

# Network Device API Guide Program

## Outline

Network guide program is a guide application for eGov Device API, using the mobile device API framework to be used as a tool and a reference when developing hybrid applications. It supports the inquiry of network related functions of mobile smart devices through JavaScript-based Network DeviceAPI. Also, it connects with web server applications based on eGov standard framework to check the network information of the device and play media, as well as to send network information to server and inquire them.

### Feature

This Guide Program provides **play media after checking network status, send network information to server, and receive network information from server** features.

### Preconditions

Category	Description
Local Device Environments	Xcode 6.3.2, PhoneGap 4.3.0
Server-side Developmental Environment	eGov Standard Framework Develeopment Environment 3.5
Works in sync with Mash up Open API	N/A
Test Device	iPhone4, iPhone6
Test Platform	iOS 7.1.2, iOS 8.3
Libraries Added	N/A

### Restrictions

#### Supported devices and platforms

For iPhone devices, there may be issues due to device's processing power.

- Problem: PhoneGap error.
- Solution: delay PhoneGap loading sequence with setTimeout() function.

```
document.addEventListener('DOMContentLoaded', function () { setTimeout(loaded, 200); }, false);
```

- Problem: iScroll5 content height calculation error.
- Solution: use setTimeout() to ensure iscroll is generated after css application to contents is complete.

```

setTimeout(function()
{
    myScroll = new iScroll(thisPage,
    {
        checkDOMChanges: true,
        onBeforeScrollStart:function(e)
        {
        }
    });
},
500);

```

Using cross domain

When using certain outside domains or its subdomains on PhoneGap, add such domains on <access origin="ExternalHosts"/> at [Project\_Name]/Supporting Files/config.xml

