

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(loader, 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

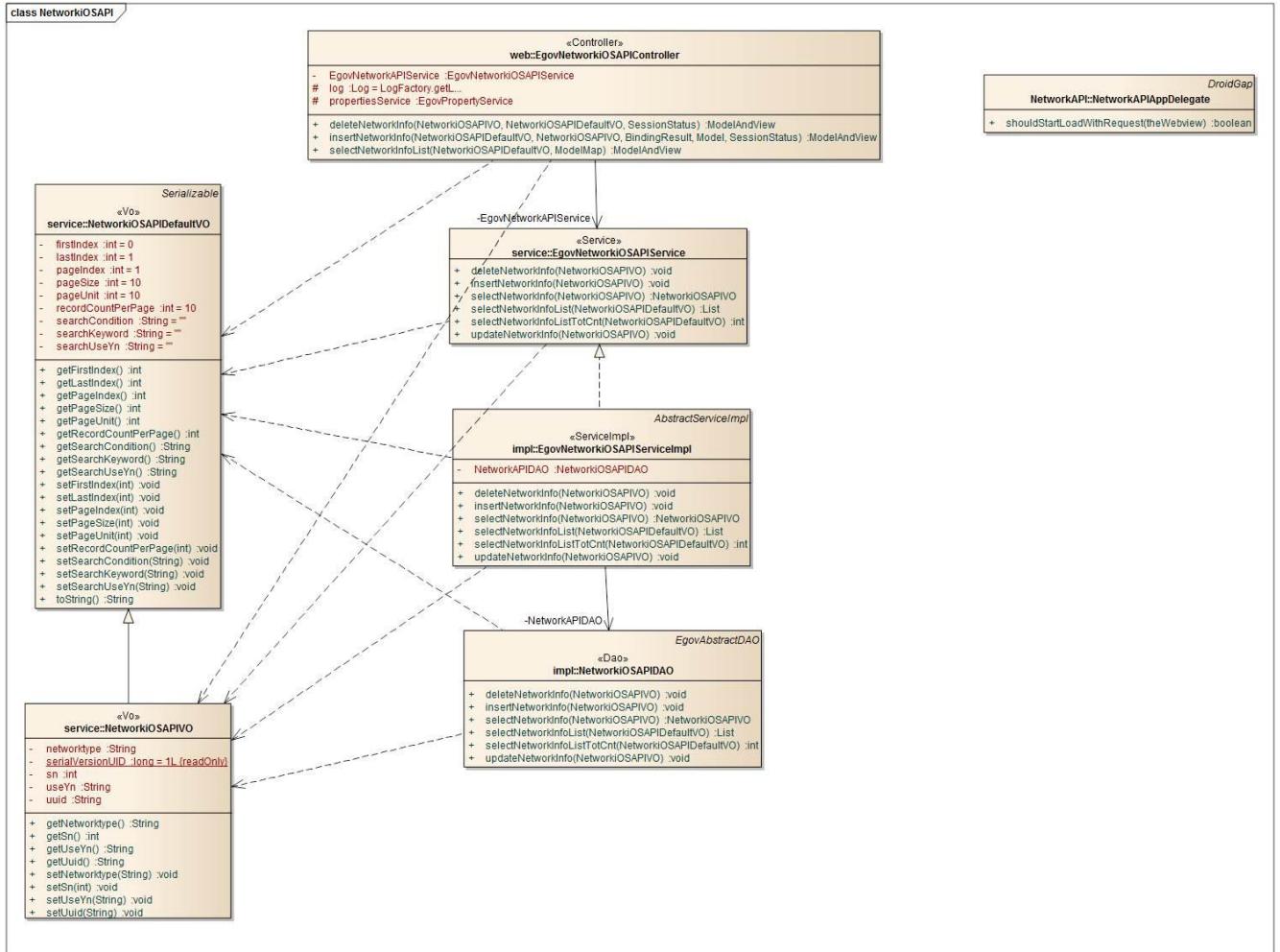
License

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	www/css/egovframwork/mbl/hyb/NetworkAPI.css	NetworkAPI Guide Program main Cascading Style Sheets
IMAGE	www/images/egovframwork/mbl/hyb/	NetworkAPI Guide Program main Image folder
JS	www/js/egovframwork/mbl/hyb/NetworkAPI.js	NetworkAPI Guide Program main JavaScript
HTML	www/NetworkAPI.html	NetworkAPI main page
HTML	www/license.html	NetworkAPI license page
HTML	www/overview.html	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 3G 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 adminis

