

Smart TV SDK IDE Help Guide

Published 2014-10-28 | (Compatible with SDK 5.1 and 2014 models)

This document is the user guide for the Samsung Smart TV SDK IDE, which helps Samsung Smart TV Application developers better understand and use the IDE.

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Configuration File

Auto Update

Update Smart TV SDK IDE

Update Emulator

**** This class will not be supported in 2015.**

All functionalities of AppsFramework are more improved, integrating with CAPH. Therefore Appsframework is not supported since 2015 Smart TV. To use functions of Appsframework, refer to [here](#).

Prerequisites

The required environments are listed as follows :

For the operating system :

Windows 7 (recommended), Windows XP service pack 2 or higher

Linux (Ubuntu Recommended)

Mac OS X

For the JDK :

Oracle JDK 1.6 or above

For the Eclipse :

Eclipse 4.3.2 (Kepler) or newer

For Run and Debug App :

Visual Box.

SDK Emulator Image for Virtual Box. This can be downloaded from

<http://www.samsungforum.com/Devtools/SdkArchive>.

Chrome browser

Interfaces description

The following picture shows the user interface of the SDK IDE visual editor for AF 2.0.

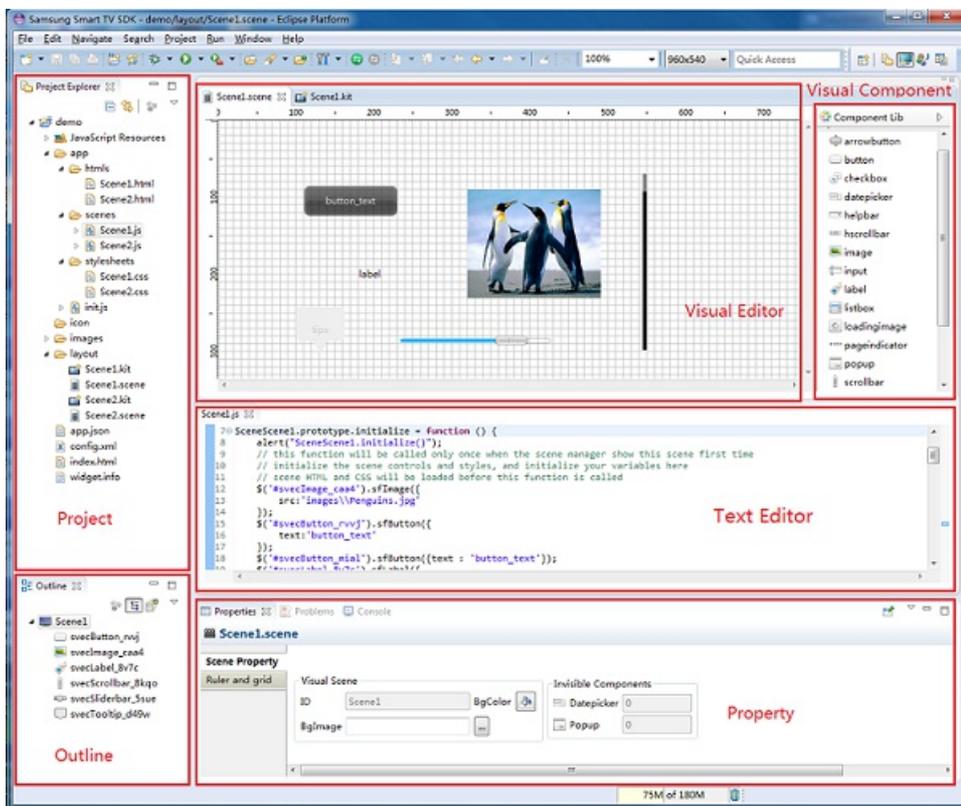


Figure 1 : Visual Editor for AF 2.0

The next picture shows the User Interface of the Visual Kit for AF 2.0.

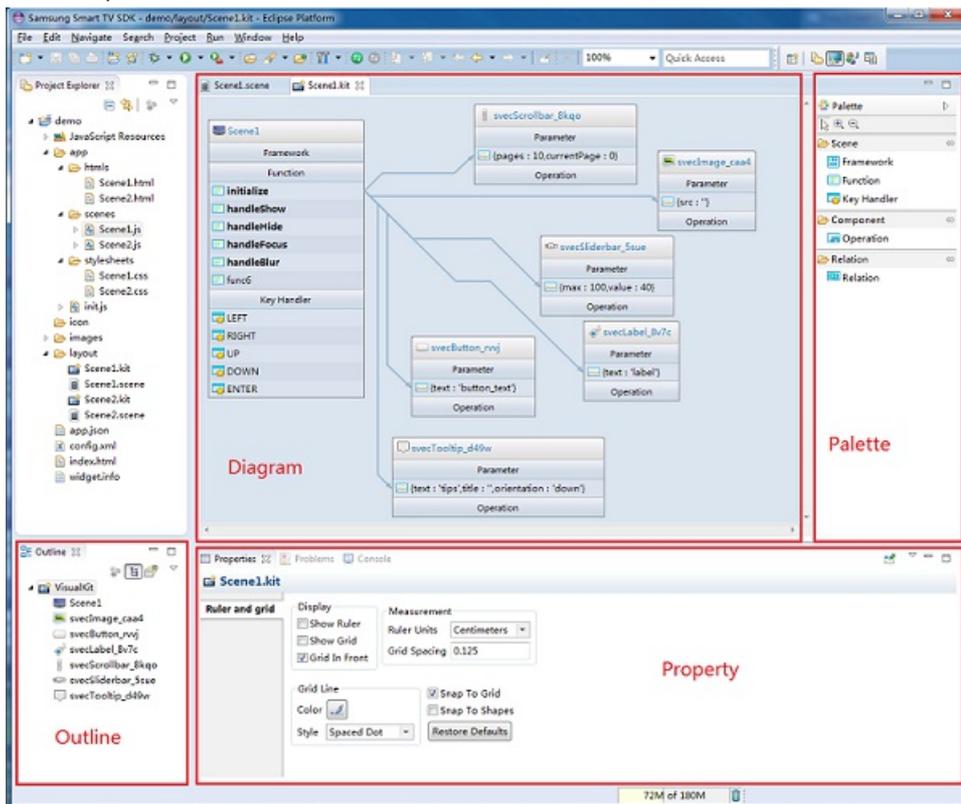


Figure 2 : Visual Kit for AF 2.0

The following figure shows the UI Designer for Caph.

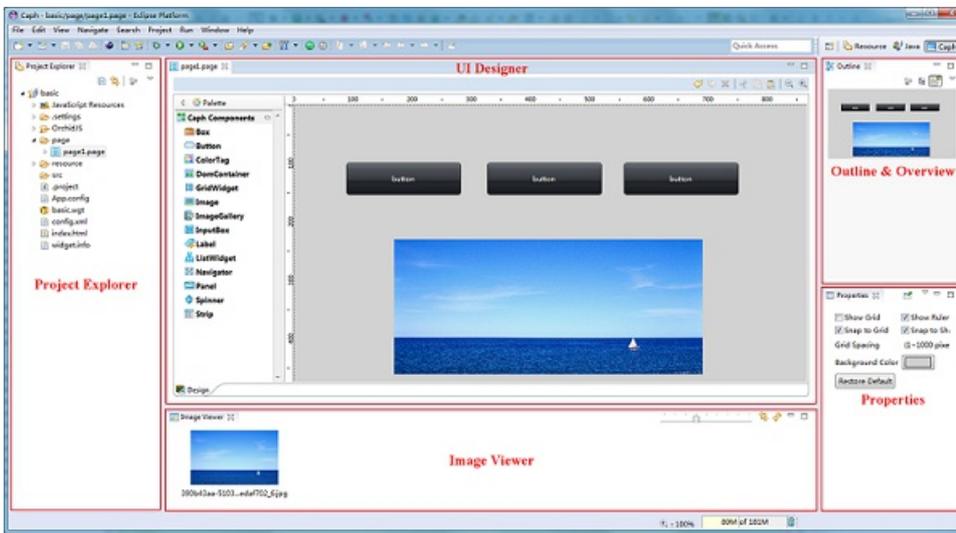


Figure 3 : Caph UI Designer

Tutorial application instructions

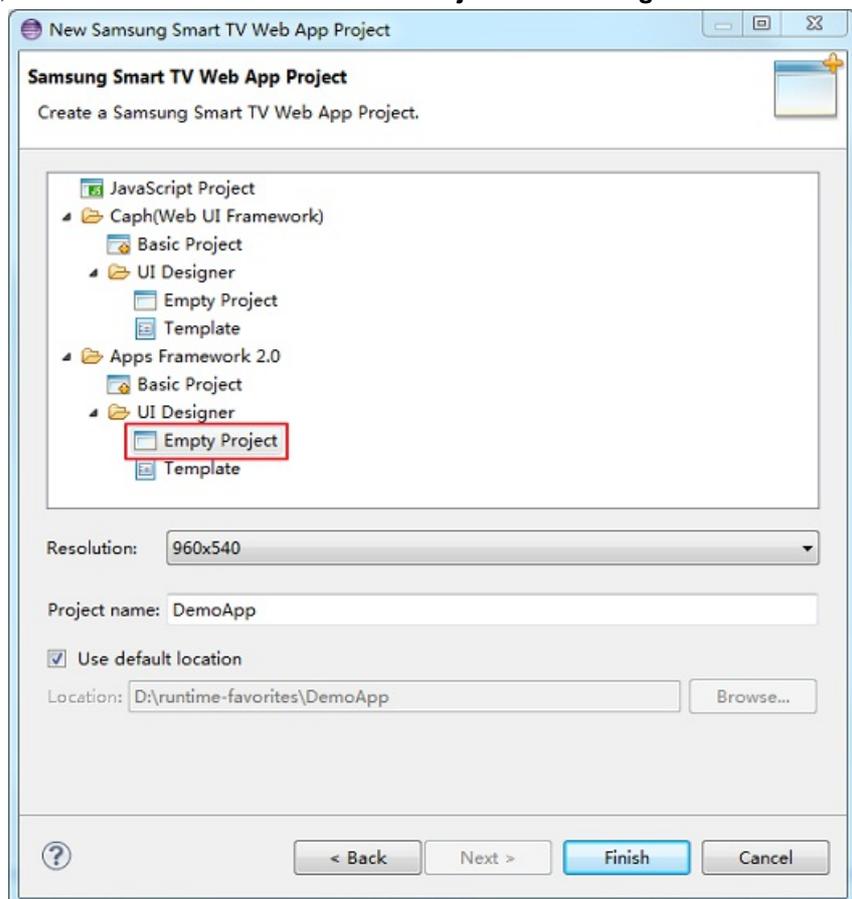
This session introduce a sample app to demonstrate the creation processes by using Visual Editor to draw the UI and using Visual Kit to build the function call relationship.

This App consists of two scenes, Scene1 and Scene2 with logical relation. Once this App is launched, Scene1 can switch to Scene2 by pressing the **ENTER** and Scene2 can turn back to Scene1 by pressing the **RETURN**.

Scene1 has a container, which contains two pictures: day and night. When the App receives the **LEFT** or **RIGHT** key event from a remote control, the container will switch among these two pictures.

Create an AF 2.0 Project

1. After the Eclipse platform is launched, select the menu item **File -> New -> Project -> Samsung Smart TV -> Web App**,



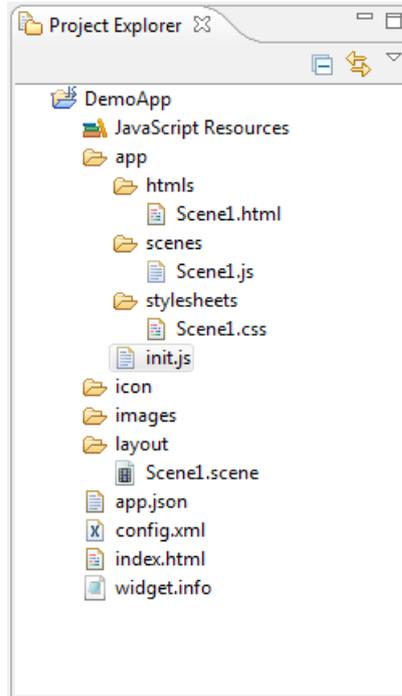
and then click Next to start the wizard. **Figure 4** : AF 2.0 Project Wizard Page

2. Select Apps Framework 2.0 -> UI Designer -> Empty Project.

On this page: Type **DemoApp** in the Project name field. Select '960*540' in the Resolution field.

Then click **Finish** button.

3.



In the Project Explorer, expand the **DemoApp** project **Figure 5** : DemoApp project

4. Open 'Scene1.scene' file with Scene Editor or double click 'Scene1.scene' to open the scene.

5. Now, drag-and-drop or double click the component from **Component Lib** to create components for your App.

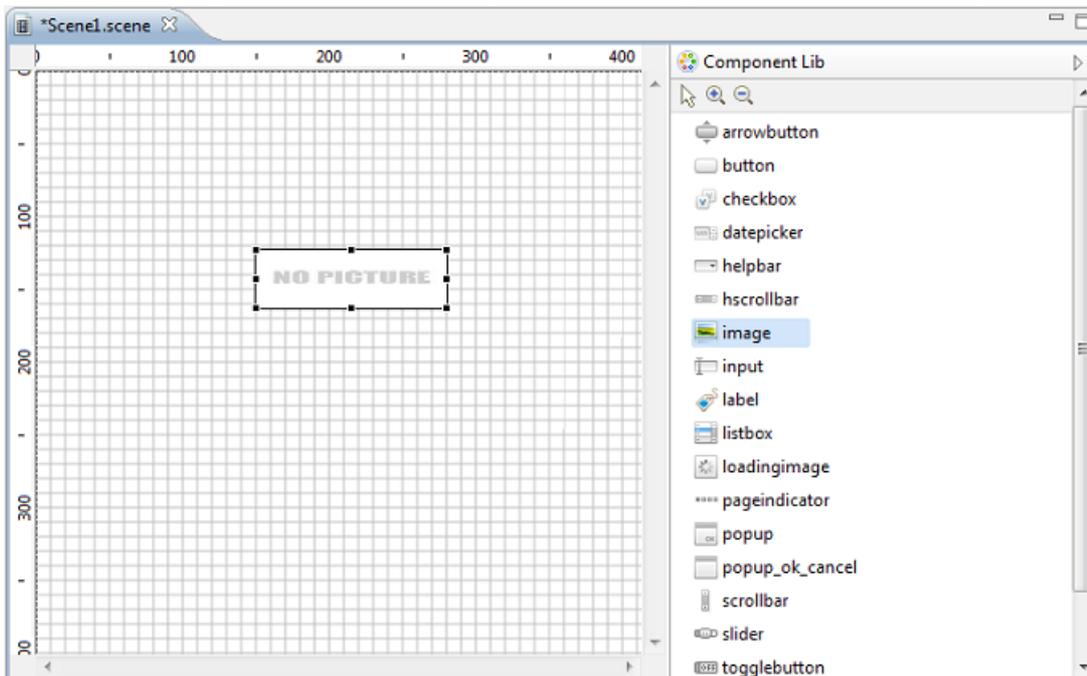


Figure 6 : Create the components

Create and Design Scenes

1. Add two buttons and one image components to Scene1 which is created by default when create an AF 2.0 app project.

Drag an image component and two buttons to the scene from Palette View.

Adjust the components' location and other properties, and the scene is shown as below.

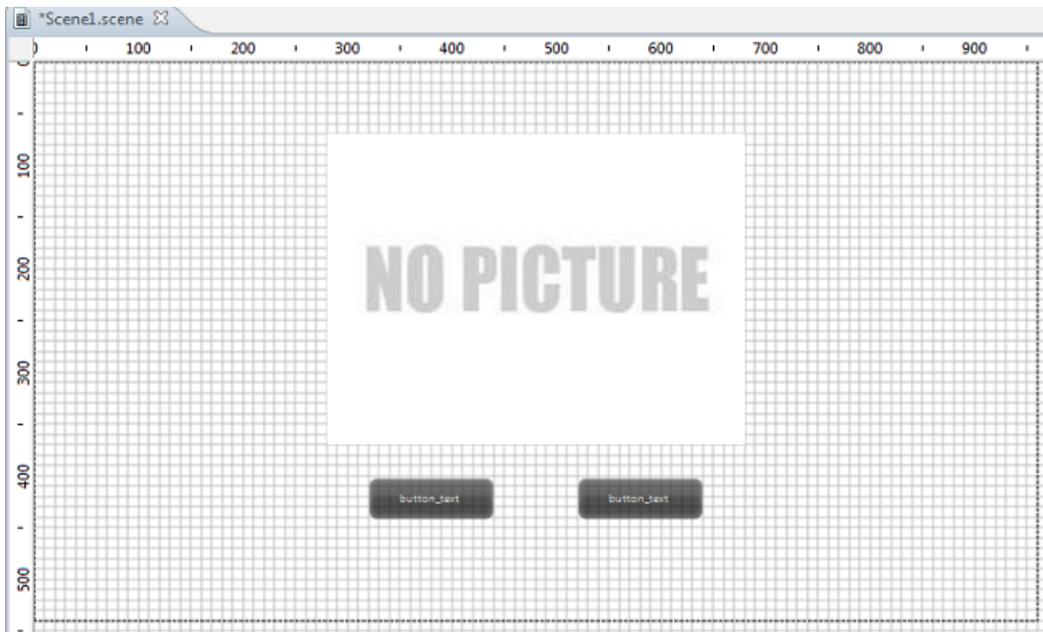


Figure 7 : The Scene1

2. Add a new scene

Choose the project tree or layout scene folder, popup the context menu. Choose **New -> Samsung Smart TV Apps Scene** to open the **New Visual Scene Diagram** wizard.

In **New Visual Scene Diagram** wizard, rename the scene name, and click **Finish** button to add a new scene.

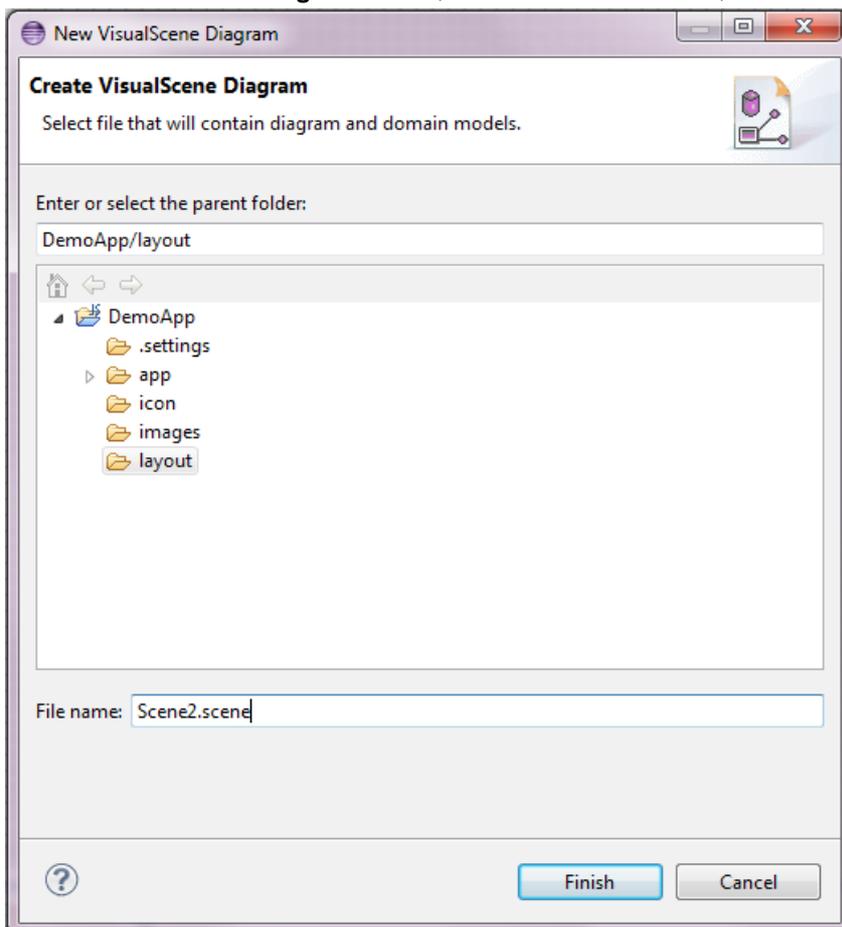


Figure 8 : New Visual Scene Diagram wizard

3. Add an image, label and helpbar component for the Scene2 :

Drag an image, label and helpbar component to the scene from Palette View.

Adjust the components' location and other property, the scene is shown as below.