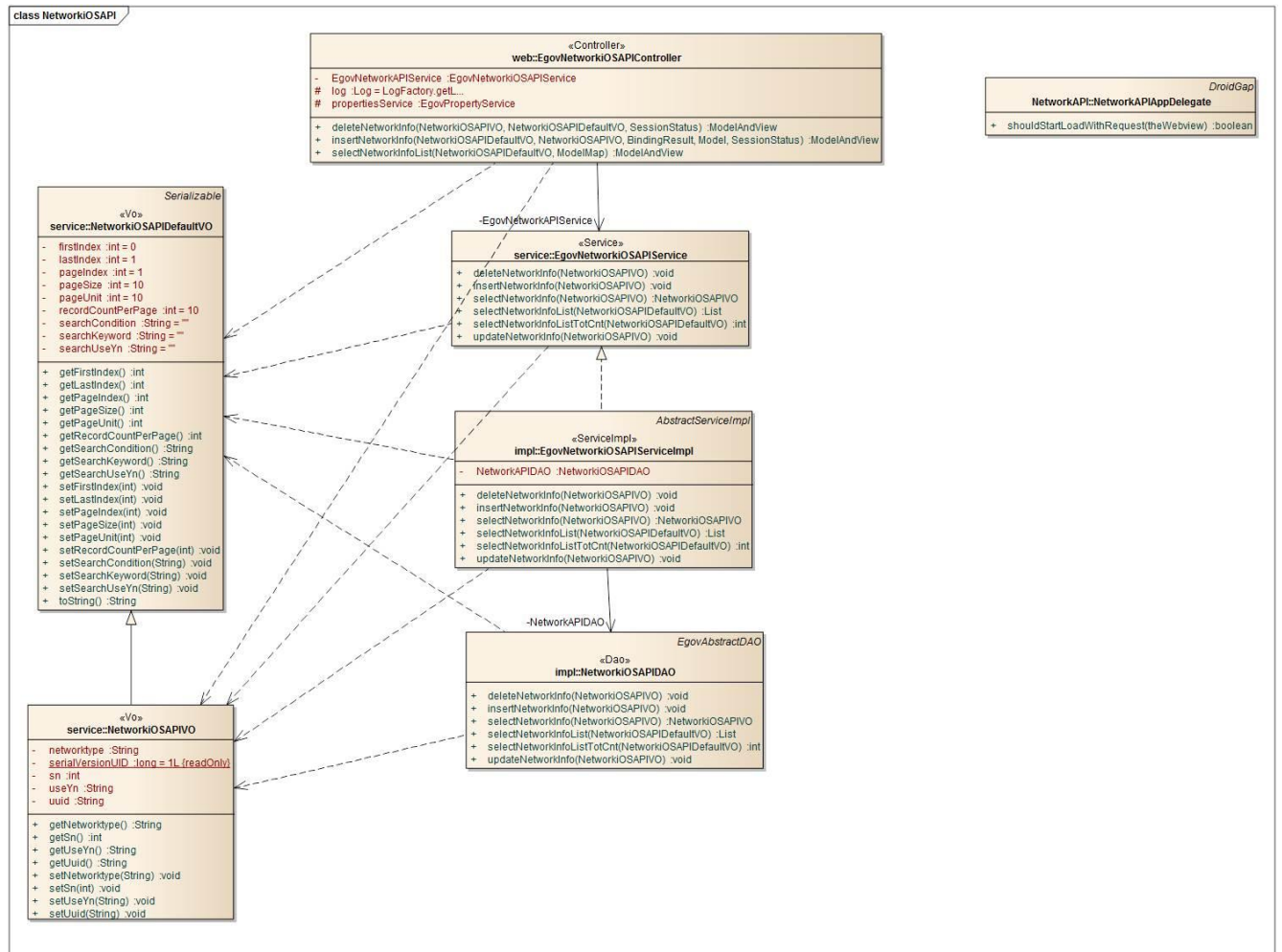
#### License

N/A

## Description

Network Device API Guide Program is comprised of **play media after checking network status, send network information to server, receive network information from server** features. (refer to related features section)

## Related Class Diagram



## Device Application

### Sources

Type	Target Source	Remark
CSS	<a href="http://www/css/egovframework/mb/mb/NetworkAPI.css">www/css/egovframework/mb/mb/NetworkAPI.css</a>	NetworkAPI Guide Program main Cascading Style Sheets
IMAGE	<a href="http://www/images/egovframework/mb/mb/">www/images/egovframework/mb/mb/</a>	NetworkAPI Guide Program main Image folder
JS	<a href="http://www/js/egovframework/mb/mb/NetworkAPI.js">www/js/egovframework/mb/mb/NetworkAPI.js</a>	NetworkAPI Guide Program main JavaScript
HTML	<a href="http://www/NetworkAPI.html">www/NetworkAPI.html</a>	NetworkAPI main page
HTML	<a href="http://www/license.html">www/license.html</a>	NetworkAPI license page
HTML	<a href="http://www/overview.html">www/overview.html</a>	NetworkAPI feature description page

## APIs Used

navigator.network.connection.type

- Network status information for the current device

```
var states = { };
states[Connection.UNKNOWN] = 'Unknown connection';
states[Connection.ETHERNET] = 'Ethernet connection';
states[Connection.WIFI] = 'WiFi connection';
states[Connection.CELL_2G] = 'Cell 2G connection';
states[Connection.CELL_3G] = 'Cell 3G connection';
states[Connection.CELL_4G] = 'Cell 4G connection';
states[Connection.NONE] = 'No network connection';

var NowNetwork = states[navigator.network.connection.type];
Return State(code)    NetworkInfo(string)
```

Connection.UNKNOWN Unknown connection

Connection.ETHERNET Ethernet connection

Connection.WIFI WiFi connection

Connection.CELL\_2G Cell 2G connection

Connection.CELL\_3G Cell 3G connection

Connection.CELL\_4G Cell 4G connection

Connection.NONE No network connection

media.play

- Plays or replays audio file.

```
function playAudio(file) {
    var my_media = new Media(file,
        function() {
            console.log("playAudio():Audio Success");
        },
        function(err) {
            console.log("playAudio():Audio Error: "+err);
        });
    my_media.play();
}

play Option
```

Option	Description	Remark
numberOfLoops	Designate number of loops	
playAudioWhenScreenIsLocked	Select whether or not to play when device screen is locked	

mediaError		
Error codes	Error Value	Remark
MEDIA_ERR_ABORTED	Plays aborted media	
MEDIA_ERR_NETWORK	Network error encountered	
MEDIA_ERR_DECODE	Decoding error (codec error)	
MEDIA_ERR_SRC_NOT_SUPPORTED	Media not supported	

```

my_media.stop

    • This function stops the audio file playback.

function playAudio(file) {
    var my_media = new Media(file,
        function() {
            console.log("playAudio():Audio Success");
        },
        function(err) {
            console.log("playAudio():Audio Error: "+err);
        });
    my_media.play();
    setTimeout(function() {
        my_media.stop();
    }, 10000);
}

```

Server Application

Sources		
Type	Target Source	Remark
Controller	egovframework.hyb.ios.nwk.web.EgovNetworkiOSAPIController.java	Classes for network information administration.
Service	egovframework.hyb.ios.nwk.service.EgovNetworkiOSAPIService.java	Service interface for network information administration.
VO	egovframework.hyb.ios.nwk.service.NetworkiOSAPIDefaultVO.java	VO Class for network information administration.
VO	egovframework.hyb.ios.nwk.service.NetworkiOSAPIVO.java	VO Class for network information administration.
DAO	egovframework.hyb.ios.nwk.service.impl.NetworkiOSAPIDAO.java	Data processing Class for network information administration.
DAO	egovframework.hyb.ios.nwk.service.impl.EgovNetworkiOSAPIServiceImpl.java	Class for processing services requested.
Query	X resources/egovframework/sqlmap/hyb/ios/nwk/EgovNetworkiOS	Query file for network information administration.

