How to use Widevine solution in Samsung widget

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Contents

Introduction

This document explains the way to use Widevine streaming & DRM solution in Samsung devices. If you have a any question, please contact to SamsungDForum.

Overview

To use Widevine streaming and DRM solution, widgets in Samsung devices have to follow the sequence below.

a. Loading Plugins

b. Get device ID

c. Get stream ID, DRM_URL etc

d. Call Play() with necessary information

Command Details

a. Loading plugins

To use Widevine solution, widget need to load Player plugin and ExternalWidgetInterface plugin.

Player plugin is needed for playback control and ExternalWidgetInterface plugin is needed to get device id.

The class ids of Player plugin and ExternalWidgetInterface plugin are as follow.

Player plugin : "clsid:SAMSUNG-INFOLINK-PLAYER"

ExternalWigetInterface plugin : "clsid:SAMSUNG-INFOLINK-EXTERNALWIDGETINTERFACE"

```
<object id="playerPlugin" border="0" classid="clsid:SAMSUNG-INFOLINK-PLAYER"
style="opacity:0.0;background-color:#000000;width:0px;height:0px;"></object>
<object id="externalPlugin" border="0" classid="clsid:SAMSUNG-INFOLINK-
EXTERNALWIDGETINTERFACE" style="opacity:0.0;background-
color:#000000;width:0px;height:0px;"></object>
```

b. Get device ID

To get the device ID for Widevine, widget has to use GetESN() in ExternalWidgetInterface.

```
function getESN() {
    var deviceId = null;
    try {
        var deviceId = Document.getElementById("ExternalPlugin").GetESN("WIDEVINE");
        if ( !deviceId ) {
            throw  new Exception('GetESN is not supported. Please reboot the device and call to
Samsung service center if the issue happens again.');
        }
        if ((deviceId+'').substr(0, Math.min(deviceId.length, 2)) != 'SS') {
            throw  new Exception('deviceId is not valid. Please reboot the device and call to Samsung
service center if the issue happens again .');
        }
    }
    catch (e) {
        alert("EXCEPTION(getESN): " + e);
        return null;
    }
    return deviceId;
}
```

If it returns SS prefixed string, the value is OK.

```
SSBDP00000000011      - Blu-ray Player including BD-HTS
SSTVB0000000011       - TV
```
☀ **If you are making a widget which is also released on the 2010 devices for none USA area such as Europe, Austrailia, you must follow "Additional Handling for widgets which will service outside of USA in 2010 devices" Section**.

c. Get stream ID, DRM URL etc

Widget has to get Stream url, Device type ID, DRM_URL, ACK_URL, heardbeat url, and heardbeat period information from server, so you should contact the Widevine to get these information.

Following is the information widget has to get to call Play()

	types	Example data	Fixed value?
1	STREAM_URL	http://download.contents.com/movie/moviename_ wv_sd.vob?trid=23520697	NO
2	DEVICE_ID	SSTVA00xxxxxxxx (result of GetESN())	Per

			Device
3	DEVICE_TYPE_ID (DEVICET_TYPE_ID)	60	Yes
4	STREAM_ID	fe32503b-2daa-4d4c-a3f4-b76ff2abf5c4	NO
5	IP_ADDR		NO
6	DRM_URL	https://drm.server.com/drmproxy.ashx	NO
7	ACK_URL	https://ack.server.com/ack.ashx	NO
8	HEARTBEAT_URL	https://heartbeat.com/Heartbeat.ashx	NO
9	HEARTBEAT_PERIOD	30	NO
10	PORTAL	Content Provider Portal	No
11	USER_DATA	optionalData	No
12	COMPONENT	WV	NO

☀ COMPONENT=WV must be located at the end of URL.

☀ If your widget is also released on 2010 devices, widget has to use DEVICE**T**_TYPE_ID instead of DEVICE_TYPE_ID.

d. Call Play()

```
if(resumePosition == 0) {

    this._startPos = 0;

    nRtn = Player.Play(url);

}

else {

    this._startPos = resumePosition;

    nRtn = Player.ResumePlay(url, resumePosition);

}
```

Play((http://download.contents.com/movie/moviename_wv_sd.vob?trid=23520697|DEVICE_ID= SSTVA00xxxxxxxx |DEVICET_TYPE_ID=60|STREAM_ID=fe32553b-2daa-4dec-a3f4-b76ff2abf5c4|IP_ADDR=|DRM_URL= https://drm.server.com/drmproxy.ashx |ACK_URL= https://ack.server.com/ack.ashx |HEARTBEAT_URL= https://heartbeat.com/Heartbeat.ashx |HEARTBEAT_PERIOD=30|I_SEEK=TIME|CUR_TIME=PTS|COMPONENT=WV)

Additional Handling for widgets which will service outside of USA in 2010 devices

This information is only applying for widgets which service on 2010 devices in non USA area. Thus, if you don't have plan to service your widget on 2010 devices, or plan to service only in USA area, you don't need to read this information.

