Tizen Web Runtime

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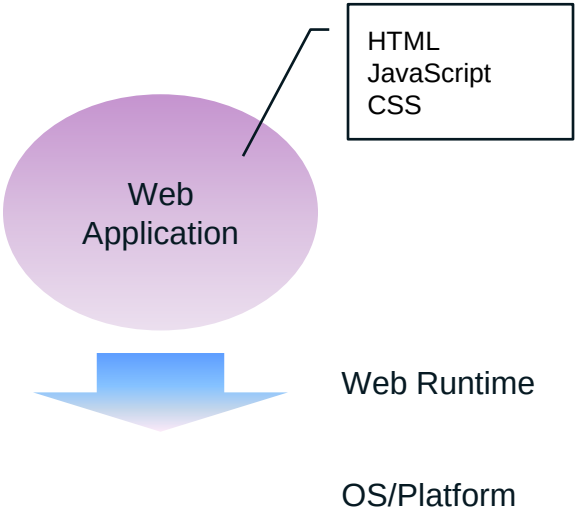
What is Web Application & Web Runtime

- Web Application
  - Using Web based technologies
  - Accessing local device / platform resources
  - Can be installed on the device
- Web Runtime
  - Lifecycle Management of web applications
  - Execution of web application
  - Access to device resources via JS API
  - Device and Platform integration
  - Access control of web applications



Tizen Web Application

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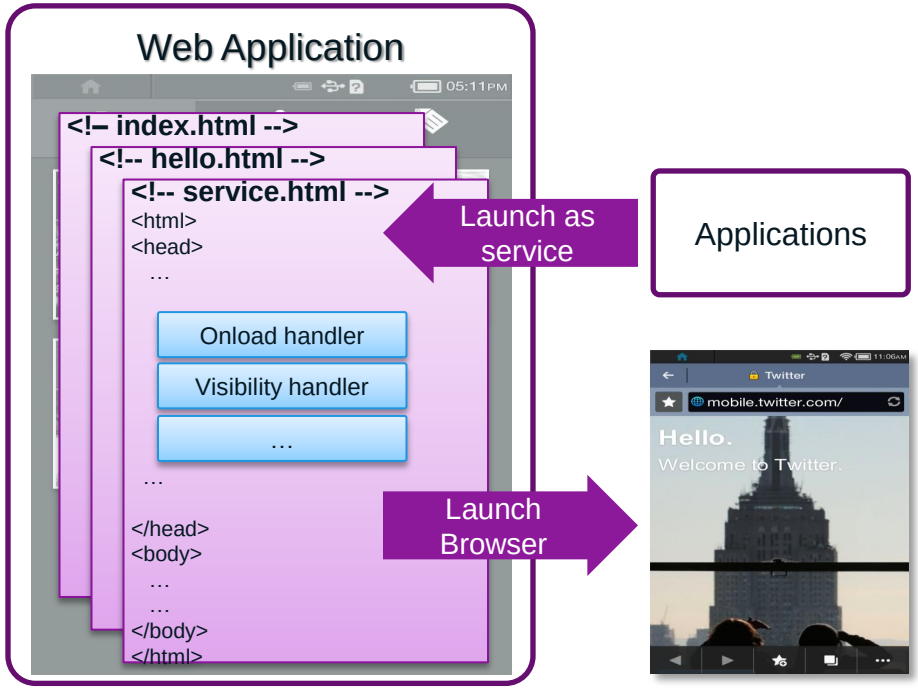
Tizen Web Application Overview (1/2)

- W3C/HTML5 specifications
  - Widget Spec: Widget P&C, Widget Interface, Widget URI, …
  - HTML5 & CSS3: Video/Audio, Web Storage, Web Workers, HTML5 Forms, …
  - W3C DAP APIs: Battery Status, Network Info, Vibration, …
  - Lagacy Web Standards : HTML4.1, CSS 2.1, DOM level 2, …
- Miscellaneous Web specifications
  - WebGL, Typed Arrays, 'viewport' metatag
- Tizen Web specifications
  - Tizen Device API
    - Application, Alarm
    - Contact, Calander
    - Call, Messaging, System Info
    - NFC, Bluetooth
    - Etc.
  - Tizen Web UI FW

https://developer.tizen.org/documentation

Tizen Web Application Overview (2/2)