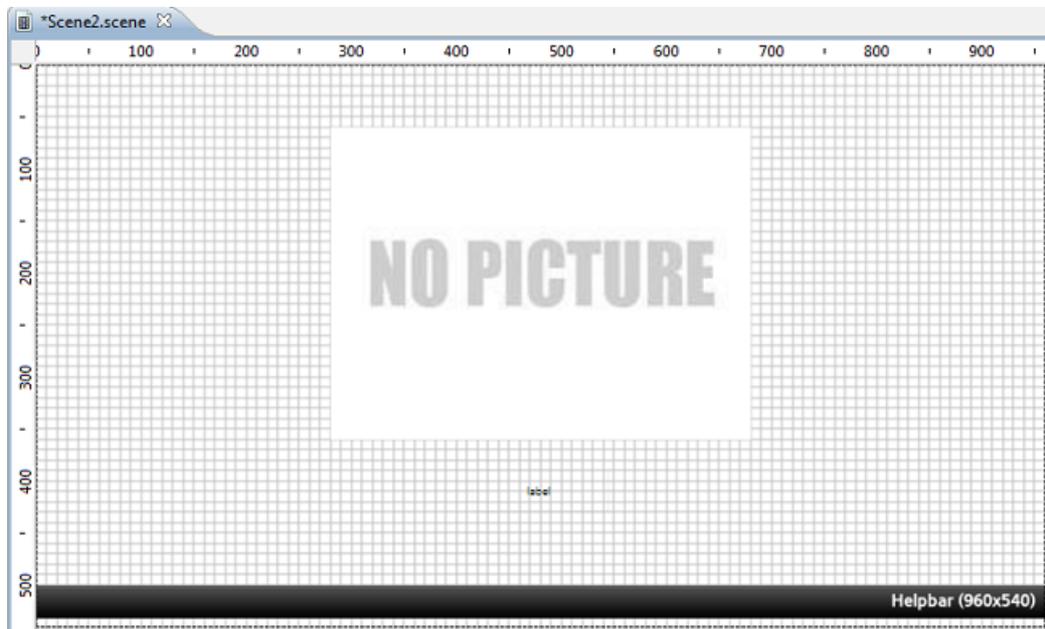


Figure 9 : The Scene2

Operations on Visual Kits

1. Create a Visual Kits. Choose the layout scene folder, popup the context menu. Choose **New -> Samsung Smart TV Apps Kits** to create the Visual Kits of the two scenes.

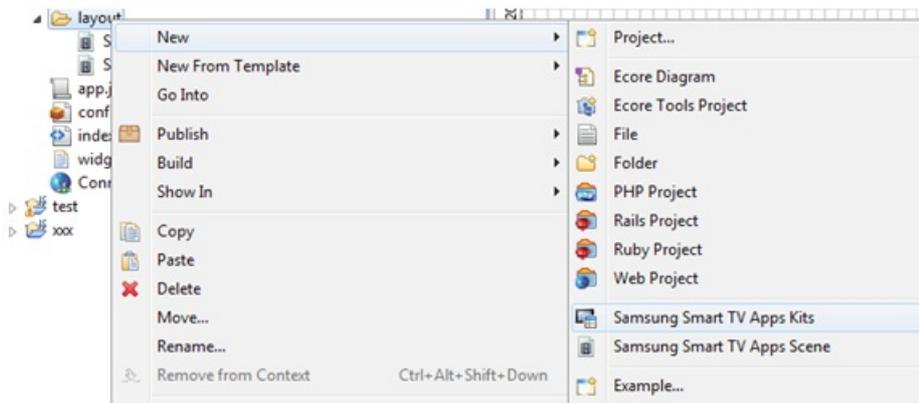


Figure 10 : Create a Visual Kits

2. Add RETURN key in Scene2 and add Framework function in both scenes. The Framework functions are 'show', 'hide', and 'focus'. Find the Palette and choose the 'Framework' or 'Key Handler' and click 'Framework' or 'Key Handler' block in scene to add 'Framework' or 'Key Handler'. The image is shown as below.

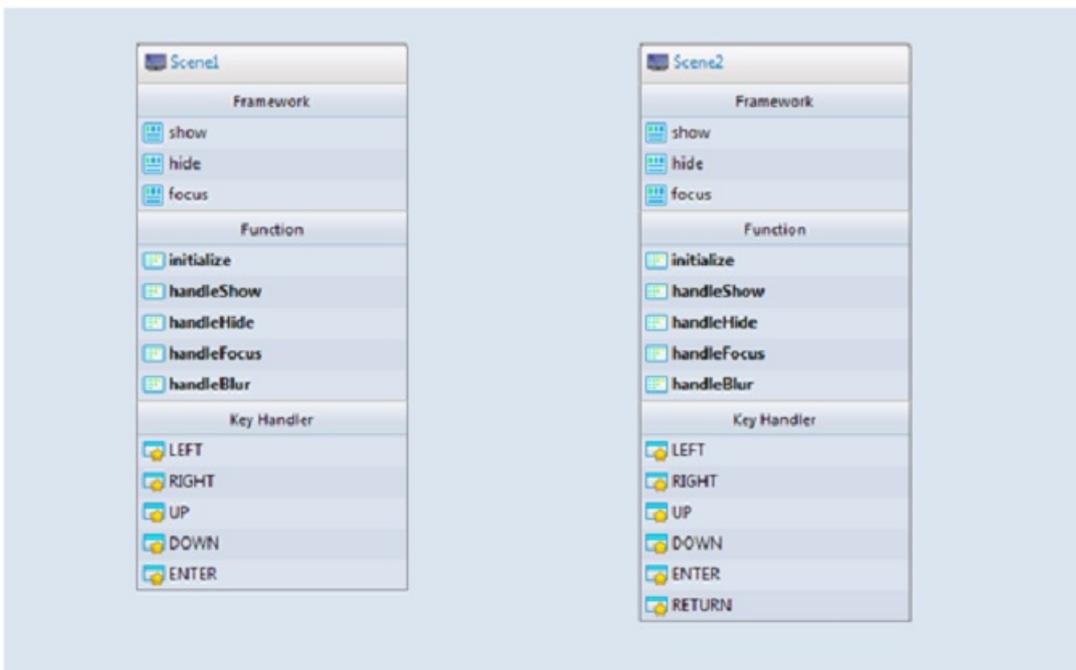


Figure 11 : Show Visual Kits

3. Add the response code to 'ENTER' and 'RETURN' key. Add relation to two scenes to switch scene. Find the Palette and choose the 'Relation' and click on block in a scene and drag to the needed block. For example, in Senen1 add relation between 'Enter' key and 'Framework' of 'hide', and add relation between 'ENTER' in Scene1 and 'Framework' of 'show', and 'focus' in Scene2. Do the same operation of 'RETURN' in Scene2. The image is shown as below.

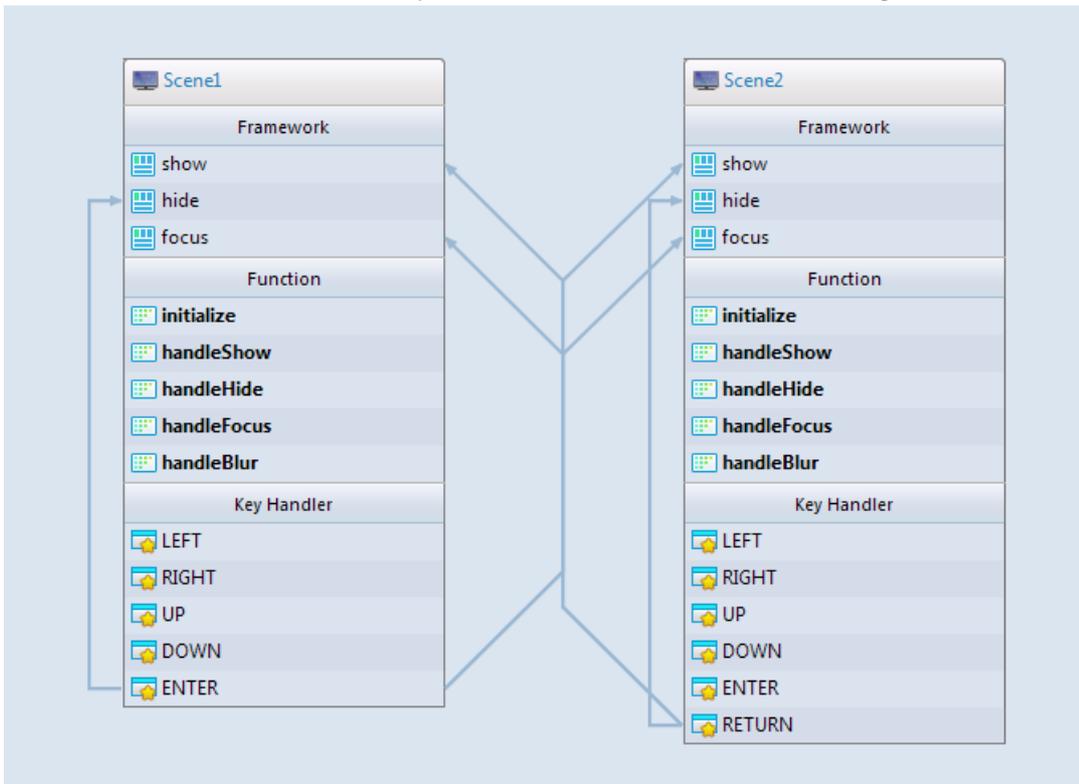


Figure 12 : Add Relations on Visual Kits

The generated codes of the two scenes are shown as below.

```

SceneScene1.prototype.handleKeyDown = function (keyCode) {
  alert("SceneScene1.handleKeyDown(" + keyCode + ")");
  // TODO : write an key event handler when this scene get focused
  switch (keyCode) {
    case sf.key.ENTER:
      sf.scene.hide('Scene1');
      sf.scene.show('Scene2');
      sf.scene.focus('Scene2');
      break;
    ...
  }
}
SceneScene2.prototype.handleKeyDown = function (keyCode) {
  alert("SceneScene2.handleKeyDown(" + keyCode + ")");
  // TODO : write an key event handler when this scene get focused
  switch (keyCode) {
    case sf.key.RETURN:
      sf.scene.hide('Scene2');
      sf.scene.show('Scene1');
      sf.scene.focus('Scene1');
      break;
    ...
  }
}
}

```

Now, the smart TV will switch from the loading scene to the main scene automatically.

Operations on Visual Kit

1. Create a Visual Kit. Choose a scene in layout scene folder, popup the context menu. Choose **New -> Samsung Smart TV Apps Kit** to create the Visual Kit of this scene. Do the same operation to the other scene.

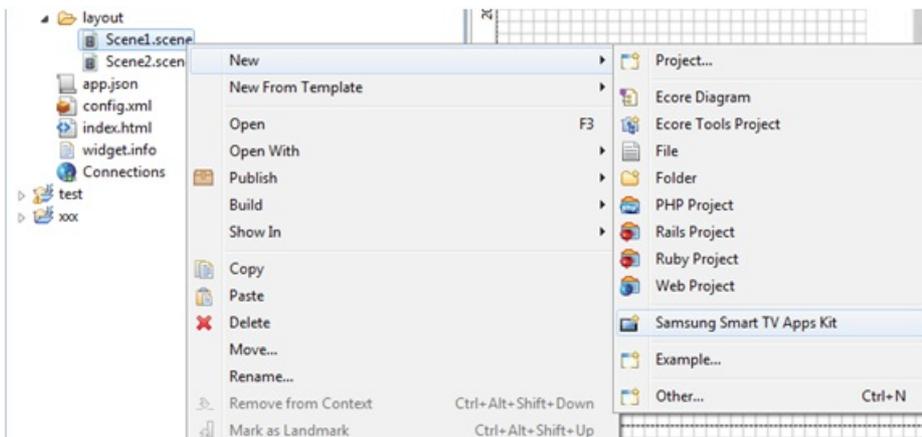


Figure 13 : Create a Visual Kit

2. Add image path and change the button's text and so on. They can be changed in property view when click the needed block of component. And add a parameter to the image component and set the other image's path. Add needed operations to the button and image component. The image is shown as below.

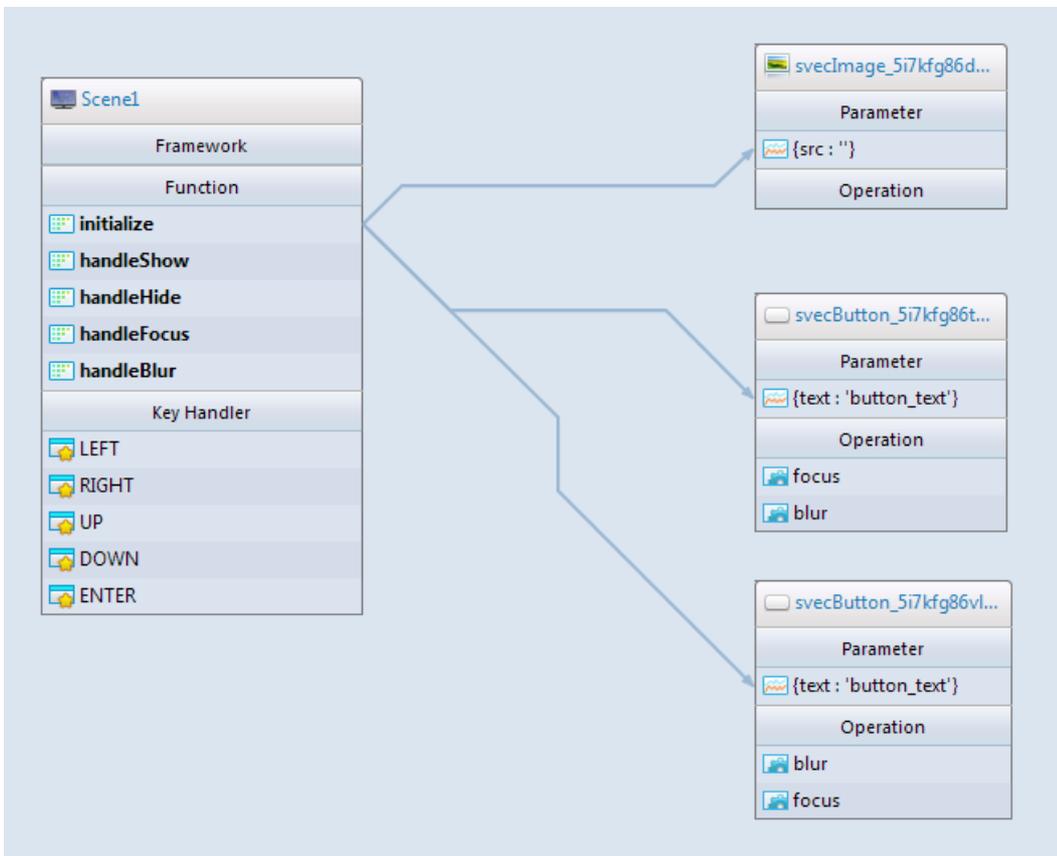


Figure 14 : Visual Kit of Scene1 step 1

- Then add Relations between LEFT, RIGHT keys and three components to add response to these two keys in Scene1. And add Relations between handleShow function and components in Scene2. The image is shown as below.

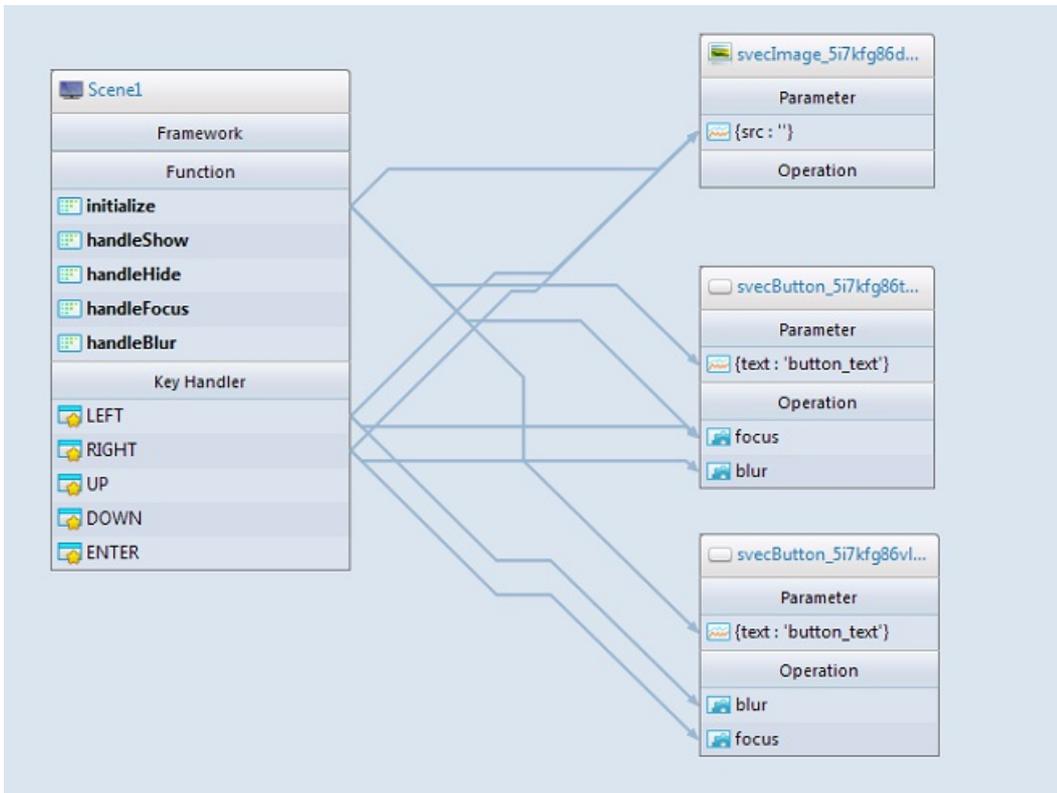


Figure 15 : Visual Kit of Scene1 step 2

The generated codes : Scene1.

```

SceneScene1.prototype.handleKeyDown = function (keyCode) {
  alert("SceneScene1.handleKeyDown(" + keyCode + ")");
  // TODO : write an key event handler when this scene get focused
  switch (keyCode) {
    case sf.key.LEFT:
      $('#svecButton_5i7kfg86v6xg').sfButton('blur');
      $('#svecButton_5i7kfg86toaxf').sfButton('focus');
      $('#sveclImage_5i7kfg86dd7xe').sfImage({src:'images/day.png'});
      break;
    case sf.key.RIGHT:
      $('#svecButton_5i7kfg86toaxf').sfButton('blur');
      $('#svecButton_5i7kfg86v6xg').sfButton('focus');
      $('#sveclImage_5i7kfg86dd7xe').sfImage({src:'images/night.png'});
      break;
    case sf.key.UP:
      break;
    case sf.key.DOWN:
      break;
    case sf.key.ENTER:
      sf.scene.hide('Scene1');
      sf.scene.show('Scene2');
      sf.scene.focus('Scene2');
      break;
    default:
      alert("handle default key event, key code(" + keyCode + ")");
      break;
  }
};

```

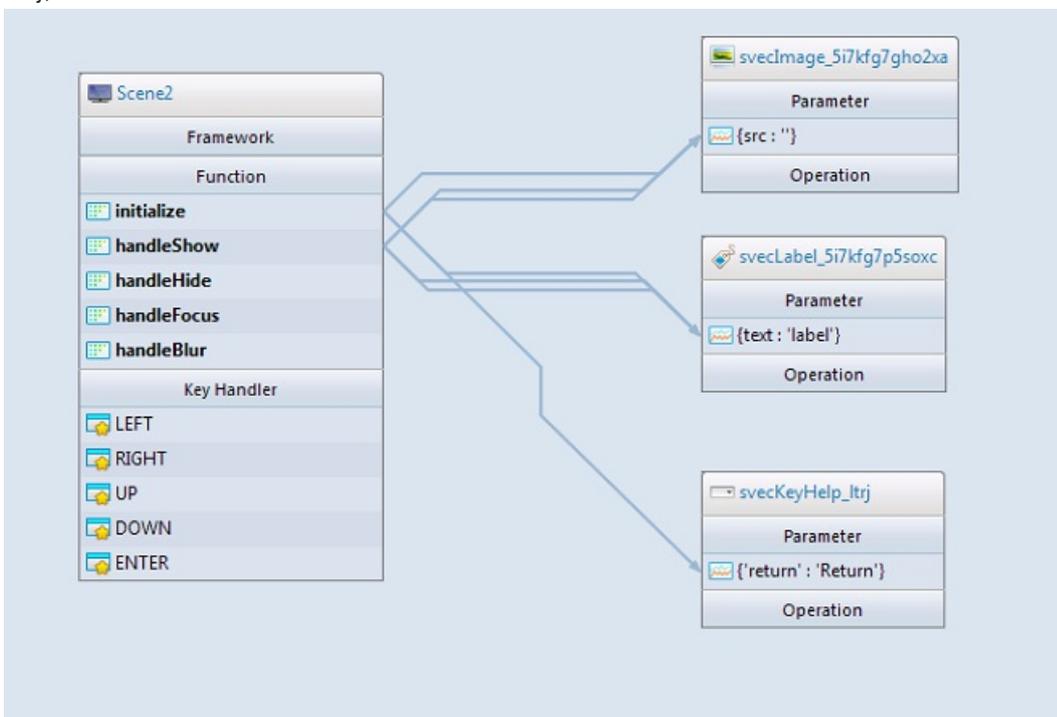


Figure 16 : Visual Kit of Scene2
 The generated codes : Scene2.

```

SceneScene2.prototype.handleShow = function (data) {
    alert("SceneScene1.handleKeyDown()");
    $('#svecLabel_5i7kfg7p5soxc').sfLable(text:'Day');
    $('#sveclmage_5i7kfg7gho2xa').sfImage({src:'images/day.png'});
    $('#svecLabel_5i7kfg7p5soxc').sfLable(text:'Night');
    $('#sveclmage_5i7kfg7gho2xa').sfImage({src:'images/night.png'});
};

```

4. Add some logic code that cannot do by VisualKit in Scene1. Do the similar to the scene2. The code is shown as below.

The codes in Scene1 :

```

SceneScene1.prototype.handleKeyDown = function (keyCode) {
    alert("SceneScene1.handleKeyDown(" + keyCode + ")");
    // TODO : write an key event handler when this scene get focused
    switch (keyCode) {
        case sf.key.LEFT:
            $('#svecButton_5i7kfg86vl6xg').sfButton('blur');
            $('#svecButton_5i7kfg86toaxf').sfButton('focus');
            $('#sveclmage_5i7kfg86dd7xe').sfImage({src:'images/day.png'});
            imageIndex = 0;
            break;
        case sf.key.RIGHT:
            $('#svecButton_5i7kfg86toaxf').sfButton('blur');
            $('#svecButton_5i7kfg86vl6xg').sfButton('focus');
            $('#sveclmage_5i7kfg86dd7xe').sfImage({src:'images/night.png'});
            imageIndex = 1;
            break;
        case sf.key.UP:
            break;
        case sf.key.DOWN:
            break;
        case sf.key.ENTER:
            sf.scene.hide('Scene1');
            sf.scene.show('Scene2',imageIndex);
            sf.scene.focus('Scene2');
            break;
        default:
            alert("handle default key event, key code(" + keyCode + ")");
            break;
    }
};

```

The codes in Scene2 :

```

SceneScene2.prototype.handleShow = function (data) {
    alert("SceneScene1.handleKeyDown()");
    if(data == 0) {
        $('#svecLabel_5i7kfg7p5soxc').sfLable(text:'Day');
        $('#sveclmage_5i7kfg7gho2xa').sfImage({src:'images/day.png'});
    } else if(data == 1) {
        $('#svecLabel_5i7kfg7p5soxc').sfLable(text:'Night');
        $('#sveclmage_5i7kfg7gho2xa').sfImage({src:'images/night.png'});
    }
};

```

App Framework 2.0 project development

The App Framework 2.0 is a Samsung provided framework which obeys the operation standards for Samsung Smart TV. The Smart TV IDE provides a visualization editing tools (such as Visual Editor) to helps developer to achieve a WYSIWYG (What You See Is What You Get) design. User can drag and drop some components to enrich their application. Currently, it has lots of integrated components to support WYSIWYG design.

