

[Tutorial] LG Web_Using CE-HTML Methods and Properties in Media Player

Version 1.0 – October 2011

LGDEV-058

Home Entertainment Company
LG Electronics, Inc.

Copyright

Copyright © 2011 LG Electronics, Inc. All Rights Reserved.

Though every care has been taken to ensure the accuracy of this document, LG Electronics, Inc. cannot accept responsibility for any errors or omissions or for any loss occurred to any person, whether legal or natural, from acting, or refraining from action, as a result of the information contained herein. Information in this document is subject to change at any time without obligation to notify any person of such changes.

LG Electronics, Inc. may have patents or patent pending applications, trademarks copyrights or other intellectual property rights covering subject matter in this document. The provision of this document does not give the recipient or reader any license to these patents, trademarks copyrights or other intellectual property rights.

No part of this document may be communicated, distributed, reproduced or transmitted in any form or by any means, electronic or mechanical or otherwise, for any purpose, without the prior written permission of LG Electronics, Inc.

This document is subject to revision without further notice.

All brand names and product names mentioned in this document are trademarks or registered trademarks of their respective owners.

About This Document

Revision History

Document Version	Date	Comment
1.0	October 19, 2011	Initial Version

Purpose

This document describes which CE-HTML methods and properties of Web open API can be used.

Reference Documents

Refer to the following documents:

- LG Web Application Development Guide
- LG Web Open API Reference Guide

Conventions

Codes

Source code and examples are indicated in the `grey Courier New` font.

Note, Caution

Note and caution are used to emphasize information.
The following samples describe when each is used.

Note

Contains information about something that is helpful to you.

Caution

Contains important information about something that you should know.

Abbreviation

The following table defines the abbreviations used in this document.

Abbreviation	Description
API	Application Programming Interface
CE	Customer Electronics
HTML	Hypertext Markup Language

Contents

1	Introduction.....	6
1.1	Overview	7
1.2	Needed APIs	8
2	Creating Application.....	9
2.1	Initializing the Page	10
2.2	Inputting Keys.....	11
2.3	Controlling Play Mode	12
2.4	Displaying Text.....	14
2.5	Setting Media Object	15
2.6	Source Code of cehtml.html	16

Tables

[Table 1] Description of the Needed APIs.....	8
---	---

Figures

[Figure 1] Application to Use CE-HTML Methods and Properties	7
--	---



1 Introduction

This chapter provides an overview of this application and needed APIs.

1.1 Overview

1.2 Needed APIs

1.1 Overview

This application shows which CE-HTML methods and properties of Web Open API can be used in LG Browser devices. LG Web Open API supports CE-HTML audio/video related methods and properties.

This application is similar to Window Media Player application. However, Window Media Player application is not compliant with CE-HTML.

LG Smart TV SDK | Web Open API Tutorial

File : /mediaplayer/cehtml/cehtml.html

Smart TV

Web Open API List		
Methods	Properties	Events
play() stop() pause() seek(time)	playState speed playPosition width height	

View Source

Video Status

playTime :
 playPosition :
 playState :
 speed :
 getResponseFailMsg :
 getClockStatus :

Press RED-Key to play video.

object method property event

BACK EXIT PLAY

Copyright LG Electronics

[Figure 1] Application to Use CE-HTML Methods and Properties

1.2 Needed APIs

This application uses following Web Open API:

[Table 1] Description of the Needed APIs

API Class	Name	Description
Method	play()	Pauses media.
	stop()	Stops media.
	pause()	Pauses media.
	seek(time)	Seeks media to specific time.
Property	playState	Returns media play speed by number.
	speed	Play speed
	playPosition	Current play position
	width / height	Returns media object size by String type.

For more information on these functions, refer to “LG Web Open API Reference Guide”.

Note

Log is used for checking the sequence of Web Open API; this will not be covered in the sample code description.