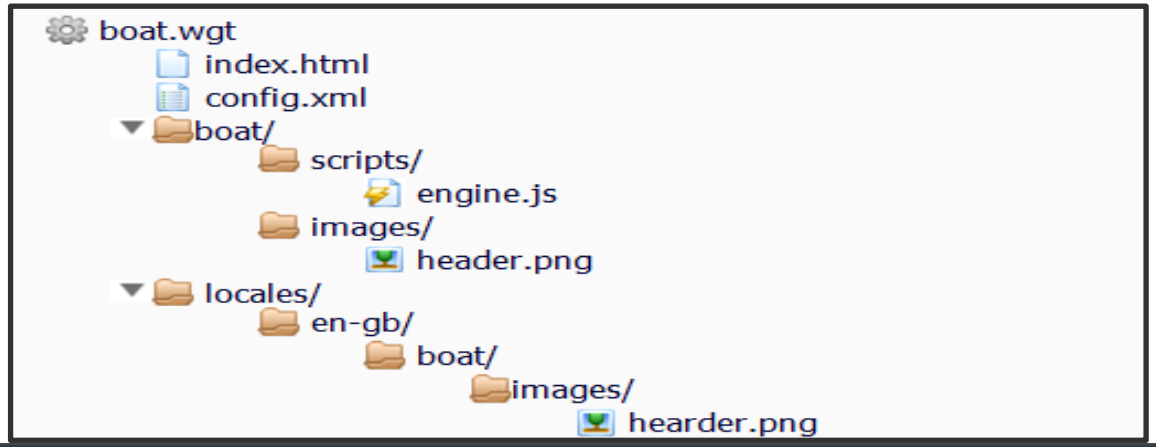


- One web app has only one process
- Web Application has multiple pages
- W3C Events are handled per page
- Web Application can be Launched as service by other app
- Web Application launches browser for external web pages that are not listed in config.xml

Packaging

- W3C Widget Packaging and Configuration

File Extension	.wgt(*Zip archive* file format)
Configuration	config.xml
Localization	localized content -> locales folder non localized content -> root folder



Configuration

- **W3C Widget Packaging and Configuration**

```
<widget xmlns=http://www.w3.org/ns/widgets
        xmlns:tizen="http://tizen.org/ns/widgets" version="2.0 Beta"
        viewmodes="fullscreen" id="http://tizen.org/myapp">
        <icon src="icon.png"/>
        <content src="index.html"/>
        <feature name="http://tizen.org/api/tizen" required="true"/>
        <feature name="http://tizen.org/api/application" required="true"/>
        <access origin="*"/ >
        <name>myapp</name>
</widget>
```

- **Namespace**
  - **Tizen Web Application: http://tizen.org/ns/widgets**

Network Access from Web Apps

- If external page is specified in configuration, load it in current web app; Otherwise, launch Browser;