## Related Tables

## Title

Title	Table	Remark
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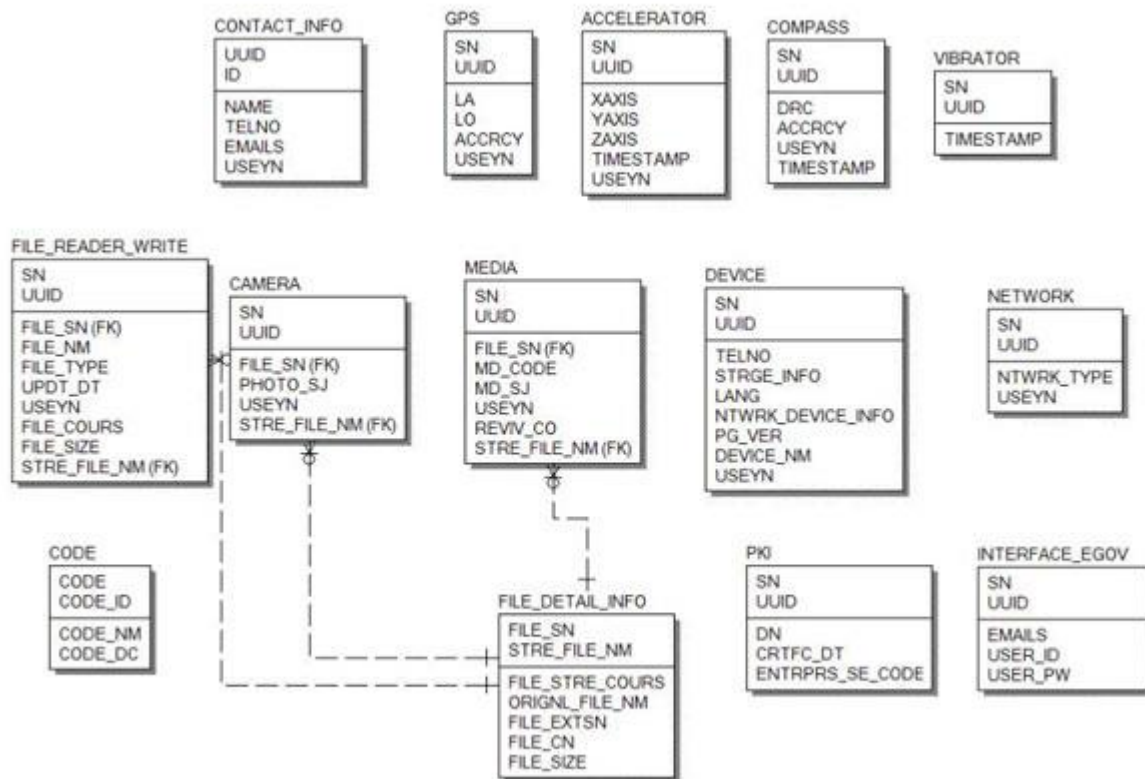
Network Network Manage Network information

## Tables Breakdown

## Network

No.	Column	Title of Column	Type	Length	Null	KEY
1	SN	Serial No.	NUMERIC	6	NotNull	pk
2	UUID	UUID	VARCHAR	50	NotNull	pk
3	NTWRK_TYPE	Network type	VARCHAR	20	Null	
4	USEYN	Activation	CHAR	1	Null	pk

## ERD



## Configuration

Necessary sections and settings for using Network related features of mobile device, provided by Network Device API Guide Program, are as follows.

Device Application

**config.xml**

ExternalHosts

```
<accessorigin="ExternalHosts"/>
```

Plugins

```
<featurename="NetworkStatus">
```

```
<paramname="ios-package" value="CDVConnection"/>
```

```
</feature>
```

Server Application

**context-properties.xml**

```
<entrykey="serverContext" value="Server Directory"/>
```

```
resource/egovframework/sqlmap/sql-map-config_[DB NAME].xml
```

```
<sqlMapresource="egovframework/sqlmap/hyb/ios/nwk/EgovNetworkiOSAPIGuide_SQL_[DB NAME].xml"/>
```

## Related Features

Network Device API Guide Program is comprised of **play media after checking network status**, **send network information to server**, and **receive network information from server** features.

Play media after checking network status

**Business Logic**

1. Check the network at application's initial execution. If the network is not Wi-Fi, function based on the user approval.
2. Check the network when streaming media. If the network is not Wi-Fi, always check user approval.