Widevine key is not installed in 2010 Samsung TV for non USA area. Thus if you have plan to service your widget with Widevine in 2010 Samsung TV for non USA area such as Europe, Australia, you have to use GetDUID() for device ID value.

The way to use DUID for device ID value is as follow.

a) Loading Network plugin and Nnavi plugin

```
<object id="networkPlugin" border="0" classid="clsid:SAMSUNG-INFOLINK-NETWORK"
style="opacity:0.0;background-color:#000000;width:0px;height:0px;"></object>
<object id="nnaviPlugin" border="0" classid="clsid:SAMSUNG-INFOLINK-NNAVI"
style="opacity:0.0;background-color:#000000;width:0px;height:0px;"></object>
```

b) Get MAC address of device

```
mac=networkPlugin.GetMAC(1)                //1 : Wired, 0 : Wireless
```

c) Get DUID

```
nnaviPlugin.GetDUID(mac);
```

Following is whole example if you want to service your widget outside of USA in 2010 devices.

```
Widevine.GetDeviceID = function()
{
   alert("Widevine.GetDeviceID()");
   var DeviceID = null;
   try {
      var firmware = NNAVI.plugin.GetFirmware();
      alert("Firmware : " + firmware);
      if(firmware > 'T-INFOLINK2011') {   // 2011-XXXX
         DeviceID = getESN();
      }
      else {  // 2010-XXXX
         var tvPlugin = document.getElementById("pluginObjectTV");
         if(!tvPlugin) {
            throw new Exception('Cannot get TV Plugin');
         }
```

```javascript
        var prodType = tvPlugin.GetProductType();
        if(prodType == 0) { // TV
            DeviceID = getDUID();
        }
        else if(prodType == 2) { // BD
            DeviceID = getESN();
        }
        else {
            throw new Exception('Unknown product type:'+prodType);
        }
    }
}
catch (e) {
    alert("EXCEPTION(GetDeviceID): " + e);
    DeviceID = null;
}

return DeviceID;

///////////////////////////////////////////////
// Functions for internal use
function getESN() {
    var deviceId = null;
    try {
        var deviceId = this.plugin.GetESN("WIDEVINE");
        if ( !deviceId ) {
            throw  new Exception('GetESN is not supported. Please reboot the device and call to
Samsung service center if the issue happens again.');
        }
        if ((deviceId+'').substr(0, Math.min(deviceId.length, 2)) != 'SS') {
            throw  new Exception('deviceId is not valid. Please reboot the device and call to Samsung
service center if the issue happens again.');
        }
    }
    catch (e) {
        alert("EXCEPTION(getESN): " + e);
        return null;
    }
    return deviceId;
}

function getDUID() {
    try {
        var MAC = Network.GetMAC();
        var DUID = NNAVI.GetDUID(MAC);
        return DUID;
    }
```

```
        catch (e) {
            alert("EXCEPTION(getDUID): " + e);
            return null;
        }
        return null;
    }
}
```

Widget event and Wideve status code mapping

Widget Event	Widevine Status
OnStreamNotFound	WV_Status_Not_Found (404)
OnRenderingComplete (Sent playback is finished)	WV_Status_End_Of_Media (1000)
OnNetworkDisconnected	WV_Status_Error_Download_Stalled (2004)
OnAuthenticationFailed	WV_Status_Error_Need_Key (2005)
OnCustomEvent(status)	WV_Status_Min_TP_Error(512) ~ WV_Status_Max_TP_Error(768)

☀ Other Widevine status code is not sent to widget.

☀ OnCustomEvent has to be registered in the widget like other events such as OnBufferingStart.

Then some range of Widevine status code (512 ~ 768) is sent through the parameter of OnCustomEvent(param)

ex) PlayerPlugin.OnCustomEvent=OnCustom;

function OnCustom(param) { alert("Widevine status code ="+param); }

Related API list

Plugin	API
Player	Play()
Player	ResumePlay()
ExternalWidgetInterface	GetESN()
Network	GetMAC()
NNAVI	GetDUID()
NNAVI	GetFirmware()