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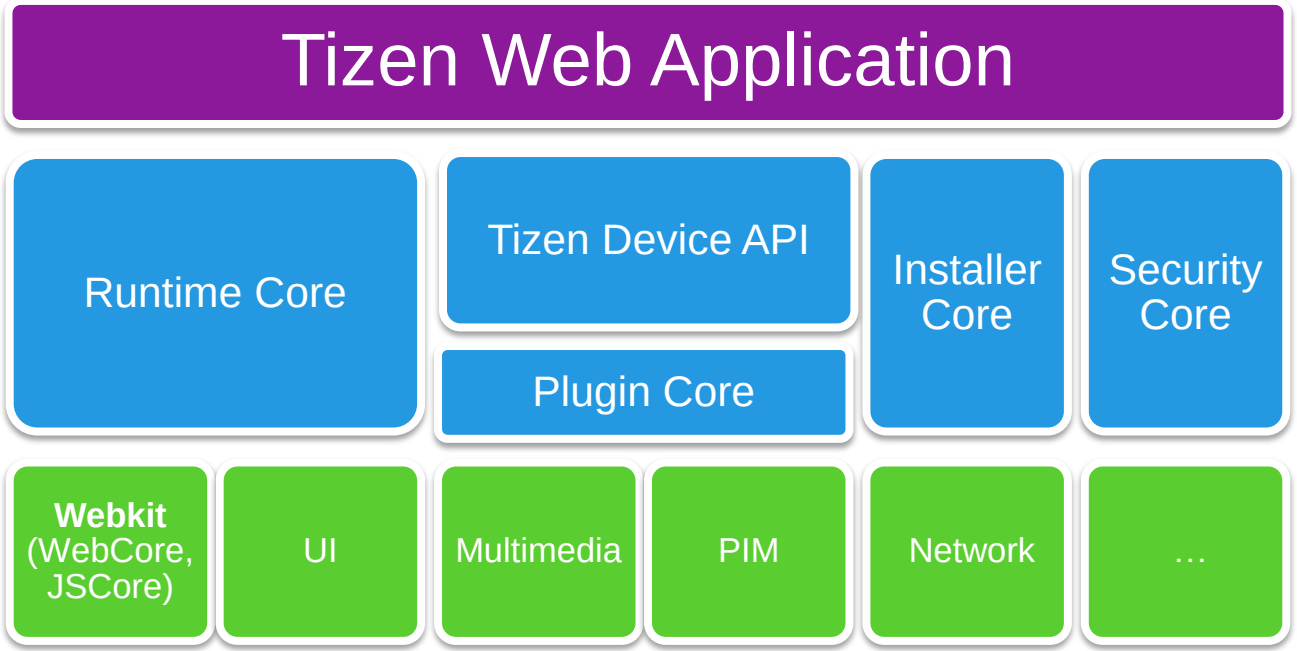
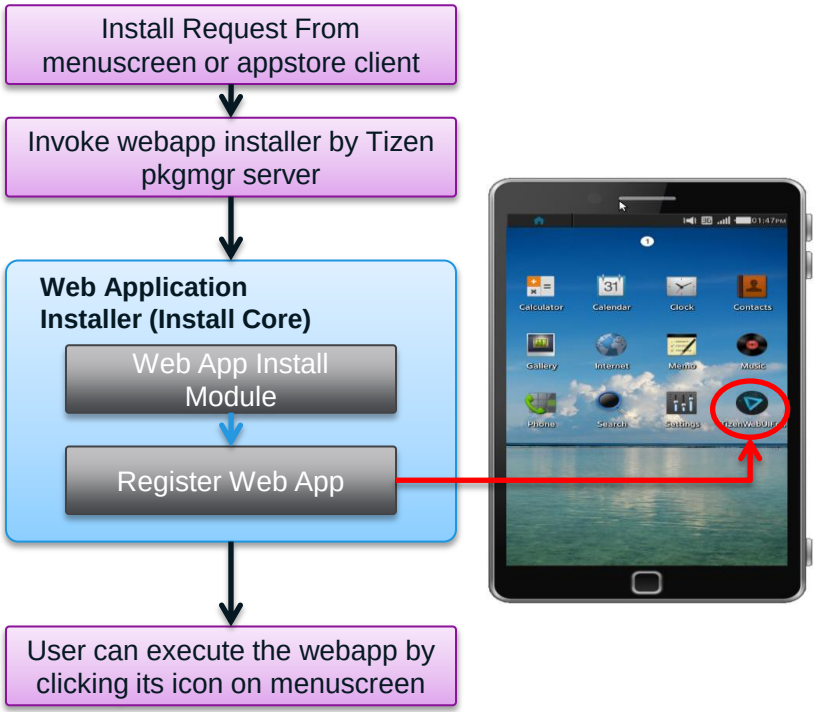
Tizen Web Runtime Overview