Smart TV IDE also provides a high-level design method for developers, the Visual Kit. The visual kit diagram (*.kit) file shows the selected scene, components and the relations between them. Each *.kit file is responsible for one Scene. Therefore the *.kit file uses the same name as the *.scene file. The Visual Kits diagram (*.kits) file is the root for all the Kit files within the project. The Kits diagram contains all the scenes and their relationship information. By editing the visual kit/kits diagram, users can build logic relation for their apps.

Project Overview

To create an AF 2.0 app project, user can click **File** in menu bar, select **New -> Other** in context menu. Choose the Samsung **Smart TV Apps -> Apps Framework** and expand it. Then select the 'AF 2.0 App Project' to create it.

Samsung Smart TV AF 2.0 app project is composed of some resource folders, source code files and some configuration files. When finish creating an AF 2.0 app project, Samsung Smart TV SDK will generate the following resources :

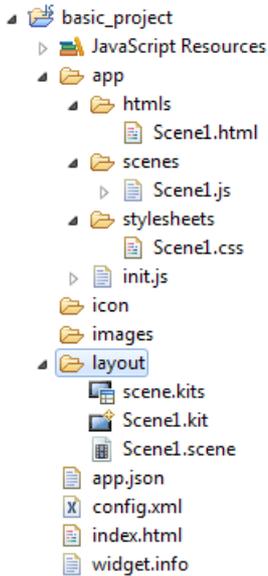


Figure 17 : AF 2.0 app Project Overview

The detailed descriptions of the resources in the AF 2.0 app project are as below :

File (Folder)	Description
app	The folder contains widget all source code files.
app/htmls	The folder contains widget .html source code files.
app/htmls/Scene1.html	The file is created by default when create a new AF 2.0 app project.
app/scenes	The folder contains widget .js source code files.
app/scenes/Scene1.js	The file is created by default when create a new AF 2.0 app project.
app/stylesheets	The folder contains widget .css source code files.
app/stylesheets/Scene1.css	The file is created by default when create a new AF 2.0 app project.
app/init.js	The file includes initialization (onStart) and de-initialization (onDestroy) functions. onStart is entry point of application.
icon	The folder contains all icon files of the widget.
images	The folder is to store AF 2.0 app project components images.
layout	The folder is to store AF 2.0 app project scene file.
layout/Scene1.scene	The file is created by default when creating a new AF 2.0 app project to design widget.

File (Folder)	Description
layout/Scene1.kit	The file is created by users based on a already created *.scene file to build logic relation of scene and components.
layout/scene.kits	The file is created by users based on all the *.scene files to build logic relation of scenes.
app.json	This file is descriptor for Apps Framework.
config.xml	This file is descriptor of Smart TV application.
index.html	This is the main page of application. All elements from Apps Framework are added to this file.
widget.info	This file is to configuration widget information.

Samsung Smart TV IDE also provides three types of template. For each template, there are three themes with different colors available for users to choose. These templates show the fundamental approaches to develop Smart TV applications by using App Framework 2.0 such as components, scene manager, and event handlers. If developers want to use the template, click the Apps Framework 2.0 -> UI Designer -> Template and click Next(Figure 17). In Figure 18, select one template during the creation process. Otherwise directly click the 'Finish' button to create an empty AF 2.0 app project.

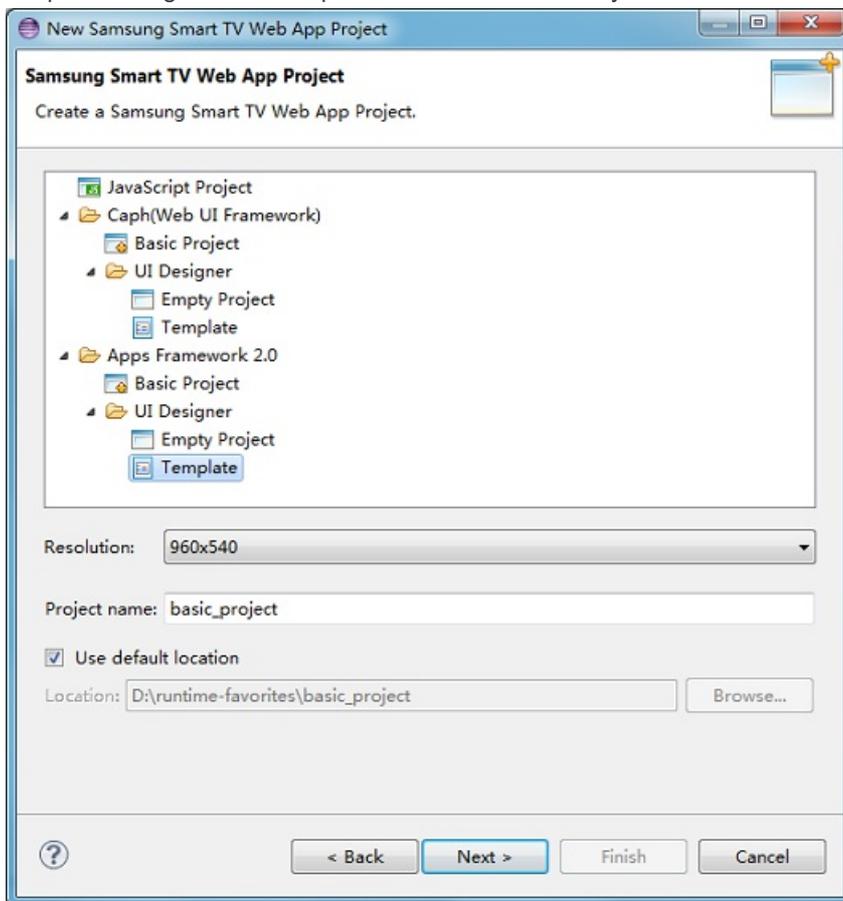


Figure 18 : AF 2.0 Template

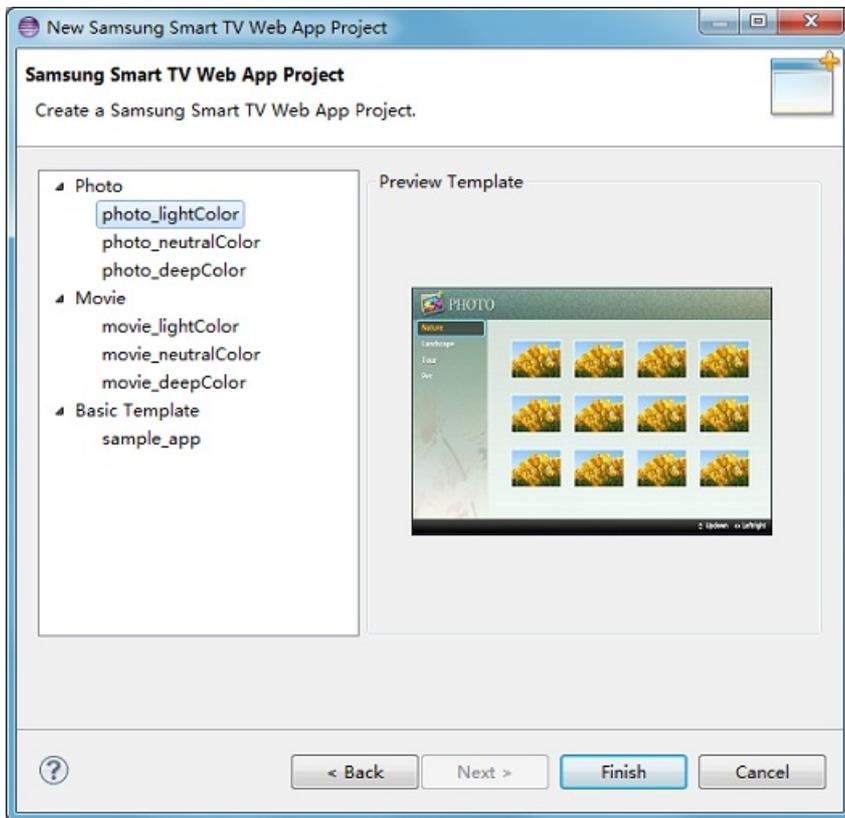
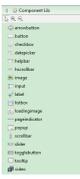


Figure 19 : AF 2.0 Template List
Palette View

Overview	Style	Description
	arrow button	The arrow button is the most basic component used in every design as we know. It is used to handle all the events that should happen on the click of a button. The arrow button component that is provided by the Samsung TV SDK can be extended horizontally and the text property of the arrow button can be modified.
	button	The button is the most basic component used in every design as we know. It is used to handle all the events that should happen on the click of a button. The button component that is provided by the Samsung TV SDK can be extended horizontally and the text property of the button can be modified.
	checkbox	The checkbox is a component used to typically select options. In Samsung TV SDK, it can be used to select a single option or multiple options depending on the developer's requirement. The size of the checkbox cannot be extended horizontally and vertically.
	datepicker	Samsung TV SDK provides the date picker component. It makes the task for entering the dates and times in the application easier.
	helpbar	Helpbar gives information about the function of each button on the remote control.
	hscrollbar	This component is typically used when the size of the page exceeds the size of the screen. You can set the size of the bar by using the size of the entire page, to the size of the screen.
	image	It is used to place an image in the design. The size of the image can be specified.
	input	The input component is used to get text input from the user. The component can be added using the Samsung TV SDK. It is quite different from that of the other components. It has two parts. The text box and the number pad component. The number pad can be used to type in text into the text box.
	label	It is used to display text on the screen.
	listbox	List box is used to manage the data items in the form of a list. You can set the number of items in the list and add an event handler for each entry in the list.
	loading image	Loading image component can be used when a task is currently loading or getting ready to be displayed on the screen. The usage of this component is absolutely a developer's choice and left up to his style of coding. However, good care has to be taken when the component is used in the right time and only for a specified amount of time. For example, in a video stream application, this component can be used along with the timer functions in JavaScript only when there are pauses in streaming.

Overview	Style	Description
	page indicator	Page indicator component is used to display a series of dots to indicate which page is currently being viewed.
	popup	Samsung TV SDK provides two types of popup components. They are single button popup and two buttons popup. When a popup is added to the design editor, the popup does not appear on the Samsung TV SDK.
	scrollbar	This component is typically used when the size of the page exceeds the size of the screen. You can set the size of the bar by using the size of the entire page, to the size of the screen.
	slider	This component is used to allow changing a numeric value by touching and dragging a slide handle.
	toggle button	The toggle button is a component that can toggle between two states.
	tooltip	The tooltip is a simple popup widget that encloses its content and displays a small arrow associating the content with a node.
	video	The Samsung TV SDK provides the Video Component to insert Videos into the Design. Often, while designing multi-media applications, developer would need such components more than the basic components. Hence Samsung TV SDK provides a very good platform for developing multi-media applications.

Visual Kit: The Visual Kit and Kits files are design tools aiming to provide an easy way for developers to create their applications. Once a *.kit or a *.kits file is opened, a palette appears at the right side of the Visual Kit diagram which contains the major functions of visual kit. By selecting the elements from the palette and inserting it into the active Scene or Component part in Visual Kit diagram, the program can generate the code automatically into the *.js file. The code generation scenario will be listed in the Synchronize Section.

Overview	Style	Description
	Framework	Developer can select Framework from palette and insert it into Scene object in the left diagram. After that, a new element will be added in the Framework section. The name of the newly added element is depends on App Framework (Ver2.0). Framework element can only be inserted into Scene object. Adding a Framework element will not cause any source code change.
	Function	Developer can select Function from palette and insert in into Scene object in the left diagram. After that, a new element will be created in the Function section. The name of the newly added element is formatted as func + number, for example func8, the number is the total count of function elements in that Scene object. If the formatted name exists yet, count number will plus one. In text editor, a piece of JavaScript code who defined a new function with the formatted name will generate.
	Key Handler	Developer can select Key Handler from palette and insert it into Scene object in the left diagram. After that, a new element will be created in the Key Handler section. The name of newly added element can be found on those keys on TV remote control. In text editor, a piece of JavaScript code of key handle case will be generated.
	Operation	Developer can select Operation from palette and insert it into Component object in the left diagram. After that, a new element will created in the Operation section. The name of newly created element can be found in Component guide. Adding an Operation element will not cause any source code change.
	Relation	Developer can select Relation from palette then drag and drop it from element to element. After that, a new line with arrow will be created between the two elements. At the same time, one line of source code would be generated.

Property View

Developers can use the property view to change the property value. The change will be reflected in other places where the change is used. If modifying the property value in source code, the changes will also be updated in the property view.

Sometimes, the synchronization will be done when user trigger the synchronization action (Sync all:  Sync current: ) via toolbar. In addition, if developers change some properties of an item in the property view, the properties will be checked whether the value is available for that item or not. If the value is not suitable, warning information will be displayed on the top of the property view, and the previous value of the item will be remained.

Visual Editor :

Component Property

Setting

Visual Component

ID Caption

BgImage ...

Metrics

Left Top

Width Height

Font

Size Color

Figure 20 : Component Property

Property	Description
ID <input type="text" value="svectPageIndicator_5i4dgrs1k2723"/>	Show the component's ID , if modified, it would be synchronous related to code.
Caption <input type="text" value="NO CAPTION"/>	Show the component's caption , if modified, it would be synchronous related to code.
BgImage <input type="text" value="pageindicator/pageindicator.png"/> ...	Show the component's background image path, if modified, it would be synchronous related to code.
Left <input type="text" value="210"/> Top <input type="text" value="170"/> Width <input type="text" value="301"/> Height <input type="text" value="30"/>	Show the component's metric, if modified, it would be synchronous related to code.
Size <input type="text"/> Color <input type="text" value="A"/>	Show the component's font, if modified, it would be synchronous related to code.

Component Parameter

Property	Value
timePicker	false
format	yyyy-MM-dd
callback	function

Figure 21 : Component Parameter

Description: Show the component's JavaScript parameters. The code is loaded when create the component via Visual Editor.

Scene Property

Visual Scene

ID BgColor

BgImage ...

Invisible Components

Datepicker

Popup

Figure 22 : Scene Property

Property	Description
ID <input type="text" value="Scene1"/>	Show the scene's ID , if modified, it would be synchronous related to code.
BgColor <input type="text"/>	Show the scene's background color , if modified, it would be synchronous related to code.
BgImage <input type="text"/> ...	Show the scene's background image , if modified, it would be synchronous related to code.
Invisible Components	Show the invisible components in diagram, and their numbers.

Ruler and Grid

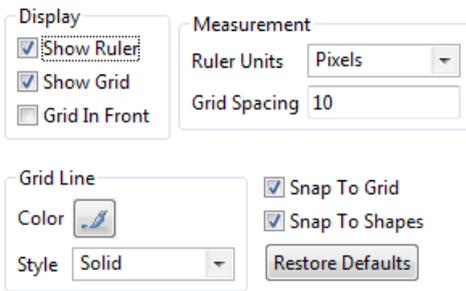


Figure 23 : Ruler and Grid

Property	Description
	<p>Show Ruler - Display a ruler along the left and top edges of the diagram and provides access to ruler guides. Guides are added by clicking anywhere in the ruler and are removed by pressing Delete when active.</p> <p>Show Grid - Display the grids and used for alignment.</p> <p>Grid in Front - Show the grid in front of the visual component.</p>
	<p>Ruler Units - Set the units of the ruler.</p> <p>Grid Spacing - Set the space of the grid.</p>
	<p>Color - Set the color of the grid line.</p> <p>Style - Set the style of the grid line.</p>
<input checked="" type="checkbox"/> Snap To Shapes	<p>Snap To Shape - This is a useful feature for alignment. A "laser line" will be appeared at the edges or the center of the node which assist users to arrange the components in the canvas.</p>
<input checked="" type="checkbox"/> Snap To Grid	<p>Snap To Grid - This is another useful feature for alignment. This feature achieve an automatic snapping function when users move one component close to another one.</p>
<input type="button" value="Restore Defaults"/>	<p>Restore Defaults - Reload the settings of the ruler and grid tab.</p>

Visual Kit :

All the elements in Visual Kit diagram remain their own property view page. The property views are different from each other. Users can modify the code in *.js file via editing the value in property view. Meanwhile, the code changes in the *.js file also can be illustrated on the Visual Kit diagram by executing the synchronization for the Kit file.

Scene Property

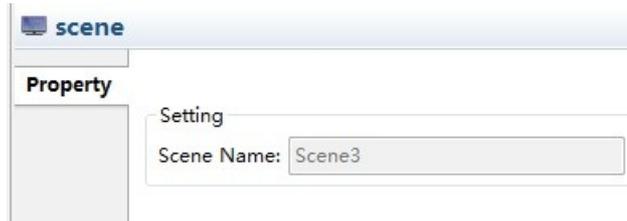


Figure 24 : Scene Property

Description: The property page for the scene contains only one setting, the scene name. This scene name option uses the file name as a default setting which cannot be replaced.

Framework Property

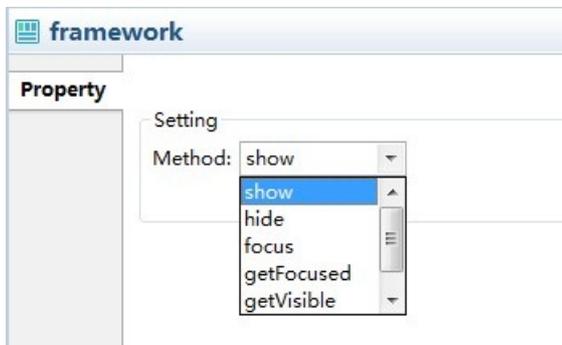


Figure 25 : Framework Property

Description: The value of the framework is selectable from a combo box. There are six choices available in the framework property: 'show', 'hide', 'focus', 'getFocused', 'getVisible', 'getState'.