Related Tables

Title

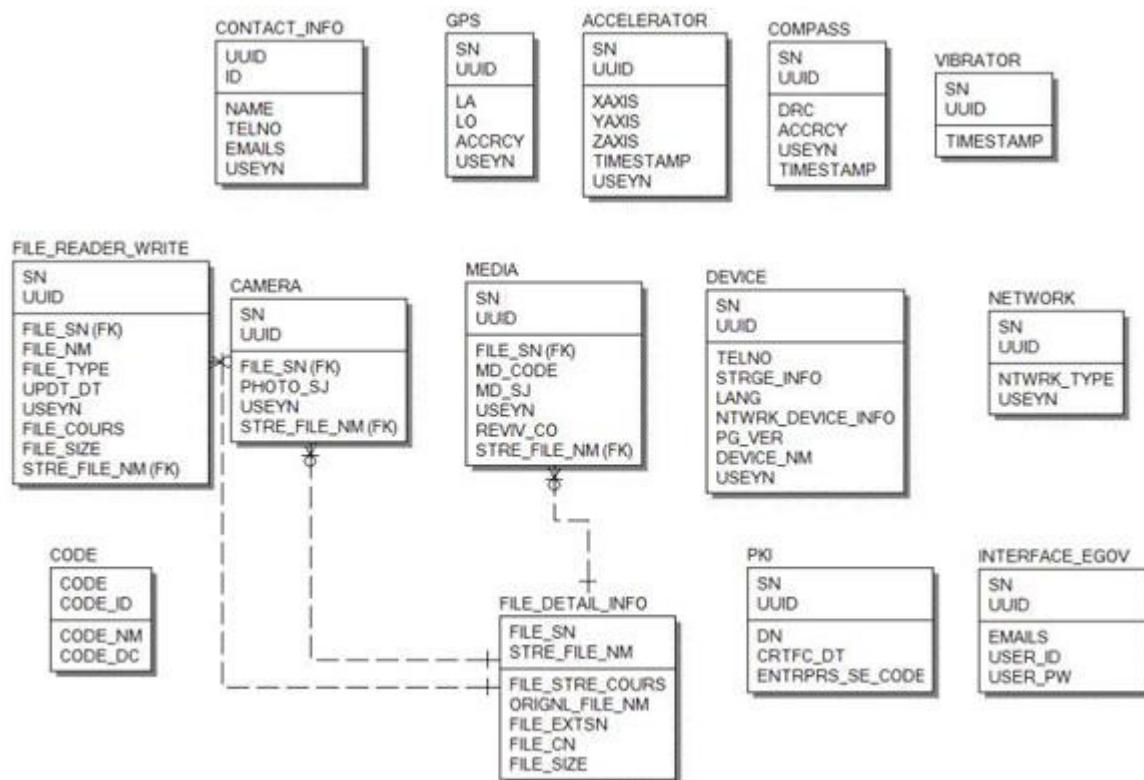
Title	Table	Remark
--------------	--------------	---------------

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/EgovNetworkiOSAPIStructure_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('DeviceAPIStructure 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