2 Creating Application

This chapter describes which CE-HTML methods and properties of Web open API can be used.

- 2.1 Initializing the Page
- 2.2 Inputting Keys
- 2.3 Displaying Text
- 2.4 Controlling Play Mode
- 2.5 Setting Media Object
- 2.6 Source Code of cehtml.html

2.1 Initializing the Page

Use the **initPage** function to set the basic functions of the application.

- 04: Record the last visited page when running the application.
- 07: Initialize the page.
- 08: Get the source code of the page using the XMLHttpRequest object.
- 09: Set the page ID.
- 10: Initialize the Log function.
- 13-15: Add an event handler which will be executed when the corresponding button is pressed.

Sample Code

```
01 : function initPage()  
02 : {  
03 :     //save page as last visited page  
04 :     setLastVisitPage();  
05 :  
06 :     //common initialize function  
07 :     commonInitialize();  
08 :     requestSourceCode();  
09 :     setPageID("CE-HTML");  
10 :     jsLog.initLG();  
11 :  
12 :     //add onclick event handler  
13 :     addEventHandler(document.getElementById("btn_back"),"click",onClickListener);  
14 :     addEventHandler(document.getElementById("btn_red"),"click",onClickListener);  
15 :     addEventHandler(document.getElementById("btn_exit"),"click",onClickListener);  
16 :  
17 :     jsLog.lgobject('application/x-netcast-av');  
18 : }
```

2.2 Inputting Keys

Use **onUserInput** function is called by **onClickHandler** function; it receives a key value as the **userInput** parameter from **onClickHandler** and creates the corresponding function for each key value to operate the key.

05: When the Back key is pressed, this code is executed.

06: When the Red key is pressed, this code is executed.

Sample Code

```
01 : function onUserInput(userInput)
02 : {
03 :   switch(userInput)
04 :   {
05 :     case VK_BACK: window.location.replace("../menu_mediaPlayer.html");
      break;
06 :     case VK_RED : case 82 : processRedKey(); break;
07 :   }
08 : }
```

2.3 Controlling Play Mode

The **processRedKey** function controls the play mode according to the status of testProcess.

- 01: Declare and initialize testProcess.
- 05: Declare video.
- 07-88: Using switch-case, control the play status according to the value of testProcess.
For each status, set button text and description.
- 09-14: (case1) Play video.
- 16-21: (case1) Call setInterval function to call setVideoStatus at an interval of 4000 milliseconds.
Pause video.
- 23-27: (case3) Play video.
- 29-33: (case4) Seek video to specific time.
- 35-39: (case5) Stop video.
- 41-45: (case6) Play video.
- 47-53: (case7) Reset the position of video object.
- 55-61: (case8) Reset the position of video object.
- 63-74: (case9) Reset the position of video object.
- 76-87: (case10) Seek video to playTime.
- 89: Whenever Red button is pressed, increase testProcess by 1.

Sample Code

```

01 :   var testProcess = 1;
02 :
03 :   function processRedKey()
04 :   {
05 :       var video = document.getElementById("video");
06 :
07 :       switch(testProcess)
08 :       {
09 :           case 1 :
10 :               video.play(); jsLog.lgmethod('video.play()');
11 :               setVideoStatus();
12 :               setInnerTextById("ce_html_test_guide", "Check
whether video is being played and playState is 4(buffering).<br>Press RED-
key to pause video.");
13 :               setInnerTextById("btn_red", "PAUSE");
14 :               break;
15 :
16 :           case 2 :
17 :               setInterval(setVideoStatus, 4000);
18 :               video.pause(); jsLog.lgmethod('video.pause()');
19 :               setInnerTextById("ce_html_test_guide", "Check whether
video is paused and status is correct.<br>Press RED-key to play video.");
20 :               setInnerTextById("btn_red", "PLAY");
21 :               break;
22 :
23 :           case 3 :
24 :               video.play(); jsLog.lgmethod('video.play()');
25 :               setInnerTextById("ce_html_test_guide", "Check
whether video is being played and status is correct.<br>Press RED-key to
seek to 90sec position.");
26 :               setInnerTextById("btn_red", "SEEK");
27 :               break;
28 :
29 :           case 4 :
30 :               video.seek(90 * 1000);
jsLog.lgmethod('video.seek(time)');
31 :               setInnerTextById("ce_html_test_guide", "Check whether
play position is correct(90000ms).<br>Press RED-key to stop video.");
32 :               setInnerTextById("btn_red", "STOP");
33 :               break;
34 :
35 :           case 5 :
36 :               video.stop(); jsLog.lgmethod('video.stop()');
37 :               setInnerTextById("ce_html_test_guide", "Check
whether video is stopped and status is correct.<br>Press RED-key to play
video.");

