

# FileReadWrite Device API Guide Program

## Outline

FileReadWrite 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 file information of mobile smart devices through JavaScript-based FileReadWrite DeviceAPI.

Also, it is comprised of a feature to send and inquire information of files within the Device, in conjunction with eGovFramework based web server application.

### Feature

This Guide Program provides **read file from mobile device, write file in mobile device, send created file to server, and restore sent file to device** 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

### Restriction

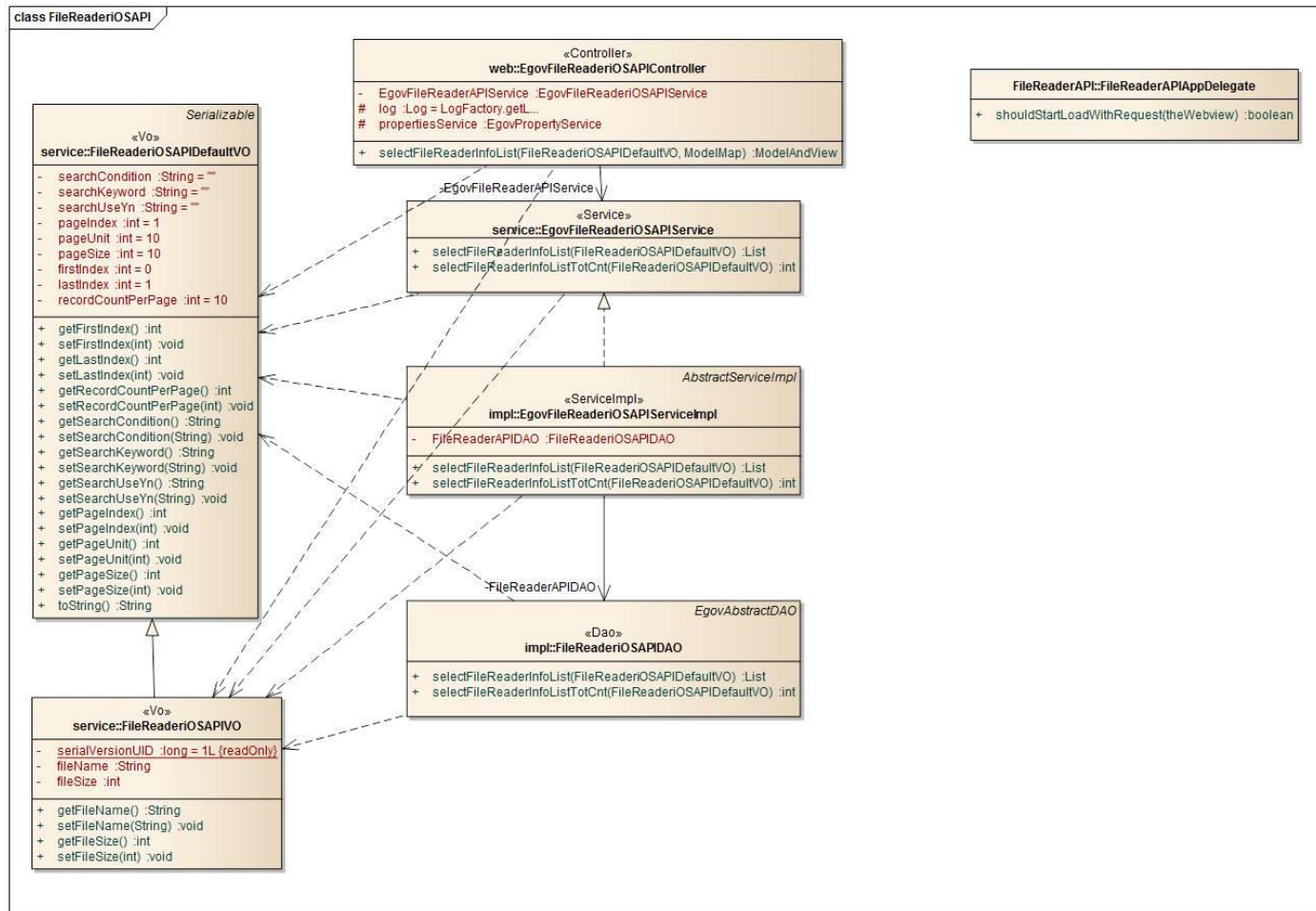
#### Using cross domain

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

## Description

FileReadWrite Device API Guide Program is comprised of **read file from mobile device, write file in mobile device, send created file to server, restore sent file to device** features. (refer to related features section)

## Class Diagram



Device Application

## Source

Type	Title	Remark
CSS	www/css/egovframework/mb1/hyb/FileReaderWriterAPI.css	FileReaderWriterAPI Guide Program main Cascading Style Sheets
IMAGE	www/images/egovframework/mb1/hyb/	FileReaderWriterAPI Guide Program main Image folder
JS	www/js/egovframework/mb1/hyb/FileReaderWriterAPI.js	FileReaderWriterAPIGuide Program main JavaScript
HTML	www/FileReaderWriterAPI.html	FileReaderWriterAPI main page
HTML	www/license.html	FileReaderWriterAPI license page
HTML	www/overview.html	FileReaderWriterAPI feature description page
RES	[Project_Name]/Resources/	FileReaderWriterAPI Guide Program main Resource fold

er

PLIST [Project\_Name]/Supproting Files/[Project\_Name]-In iOS application settings file  
fo.plist