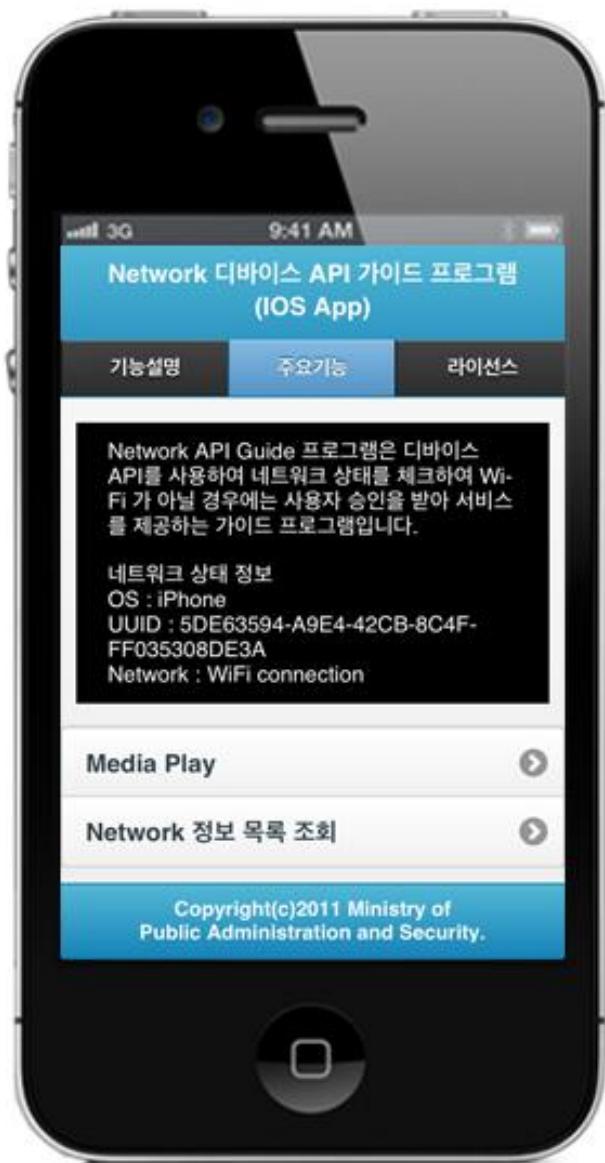
var params = {
    uuid : device.uuid,
    networktype : states[navigator.network.connection.type],
    useYn : "Y"
};

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/networkiOSInfo List.do	EgovNetworkiOSAPI Controller	selectNetworkIn foList	NetworkAPI.html#apiList View
Request network details list	/nwk/networkiOSInfo. do	EgovNetworkiOSAPI Controller	selectNetworkIn fo	NetworkAPI.html#network InfoDetail
Request deletion of network information	/nwk/deleteNetworkiO SInfo.do	EgovNetworkiOSAPI Controller	deleteNetworkI nfo	NetworkAPI.html#network InfoDetail





Back: calls main page.

List: requests details of the selected list.

List: calls network information list page.

Delete: deletes network information.

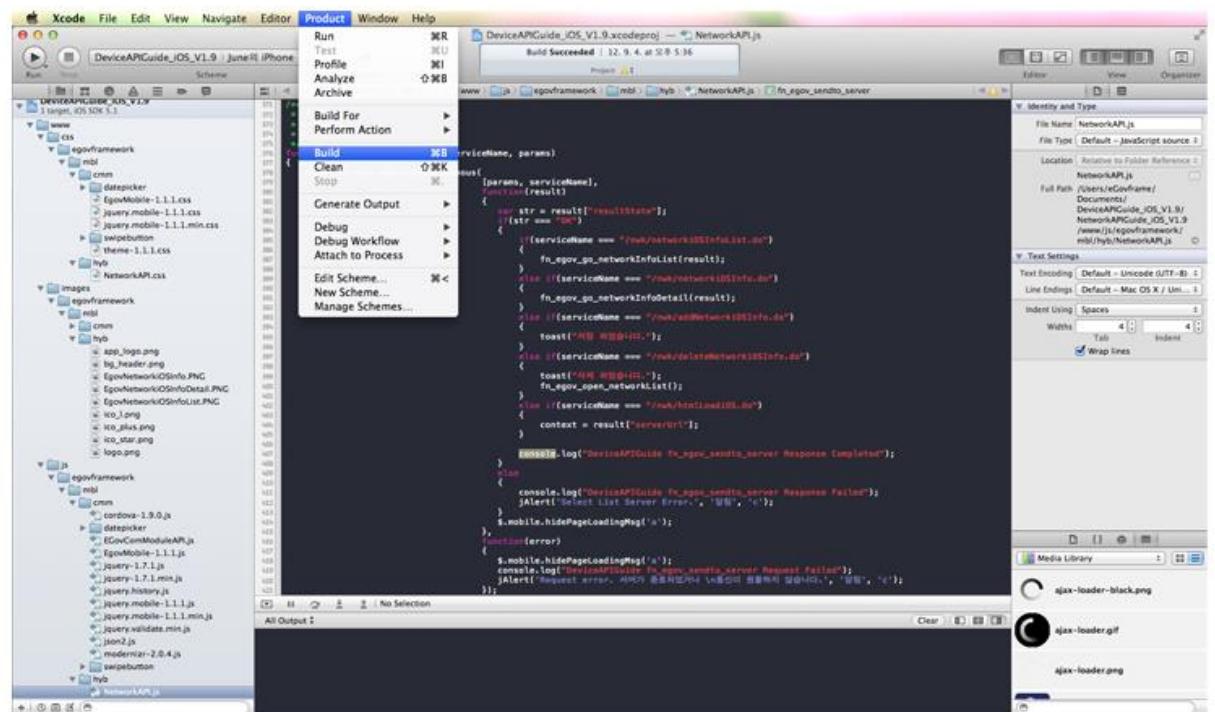
Compiling, debugging, distributing

Compiling

Device Application

1. [NetworkAPI installation link](#)