Function Property

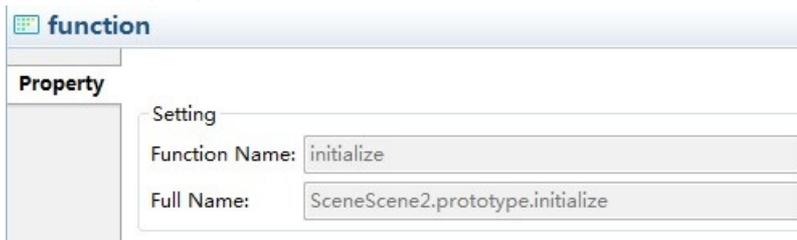


Figure 26 : Function Property

Description: There are two types of function. One type of function is generated initially by the system which cannot be deleted or renamed from the Visual Kit diagram. There are 'initialize', 'handleShow', 'handleHide', 'handleFocus' and 'handleBlur'. The property view shows the function name and the full name in *.js file. The other functions created by users are using the same property view. The only difference is the user created functions are supporting rename action.

Key handler Property

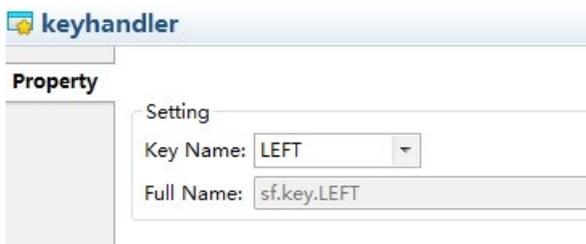


Figure 27 : Key handler Property

Description: Each Key Handler element represents a button in a remote controller. Therefore the number and the name of the Key Handler element are structured in the Visual Kit editor. There are 39 options available including 5 initially created for users to implement the Key Handler elements. All the options of the key name are listed in a combo box in property page. The full name of the key in *.js file is also shown in property page.

Component Property



Figure 28 : Component Property

Description: The component property page presents two pieces of information. The first one is the id code of the component which obeys the information from Scene file and is generated by the system. The second one is the type of the component which is defined during the creation process. Both of these two settings cannot be modified.

Parameter Property



Figure 29 : Parameter Property

Description: Majority of the components have the parameter option. It shows the default property and value of current both of Property and Value can't modified by users. Figure Parameter Property shows the property view of a Button component and its default value is 'button_text'.

Operation Property

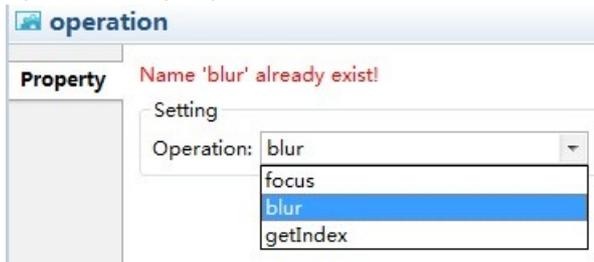


Figure 30 : Operation Property

Description: Most of the components provided by the system lib have operation elements. The Operation option describes the basic actions of the component that can be activated in the application. Each type of component has its own behaviors established in the system lib. Therefore the operation's value only can be picked and only one time picked from a particular combo box.

Relation Property



Figure 31 : Relation Property

Description: The relation items also contain their own property view. There are two tabs in relation property; They are "Property" and "Parameters". The content in tab 'Property' view shows two elements. The first one is the 'Source Name' and the second one is the 'Target Name'. Both of them can't be modified. Relation tab "Parameters" shows the "Name" and "Value" of Relation parameter. The "Value" can be modified by users.

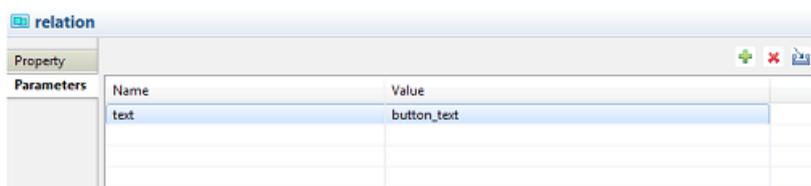


Figure 32 : Relation Parameters

On the top right of the Parameters view are three toolbars, "Add", "Delete", and "Insert". They can be also trigger by right click. When click "Add", a dialog will popup. When add parameter to the relation which target is Parameter, the dialog is as shown below. User can add "Name" by itself or click the comb box to select a suggested item. When relation target is Function, Framework or Option, the "Name" is fixed and user can only input Value. The "Insert" is the same as "Add" operation except that user must select an existed property line to trigger it. Select an exist property and click "Delete" to delete the selected property.

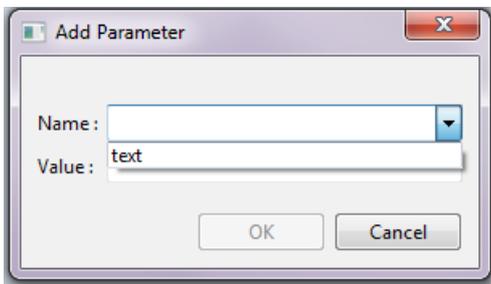


Figure 33 : Relation Add Parameters (Relation to Parameter)

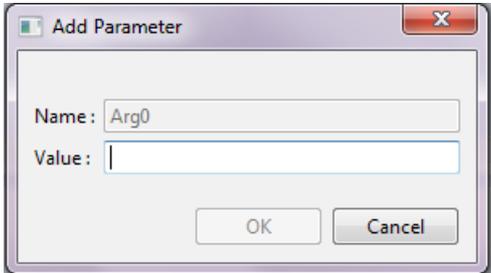


Figure 34 : Relation Add Parameters (Relation to Function, Framework, Operation)

Context Menu

Visual Editor : The **Context Menu** is a popup menu when user right clicks on the Visual Editor. This menu provides some common used functions of the Visual Editor.

The screen shot of the context menu is shown below :

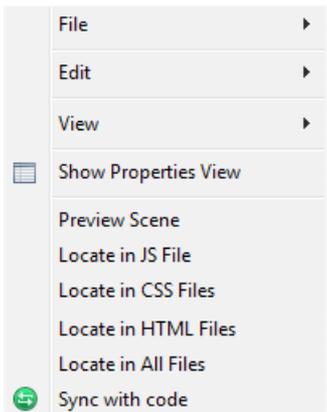
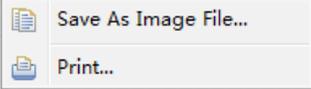
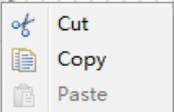
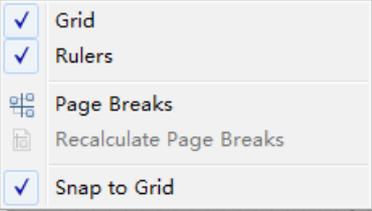
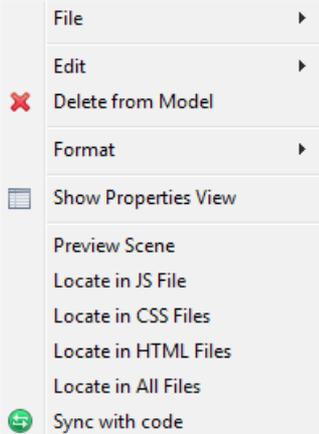
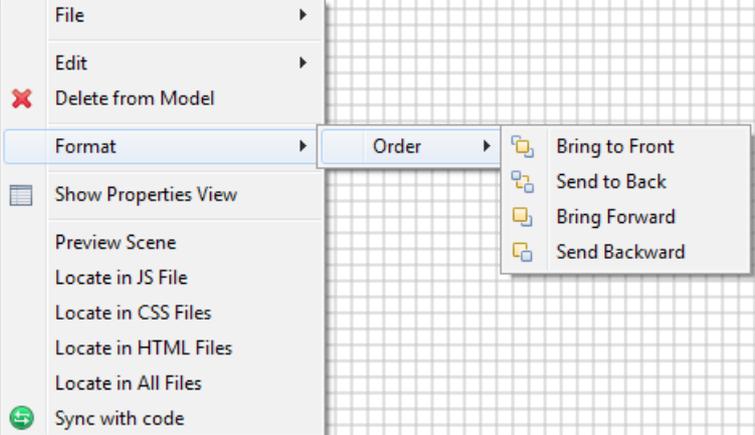


Figure 35 : VE Context Menu

The details of **Context Menu** are listed as follows :

Menu Name	Description
File	<p>It contains the following submenu:</p>  <p>There are two operations available here.</p> <p>The Save As Image File... operation can save the current scene's appearance as an image file.</p> <p>The Print... operation allows user to print a picture of the current scene's appearance.</p>
Edit	<p>It contains the following submenu:</p>  <p>It provides cut, copy and paste operations for selected components.</p> <p>Cut can cut the selected components from current scene.</p> <p>Copy can copy the selected components from current scene.</p> <p>Paste can paste the components which are copied or cut.</p>

Menu Name	Description
View	<p>This operation is only provided for Visual Scene. It contains the following submenu:</p>  <p>Grid please refers to Property View Rulers please refer to Property View. Page Breaks can make a page break on the scene. Recalculate Page Breaks can recalculate page breaks. Snap to Grid please refer to Property View.</p>
Delete from Model	<p>This operation will appear when component is selected in Visual Scene.</p>  <p>By clicking it, the selected component will be deleted.</p>
Show Properties View	<p>This operation makes Property View to be active.</p>
Preview Scene	<p>Preview the current scene in the Emulator.</p>
Format	<p>The hierarchy of its menu is showed as follows:</p>  <p>It provides functions to change the relative z-order of the selected components.</p> <ul style="list-style-type: none"> Bring component to the front Send component to the back Bring component to the forward Send component to the backward
Locate in JS File	<p>This operation will open the related JavaScript file and locate the selected component in JavaScript file.</p>
Locate in CSS File	<p>This operation will open the related CSS file and locate the selected component in CSS file.</p>
Locate in HTML File	<p>This operation will open the related HTML file and locate the selected component in HTML file.</p>
Locate in All Files	<p>This operation will open the related JavaScript, CSS and HTML files and locate the selected component in these files.</p>

Menu Name	Description
Sync with code	Synchronize the Visual Scene file with the code from JavaScript, CSS and HTML files. For more details, please refer to : Synchronize with Code

Visual Kit : The **Context Menu** is a popup menu when user right clicks on the Visual Kit diagram. This menu provides some common used functions of the Visual Kit. Depend on the requirement for each elements, the content of the context menu is different.



Figure 36 : VK Context Menu

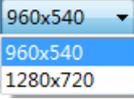
Menu Name	Description
Locate in JS File	This operation will open the related JavaScript file.
Sync with code	Synchronize the Visual Scene file with the code from JavaScript, CSS and HTML files. For more details, please refer to: Synchronize.
Show Properties View	This operation opens the Property View page.

AF 2.0 Toolbar

The toolbar provides a convenient way to do some actions such as debug, package, sync with code, sync with all codes, change resolution, zoom in/out and so on.

The details of toolbar are as follows :

Icon	Command Name	Description
	Samsung Tools	Execute the Run PNaCl App in Chrome command if click on the tool icon, or open a drop-down menu if click on the triangular arrow.
	Run PNaCl App in Chrome	Pop-up a dialog, developers can start the PNaCl Server and run the PNaCl App with Chrome browser from this dialog.
	TV Log On/Off	Turn on/off the TV log.
	Debug App	Debug a selected product into Samsung Smart TV Emulator. See Run and Debug for more.
	Run App	Run a selected product into Samsung Smart TV Emulator. See Run and Debug for more.
	Sync with code	Synchronize the current scene's JavaScript/HTML/CSS codes.
	Sync all with code	Synchronize current project's all scenes's JavaScript/HTML/CSS codes.
	Zoom In/Out	Provides zoom in/out operations. The following selections are available:

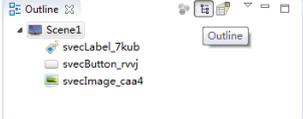
Icon	Command Name	Description
	Change Resolution	Provides change project's resolution operations. The following resolutions are provided 

Outline

The **Outline** provides a convenient way to do some actions such as list all components in current scene/kit (including special components), select component, preview scene, thumbnail current scene and so on.

The detailed functions of the **Outline** are as below.

Visual Editor

Outline	Description
	This overview option shows a thumbnail of the current active kit. If the display scale of the current active kit is high, users can move the display interface by clicked or dragged the viewing zone from one place to another in the overview.
	The outline view shows the structure of current active scene using tree model, and provides the following operations: 1. right click the root node, it shows Preview Scene operations 2. click sub node, the component will be selected in current scene, all the opened related codes will be highlight in JavaScript, CSS and HTML editors, and the Properties view will be changed to the component, too.

Visual Kit

Outline	Description
	This overview option shows a thumbnail of the current active kit. If the display scale of the current active kit is high, users can move the display interface by clicked or dragged the viewing zone from one place to another in the overview.
	The outline view shows the structure of current active scene using tree model, and provides the following operations: click sub node, the component will be selected in current kit, all the opened related codes will be highlight in JavaScript, CSS and HTML editors, and the Properties view will be changed to the component, too.

Synchronize with Code

Visual Editor and Visual Kit Synchronize with code function provide a convenient way to reflect code modification to Visual Scene/Kit/Kits. Now, our SDK gives the follow ways to do synchronize :

Through [AF 2.0 Toolbar](#)

Through project resource and layout folder resource

Through scene file's [context menu](#)

Here gives an example of adding a button from code.

1. Add components' js codes in *.js file.

```
$('#svecButton_5i4dgcAh6mqf').sfButton({
    text: 'button_text'
});
```

2. components' css codes in *.css file

```
#SceneScene1 #svecButton_5i4dgcah6mqf {
    position: absolute;
    left: 410px;
    top: 150px;
    width: 121px;
}
```

3. Add components' html codes in *.html file.

```
<div id="svecButton_5i4dgcah6mqf"></div>
```

When finishing synchronization, a new button component will be created on the scene.

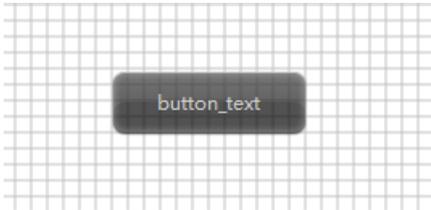


Figure 37 : Synchronize result

Caph project development

Caph sample application

This session introduce a sample app to demonstrate the creation processes by using **Caph UI Designer** to design an app.

This App has one page named page1. Page1 have two **Buttons** and a **ImageGallery** component which contains some pictures. When the App receives the **LEFT** or **RIGHT** key event from a remote control, the focus will be changed between two buttons. When focus is on one button and then press **ENTER**, the **ImageGallery** will switch pictures.

1. Creating the Project

After the Eclipse platform is launched, select the menu item **File -> New -> Project -> Samsung Smart TV**. Select Web App and then click Next to start the wizard.

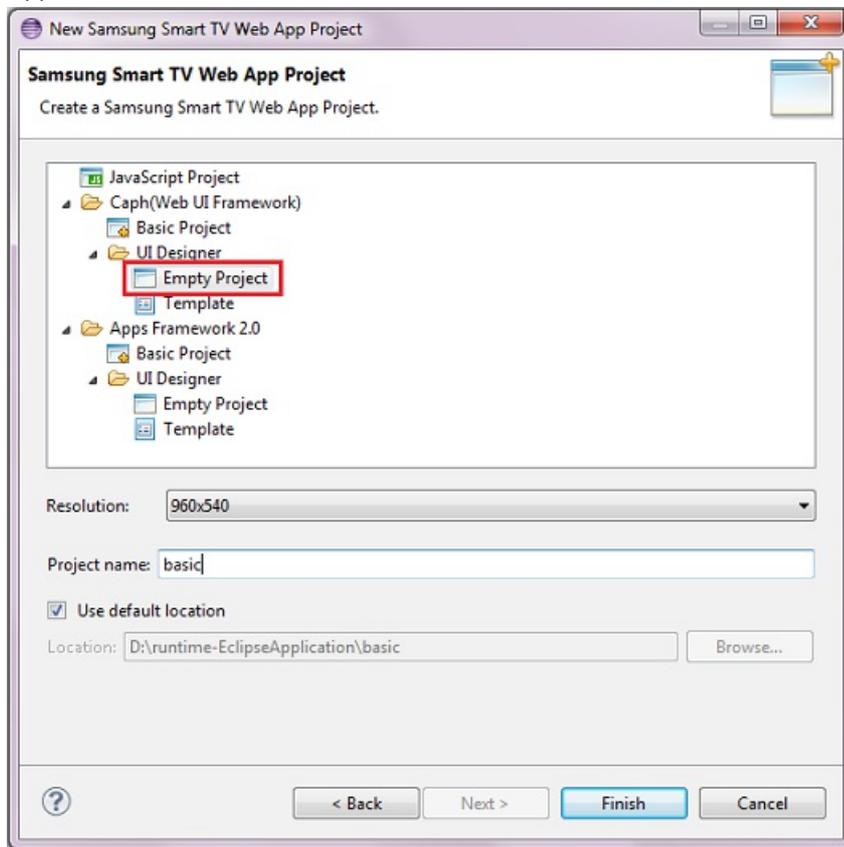


Figure 38 : Smart TV Web App Project Wizard

On this page

Select **Caph(Web UI Framework) -> UI Designer -> Empty Project**.

Select 960x540 in the Resolution field.

Type 'basic' in the Project name field.

Then click Finish button.

2. Design a page

In the Project Explorer, open **page1.page** file, and the UI Designer will show up.

Drag two **Buttons** and one **ImageGallery** into the diagram, and then modify the properties of **ImageGallery**.

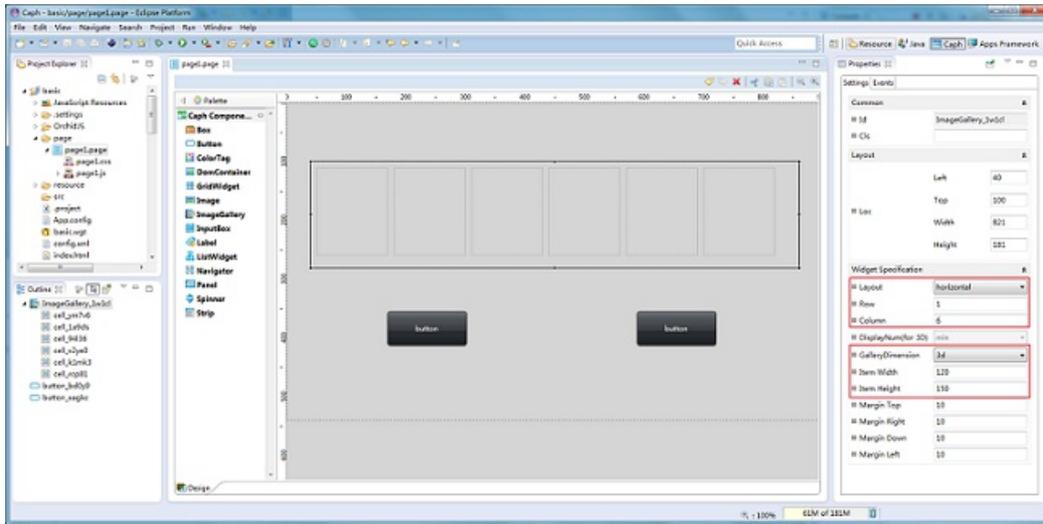


Figure 39 : Design a page (step 1)

Modify the **Text** properties of the two **Buttons** to "Previous" and "Next".

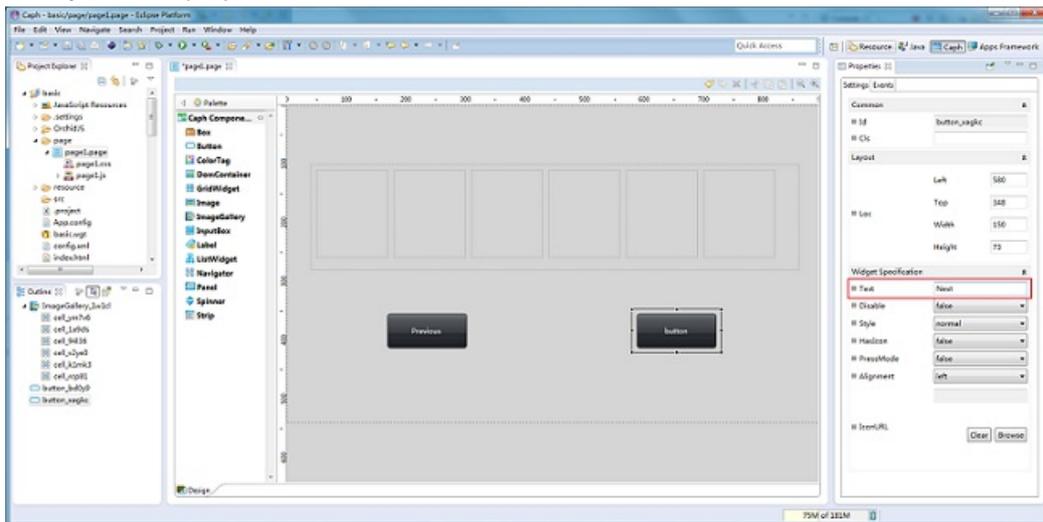


Figure 40 : Design a page (step 2)

Drag an Image into each cell of **ImageGallery**, and set the URL for each Image.