**Related Codes**

Check network status.

```
var isNetworkCheck = false;
function fn_egov_network_check(doCheck)
{
    console.log('DeviceAPIGuide fn_egov_network_check');
    var networkState = navigator.network.connection.type;

    if (networkState == Connection.UNKNOWN || networkState == Connection.NONE)
    {
        jAlert("Network Connection Unavailable.", "Alert", "b");
        return false;
    }
}
```

```

    }
    if(networkState != Connection.WIFI)
    {
        if(!doCheck)
        {
            if(isNetworkCheck)
            {
                return true;
            }

            if(confirm('Additional charges may be charged if not connected to Wi Fi. \nContinue?'))
            {
                isNetworkCheck = true;
                return true;
            }
            else
            {
                isNetworkCheck = false;
                return false;
            }
        }
        else
        {
            return true;
        }
    }

    Plays media

function fn_egov_click_mediaBtn()
{
    if(context === null)
    {
        fn_egov_init_context();
        return;
    }

    if(audioCheck)        // if already playing, stops the music
    {
        fn_egov_stop_audio();
        audioCheck = false;
    }
    else
    {
        // in case of audio/video streaming, conduct network check each time to ask user approval
        if(fn_egov_network_check(true))
        {
            $.mobile.showPageLoadingMsg('a');
            // depending on device performance, delay using setTimeout to ensure next code is
            // executed after ProgressDialog Show is completely loaded.
            setTimeout(function()
            {
                fn_egov_play_audio();
            }, 1000);
        }
    }
}

```



```

        var params = {
            uuid : device.uuid,
            networktype : states[navigator.network.connection.type],
            useYn : "Y"
        };

        fn_egov_sendto_server("/nwk/addNetworkiOSInfo.do",params);
    },
    500);
}
}
}

Send Network Information to Server

```

```

var params = {
    uuid : device.uuid,
    networktype : states[navigator.network.connection.type],
    useYn : "Y"
};

fn_egov_sendto_server("/nwk/addNetworkiOSInfo.do",params);

```

#### Related Screen and Implementation Manual

Function	URL	Controller	method	Display (HTML)
Plays media	/nwk/getMp3FileiOS.do	EgovNetworkiOSAPIController	getMp3File	NetworkAPI.html#vbrMain
Upload Network information	/nwk/addNetworkiOSInfo.do	EgovNetworkiOSAPIController	insertNetworkInfo	NetworkAPI.html#vbrMain



Media Play: Checks network. If network is not Wi-Fi, plays media based on user approval and uploads device's network information.

Receive network information from server

#### **Business Logic**

1. Check the network. If the network is not Wi-Fi, function based on user approval.

#### **Related Codes**

Request network information list

```
function fn_egov_open_networkList()
{
    if(context === null)    // Determine user approval for 3G network usage at application's initial
        execution.
    {
```

```

        fn_egov_init_context();
        return;
    }

    if(fn_egov_network_check(false))    // if communication event occurs, determine if user
approved 3G usage
    {
        var params = {};

        $.mobile.showPageLoadingMsg('a');
        // depending on device performance, delay using setTimeout to ensure next code is executed
after ProgressDialog Show is completely loaded.
        setTimeout(function()
            {
                fn_egov_sendto_server("/nwk/networkiOSInfoList.do",params);
            },
            500);
    }
}

    Request network details list

function fn_egov_open_networkDetailInfo(selectedId)
{
    if(fn_egov_network_check(false))    // if communication event occurs, determine if user
approved 3G usage
    {
        var params = { sn : selectedId };

        $.mobile.showPageLoadingMsg('a');
        // depending on device performance, delay using setTimeout to ensure next code is executed
after ProgressDialog Show is completely loaded.
        setTimeout(function()
            {
                fn_egov_sendto_server("/nwk/networkiOSInfo.do",params);
            },
            500);
    }
}

    Request deletion of network information

function fn_egov_click_deleteBtn()
{
    if(fn_egov_network_check(false))    // if communication event occurs, determine if user
approved 3G usage
    {
        var params = {
            sn : pageNumber
        };

        $.mobile.showPageLoadingMsg('a');
        // depending on device performance, delay using setTimeout to ensure next code is executed
after ProgressDialog Show is completely loaded.
        setTimeout(function()
            {

```

```

        fn_egov_sendto_server("/nwk/deleteNetworkiOSInfo.do",params);
    },
    500);
    }
}

```

#### Related Screen and Implementation Manual

Function	URL	Controller	method	Display (HTML)
Request network information list	/nwk/networkiOSInfoList.do	EgovNetworkiOSAPI Controller	selectNetworkInfoList	NetworkAPI.html#apiList View
Request network details list	/nwk/networkiOSInfo.do	EgovNetworkiOSAPI Controller	selectNetworkInfoDetail	NetworkAPI.html#networkInfoDetail
Request deletion of network information	/nwk/deleteNetworkiOSInfo.do	EgovNetworkiOSAPI Controller	deleteNetworkInfo	NetworkAPI.html#networkInfoDetail





Back: calls main page.