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



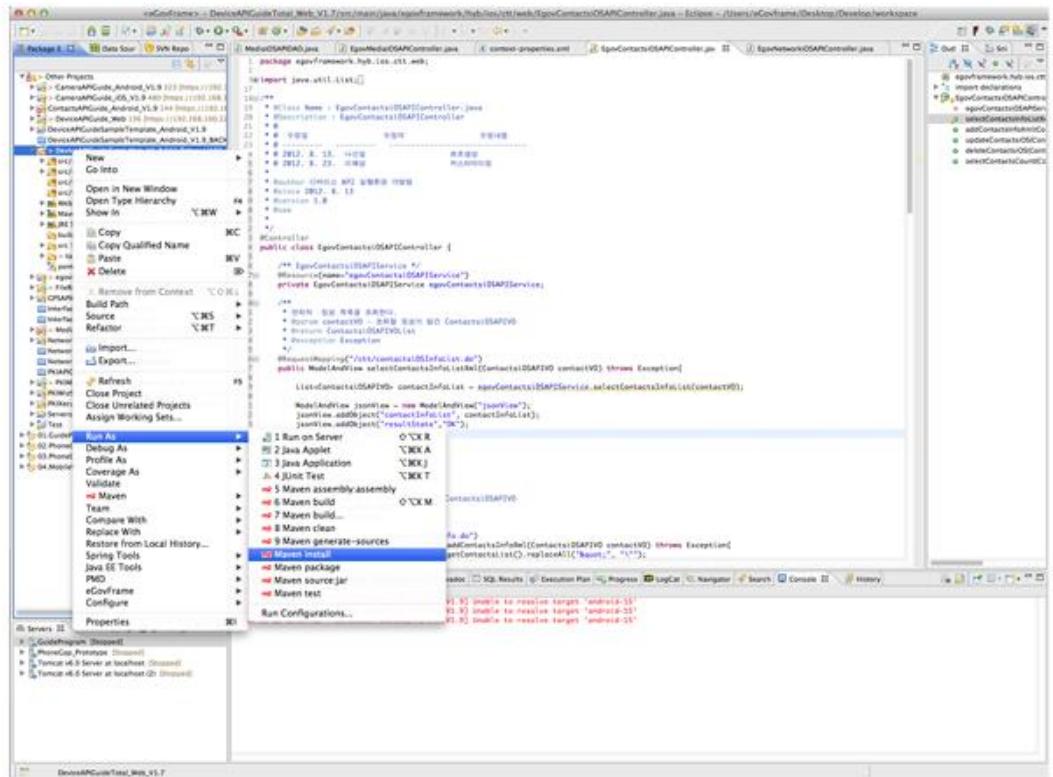
- The following screen will appear upon successful build.