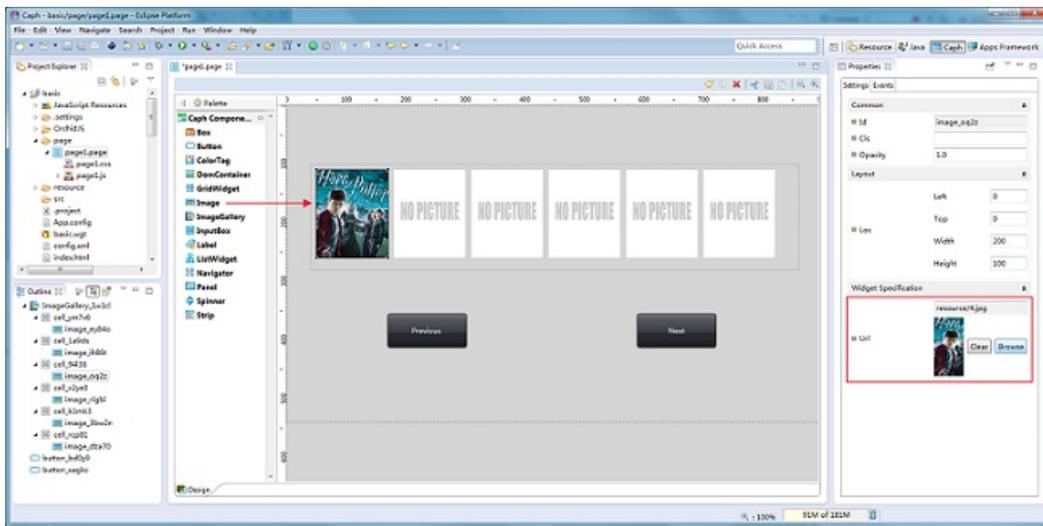


Figure 41 : Design a page (step 3)

Select the "Previous" Button and switch to the Events tab. Choose the "click" event type in the drop down list.

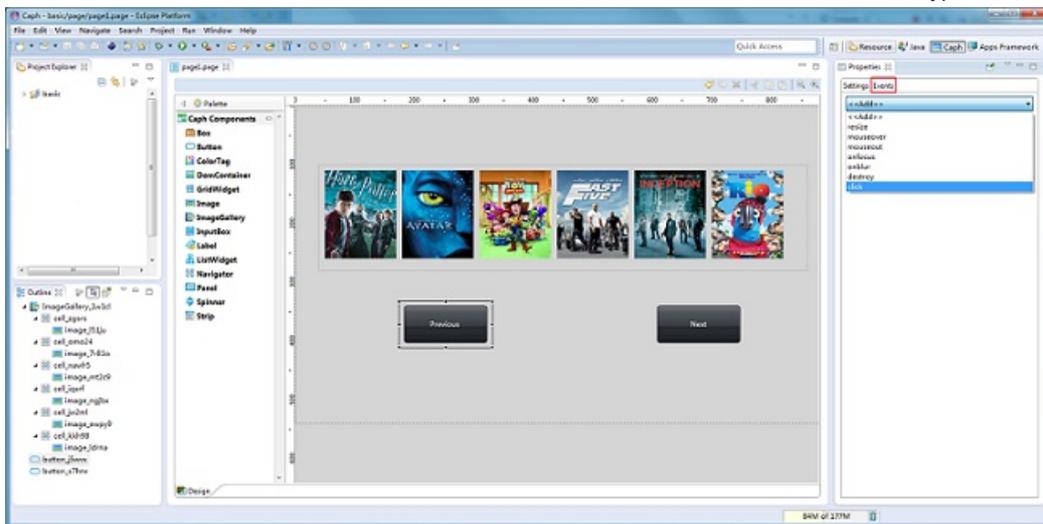
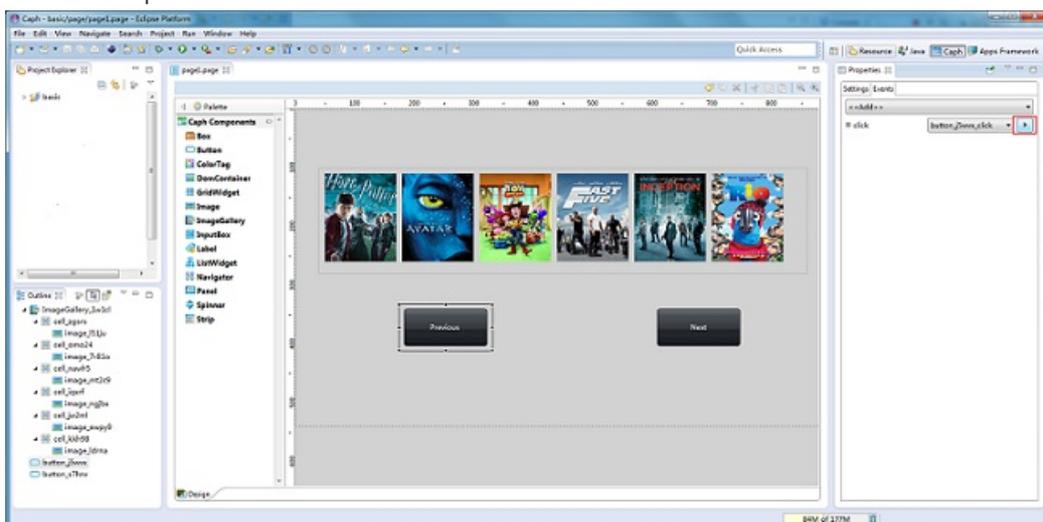


Figure 42 : Design a page (step 4)

Click the right arrow button, it will jump to **page1.js** file, and highlight the event handling code block. Add the click event handling function in order to change current Image when click the "Previous" **Button**. And follow the above-mentioned operation for "Next" **Button**.



```
1 //samsung electronics
2
3 var scenemanager = caph.wui.widget.SceneManager.getInstance();
4
5 function page1_page(){
6
7 };
8
9 page1_page.prototype.init = function(){
10 // TODO Auto-generated method stub
11 };
12
13 page1_page.prototype.onRender = function(){
14 // TODO Auto-generated method stub
15 };
16
17 page1_page.prototype.onPostRender = function(){
18 // TODO Auto-generated method stub
19 };
20
21 page1_page.prototype.onDestroy = function(){
22 // TODO Auto-generated method stub
23 };
24
25 page1_page.prototype.button_jsvwx_click = function()
26 {
27     var context = scenemanager.getUIContext();
28     imageGallery = caph.wui.widget.Component.getWidgetById("ImageGallery_ivic1", context);
29     imageGallery.prev(imageGallery);
30 }
31
```

Figure 43 : Design a page (step 5)

3. Run the app.

Choose this 'basic' project in **Project Explorer**, popup the context menu, select the menu item **Run As -> Samsung Smart TV Emulator**.

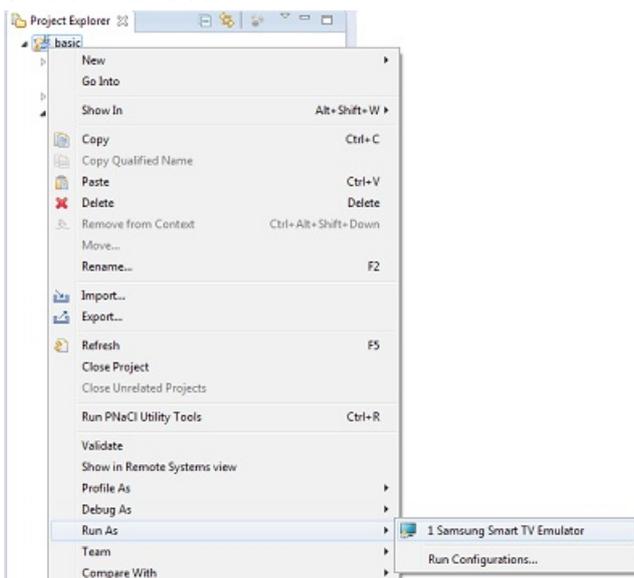


Figure 44 : Run the app (step 1)

By pressing LEFT or RIGHT key on the remote control, user will see button's focus are changed between 'Previous' and 'Next' button. By pressing ENTER key on the remote control, user will see the image changed.

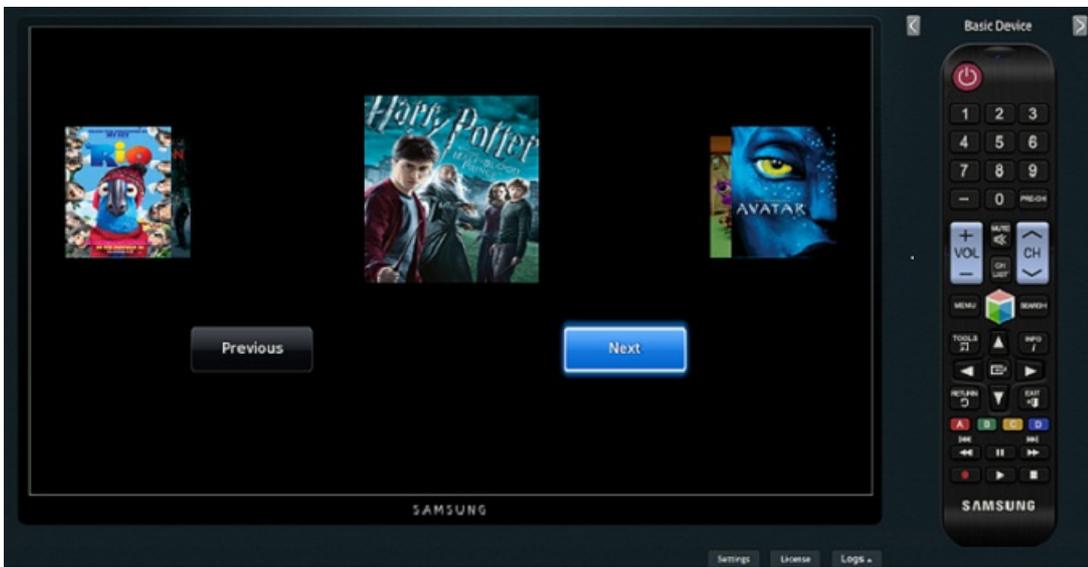


Figure 45 : Run the app (step 2)

Palette View

Caph Components Palette View provides the following palette for creating Samsung Smart TV applications.

Overview	Style	Description
<ul style="list-style-type: none"> Palette Caph Components <ul style="list-style-type: none"> Box Button ColorTag DomContainer GridWidget Image ImageGallery InputBox Label ListWidget Navigator Panel Spinner Strip 	Box	Box represents a widget with a rectangular region. It is a subclass of View.
	Button	Button represents a widget, which provides the user a simple way to trigger event.
	ColorTag	ColorTag represents a manager for color tag. It mainly is for indicating the depth of UI, this widget can manage some of the tags, the tag is located in the upper left corner of the screen. Each tag has its own name, size and color, these tags were rendered in the stacked way.
	DomContainer	DomContainer Represents a rectangle container that could only append Dom element in it.
	GridWidget	GridWidget represents a container of a set of widgets; the container can display some widgets in a two-dimensional.
	Image	Image represents a container of image resources. Image resources can be added or changed.
	ImageGallery	ImageGallery represents a container of a set of widgets, the container can display some widgets in two-dimensional and three-dimensional, the container layout can be set vertical or horizontal or rectangular, the animation of this widget can be 3D or 2D.
	InputBox	InputBox represents a widget with basic text field, it can be used as a direct replacement for traditional text inputs.
	Label	Label represents a container which can display text. A user can change text and the size of widget.
	ListWidget	ListWidget represents a container of a set of widgets; other widget can be rendered on the ListWidget. A user can create linear structure widget easily by using it.
	Navigator	Navigator represents a container of a set of widgets. It can add sets of strings and images. It will convert each set of string and image to a label and image widget.
	Panel	Panel represents a container that consists of image part and text part, the image part is always on top of the text part.
	Spinner	Spinner represents a widget with a number in the center text area.
	Strip	Strip represents a container of a set of widgets. It can add a set of Strings, and each string will be converted to a tag.

Property View

General properties of components are as follows.

Property	Description

Property	Description
<div style="border: 1px solid #ccc; padding: 5px;"> Common ⌵ <input type="checkbox"/> Id <input style="width: 150px;" type="text" value="button_84baa"/> <input type="checkbox"/> Cls <input style="width: 150px;" type="text"/> </div>	- Show the component's ID - Show/set the component's class
<div style="border: 1px solid #ccc; padding: 5px;"> Layout ⌵ <div style="display: flex; justify-content: space-between;"> <div style="width: 100px;"> <input type="checkbox"/> Loc </div> <div style="width: 150px;"> Left <input style="width: 100px;" type="text" value="550"/> Top <input style="width: 100px;" type="text" value="370"/> Width <input style="width: 100px;" type="text" value="120"/> Height <input style="width: 100px;" type="text" value="47"/> </div> </div> </div>	Show/set the component's top-left position, width and height .
<div style="border: 1px solid #ccc; padding: 5px;"> Widget Specification ⌵ <input type="checkbox"/> Text <input style="width: 150px;" type="text" value="Next"/> <input type="checkbox"/> Disable <input style="width: 100px;" type="text" value="false"/> <input type="checkbox"/> Style <input style="width: 100px;" type="text" value="normal"/> <input type="checkbox"/> HasIcon <input style="width: 100px;" type="text" value="false"/> <input type="checkbox"/> PressMode <input style="width: 100px;" type="text" value="false"/> <input type="checkbox"/> Alignment <input style="width: 100px;" type="text" value="left"/> <input type="checkbox"/> IconURL <input style="width: 150px;" type="text"/> <div style="text-align: right; margin-top: 5px;"> <input type="button" value="Clear"/> <input type="button" value="Browse"/> </div> </div>	Show/set the component's specification properties. Different components have different properties.

In events tab of property view, the events of the current selected widget will be listed. The developer can select an event in event list, and then click right arrow button. The selected event will be added in JavaScript file.

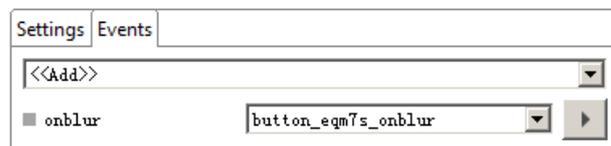
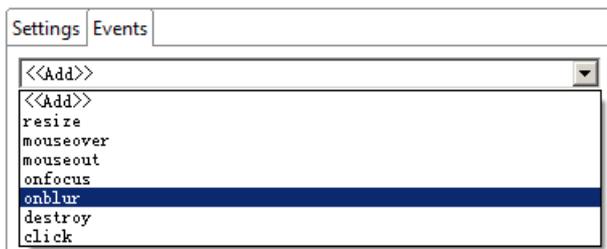


Figure 46 : Events properties



User can also set the properties for the Caph UI Designer.

Property	Description
<input type="checkbox"/> Show <u>G</u> rid	Display the grids and used for alignment.
<input checked="" type="checkbox"/> Show <u>R</u> uler	Display a ruler along the left and top edges of the diagram and provides access to ruler guides. Guides are added by clicking anywhere in the ruler and are removed by pressing Delete when active.
<input type="checkbox"/> Snap <u>t</u> o Grid	This is another useful feature for alignment. This feature achieve an automatic snapping function when users move one component close to another one.
<input checked="" type="checkbox"/> Snap <u>t</u> o Shapes	This is a useful feature for alignment. A "laser line" will be appeared at the edges or the center of the node which assist users to arrange the components in the canvas.
Grid Spacing <input style="width: 50px;" type="text" value="10"/> (1~1000 pixel)	Set the space of the grid.
<u>B</u> ackground Color <input style="width: 40px; height: 20px;" type="color"/>	Set the color of the diagram.

Property	Description
Restore Defaults	Reload the default settings.

Context Menu

The Context Menu is a popup menu when user right clicks on the Caph UI Designer.

The screenshot of the context menu is shown below.

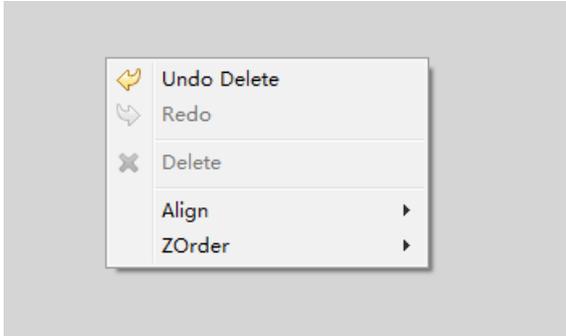
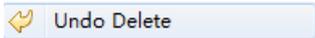
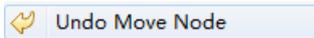
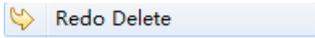
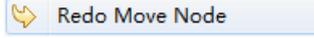
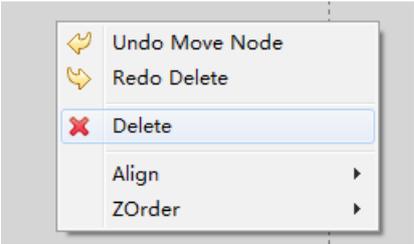
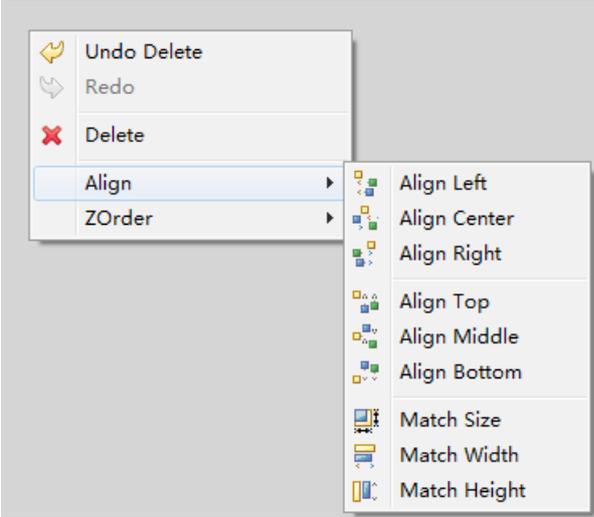
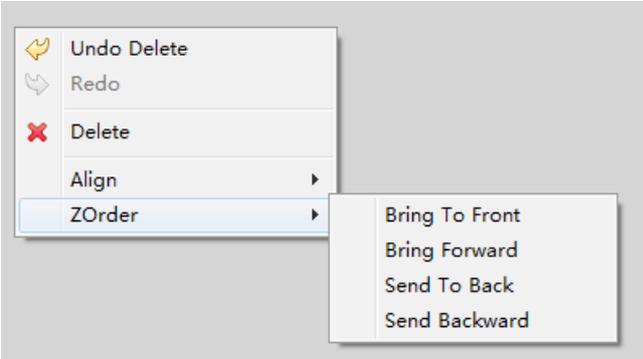


Figure 47 : Context menu

The details of Context Menu are listed as below.

Menu Name	Description
Undo Delete/Move Node	<p>It contains the following choice :</p> <p>Undo Delete : </p> <p>Undo Move Node : </p> <p>There are two operations available here.</p> <ol style="list-style-type: none"> 1. The 'Undo Delete' operation can redisplay those Caph components that are previously deleted. 2. The 'Undo Move Node' operation allows user to move Caph component back to the place it has been before.
Redo Delete/Move Node	<p>It contains following choice :</p> <p>Redo Delete : </p> <p>Redo Move Node : </p> <p>It provides redo operations for modified components.</p> <ol style="list-style-type: none"> 1. 'Redo Delete' can restore delete operation. 2. 'Redo Move Node' can move those Caph components to the place again after you cancel the operation.
Delete	<p>This operation is only provided for existed Caph components.</p> <p>It deletes all the selected Caph components :</p>  <p>By clicking it, the selected component will be deleted.</p>

Menu Name	Description
Align	<p>This operation is only provided for multiple caph components.</p> <p>It contains the following submenu :</p>  <p>It provides several ways of alignment operations for selected components.</p> <ol style="list-style-type: none"> 1. 'left/center/right' can align the selected components horizontally. 2. 'top/middle/bottom' can align the selected components vertically. 3. 'size/width/height' can align the selected components according to the minimal width or height or size (including width and height).
ZOrder	<p>This operation is only provided for multiple Caph components.</p> <p>It contains the following submenu :</p>  <p>It provides several ways of ordering operations for selected components.</p> <ol style="list-style-type: none"> 1. 'Bring To Front' can bring selected components before all the other components and cover them. 2. 'Bring Forward' can bring selected components before all the other components. 3. 'Send To Back' can bring selected components after all the other components and be covered. 4. 'Send Backward' can bring selected components after all the other components.