List: requests details of the selected list.

List: calls network information list page.

Delete: deletes network information.

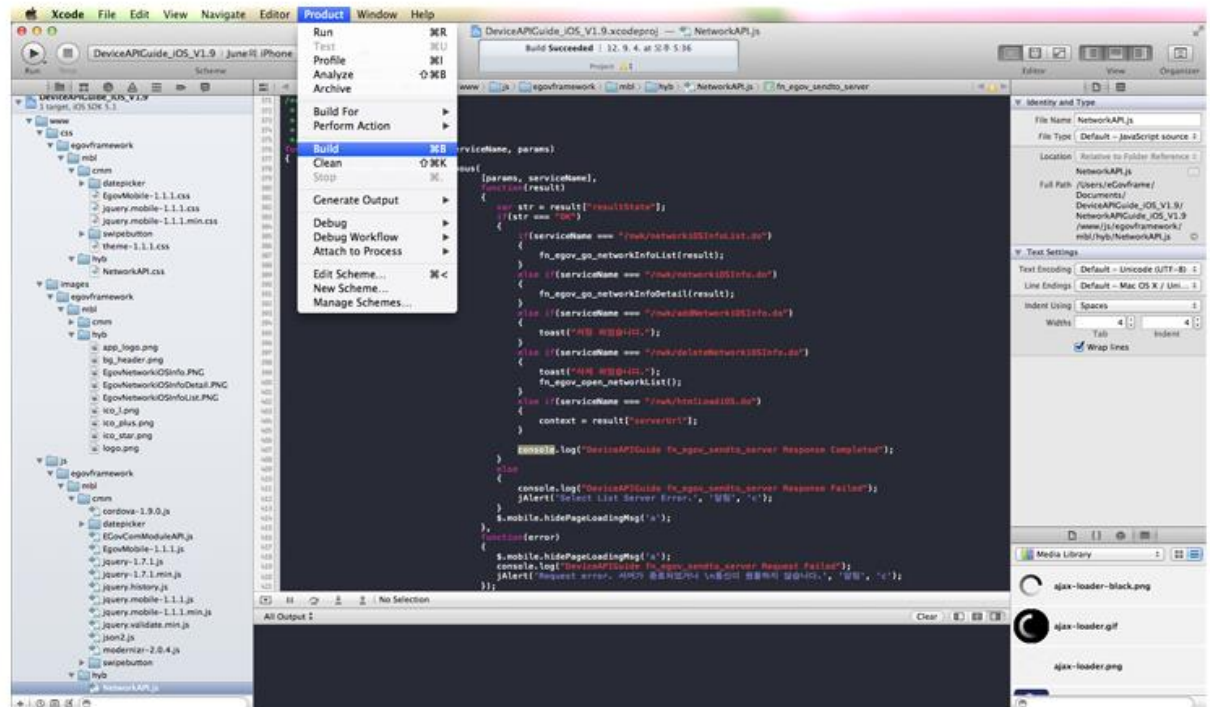
## Compiling, debugging, distributing

Compiling

**Device Application**

1. [NetworkAPI installation link](#)

- Click on "build" after checking NetworkAPI project's installation status.



- The following screen will appear upon successful build.

