

Compositor

API Reference

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History

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Date** | **Author** | **Description** |
| 0.1 | 10-07-2018 | Coen Custers | Initial version. |
| 0.2 | 24-09-2018 | Coen Custers | Update after refactoring. |
|  |  |  |  |

Table of Contents

[1.1 Scope 3](#__RefHeading___Toc3444_2680829492)

[1.2 Case sensitivity 3](#__RefHeading___Toc3451_323876262)

[1.3 Acronyms, Abbreviations and Terms 3](#__RefHeading___Toc3446_2680829492)

[1.4 Standards 4](#__RefHeading___Toc3448_2680829492)

[1.5 References 4](#__RefHeading___Toc3450_2680829492)

[1.6 Open Issues 4](#__RefHeading___Toc3452_2680829492)

[1.7 Limitations 5](#__RefHeading___Toc3454_2680829492)

[2. Plugin 6](#__RefHeading___Toc3453_323876262)

[2.1 Configuration of Controller 6](#__RefHeading___Toc3458_2680829492)

[2.2 Introduction of the Compositor Plugin 7](#__RefHeading___Toc3458_26808294921)

[2.3 Application Programming Interface (API) 7](#__RefHeading___Toc3460_2680829492)

[2.3.1 General information 7](#__RefHeading___Toc3462_2680829492)

[2.3.2 Switch Client to Top. 8](#__RefHeading___Toc3455_323876262)

[2.3.3 Switch Input device 8](#__RefHeading___Toc3457_323876262)

[2.3.4 Kill <client> 8](#__RefHeading___Toc3459_323876262)

[2.3.5 Opacity 8](#__RefHeading___Toc3461_323876262)

[2.3.6 Visibility 9](#__RefHeading___Toc3463_323876262)

[2.3.7 Geometry 9](#__RefHeading___Toc3465_323876262)

[2.3.8 Get Screen Resolution 9](#__RefHeading___Toc3467_323876262)

[2.3.9 Update Screen Resolution 10](#__RefHeading___Toc3528_483215765)

## Scope

This document describes the API interface of plugin. This plugin can be configured to be loaded and executed in the WPEFramework and offers HTML5 browser functionality on the platform.

## Case sensitivity

All identifiers, keywords, entities, properties, relations and actions should be treated as case-sensitive.

## Acronyms, Abbreviations and Terms

The next list provides an overview of acronyms and abbreviations used in this document and their definitions.

|  |  |
| --- | --- |
| **Acronym** | **Definitions** |
| API | Application Programming Interface |
| JSON | JavaScript Object Notation |
| UTC | Coordinated Universal Time |

Below terms are listed with their definitions, as used in this document.

|  |  |
| --- | --- |
| **Term** | **Definitions** |
| Callsign | The *callsign* is the name given to an instance of a plugin. A single plugin can be instantiated multiple times, but each instance name, *callsign*, must be unique. |
| Proxy | An object in one process space representing the “real” object in another process space. The Proxy takes care of marshalling the parameters. |
| Stub | An object in the process space that contains the actual object. The stub takes care of un-marshalling of the request from the Proxy and executes the call, on behalf of the Proxy object, on the real object. |

## Standards

Date time formats between the systems shall be in UTC time and W3C (ISO 8601 profile) formatting [ISO 8601], e.g.: 2004-11-05T13:15:30Z. This way time discontinuities can be avoided due to daylight savings. Note that all interfacing systems must decode/encode the date time to the correct local time.

Languages used in the WPEFramework will be conform [ISO 639-1] using two letter language codes. If WPEFramework encounters a language code it does not recognize, it will use ‘xx’ instead. For a list of available two letter ISO language codes, please visit:  
<http://www.loc.gov/standards/iso639-2/php/code_list.php>

## References

This section lists the references made in this document:

|  |  |
| --- | --- |
| [WPEF] | WPEFramework API Reference  <https://github.com/WebPlatformForEmbedded/WPEFramework> |
| [HTTP] | Hypertext Transfer Protocol  <http://www.w3.org/Protocols> |
| [ISO 8601] | Date and time format  <https://www.iso.org/iso-8601-date-and-time-format.html> |
| [ISO-3166] | Country code specification  <http://www.iso.org/iso/country_codes.htm> |
| [ISO-639-1] | Language code specification (Alpha-2 code)  <http://www.loc.gov/standards/iso639-2/php/code_list.php> |
| [JSON] | JavaScript Object Notation  [http://www.json.org](http://www.json.org/) |
| [URLENC] | URL Encoding  <http://www.w3schools.com/tags/ref_urlencode.asp> |

## Open Issues

This is a list of open issues that needs to be resolved:

* This document is still a work in progress.