Caph Toolbar

The Toolbar provides a convenient way to do some actions such as delete, redo, undo, zoom in/out and so on.

The toolbar display on the top of Caph UI Designer, and normally is as follows.



Figure 48 : Toolbar

When two or more components are selected, the toolbar will be changed to the following figure.



Figure 49 : Toolbar with alignment

The details of **Toolbar** items are as below.

Icon	Command Name	Description
	Undo	When one component is operated, like move, cut, delete, the undo command will help return to previous status.
	Redo	When one component is operated, like move, cut, delete, and the undo operation is executed, then redo will do previous operation again.
	Delete	When one or more component is selected, delete operation will removed them from Caph UI Designer.
	Cut	When cut one component, it will disappear in Visual Editor, the component's information is stored in memory and you can paste it later.
	Copy	When copy one component, the component's information is stored in memory and you can paste it later.
	Paste	When one component is cut or copied, the component's information is stored in memory and you can paste it in the Visual Editor.
	Zoom In	Provides zoom in operations.
	Zoom Out	Provides zoom out operations.
	Alignment	Provides alignment operations: Align Left, Align Right, Align Top, Align Bottom, Align Middle, Match Size, Match Width and Match Height.

Outline

The detailed functions of the Outline are as below.

Outline	Description
	This overview option shows a thumbnail of the current active scene,if the display scale of the current activated scene is high, users can move the display interface by clicked or dragged the viewing zone from one place to another in the overview.
	The outline view shows the structure of current activated scene using tree model, and provides the following operations : 1) right click the root node, it shows "Delete" operation 2) If node is operated in Caph UI Designer, then right-click node, the component will be show undo/redo operations.

Image Viewer

The Image Viewer provides a convenient way to preview all the image resources by automatically scanning the whole project.

Open the Image Viewer by **Window -> Show View -> Other -> Samsung Smart TV SDK -> Image Viewer**.

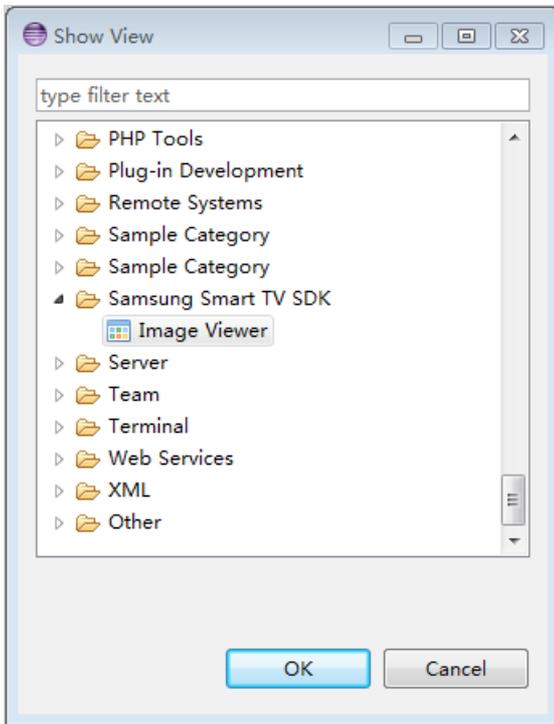


Figure 50 : Image Viewer menu

Also we can preview the image resources by using the image component.

1. Drag an image component to the blank area and select the image component.

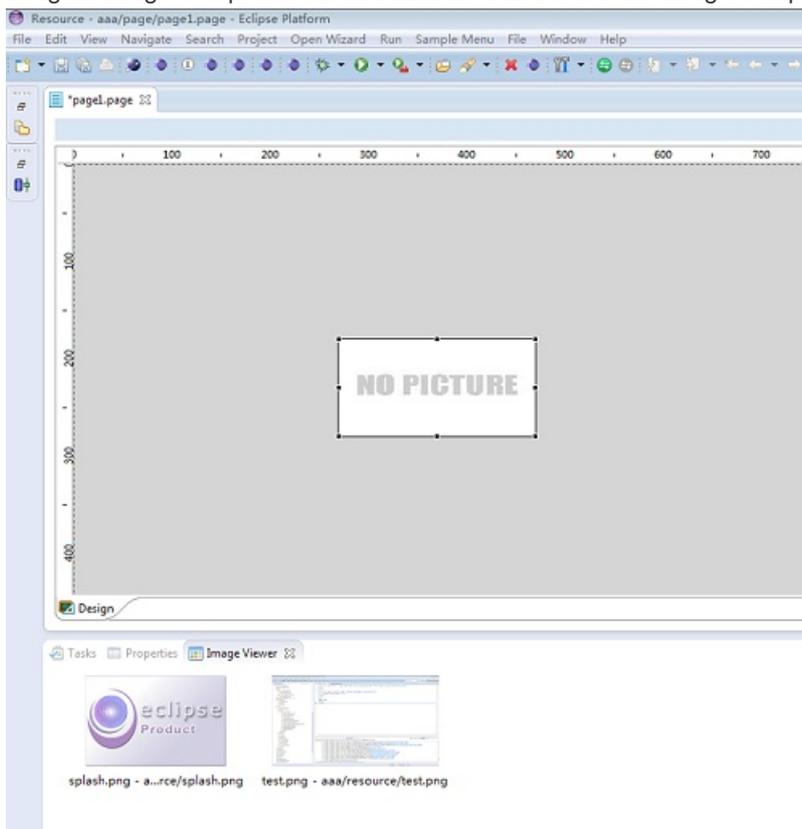


Figure 51 : Using Image component

2. Double click the image resources that you want to preview listed in the Image Viewer.

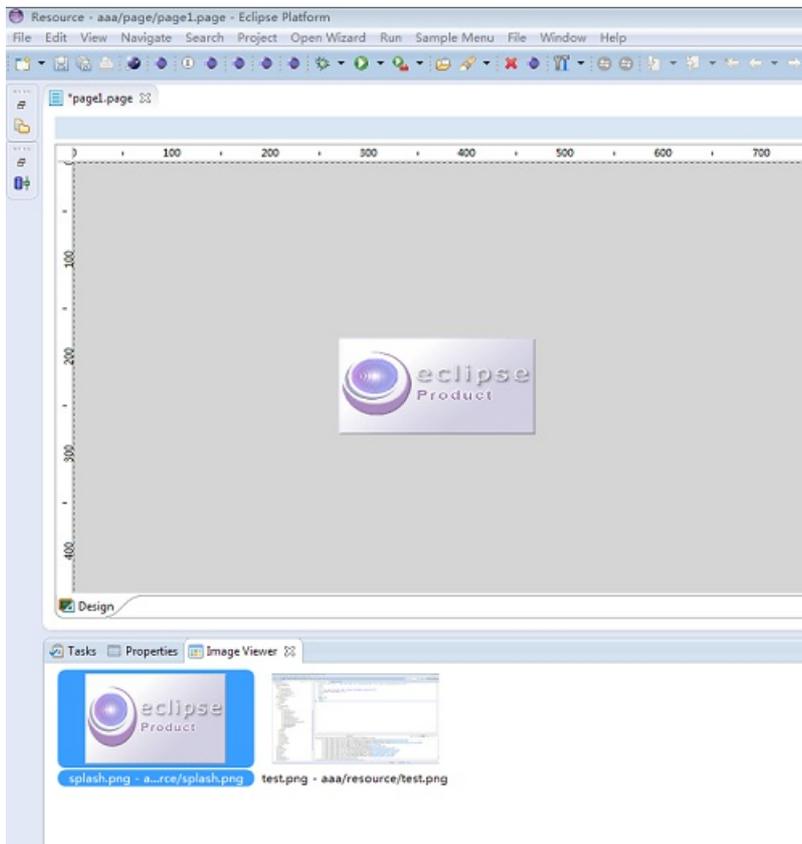


Figure 52 : Using Image Viewer

- Slide the scroll bar to resize the size of image resources listed in the Image Viewer.



Figure 53 : Slider

Samsung API Content Assist

Samsung API Content Assist, which has been integrated into **Samsung Smart TV SDK JavaScript Editor**, provides context sensitive Samsung Device API content completion upon user request when developing Samsung Smart TV apps. Popup windows are used to propose suggestions for developers to choose from to complete a phrase.

Open a JavaScript file with **Samsung Smart TV SDK JavaScript Editor**, and then the code completion feature can be triggered by entering the objects defined in Samsung device API and call Content Assist (Alt + /, by default, or ".").

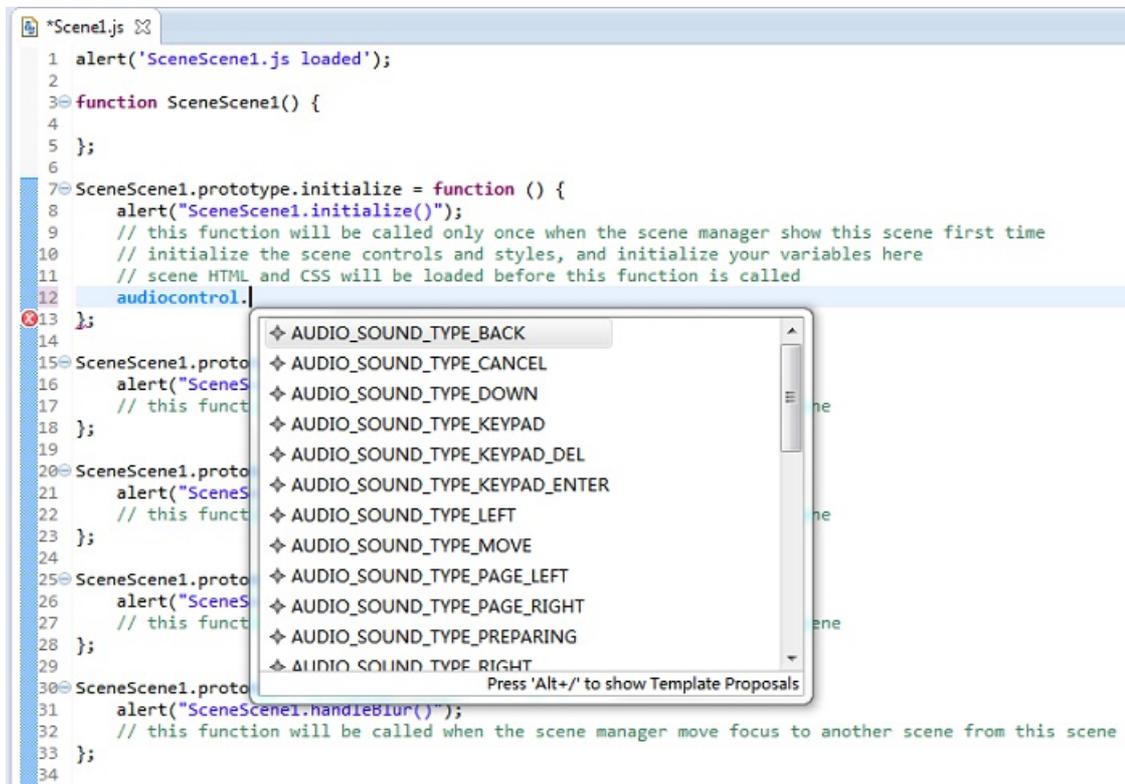


Figure 54 : Content Assist of Samsung API Object

1. The developer's previous input will be parsed, and certain related proposals will be presented in a popup window right after the "." character.
2. The proposals will be listed alphabetically for searching convenience.
3. Developer can select an appropriate proposal from the popup window using the up and down key, and apply the selected one by pressing "Entry" key.

Run and Debug App

Samsung Smart TV SDK not only support launching the apps into Emulator for functionality test, but also provides debugging function to developer. Samsung Smart TV SDK uses Web Inspector as its debugging tool which allows developers to view the page source, network status, script debugging, profiling and more.

After the preparation of the developing tools and installing the SDK Emulator Image into Visual Box, user should check the Visual Box setting and choose one Emulator for testing. Open the Samsung Smart TV Emulator preference page by **Window -> Preferences -> Samsung Smart TV -> Emulator**.

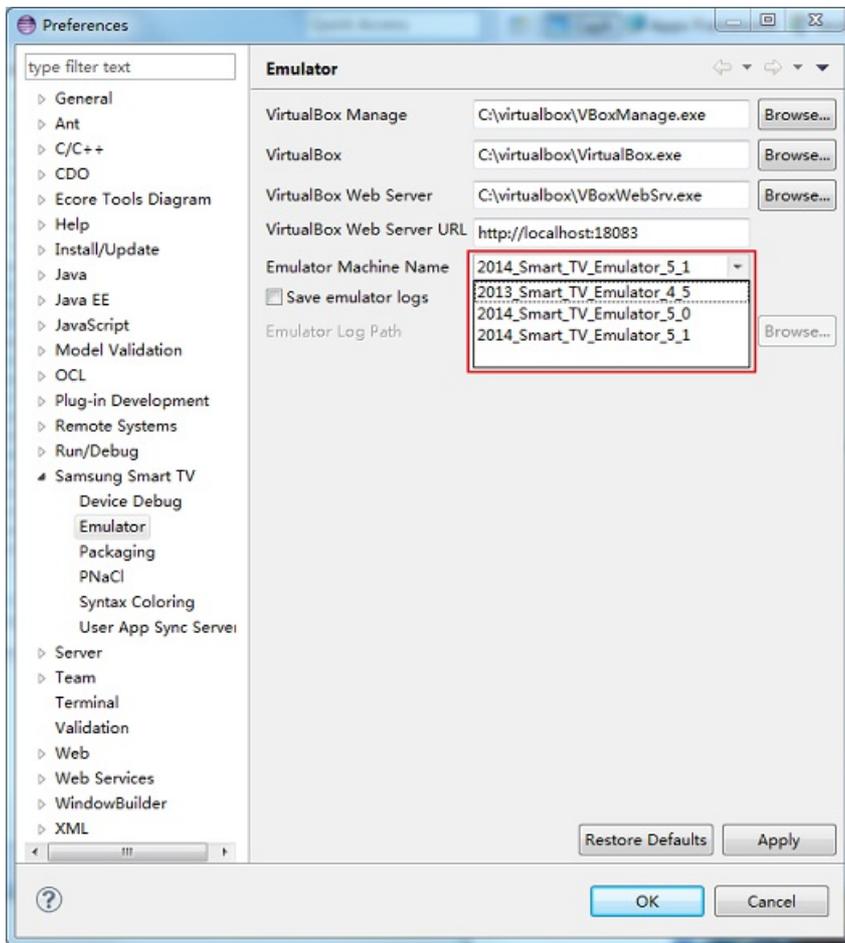


Figure 55 : Emulator Preference Page

User can modify the Preferences to change some properties of the Emulator. If required to change the port of Virtual Box Web Server, user can edit the **Virtual Box Web Server URL** property. For example, changing the value to "http://localhost:9999", the Virtual Box Web Server will use the 9999 port rather than the default value 18083.

Run and Debug

Developers have two ways to run or debug their apps :

1. Select one app project, and then click the **Run** or **Debug** button in toolbar.

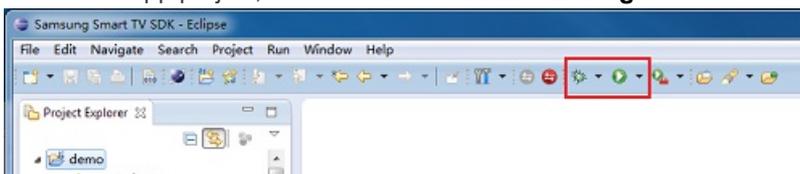


Figure 56 : Run or Debug from Toolbar

2. Select one app project, right click it and within the pop-up project menu, find the **Run As** or **Debug As** button.

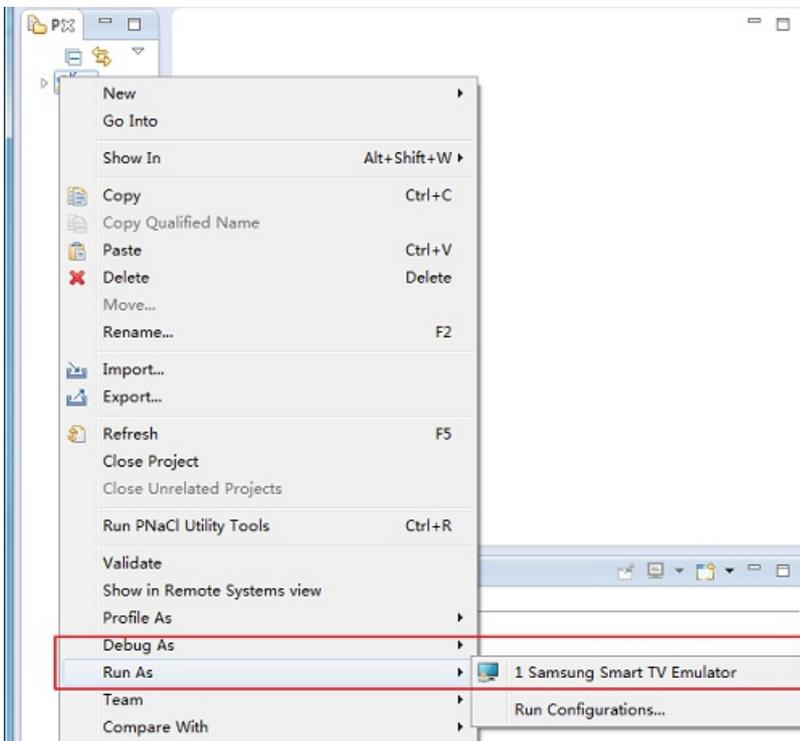


Figure 57 : Run or Debug from Popup Menu

Google Chrome is a prerequisite for debugging apps, because the Web Inspector is integrated into it. Once executing the debugging function, the Web Inspector will wait until Emulator launching finished. If the emulator runs correct, the web inspector will be started soon. Developer can use it to debug JavaScript code, view page source and more.

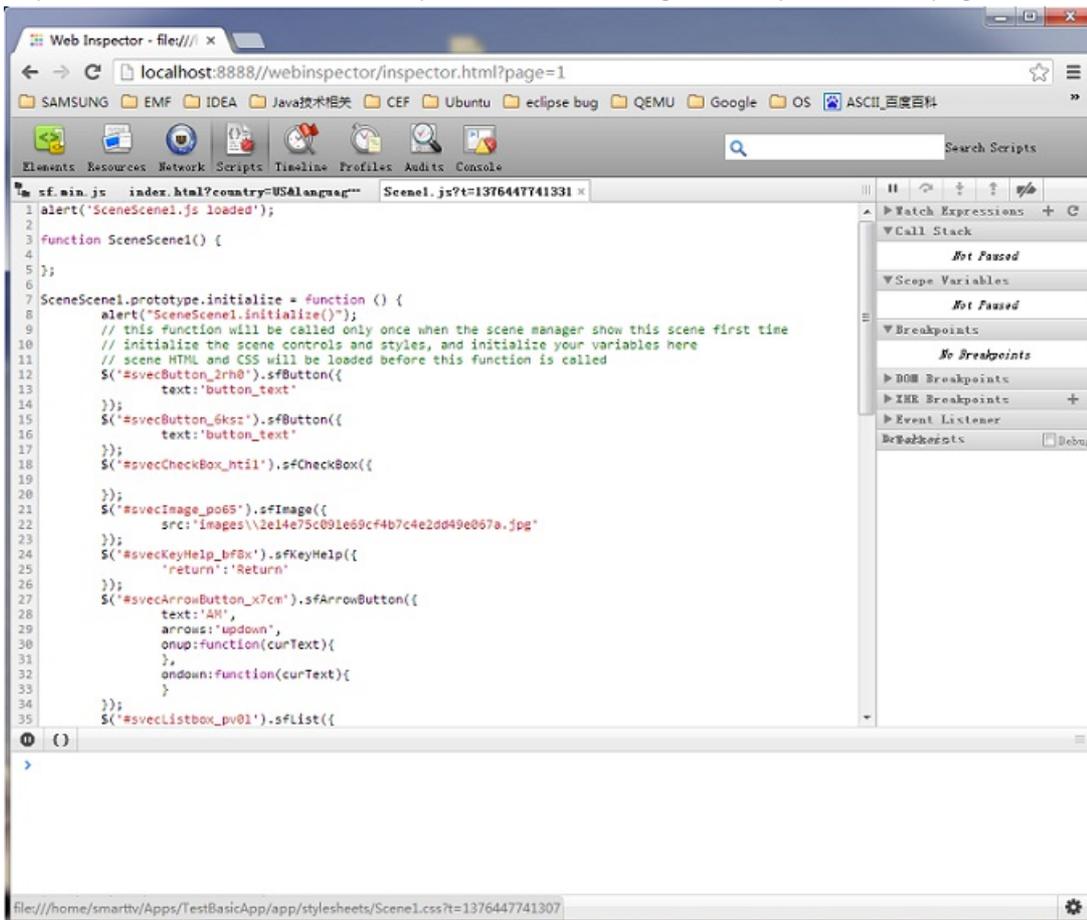


Figure 58 : Web Inspector

Except the two methods above, right click on one scene and select Preview Scene can also run the current scene. By the way, the Preview mode is only for preview and all the remote control events are inactive.