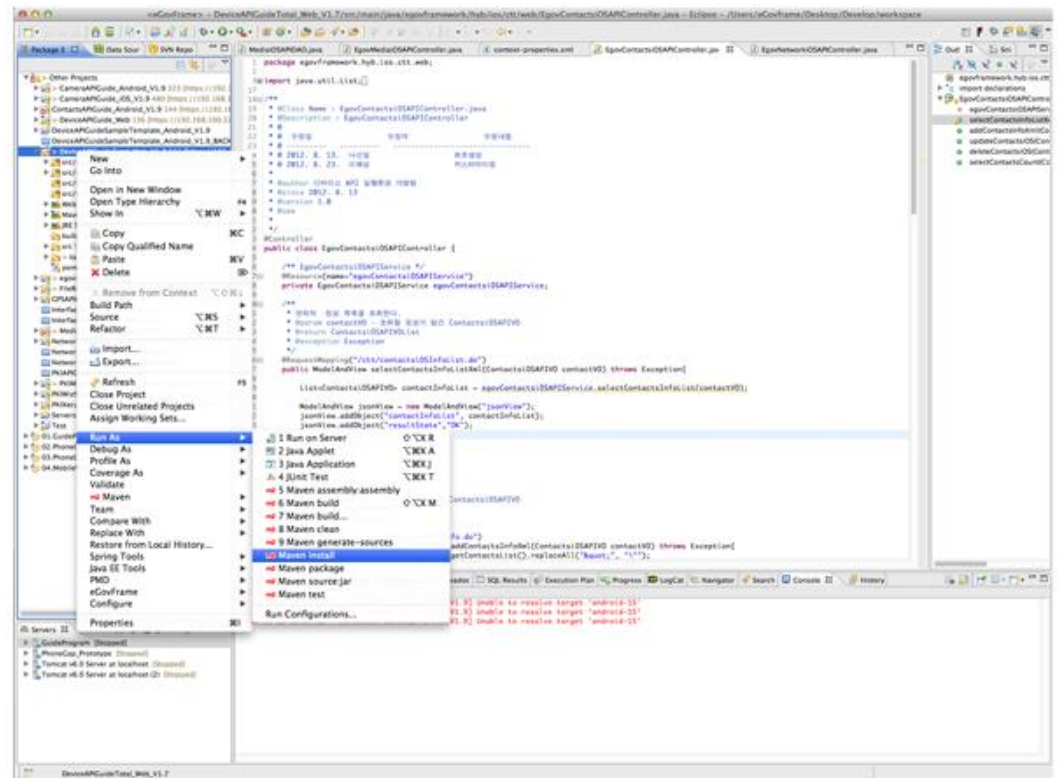


#### Server Application

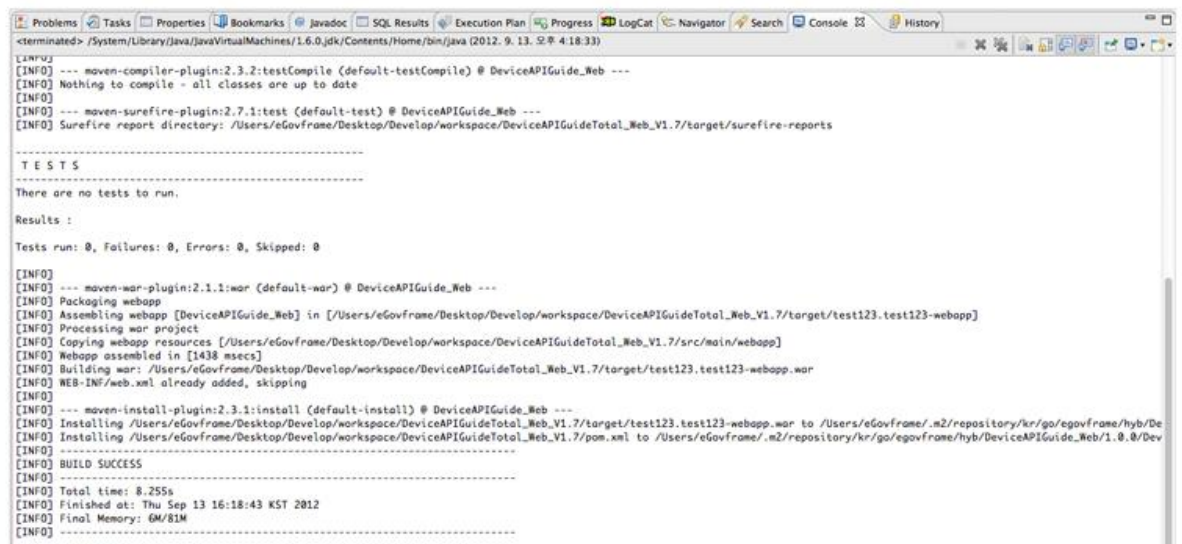
1. [Web Server installation link](#)