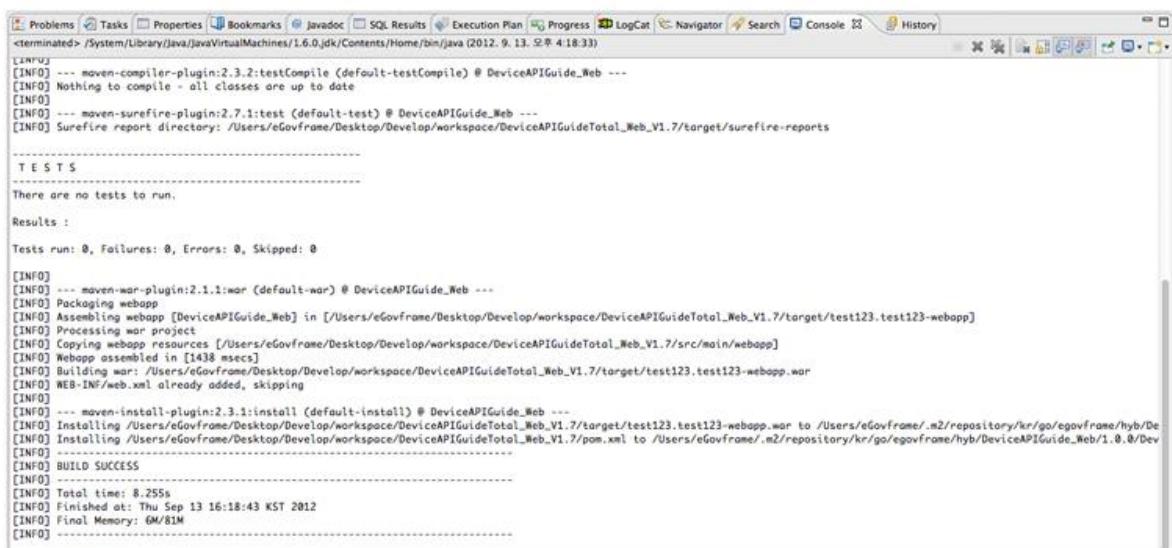
Server Application

- [Web Server installation link](#)

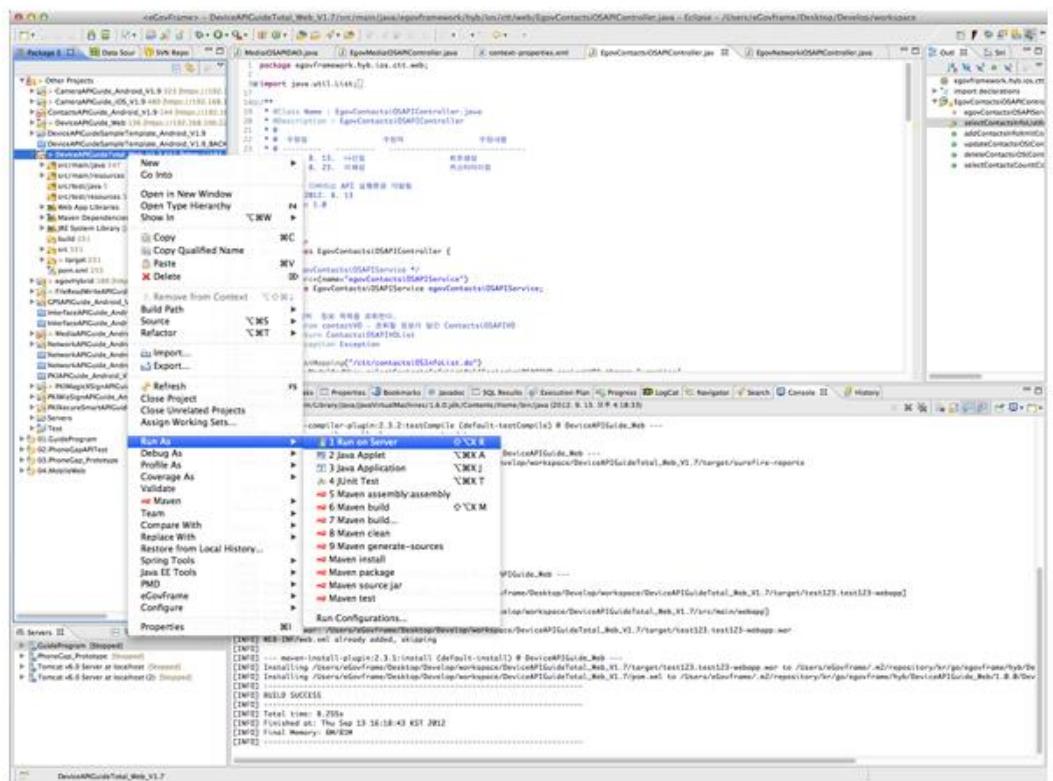
2. Right-click on the project>Run as>Maven install to build.