## Limitations

The information described in this document is preliminary and subject to change in the future.

Legend:



**Be aware of:** implementation choice is needed or side-effect needs to be handled.



**Implementation advice:** Guide line for implementation mostly related to performance.

# Plugin

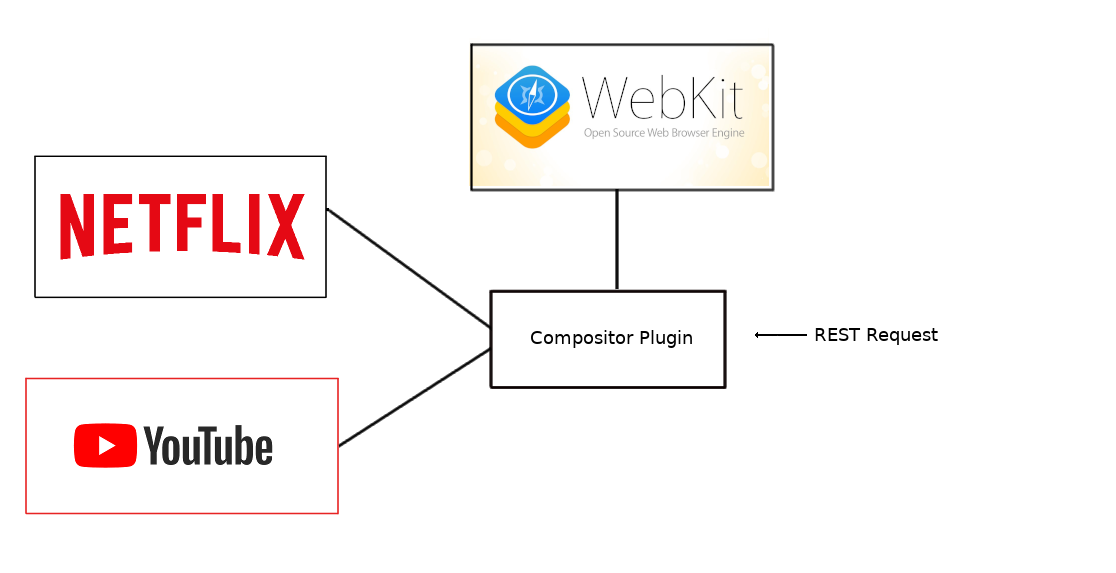
## Configuration of Controller

|  |  |
| --- | --- |
| callsign | [string] the instance name for the plugin e.g. YouTube. Default: WebKitBrowser. |
| classname | [string] NetworkControl. |
| locator | [string] libWPENetworkCompositor.so |
| autostart | [bool] should the plugin be instantiated at the moment the WPEFramework is starts up. |
| configuration | [JSON] JSON object specifying the exact configuration for this plugin. See the next paragraph for details. |

Configuration of the controller:

|  |  |
| --- | --- |
| useragent | [string] the useragent that is used during communication with the web server. |
| url | [string] the URL that is loaded upon starting the browser. |
| injectedbundle | [string] the name of the so that is loaded to extend the HTML5 with customized javascript handlers. |
| cookiestorage | [string] postfixed path to the persistent location on where cookies will be stored. |

## Introduction of the Compositor Plugin

In the illustration above one is able to see the overall working of the Compositor-plugin. One can distinguish the three clients: *WPEWebBrowser*, *Netflix* and *Youtube* and the Compositor-plugin.

Whenever a REST- request is send to the plugin. The plugin will then handle the request for the compositor-server. So, basically the Compositor-plugin tasks can be subdivided into three main tasks:

1) It acts as REST-service that handles all requests it receives from its compositor-clients.

2) It contains a compositor-server that renders and handles the input (keyboard) events of all clients.

3) It will manage its clients and determines which client is active (on top of the screen).

As a compositor-server it will determine which client gets the focus (is on top) and becomes active. The Compositor-plugin is able to change the geometry, the input-source, the opacity, the visibility or to kill each client. Next to setting the overall screen resolution.