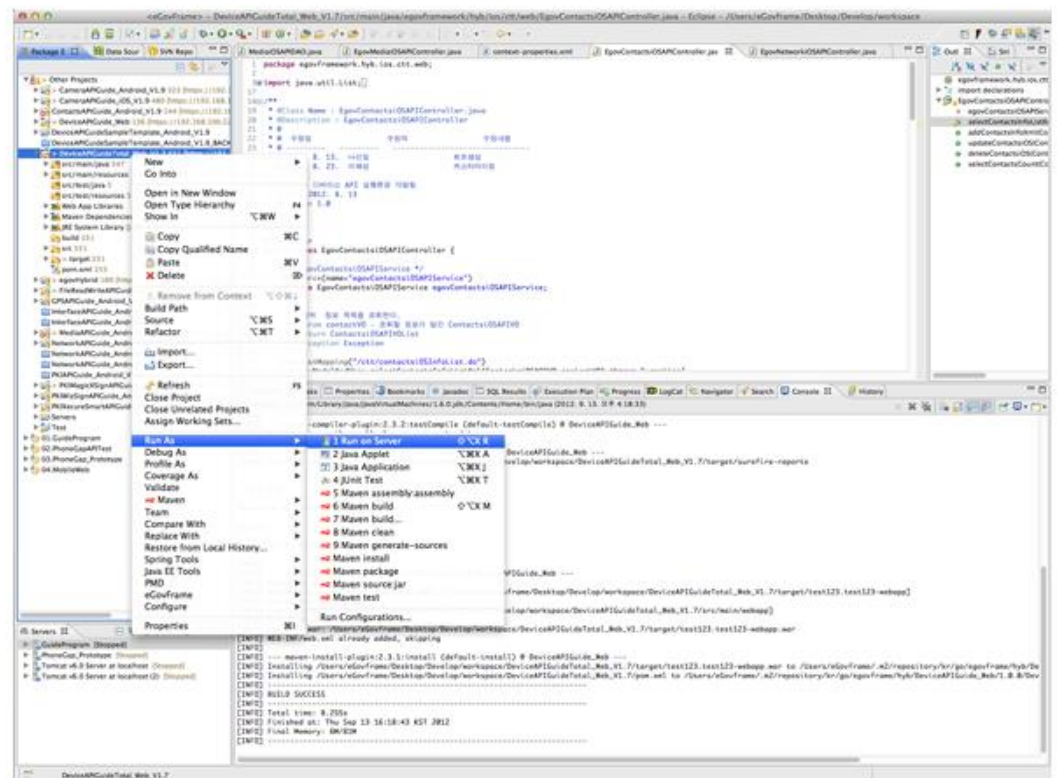
2. Right-click on the project > Run as > Maven install to build.



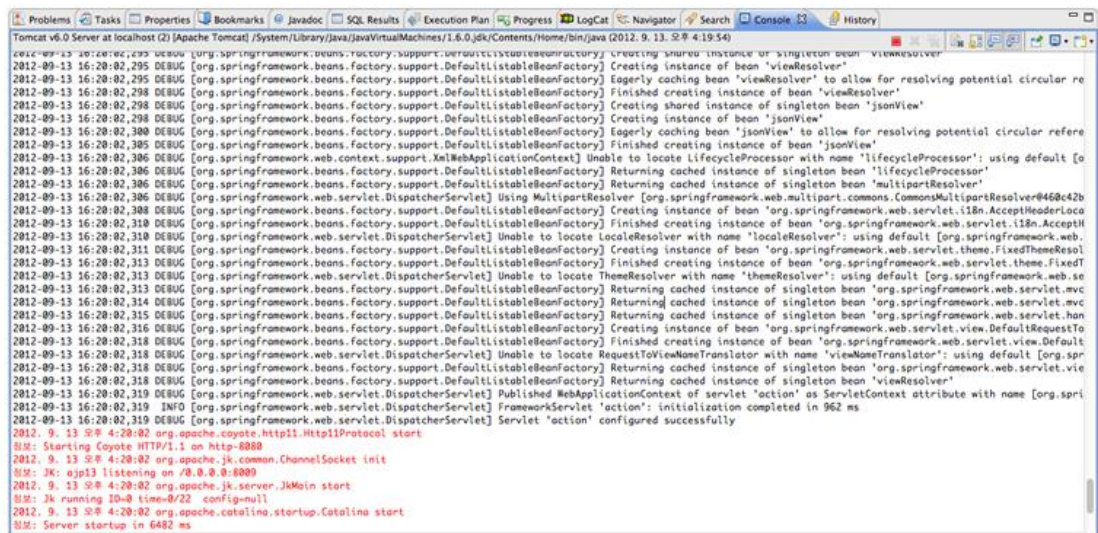
3. Build successful (check console information)



4. Right-click on project>Run as>Run on Server to execute.



5. Check to see if project is successfully executed.



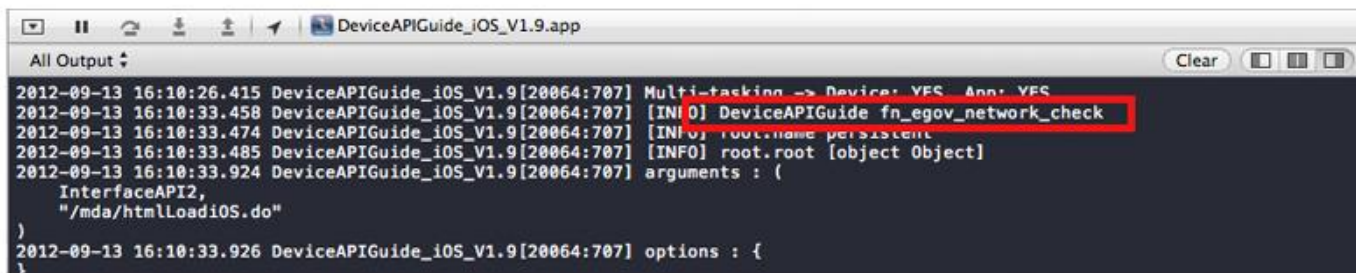
## Debugging

Use console.log in order to check the details on any errors on the device application, and to conduct debugging. Debug codes in console.log are available in JavaScript syntaxes that you can use in both Eclipse and Xcode.