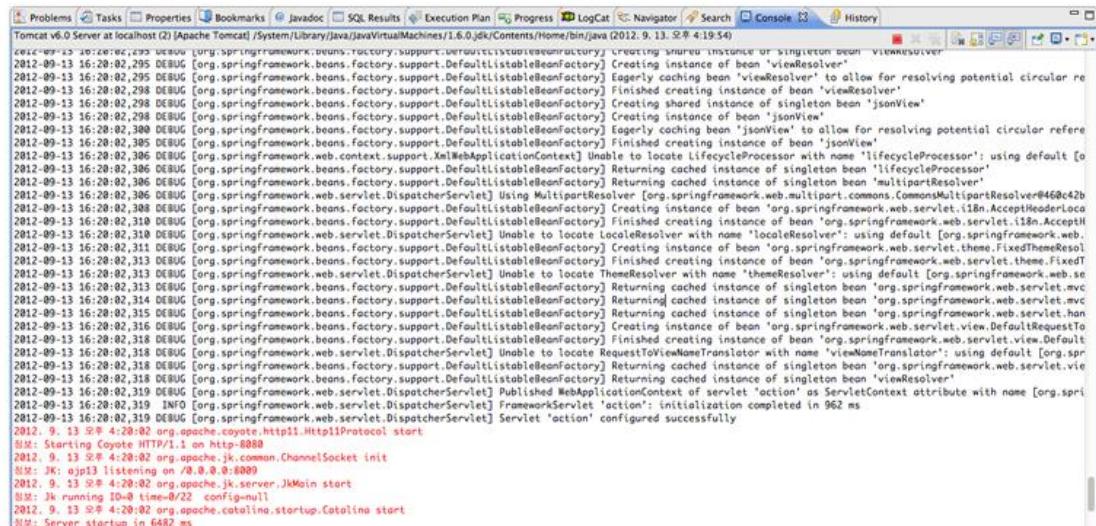
- ### 3. Build successful (check console information)



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



5. Check to see if project is successfully executed.



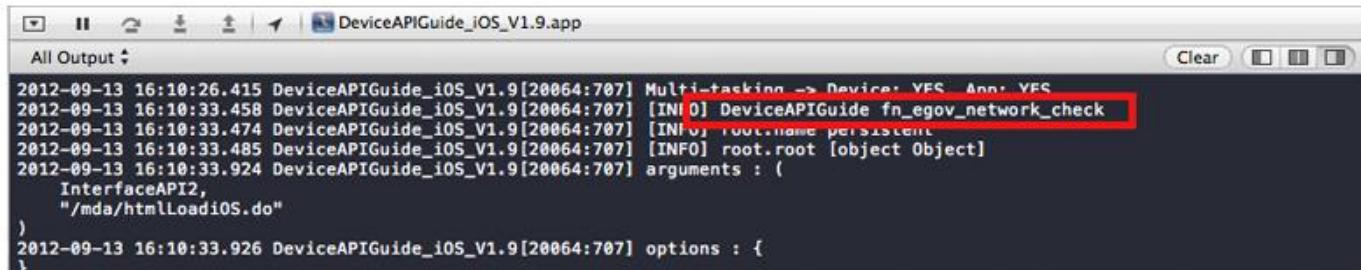
Debugging

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



The screenshot shows the Xcode Organizer log window for the application "DeviceAPIGuide_iOS_V1.9.app". The log output is displayed in a scrollable text area. The text shows several log entries from September 13, 2012, at 16:10:26.415. The entries include logs from the DeviceAPIGuide module, such as "fn_egov_network_check" being called, and other logs related to the application's startup and configuration. The log entries are color-coded with red highlights around specific lines, likely indicating the execution of the debug code.

```
2012-09-13 16:10:26.415 DeviceAPIGuide_iOS_V1.9[20064:707] Multi-tasking -> Device: YES Ann: YES
2012-09-13 16:10:33.458 DeviceAPIGuide_iOS_V1.9[20064:707] [INFO] DeviceAPIGuide fn_egov_network_check
2012-09-13 16:10:33.474 DeviceAPIGuide_iOS_V1.9[20064:707] [INFO] root.name persistent
2012-09-13 16:10:33.485 DeviceAPIGuide_iOS_V1.9[20064:707] [INFO] root.root [object Object]
2012-09-13 16:10:33.924 DeviceAPIGuide_iOS_V1.9[20064:707] arguments : [
  InterfaceAPI2,
  "/mda/htmlLoadiOS.do"
]
2012-09-13 16:10:33.926 DeviceAPIGuide_iOS_V1.9[20064:707] options : {
```

