG Apps IDs.
  - If an application has been executed with ID "A", the application is not shown on other TVs with ID "B".
  - However, once an application is installed on TV, it can be shown with different IDs on the same TV.
-

# Debugging App on TV with LG IDE

1. In LG IDE, click **[Run Emulator > Debug Configuration]** menu or toolbar icon . Then, the Debug Configuration window will be opened.

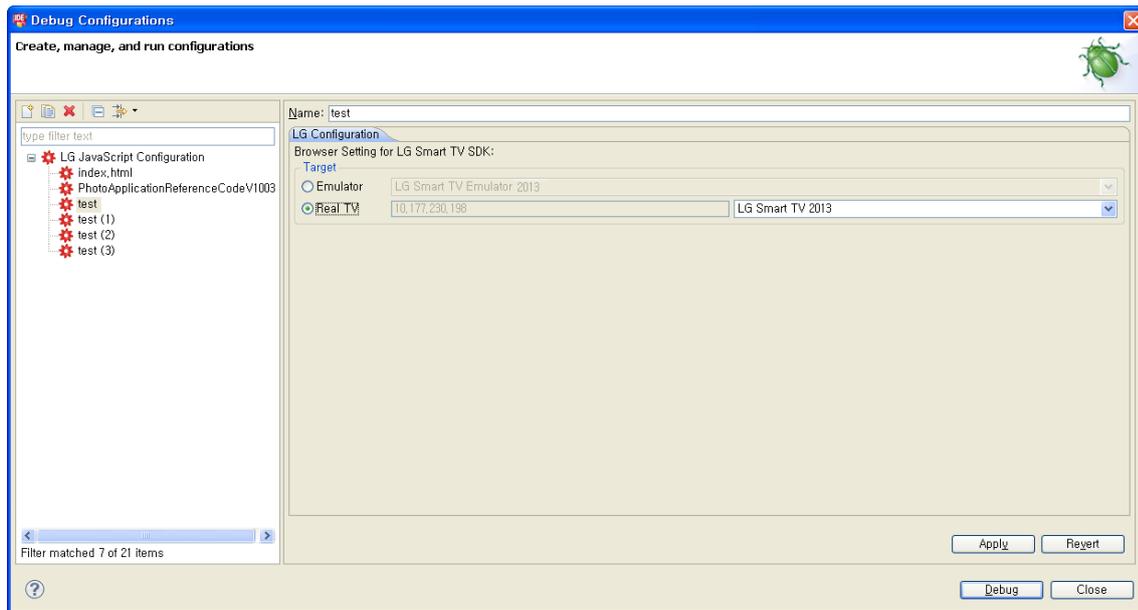
2. Select the Target and target TV. Then, click **[Apply]**.

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## Note

The IP address of the local server, your current PC, is displayed in the 'Real TV' field.

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3. Click **[Debug]**. Then, LG IDE starts to begin the [Remote Debug] mode. Or, click **[Close]** to begin by **[Run Emulator > Debug]** menu later.

4. Be sure that your project should have been exported from LG IDE for testing the application on a TV. Refer to [Exporting Project](#) to export and launch the application on a TV for testing purpose.

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## Caution

As your current PC works as local server when debugging the application on TV, the PC and TV should be connected to the same network.

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5. The IDE waits for TV to be connected to the local server PC and the application to be launched on the TV browser.



6. If the application is launched on a TV and the TV successfully accessed to the local server PC, [Remote Debug] mode is opened in IDE and developer can debug the application on a TV using 'Web Inspector'.

Refer to the following URL to learn about 'Web Inspector': <https://developers.google.com/chrome-developer-tools/docs/overview>

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## Note

The Safari browser should be installed on your PC to use Web Inspector in LG IDE.

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Remote Debug - file://C:/Program%20Files/LG\_Smart\_TV\_SDK/LGIDE/plugins/com.lge.sdk.ide.webtools.webProjectFileMenu\_2.2.0.1/LGInspectorForIDE/inspector.h...

File Edit Navigate Search Tools Run Window Help

Debug Remote Debug WYSIWYG

Remote Web Inspector

Elements Resources Network Scripts Timeline Profiles Audits Console

Search Elements

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN" "http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>...</head>
<body class="subguide" onload>
  <div id="mainContain">...</div>
  <!-- 개발자 등록 안내 Layer -->
  <form id="layerForm" name="layerForm" method="post">
    <div id="registerGuideView">...</div>
  </form>
  <script type="text/javascript" src="/devel/common/js/s_code.js"></script>
  <script language="JavaScript" type="text/javascript">...</script>
  <script language="JavaScript" type="text/javascript">...</script>
  <noscript>
    