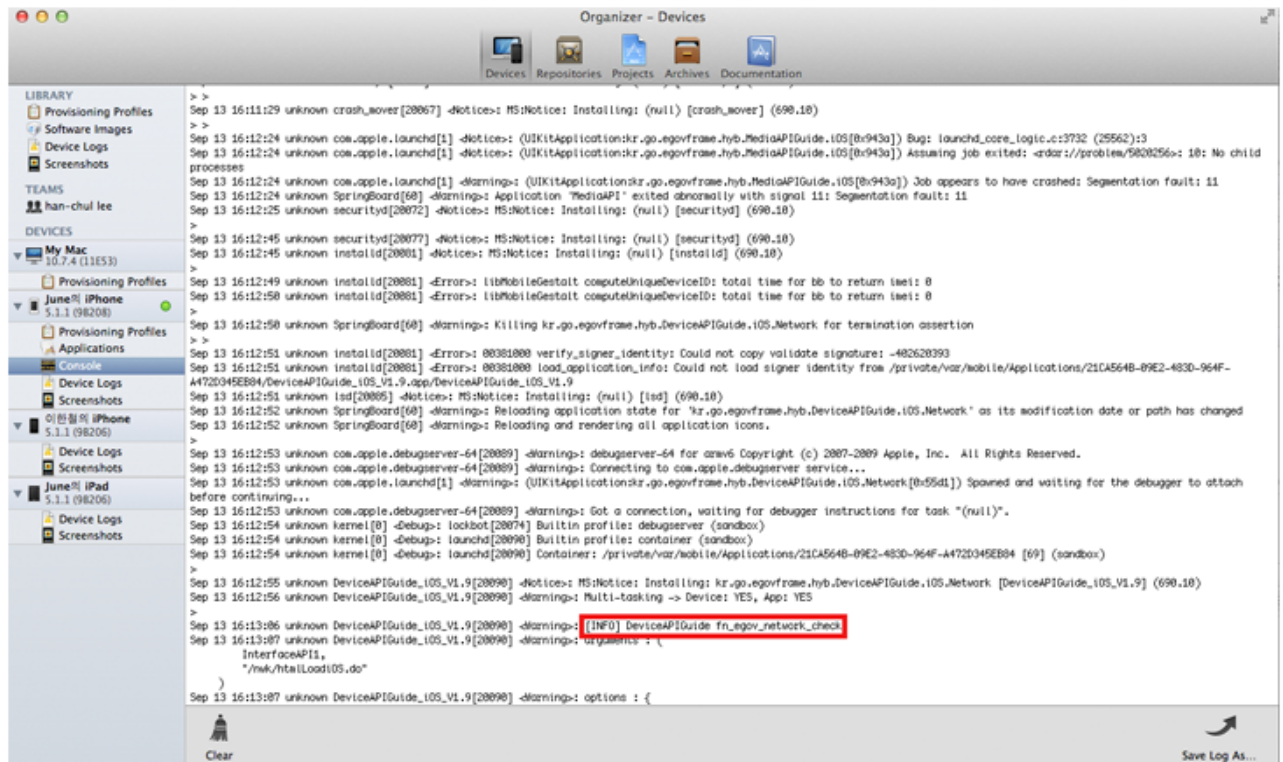
- Example of actual console log

```
function fn_egov_network_check(doCheck)
{
    console.log('DeviceAPIGuide fn_egov_network_check');
    var networkState = navigator.network.connection.type;
    ...
}
```

- xCode console window



- Organizer log window



Log message	Value	Remark
DeviceAPIGuide fn_egov_network_check	Checks network condition	
DeviceAPIGuide fn_egov_sendto_server Response Completed	Request to server successfully processed	
DeviceAPIGuide fn_egov_sendto_server Response Failed	Internal server process error	
DeviceAPIGuide fn_egov_sendto_server Request Failed	Communications error	
DeviceAPIGuide fn_egov_play_audio Success	Media playback successful	
DeviceAPIGuide fn_egov_play_audio Error	Media playback failed	
Distribution		

Download Network Device API Guide : [Click](#)

## References

- UX/UI library : jQuery Mobile[Click](#)
- Phonegap 4.3.0 : [Click](#)