```

```

38 :             setInnerTextById("btn_red", "PLAY");
39 :             break;
40 :
41 :         case 6 :
42 :             video.play(); jsLog.lgmethod('video.play()');
43 :             setInnerTextById("ce_html_test_guide", "Check
whether video is being played and status is correct.<br>Press RED-key to
move video to top-left corner.");
44 :             setInnerTextById("btn_red", "MOVE");
45 :             break;
46 :
47 :         case 7 :
48 :             video.style.position="relative";
49 :             video.style.top="100px";
50 :             video.style.left="0px";
51 :             setInnerTextById("ce_html_test_guide", "Check
whether video is moved to top-left corner.<br>Press RED-key to move video
to bottom-right corner.");
52 :             setInnerTextById("btn_red", "MOVE");
53 :             break;
54 :
55 :         case 8 :
56 :             video.style.position="relative";
57 :             video.style.top="0px";
58 :             video.style.left="600px";
59 :             setInnerTextById("ce_html_test_guide", "Check
whether video is moved to bottom-right corner.<br>Press RED-key to turn
video into large screen.");
60 :             setInnerTextById("btn_red", "FULL SCREEN");
61 :             break;
62 :
63 :         case 9 :
64 :             var table = document.getElementById("table");
65 :             table.style.color="white";
66 :             video.style.top="0px";
67 :             video.style.left="0px";
68 :             video.width = "900px";
69 :             video.height = "350px";
70 :             jsLog.lgproperty('width');
71 :             jsLog.lgproperty('height');
72 :             setInnerTextById("ce_html_test_guide", "Check
whether video is being played in full screen.<br>Press RED-key to seek to
end of video.");
73 :             setInnerTextById("btn_red", "SEEK");
74 :             break;
75 :
76 :         case 10 :
77 :             var table = document.getElementById("table");
78 :             table.style.color="black";
79 :             video.style.top="0px";
80 :             video.style.left="0px";
81 :             video.width = "300px";
82 :             video.height = "250px";
83 :             video.seek(video.playTime);
84 :             jsLog.lgmethod('video.seek(time)');
85 :             setInnerTextById("ce_html_test_guide", "Check
whether playState is 5(finished).<br>No more test is left on this page.");
86 :             document.getElementById("btn_red").style.visibility
= "hidden";
87 :             setInnerTextById("btn_red", "");
88 :             break;
89 :         }
90 :     }
testProcess++;
}

```

2.4 Displaying Text

Use **setVideoStatus** function to display property and methods of video object.

- 03: Declare video.
- 04: Display playTime property on screen.
- 06: Display playPosition property on screen.
- 08-09: Declare and initialize playStateExplain and playState.
- 10-17: According to the value of playState, set text to playStateExplain and display it on screen.
- 18: Display speed property on screen.
- 19: Display getResponseFailMsg method.
- 20: Display getClockStatus method.