  </noscript>
  <!--/DO NOT REMOVE/-->
  <!-- End SiteCatalyst code version: H.22.1. -->
</body>
</html>
```

Computed Style

Styles

element.style {

Matched CSS Rules

common.css:252

.subguide {

- background: url(../images/bg/bg\_...

body, a, input, textarea, dl, popup.css:7

dd, dt, div, p, h1, h2, h3, h4, ul, li {

- margin: 0;
- padding: 0;
- border: 0;

body, td, div, h1, h2, h3, h4, popup.css:5

select, input, textarea {

- font: normal 12px 'dotum';
- color: #414141;

body {

popup.css:4

LG Console

```
[2012.09.17 15:07:18] Starting TCP connector...
[2012.09.17 15:07:18] Detected new connector at port 65119.
[2012.09.17 15:07:45] Client trying to connect on port #65130...
[2012.09.17 15:07:45] Starting TCP connector on port 65130 with timeout infinite
[2012.09.17 15:07:45] Started TCP connector on port 65130 with timeout infinite
[2012.09.17 15:07:45] Parsing handshake request: GET /jWebSocket/jWebSocket HTTP/1.1\nUpgrade: WebSocket\nConnection: Upgrade\nHost: 10.0.2.2:8787\nOrigin: null\nSec-WebSocket-Pr
```

# Running App on TV with LG IDE

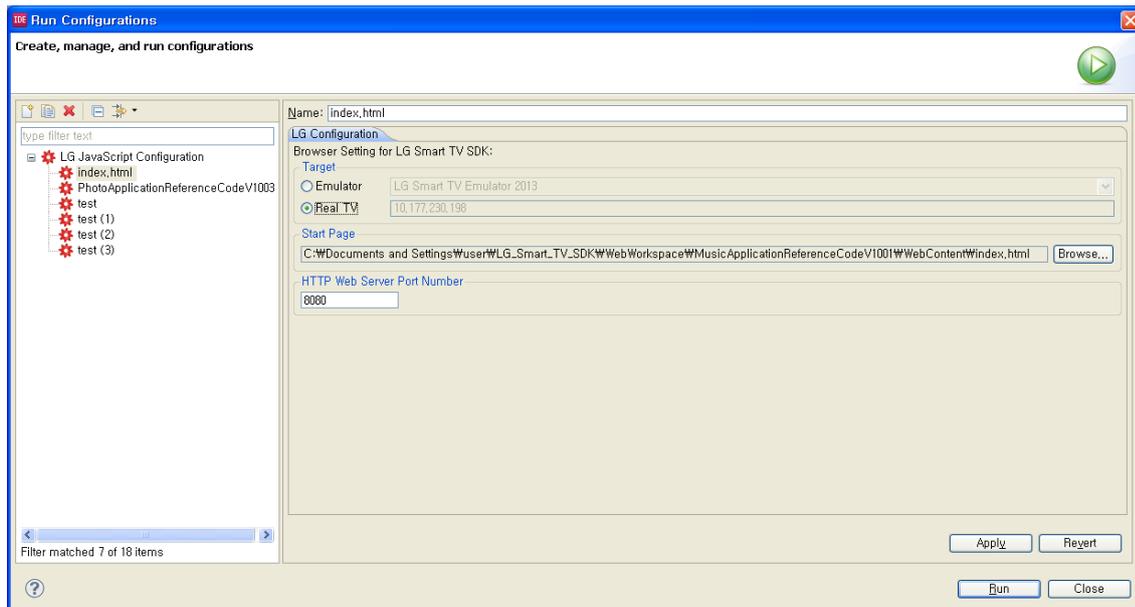
1. In LG IDE, click **[Run Emulator > Run Configuration]** menu or toolbar icon . Then, the Run Configuration window will be opened.

2. Select Target, Start Page, and HTTP Web Server Port Number. Then, click **[Apply]**.

---

## Note

- If you change the server port number, LG IDE will be restarted. As '8787' is preoccupied, do not use it.
  - The IP address of the local server, your current PC, is displayed in the 'Real TV' field.
- 



3. If you click **[Run]**, the project starts to run on the target. You can also run the project by **[Run Emulator > Run]** menu later.

4. Be sure that the application is launched on a TV using the USB first. For detailed information on how to launch the application on a TV, refer to [Deploying App on Real TV](#).

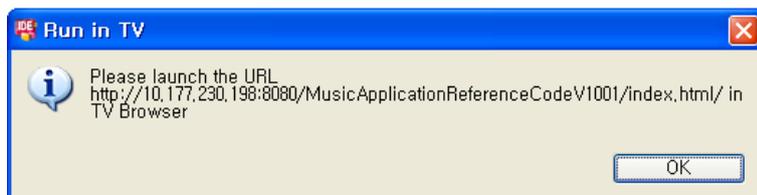
---

## Caution

As your current PC works as local server when debugging the application on TV, the PC and TV should be connected to the same network.

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If the application is not launched on the TV browser yet, the following popup appears.



5. When the application is launched on a TV and the TV successfully accessed to the local server PC, you can check the application on real browser.