## Application Programming Interface (API)

### General information

Using one of both methods will retrieve for you the information of actual running clients.

|  |  |
| --- | --- |
| Request: | GET /Service/Compositor/ or *Service/*Compositor/Clients |
| Success: | HTTP/1.1 200 OK List information of all clients  { client\_list } |

### Kill <client>

Using this method to kill the <client>:

Whenever a <client> is killed, the execution of the <client> is stopped and all its resources will be released.

|  |  |
| --- | --- |
| Request: | POST /Service/Compositor/*<client>*/Kill |
| Success: | HTTP/1.1 200 OK Kill the <client> |
| Failure: | HTTP/1.1 400 BAD REQUEST Unsupported request for the service |

### Switch Client to Top.

Using this method to get a <client> to the top position (of the <client>-list).

Whenever a <client> is on top, it will shown on the screen and it will be in focus.

|  |  |
| --- | --- |
| Request: | POST /Service/Compositor/*<client>*/Top |
| Success: | HTTP/1.1 200 OK Update the <client> to the client-stack |
| Failure: | HTTP/1.1 400 BAD REQUEST unsupported request for the service |

### Switch Input

Using this method to re-direct all the input-events to the <client>.

Each client has its own display, surface and keyboard (input-device). Analogous to setting the surface of a <client> to the top, one is able to direct the input-events to that specific <client>.

In the end the client is shown on the screen and all the input-events will act as if they are only send to the <client>.

|  |  |
| --- | --- |
| Request: | POST /Service/Compositor/*<client>*/Input |
| Success: | HTTP/1.1 200 OK Update the Input of the <client> |
| Failure: | HTTP/1.1 400 BAD REQUEST unsupported request for the service |

### Update Opacity

Using this method to reset the opacity-value of a <client>:

The opacity of a <client> surface can range from 0 till 255, that will represent an opacity of the surface from 0% till 100%.

Thus, for example, whenever someone wants an 25% opacity, one replaces [index] with the value 64.

|  |  |
| --- | --- |
| Request: | POST /Service/Compositor/*<client>*/Opacity/[index] |
| Success: | HTTP/1.1 200 OK Update to opacity to [value] |

### Reset Visibility

Using the method to make the surface of the <client> to hidden or visible:

|  |  |
| --- | --- |
| **Visibility** | **[value]** |
| hidden | Hide |
| visible | Show |

|  |  |
| --- | --- |
| Request: | POST /Service/Compositor/*<Client>*/Visible/[value] |
| Success: | HTTP/1.1 200 OK Update the visibility to [Hide] or [Show] |
| Failure: | HTTP/1.1 400 BAD REQUEST unsupported request for the service |

### Update Geometry

Using the method to update the geometry of the client surface:

The geometry is denoted as coordinates of a rectangle, where:

- [X] = x-coordinate of surface

- [Y] = y-coordinate of surface

- [W] = width of surface

- [H] = height of surface

|  |  |
| --- | --- |
| Request: | POST /Service/Compositor/*<Client>*/Geometry/[X]/[Y]/[W]/[H] |
| Success: | HTTP/1.1 200 OK Update the geometry([X],[Y],[W],[H]) |
| Failure: | HTTP/1.1 400 BAD REQUEST unsupported request for the service |

### Get Screen Resolution

Using this method to get the screen resolution of the screen.

|  |  |
| --- | --- |
| Request: | GET /Service/Compositor/Resolution |
| Success: | HTTP/1.1 200 OK Get compositor resolution to [value]  { resolution } |
| Failure: | HTTP/1.1 400 BAD REQUEST invalid parameter for resolution: |

### Update Screen Resolution

Using this method to reset the screen resolution by passing index.

|  |  |
| --- | --- |
| **Resolution** | **[*index*]** |
| *480i* | *1* |
| *480p* | *2* |
| *720p* | *3* |
| *720p50Hz* | *4* |
| *108024Hz* | *5* |
| *1080i50Hz* | *6* |
| *1080p50Hz* | *7* |
| *1080p60Hz* | *8* |
| *2160p50Hz* | *9* |
| *2160p60Hz* | *10* |

|  |  |
| --- | --- |
| Request: | POST /Service/Compositor/*Resolution/[index*] |
| Success: | HTTP/1.1 200 OK Update compositor resolution to [index] |
| Failure: | HTTP/1.1 400 BAD REQUEST invalid parameter for resolution: |