Sample Code

```

01 : function setVideoStatus()
02 : {
03 :     var video = document.getElementById("video");
04 :     setInnerTextById("playTime_value", "playTime : " + video.playTime
+ "ms");
05 :     jsLog.lgproperty('playTime');
06 :     setInnerTextById("playPosition_value", "playPosition      :      " +
video.playPosition + "ms");
07 :     jsLog.lgproperty('playPosition');
08 :     var playStateExplain = "";
09 :     var playState = video.playState;
10 :     if(playState == 0){playStateExplain = "stopped";}
11 :     else if(playState == 1){playStateExplain = "playing";}
12 :     else if(playState == 2){playStateExplain = "paused";}
13 :     else if(playState == 3){playStateExplain = "connecting";}
14 :     else if(playState == 4){playStateExplain = "buffering";}
15 :     else if(playState == 5){playStateExplain = "finished";}
16 :     else if(playState == 6){playStateExplain = "error";}
17 :     setInnerTextById("playState_value", "playState : " + playState + "
(" + playStateExplain + ")");
18 :     setInnerTextById("speed_value", "speed: "+video.speed+"x");
    jsLog.lgproperty('speed');
19 :     setInnerTextById("error_value",      "getResponseFailMsg      :      " +
video.getResponseFailMsg());
20 :     setInnerTextById("clock_status_value",  "getClockStatus      :      " +
video.getClockStatus());
21 : }

```

2.5 Setting Media Object

The following code shows how to set Media object.

03: Set data type. Refer to "LG Web Application Development Guide" for related to information.

04-05: Set width and height.

06: Set the path of media file which will be played.

Sample Code

```
01 : <object
02 :     id="video"
03 :     type="application/x-netcast-av"
04 :     width=300
05 :     height=250
06 :     data="/ApiTutorial/mediafile/timer.mp4"
07 :     style="float: left">
08 : </object>
```

2.6 Source Code of cehtml.html

Source code of cehtml.html is as follows:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
<title>CE-HTML API Test Page</title>
<link rel="stylesheet" href="../../css/style.css">
<script language="javascript" src="../../js/common.js"></script>
<script language="javascript" src="../../js/keycode.js"></script>
<script language="javascript" src="../../js/media.js"></script>
<script language="javascript" src="../../js/menu.js"></script>

<script type="text/javascript" src="../../blackbirdjs/blackbird.js"></script>
<link type="text/css" rel="Stylesheet" href="../../blackbirdjs/blackbird.css"
/>

<script>

    //initialize page
    function initPage()
    {
        //save page as last visited page
        setLastVisitPage();

        //common initialize function
        commonInitialize();
        requestSourceCode();
        setPageID("CE-HTML");
        jsLog.initLG();

        //add onclick event handler
        addEventHandler(document.getElementById("btn_back"), "click",
onClickHandler);
        addEventHandler(document.getElementById("btn_red"), "click",
onClickHandler);
        addEventHandler(document.getElementById("btn_exit"), "click",
onClickHandler);

        jsLog.lgobject('application/x-netcast-av');
    }

    //onUserInput function should be implemented
    function onUserInput(userInput)
    {
        switch(userInput)
        {
            case VK_BACK :
window.location.replace("../menu_mediaPlayer.html"); break;
            case VK_RED : case 82 : processRedKey(); break;
        }
    }

    var testProcess = 1;
    function processRedKey()
    {
        var video = document.getElementById("video");

        switch(testProcess)
        {
            case 1 :
                video.play(); jsLog.lgmethod('video.play()');
                setVideoStatus();
                setInnerTextById("ce_html_test_guide", "Check
whether video is being played and playState is 4(buffering).<br>Press RED-key
to pause video.");
```