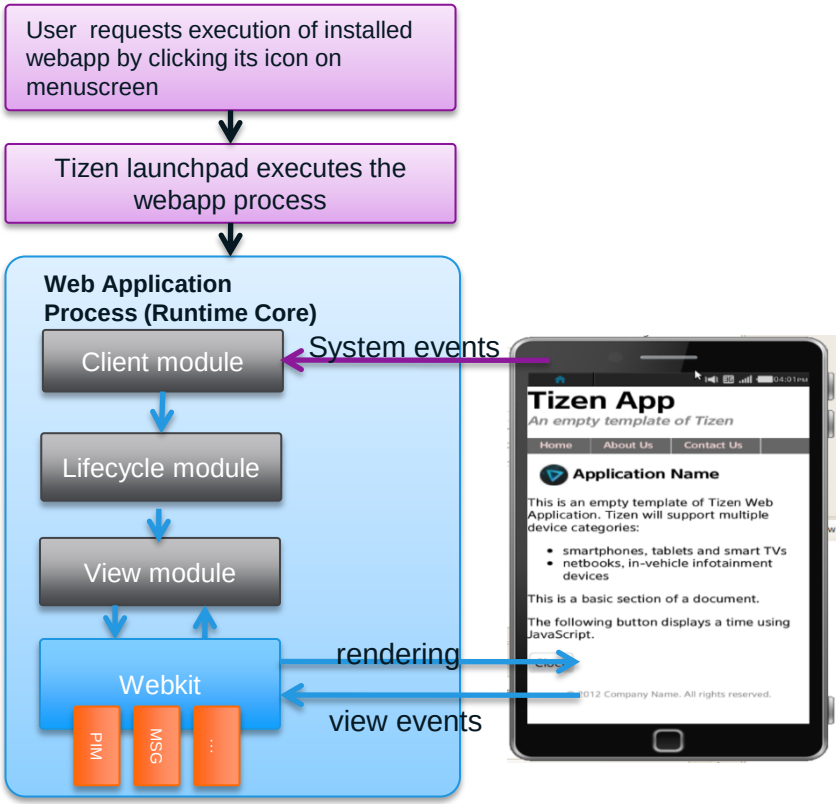
Installer Core



- Main functionality
  - Installing web app
    - Follow install process of W3C P&C
    - Check security policy for access control
    - Register web app and save its resources
  - Removing web app
    - Unregister web app and remove its resources
    - Triggered by MenuScreen or Setting app
- Installation triggered by
  - Appstore Client native app
    - In this case, all web app are signed app
    - Not yet activated (will be integrated with appstore client when it's ready)
  - Myfiles native app
    - In this case, all web app are side-loaded
    - The policy might change later to disallow side-loaded web apps