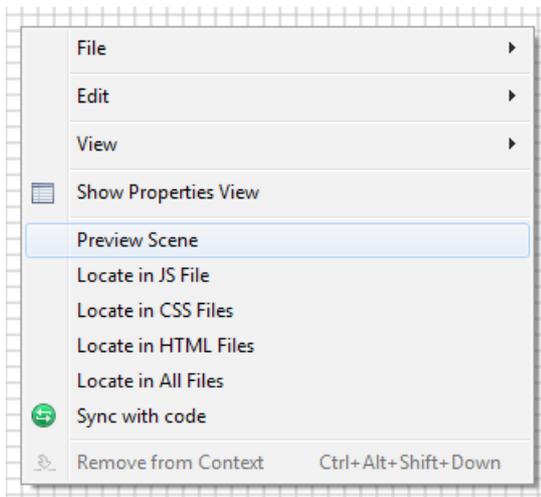


Figure 59 : Preview Scene

Embedded Log Viewer

Embedded Log Viewer is a viewer in Samsung Smart TV SDK that can see log message which is delivered from the Emulator. When emulator is launched and connected to IDE, the log viewer will be shown the IDE editor.

Developers can open Log Viewer by the path **Window -> Show View -> Console** as shown in the below image.

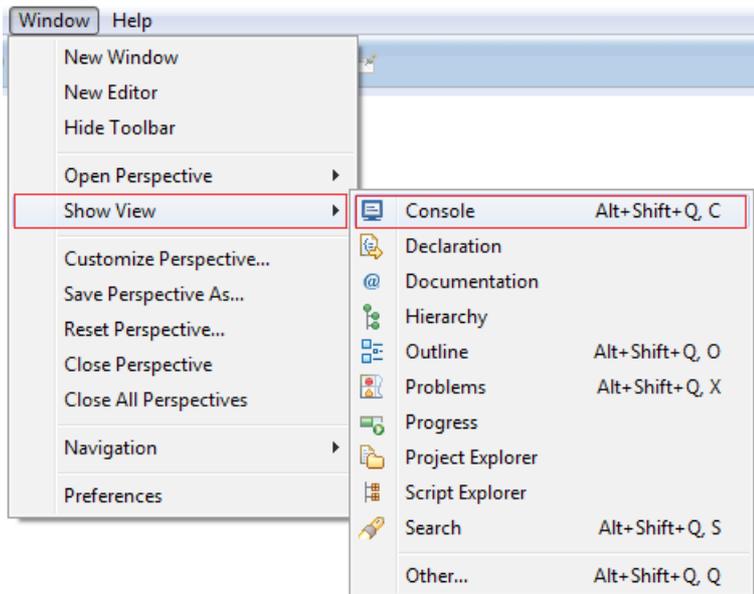


Figure 60 : Menu path

When developers launch an App in emulator and Emulator responses to the IDE, the log message will be shown in the embedded console view. There are some features about console view.

Hyperlink can be shown if do as follow steps :

1. Edit js file (such as Scene1.js in basic project). Add alert message in the js file (see red rectangle). The alert message needs to follow these rules :
 - Start with "file://";
 - Then follows an absolute file path, such as "D:/dev/runtime-New_configuration/basic/app/init.js";
 - The file specified by the absolute path must exist in current project.
2. Run current project in Samsung Smart TV emulator.

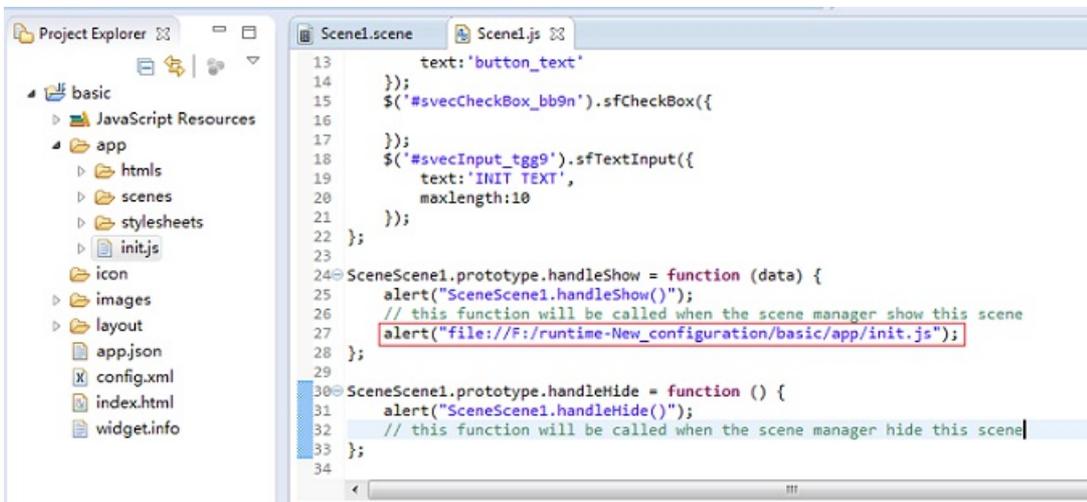


Figure 61 : Samsung Smart TV Emulator Log View

If the hyperlink pointed file is in the current project and the file's absolute path is correct, this hyperlink is clickable, and the relevant file can be displayed.

The log viewer also contains a filter function to process the message contents from Emulator. The filter buttons is shown in the console view with four levels to choose :

All: show all log messages responded from emulator.

Alert: show alert messages which starts with "[JS ALERT]".

Error: show error messages.

Keyword: allow user to type in a keyword and show the log messages which contains the keyword.

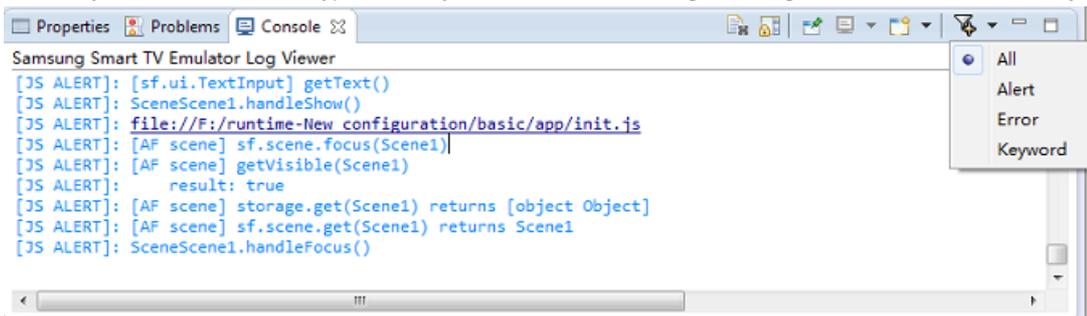


Figure 62 : SLog View - four levels

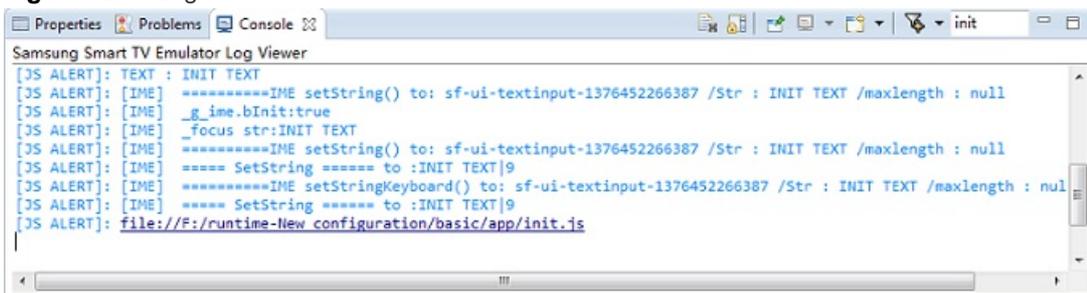


Figure 63 : Filter log messages by keyword

The log message received from Emulator can also be logged into a local file, "{user.home}/Samsung/Logs/emulator.log", automatically when the checkbox **Save emulator logs** is selected. The default value of the Save emulator logs is unselected which can be changed from **Window -> Preferences -> Samsung Smart TV -> Emulator**.

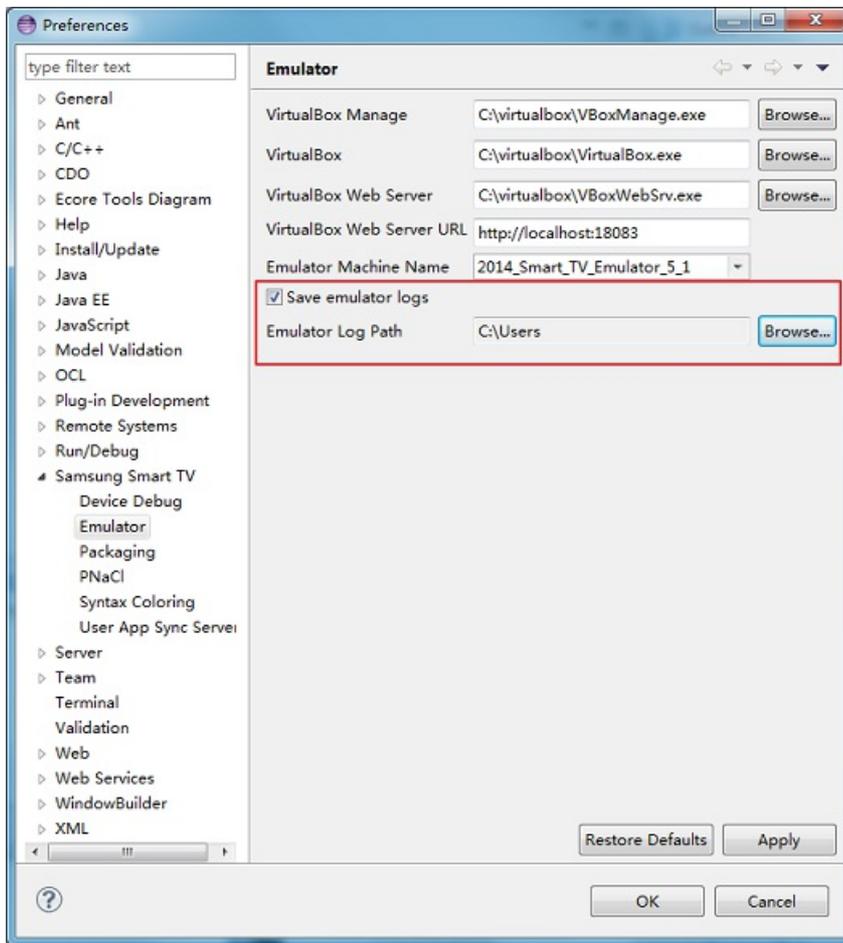


Figure 64 : Log saving

The user can also change the emulator log path by clicking '**Browser...**' when the checkbox **“Save emulator logs”** is selected.

Samsung API Syntax Highlight

With Samsung API Syntax Highlight integrated in the **Samsung Smart TV SDK JavaScript Editor**, the Samsung API keywords can easily be distinguished from others. There are three kinds of Samsung API keywords defined in Samsung Device API, and each keyword type is highlighted differently.

Samsung Application Interface.

Samsung Methods.

Samsung Parameter Variables.

By default, the colors for Samsung API keywords are as follows :

Keyword Type	Color Settings
Samsung Application Interface	RGB (0, 128, 255)
Samsung Methods	RGB (255, 100, 100)
Samsung Parameter Variables	RGB (63, 63, 191)

```

Scene1.js
1 alert('SceneScene1.js loaded');
2
3 function SceneScene1() {
4
5 };
6
7 SceneScene1.prototype.initialize = function () {
8     alert("SceneScene1.initialize()");
9     // this function will be called only once when the scene manager show this scene first time
10    // initialize the scene controls and styles, and initialize your variables here
11    // scene HTML and CSS will be loaded before this function is called
12    audiocontrol.setVolume(AUDIO_SOUND_TYPE_DOWN);
13 };
14
15 SceneScene1.prototype.handleShow = function (data) {
16     alert("SceneScene1.handleShow()");
17     // this function will be called when the scene manager show this scene
18 };
19
20 SceneScene1.prototype.handleHide = function () {
21     alert("SceneScene1.handleHide()");
22     // this function will be called when the scene manager hide this scene
23 };
24

```

Figure 65 : Default Samsung API Keywords Colors

To customize the highlighting styles of the Samsung API keywords for the code, refer to the following steps :

Click **Window -> Preferences** (Eclipse -> Preferences, in Mac OS X).

Select **Samsung Smart TV -> Syntax Coloring** and it shows the current highlighting style of each Samsung API keyword type.

Click the colored button on the right side, and select the color that you want the text of the keyword to appear in, and click **OK** or **Apply** to save your changes.

Or click **Restore Defaults** if you want to restore the color settings of Samsung API keywords to their default values, and then click **OK** or **Apply** to save your changes.

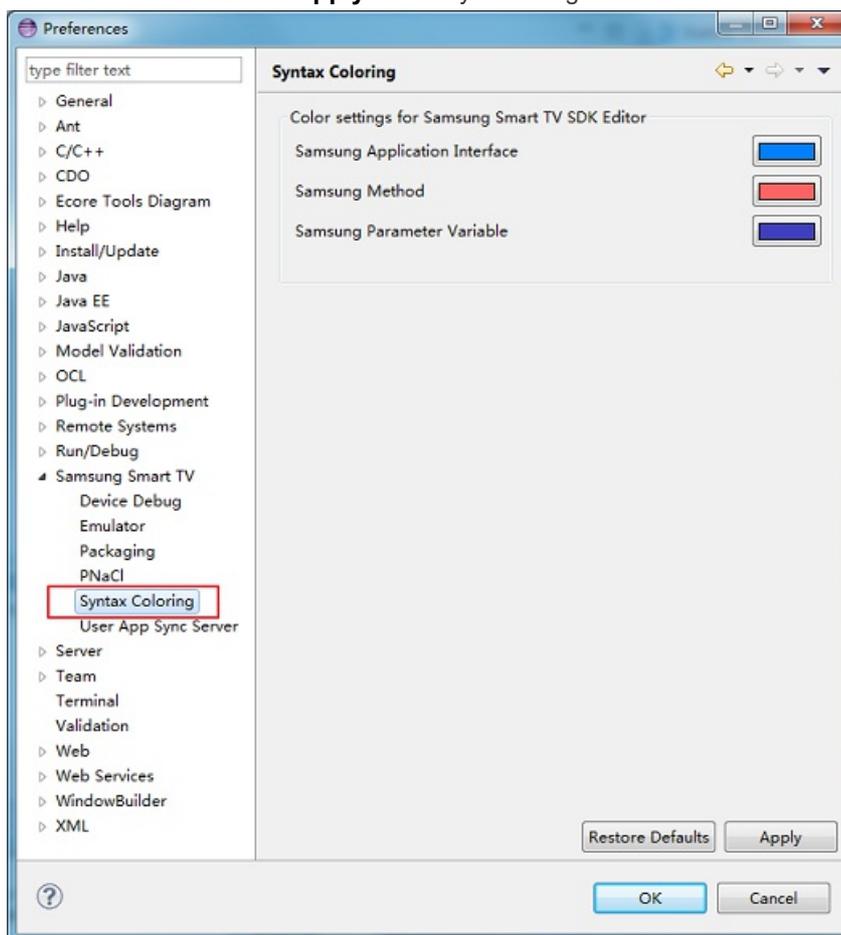


Figure 66 : Samsung API keywords Preference Page

Import and Export

With **Import** and **Export** integrated in the Samsung Smart TV SDK, Smart TV apps projects can be easily imported into

your workspace and exported in compressed files for distribution and running or debugging on real Samsung Smart TVs.

Import

To import Samsung Smart TV apps projects, refer to the following steps :

Click **File -> Import**.

In the **Import** dialog, select **Samsung Smart TV Apps** folder.

There are two options for Samsung Smart TV apps projects importation : **Samsung Smart TV Native Apps Project** for PNaCl apps and **Samsung Smart TV Web Apps Project** for AF 2.0 app and JavaScript apps.

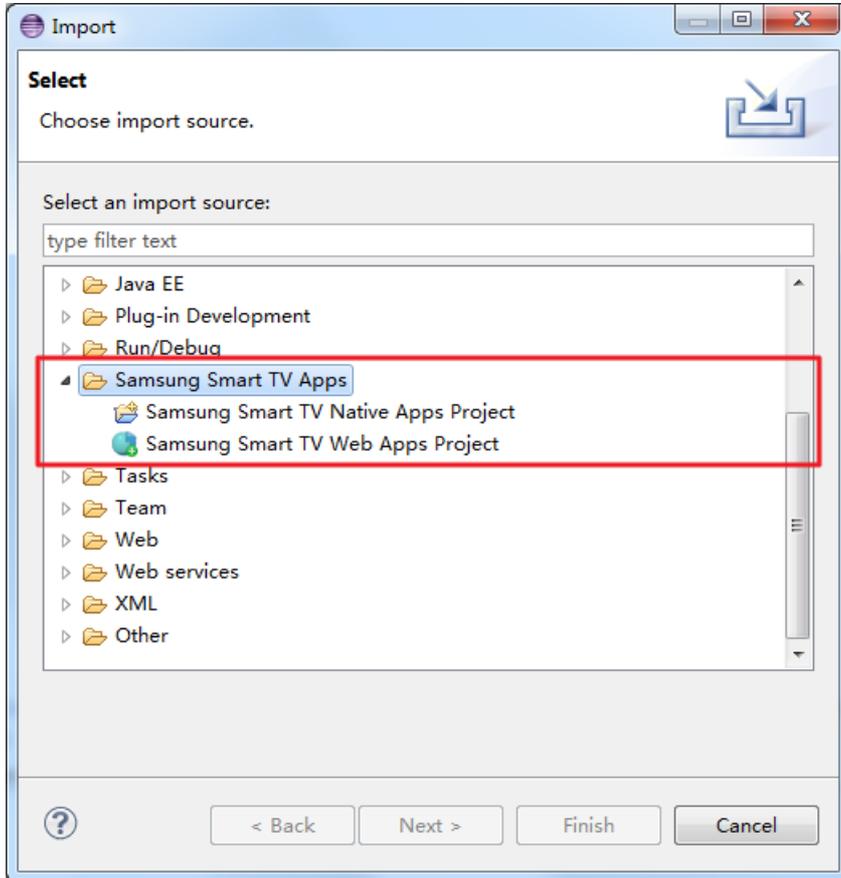


Figure 67 : Import Samsung Smart TV Apps Projects

Export

To export Samsung Smart TV apps projects, refer to the following steps :

Click **Window -> Preferences** (Eclipse -> Preferences, in Mac OS X) and select **Samsung Smart TV -> Packaging**. The **Registered Area List** on the right side lists all the target distribution areas of your Smart TV apps, which can be newly added, deleted or modified through the commands on the side. And the **Package file output folder** specifies the destination where the packaged apps would be.

1. Before exporting projects, certain Packaging settings should be configured.

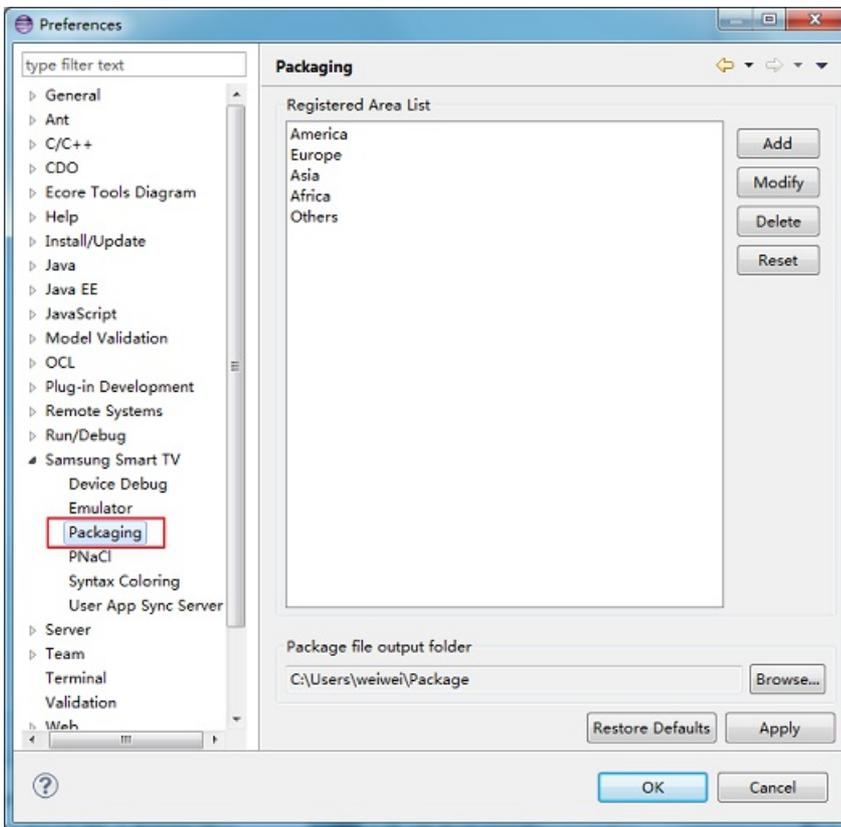


Figure 68 : App Packaging Settings

2. If you want to run your apps on real Samsung Smart TV, **User App Sync Server** should be configured. (Optional)
Click **Window -> Preferences** (Eclipse -> Preferences, in Mac OS X) and select **Samsung Smart TV -> User App Sync Server**. Then, set the IP address and resource path of the server.