```

        setInnerTextById("btn_red", "PAUSE");
        break;

    case 2 :
        setInterval(setVideoStatus, 4000);
        video.pause(); jsLog.lgmethod('video.pause()');
        setInnerTextById("ce_html_test_guide", "Check
whether video is paused and status is correct.<br>Press RED-key to play
video.");
        setInnerTextById("btn_red", "PLAY");
        break;

    case 3 :
        video.play(); jsLog.lgmethod('video.play()');
        setInnerTextById("ce_html_test_guide", "Check
whether video is being played and status is correct.<br>Press RED-key to seek
to 90sec position.");
        setInnerTextById("btn_red", "SEEK");
        break;

    case 4 :
        video.seek(90 * 1000);
        jsLog.lgmethod('video.seek(time)');
        setInnerTextById("ce_html_test_guide", "Check
whether play position is correct(90000ms).<br>Press RED-key to stop video.");
        setInnerTextById("btn_red", "STOP");
        break;

    case 5 :
        video.stop(); jsLog.lgmethod('video.stop()');
        setInnerTextById("ce_html_test_guide", "Check
whether video is stopped and status is correct.<br>Press RED-key to play
video.");
        setInnerTextById("btn_red", "PLAY");
        break;

    case 6 :
        video.play(); jsLog.lgmethod('video.play()');
        setInnerTextById("ce_html_test_guide", "Check
whether video is being played and status is correct.<br>Press RED-key to move
video to top-left corner.");
        setInnerTextById("btn_red", "MOVE");
        break;

    case 7 :
        video.style.position="relative";
        video.style.top="100px";
        video.style.left="0px";
        setInnerTextById("ce_html_test_guide", "Check
whether video is moved to top-left corner.<br>Press RED-key to move video to
bottom-right corner.");
        setInnerTextById("btn_red", "MOVE");
        break;

    case 8 :
        video.style.position="relative";
        video.style.top="0px";
        video.style.left="600px";
        setInnerTextById("ce_html_test_guide", "Check
whether video is moved to bottom-right corner.<br>Press RED-key to turn video
into large screen.");
        setInnerTextById("btn_red", "FULL SCREEN");
        break;

    case 9 :
        var table = document.getElementById("table");
        table.style.color="white";
        video.style.top="0px";
        video.style.left="0px";
        video.width = "900px";
        video.height = "350px";

```

```

        jsLog.lgproperty('width');
        jsLog.lgproperty('height');
        setInnerTextById("ce_html_test_guide", "Check
whether video is being played in full screen.<br>Press RED-key to seek to end
of video.");

        setInnerTextById("btn_red", "SEEK");
        break;

    case 10 :
        var table = document.getElementById("table");
        table.style.color="black";
        video.style.top="0px";
        video.style.left="0px";
        video.width = "300px";
        video.height = "250px";
        video.seek(video.playTime);
jsLog.lgmethod('video.seek(time)');
        setInnerTextById("ce_html_test_guide", "Check
whether playState is 5(finished).<br>No more test is left on this page.");
        document.getElementById("btn_red").style.visibility
= "hidden";

        setInnerTextById("btn_red", "");
        break;
    }
    testProcess++;
}

function setVideoStatus()
{
    var video = document.getElementById("video");
    setInnerTextById("playTime_value", "playTime : " +
video.playTime + "ms"); jsLog.lgproperty('playTime');
    setInnerTextById("playPosition_value", "playPosition : " +
video.playPosition + "ms"); jsLog.lgproperty('playPosition');
    var playStateExplain = "";
    var playState = video.playState;
    if(playState == 0){playStateExplain = "stopped";}
    else if(playState == 1){playStateExplain = "playing";}
    else if(playState == 2){playStateExplain = "paused";}
    else if(playState == 3){playStateExplain = "connecting";}
    else if(playState == 4){playStateExplain = "buffering";}
    else if(playState == 5){playStateExplain = "finished";}
    else if(playState == 6){playStateExplain = "error";}
    setInnerTextById("playState_value", "playState : " + playState +
" (" + playStateExplain + ")");
    setInnerTextById("speed_value", "speed : " + video.speed + "x");
jsLog.lgproperty('speed');
    setInnerTextById("error_value", "getResponseFailMsg : " +
video.getResponseFailMsg());
    setInnerTextById("clock_status_value", "getClockStatus : " +
video.getClockStatus());
}