<< install steps >>

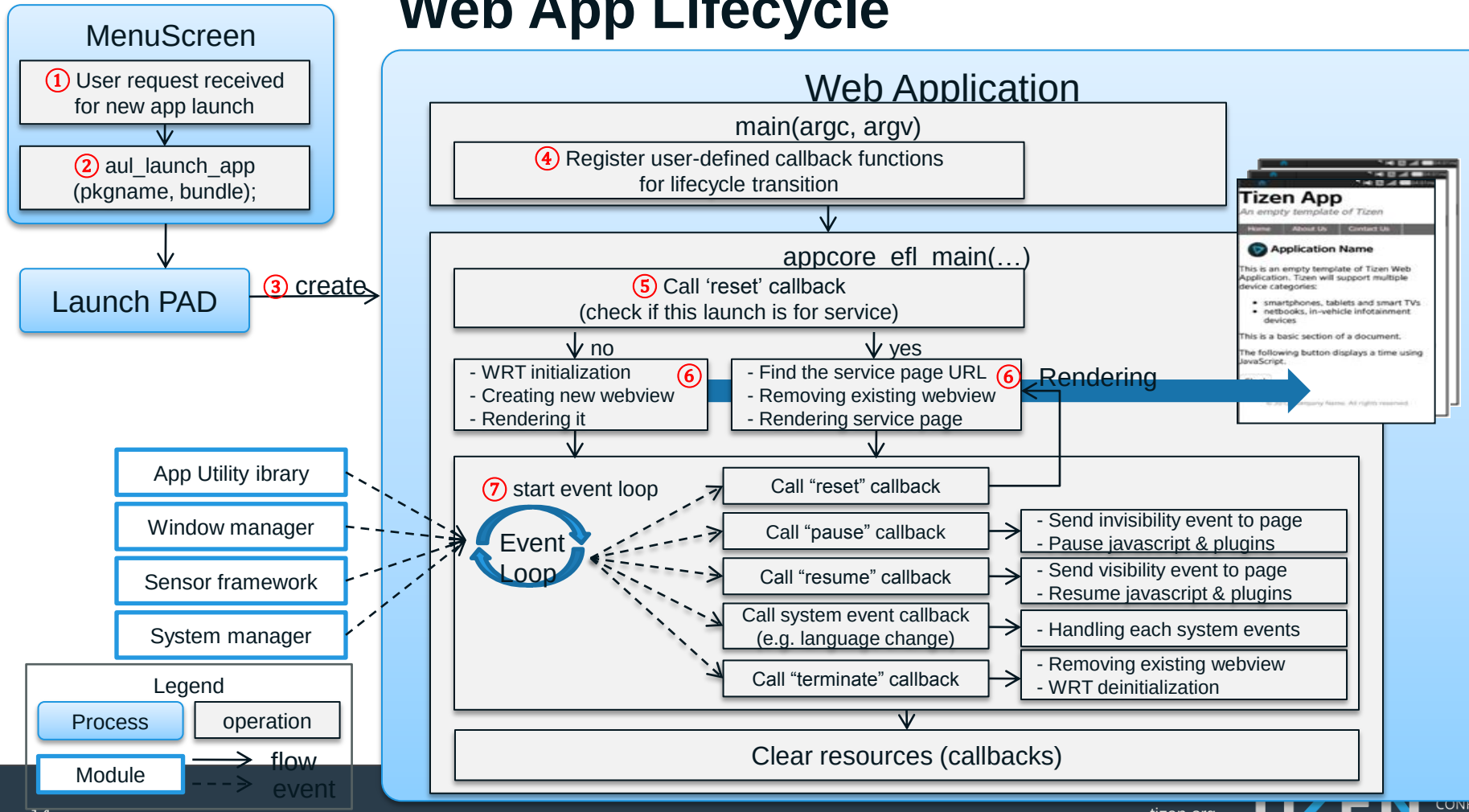
Runtime Core



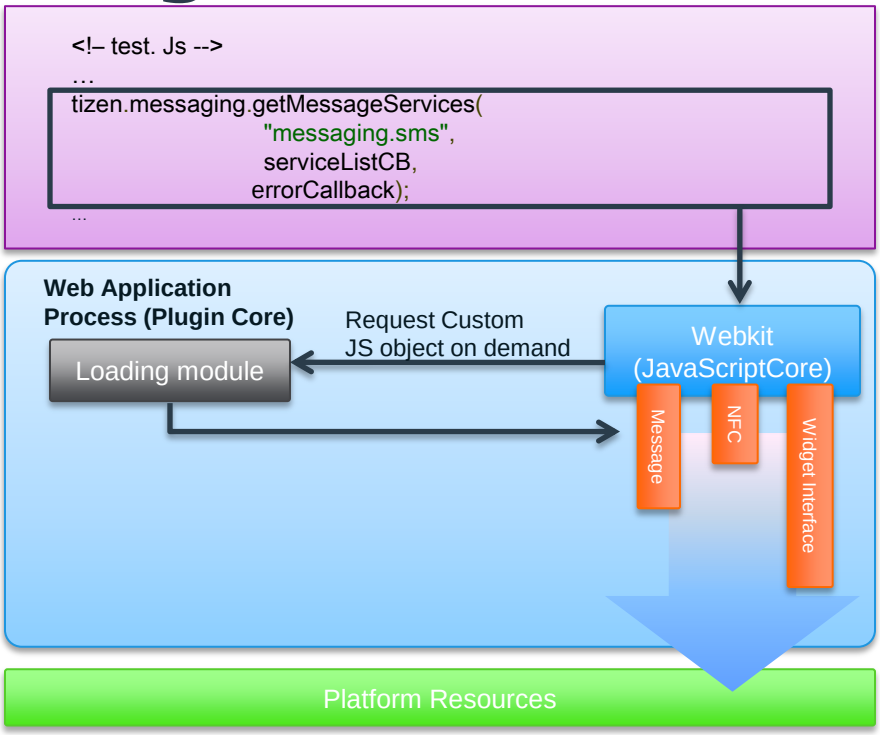
- Main functionality
  - Client module
    - Receive system events from platform
    - Request handling of these events properly to Lifecycle module
  - Lifecycle module
    - Handle jobs related to launch / suspend / resume / reset / terminate webapp internally
  - View module
    - Handle jobs related to view including webview creation and deletion
    - Add Custom JS objects to Webkit view to access Tizen device APIs (PIM, Messaging, Bluetooth, NFC, …)
    - Handle events of WebKit like resource loading, creation of new webview.
- Start launching from
  - Menuscreen
  - Other 3rd-party applications
    - In the case when the webapp is registered as service