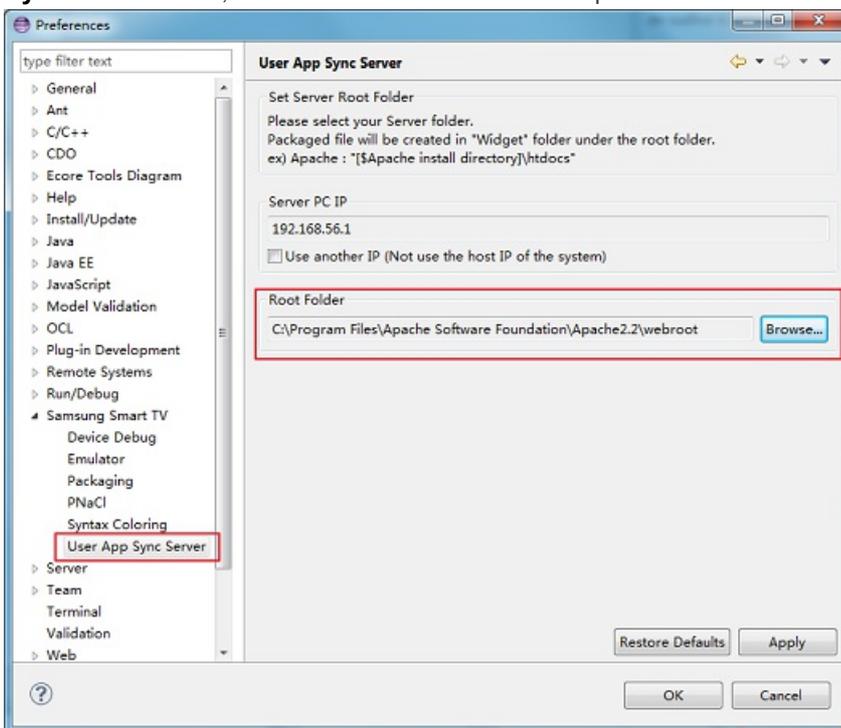


Figure 69 : Server Settings

3. Click **File -> Export**, and select **Samsung Smart TV Apps -> Package file** in **Export** dialog.

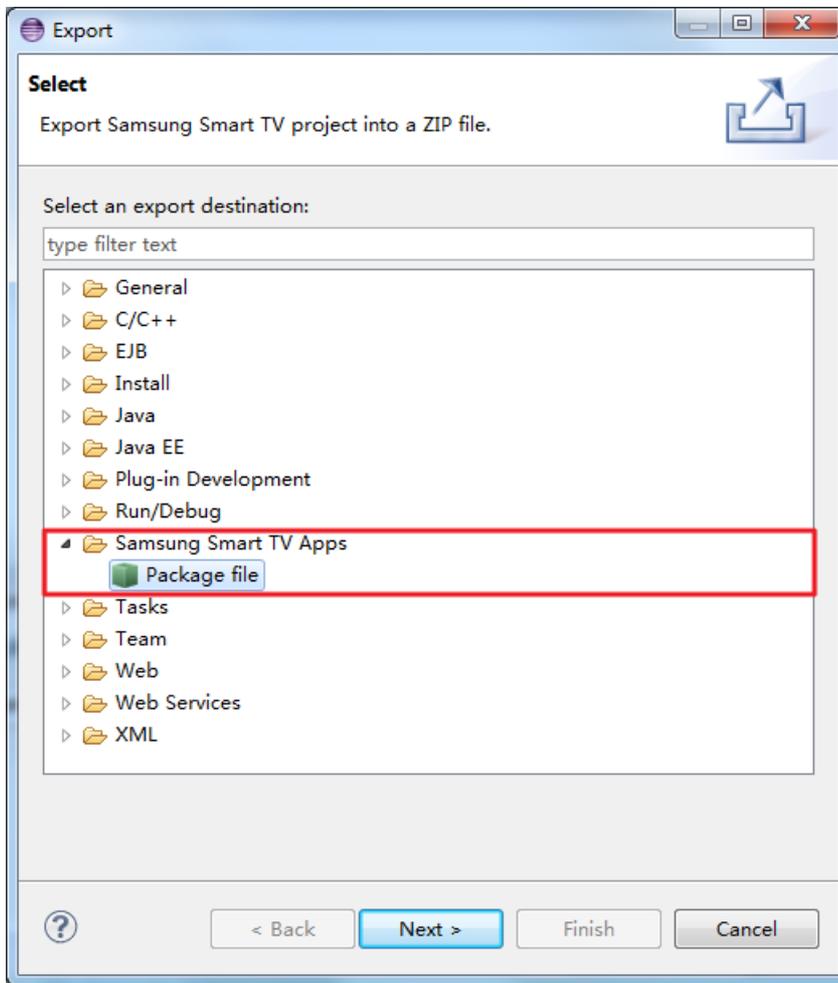


Figure 70 : Export Samsung Smart TV Apps Projects

4. Configure essential packaging information, such as app version, distribution area and available languages, in **ZIP Export** dialog. Your app on the server would be updated if the checkbox **Update the packaged files on the server** is checked.

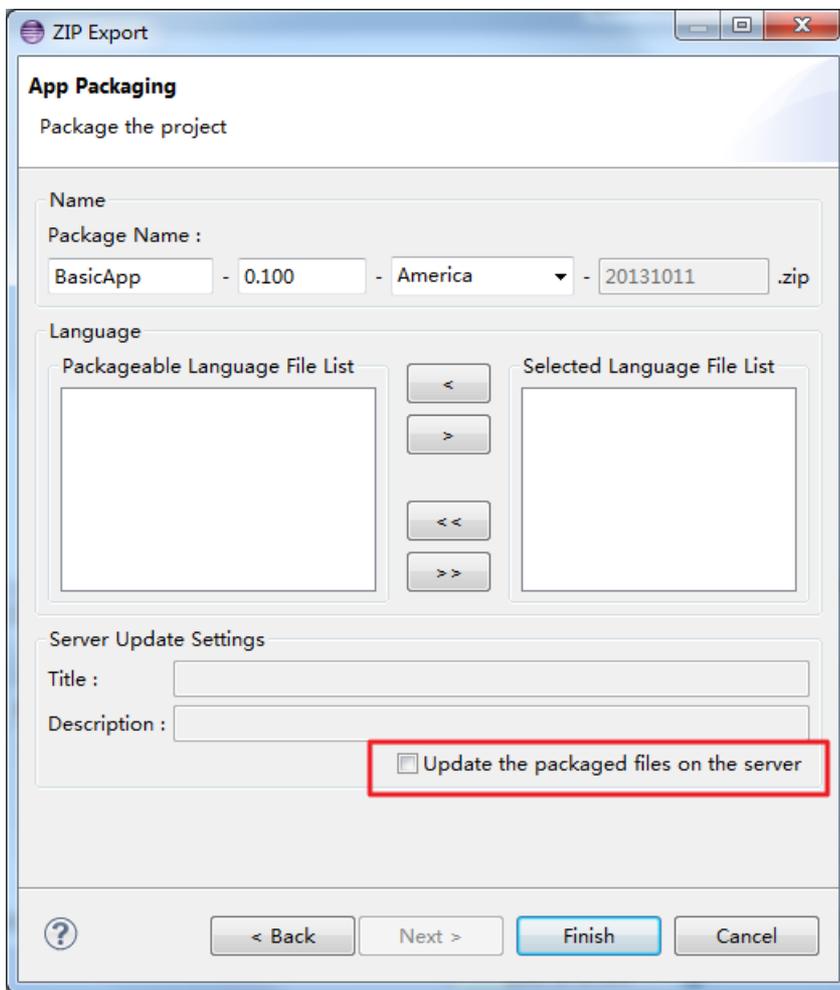


Figure 71 : Configure essential packaging information

Context Help

Context Help function is the Eclipse self-contained function which is also implemented in Samsung Smart TV IDE. By selecting one of the UI components and pressing the F1 button, a new Help View will be opened with a paragraph of description and some hyperlinks to the relevant articles. Within the Smart TV IDE, several views such as Visual Scene/Kit Editor, Properties and Outline view, integrate this context help function.

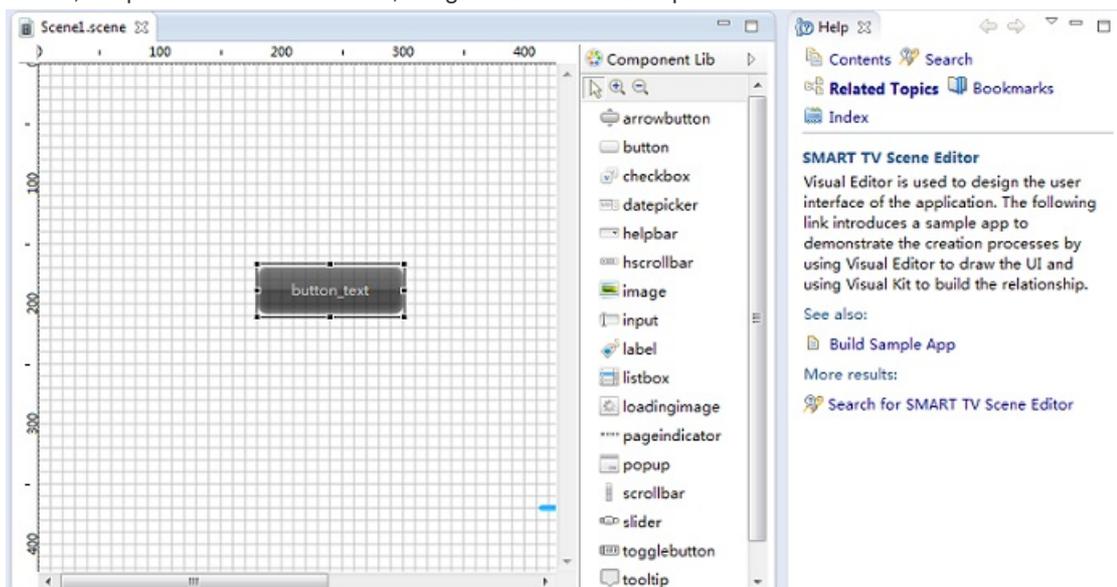


Figure 72 : Context Help about Visual Scene

Configuration File

With the help of Samsung Smart TV SDK XML Editor, user can edit certain fields such as resolution, app name, and icon preview with great convenience.

1. Select \config.xml file, and then right click the selected xml file and select 'Open With' **Samsung Smart TV SDK XML Editor** in the context menu.
2. Navigate to the configuration page in the first tab, and editing certain fields.

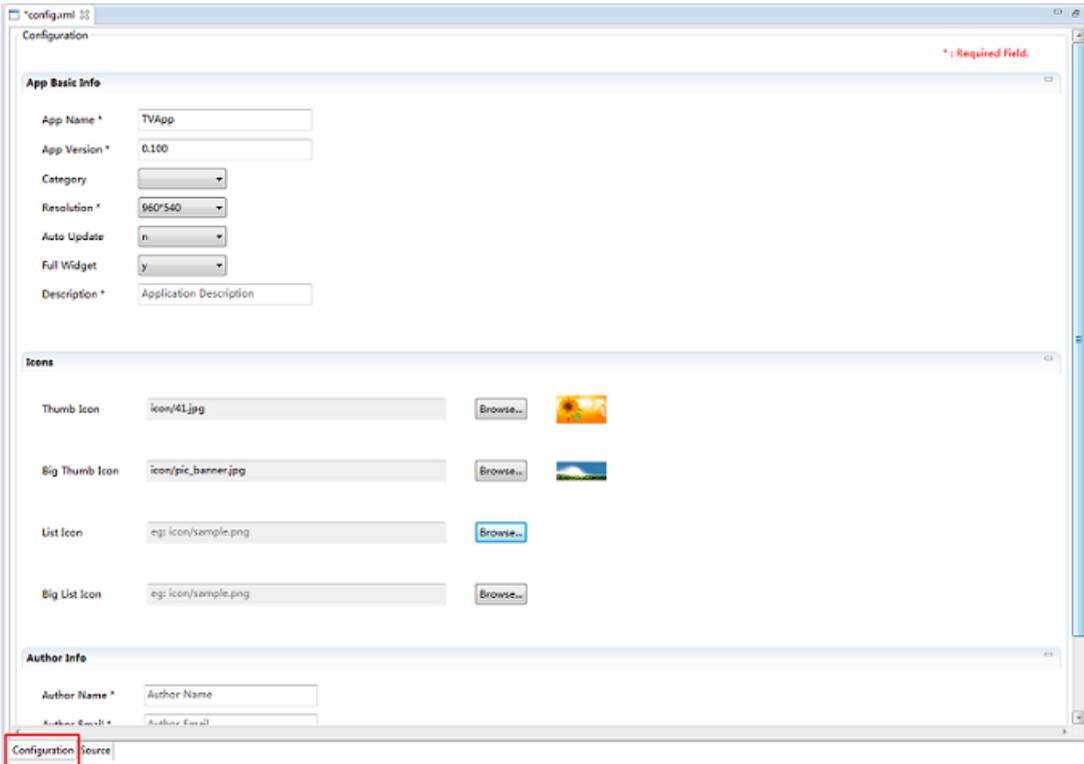


Figure 73 : Visual Editing of Config.xml

Auto Update

Auto Update includes updating Smart TV SDK IDE and emulator on line.

Update Smart TV SDK IDE

Developers can update/install IDE as follow :

Help -> Install New Software... -> type or select a site (see red rectangle). (or **Help -> Check for Updates**, if the update site URL has been already added to 'Available Software Sites').

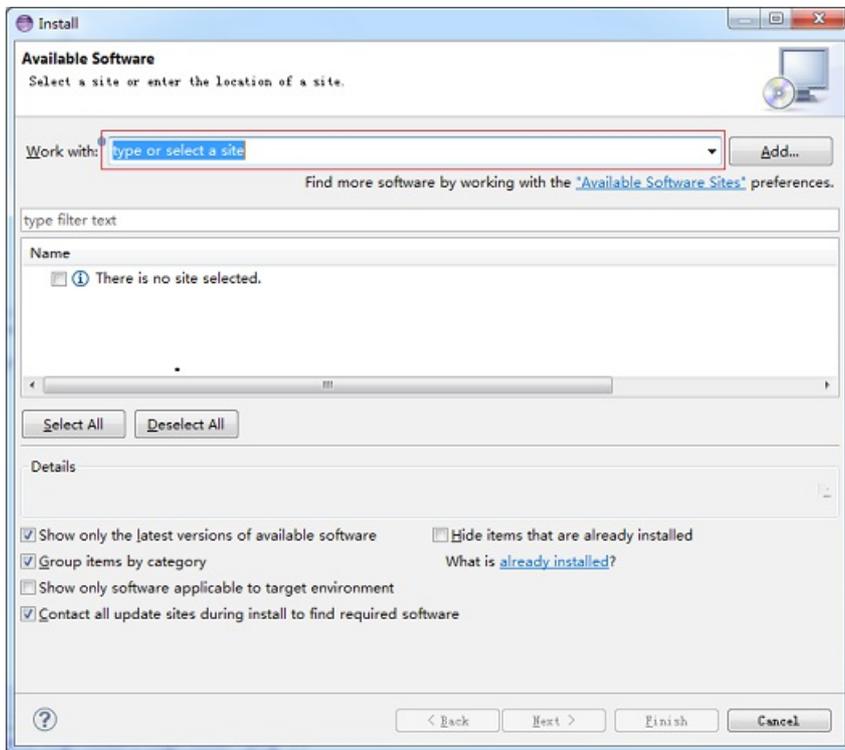


Figure 74 : Type or select a site

Before updating SDK plug-in on line, the Eclipse 4.3 (Kepler) should be installed.

Currently, the official update site URL is: http://d3f5cmlctbt8h4.cloudfront.net/Public/smart_tv_sdk/releases/ide/

Update Emulator

Developers can update emulator as follow :

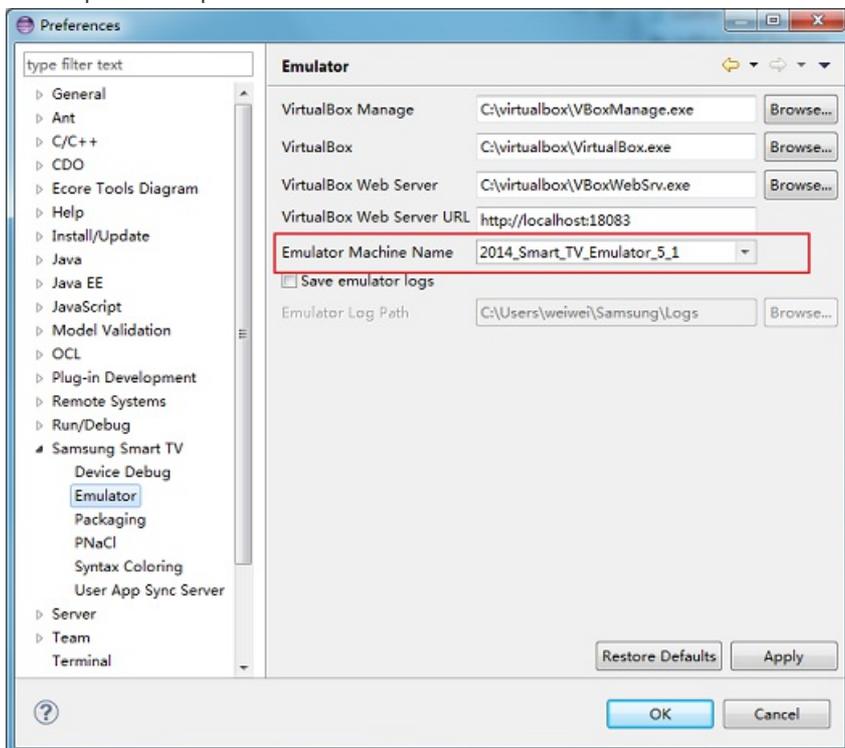


Figure 75 : Select your emulator name

When developer opens the preference page for the first time since updating/installing IDE, the emulator machine name setting is nothing but a watermark "Please select your Smart TV Emulator". Some emulator names will be listed in drop down table if emulators were installed in Virtual Box.

After select 'Update Samsung SmartTV Emulator...', the 'Download Manager' dialog will be shown. Available emulators will be listed in the dialog. In 'Download Manager' dialog, the upgradable emulator names will be listed. Initially, the listed emulators are unselected and the 'Download' button is disabled.

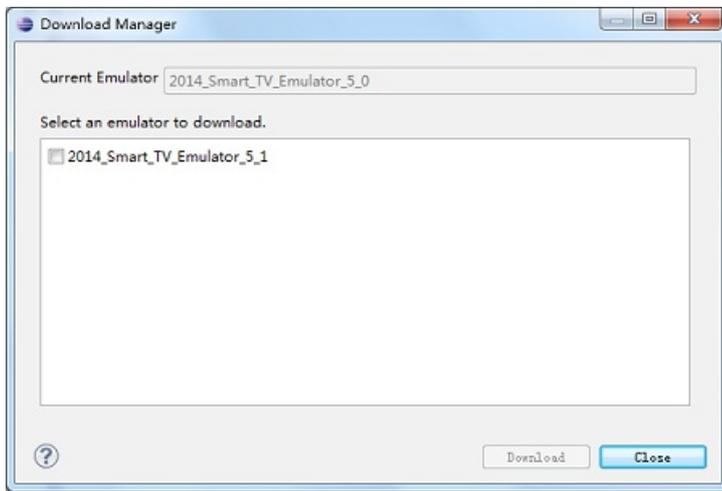


Figure 76 : Download Manager

The developer can only select one at the same time. If an emulator is selected, the release note according with the selection will be also shown in this dialog, and the 'Download' button will be enabled. The developer can click to download the selected emulator.

1. **Window -> Preferences -> Samsung Smart TV -> Emulator** -> Please select your emulator name
2. **Help -> Update Samsung SmartTV Emulator...**