</script>
</head>

<body ondragstart='return false' onselectstart='return false'
onload="javascript:initPage();">
    <!-- title -->
    <div class='SuiteTitle' >LG Smart TV SDK | Web Open API Tutorial</div>

    <!-- navigation -->
    <div class='SuiteNavigation'>
        <div style="float:left;">File :
/mediaplayer/cehtml/cehtml.html</div>
    </div>

    <div class='SuiteTitleLine'> </div>

    <!-- test contents -->

```

```

<div class='ContentArea'>
  <div class='ApiListTitleArea'>Web Open API List</div>
  <div class='ApiListArea'>
    <div class='MethodTitleArea'>
      Methods
      <div class='MethodListArea'>
        play()<br>
        stop()<br>
        pause()<br>
        seek(time)<br>
      </div>
    </div>
    <div class='PropertyTitleArea'>
      Properties
      <div class='PropertyListArea'>
        playState<br>
        speed<br>
        playPosition<br>
        width<br>
        height<br>
      </div>
    </div>
    <div class='EventTitleArea'>
      Events
      <div class='EventListArea'>
      </div>
    </div>
  </div>

  <div class='ViewTitleArea'>
    <div id='tabViewArea' class='SelectedViewArea'
style='float:left;' onclick="showView();">View</div>
    <div id='tabCodeArea' class='UnselectedViewArea'
style='float:right;' onclick='showCode();'>Source</div>
  </div>

  <div id='view'>
    <div class='ViewArea'>
      <div>
        <object
          id="video"
          type="application/x-netcast-av"
          width=300
          height=250
          autoStart="false"

          data="/ApiTutorial/mediafile/timer.mp4"
          style="float: left;">

        </object>
      </div>

      <table width="600px" border="0" cellpadding="0"
cellspacing="0" id="table">
        <tr height="35px">
          <td width="600px" align="left"
colspan="2"><div class="centerTestGuide">Video Status</div></td>
          </tr>
          <tr height="35px">
            <td width="600px"><div
class="eachTestGuide" id="playTime_value">playTime :</div></td>
            </tr>
            <tr height="35px">
              <td width="600px"><div
class="eachTestGuide"
id="playPosition_value">playPosition :</div></td>
              </tr>
              <tr height="35px">
                <td width="600px"><div
class="eachTestGuide" id="playState_value">playState :</div></td>

```

```

        </tr>
        <tr height="35px">
            <td width="600px"><div
class="eachTestGuide" id="speed_value">speed :</div></td>
            </tr>
            <tr height="35px">
                <td width="600px"><div
class="eachTestGuide" id="error_value">getResponseFailMsg :</div></td>
                </tr>
                <tr height="35px">
                    <td width="600px"><div
class="eachTestGuide"
id="clock_status_value">getClockStatus :</div></td>
                    </tr>
                    <tr height="70px">
                        <td width="600px" align="center"
valign="middle" style="font-size: 20px"><div class="eachTestGuide"
id="ce_html_test_guide">Press RED-Key to play video.</div></td>
                        </tr>
                    </table>
                </div>
            </div>

            <div style="visibility: hidden" id='codeview'>
                <textarea class="SourceCodeArea" value=""
id='sourcecode'></textarea>
            </div>

        </div>

<!-- button and copyright -->
<div class='SuiteButtonArea'>
    <!-- back key description -->
    <div id='btn_back' class='buttonDescription'>BACK</div>

    <!-- exit key description -->
    <div id='btn_exit' class='buttonDescription'>EXIT</div>

    <!-- red key description -->
    <div id='btn_red' class='buttonDescription redColor'>PLAY</div>

    <!-- copyright -->
    <div class='copyright'>Copyright LG Electronics</div>
</div>

</body>
</html>

```