<< launch steps >>

Web App Lifecycle



Plugin Core



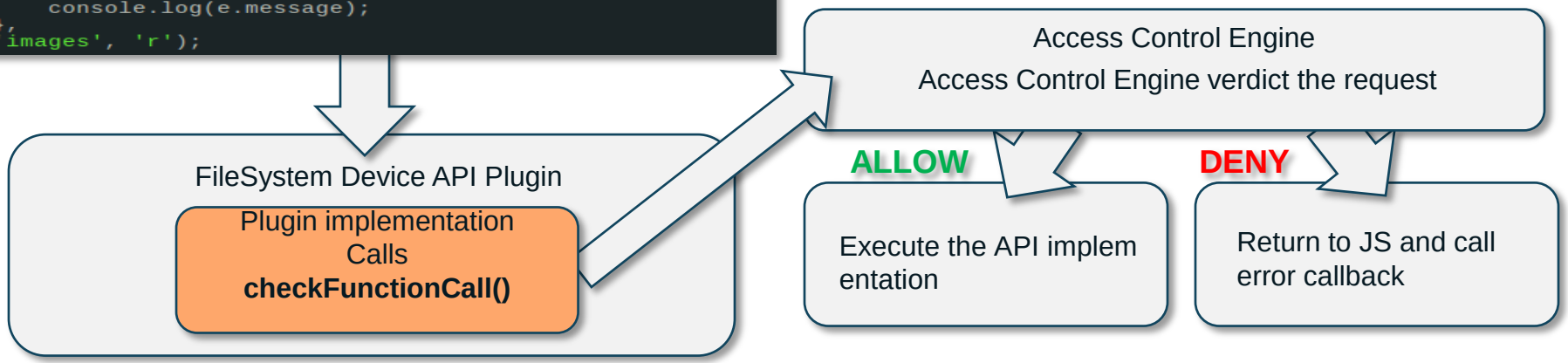
<< Tizen Device API access steps >>

- Tizen Web Runtime Plugin
  - Enable web app access to device/platform resources via JavaScript APIs
  - Includes Tizen Plugins and W3C widget interface Plugin
- Major functionality
  - Creation of new JavaScript objects
    - JS binding to device/platform resources
    - Direct communication with JavaScript Core
    - On demand plugin loading during runtime, except for widget interface plugin

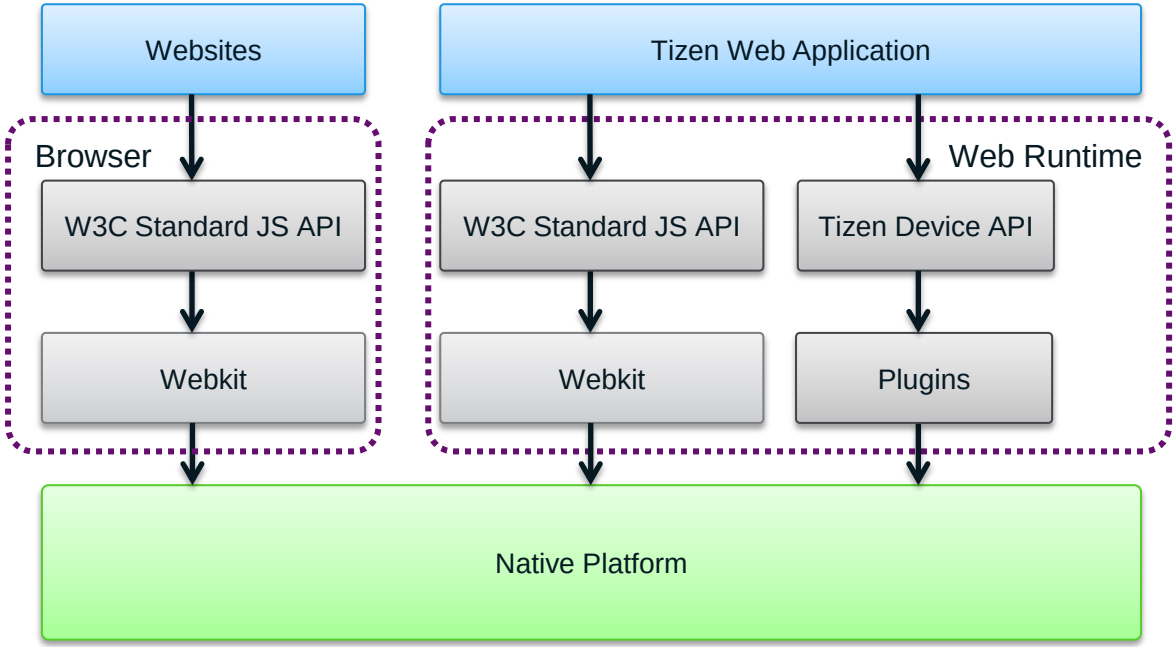
Access Control Engine

- Component responsible for Tizen policy management
- Evaluates policy per single request
- Manages policy and prompt verdict cache

```
deviceapis.filesystem.resolve(
function(dir) {
    console.log("Mount point Name is " + dir.fullPath);
},
function(e) {
    console.log(e.message);
},
'images', 'r');
```



Summary of Web Application



Thank You.

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