- Organizer log window

```

> >
Sep 13 16:11:29 unknown crash_mover[28067] <Notice> M5:Notice: Installing: (null) [crash_mover] (690.10)
> >
Sep 13 16:12:24 unknown com.apple.launchd[1] <Notice> (UIKitApplication:kr.go.egovframe.hyb.DeviceAPIGuide.iOS[0x943a]) Bug: launchd_core_logic.c:3732 (25562):3
Sep 13 16:12:24 unknown com.apple.launchd[1] <Notice> (UIKitApplication:kr.go.egovframe.hyb.DeviceAPIGuide.iOS[0x943a]) Assuming job exited: <error://problem/5809256>; 10: No child processes
Sep 13 16:12:24 unknown com.apple.launchd[1] <Warning> (UIKitApplication:kr.go.egovframe.hyb.DeviceAPIGuide.iOS[0x943a]) Job appears to have crashed: Segmentation fault: 11
Sep 13 16:12:24 unknown SpringBoard[68] <Warning> Application 'MediaPI' exited abnormally with signal 11: Segmentation fault: 11
Sep 13 16:12:25 unknown securityd[28072] <Notice> M5:Notice: Installing: (null) [securityd] (690.10)
> >
Sep 13 16:12:45 unknown securityd[28077] <Notice> M5:Notice: Installing: (null) [securityd] (690.10)
Sep 13 16:12:45 unknown installd[28081] <Notice> M5:Notice: Installing: (null) [installd] (690.10)
> >
Sep 13 16:12:49 unknown installd[28081] <Error> libbmobilegestalt computeUniqueDeviceID: total time for bb to return ism: 8
Sep 13 16:12:58 unknown installd[28081] <Error> libbmobilegestalt computeUniqueDeviceID: total time for bb to return ism: 8
> >
Sep 13 16:12:58 unknown SpringBoard[68] <Warning> Killing kr.go.egovframe.hyb.DeviceAPIGuide.iOS.Network for termination assertion
> >
Sep 13 16:12:51 unknown installd[28081] <Error> 00381000 verify_signer_identity: Could not copy validate signature: -482620393
Sep 13 16:12:51 unknown installd[28081] <Error> 00381000 load_application_info: Could not load signer identity from /private/var/mobile/Applications/21CA564B-09E2-4830-964F-A4720345EB84/DeviceAPIGuide.iOS_V1.9.app/DeviceAPIGuide.iOS_V1.9
Sep 13 16:12:51 unknown lsd[20899] <Notice> M5:Notice: Installing: (null) [lsd] (690.10)
Sep 13 16:12:51 unknown SpringBoard[68] <Warning> Reloading application state for 'kr.go.egovframe.hyb.DeviceAPIGuide.iOS.Network' as its modification date or path has changed
Sep 13 16:12:52 unknown SpringBoard[68] <Warning> Reloading and rendering all application icons.
> >
Sep 13 16:12:53 unknown com.apple.debugserver-64[20899] <Warning> debugserver-64 for armv6 Copyright (c) 2007-2009 Apple, Inc. All Rights Reserved.
Sep 13 16:12:53 unknown com.apple.debugserver-64[20899] <Warning> Connecting to com.apple.debugserver service...
Sep 13 16:12:53 unknown com.apple.launchd[1] <Warning> (UIKitApplication:kr.go.egovframe.hyb.DeviceAPIGuide.iOS.Network[0x5d1]) Spawning and waiting for the debugger to attach before continuing...
Sep 13 16:12:53 unknown com.apple.debugserver-64[20899] <Warning> Got a connection, waiting for debugger instructions for task "(null)".
Sep 13 16:12:54 unknown kernel[0] <Debug> lockbot[20874] Builtin profile: debugserver (sandbox)
Sep 13 16:12:54 unknown kernel[0] <Debug> launchd[20990] Container: /private/var/mobile/Applications/21CA564B-09E2-4830-964F-A4720345EB84 [69] (sandbox)
> >
Sep 13 16:12:55 unknown DeviceAPIGuide.iOS_V1.9[20898] <Notice> M5:Notice: Installing: kr.go.egovframe.hyb.DeviceAPIGuide.iOS.Network [DeviceAPIGuide.iOS_V1.9] (690.10)
Sep 13 16:12:56 unknown DeviceAPIGuide.iOS_V1.9[20898] <Warning> Multi-tasking -> Device: YES, App: YES
> >
Sep 13 16:13:06 unknown DeviceAPIGuide.iOS_V1.9[20898] <Warning> [INFO] DeviceAPIGuide fn_egov_network_check
Sep 13 16:13:07 unknown DeviceAPIGuide.iOS_V1.9[20898] <Warning> arguments + [
    InterfaceAPI,
    "/mk/htm/LoadIOS.do"
]
> >
Sep 13 16:13:07 unknown DeviceAPIGuide.iOS_V1.9[20898] <Warning> options : {

```

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](#)