### APIs Used

LocalFileSystem

- Load the system information out of the mobile device

```
window.requestFileSystem(LocalFileSystem.PERSISTENT, 0, onSuccess, onError);
```

**Parameter**

**Description**

**Remark**

LocalFileSystem.PERSISTENT Inquires the storages that cannot be removed by either user or application

onSuccess, Callback function called upon successful inquiry to the files system

onError Callback function called upon inquiry failure

FileTransfer[upload]

- Transfer selected file(s) to outside system.

```
var ft = new FileTransfer();  
ft.upload(fileURI, encodeURI("http://some.server.com/upload.php"), win, fail, options);  
FileTransfer[upload]
```

- Transfer selected file(s) from outside system to the mobile device.

```
var ft = new FileTransfer();  
ft.download(fileURI, encodeURI("http://some.server.com/upload.php"), win, fail, options);  
Server Application
```

### Source

Type	Title		Remark
Controllor	egovframework.hyb.ios.frw.web.EgovFileReaderWriteriOSAPIControler.java	FileReadWriteAPI	Guide Program Controllor Class
Service	egovframework.hyb.ios.frw.service.EgovFileReaderWriteriOSAPIService.java	FileReadWriteAPI	Guide Program Service Class
ServiceImpl	egovframework.hyb.ios.frw.service.impl.EgovFileReaderWriteriOSAPIServiceImpl.java	FileReadWriteAPI	Guide Program ServiceImpl Class
VO	egovframework.hyb.ios.frw.service.FileReaderWriteriOSAPIVO.java	FileReadWriteAPI	Guide Program VO Class
DAO	egovframework.hyb.ios.frw.service.impl.FileReaderWriteriOSAPIDAObject.java	FileReadWriteAPI	Guide Program DAO Class
QUERY	X resources/egovframework/sqlmap/hyb/ios/frw/EgovFileReaderWriteri	FileReadWriteAPI	Guide Program Q

**Related Tables**

Title	Table	Remark
FileReader/Write	FILE_READER_WRITE	Manage file information
File details	FILE_DETAIL_INFO	Manage file details

**Table Definition**

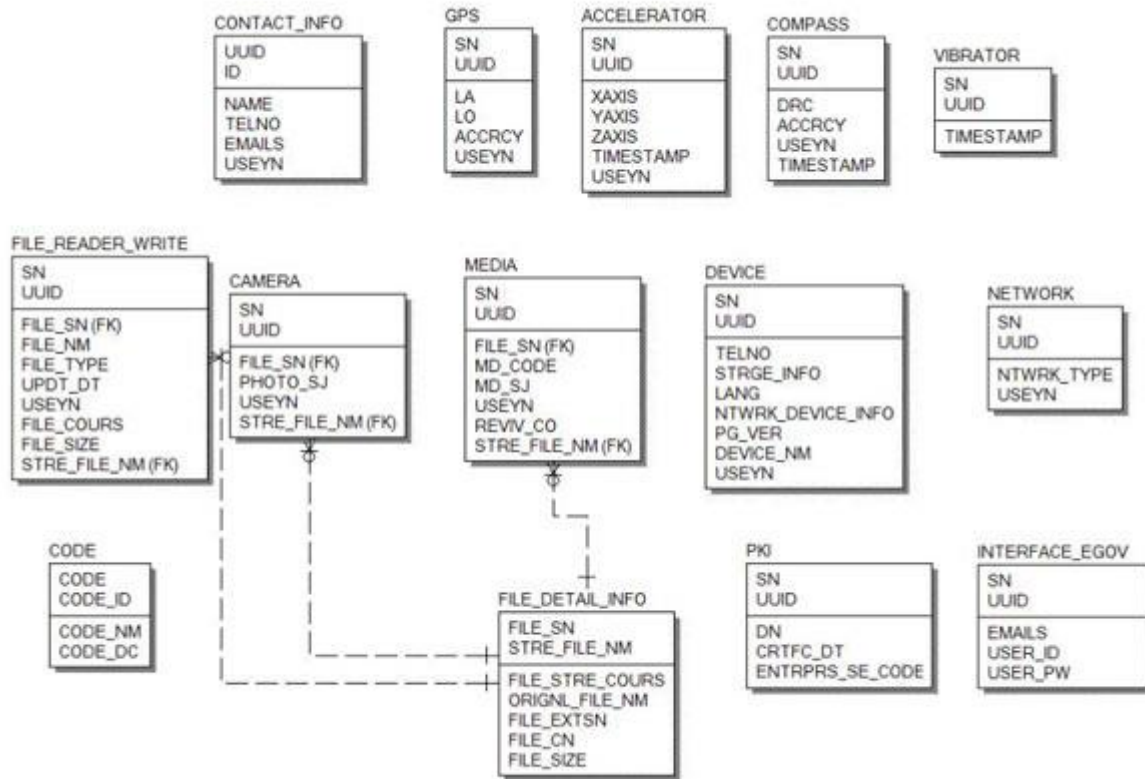
- FILE\_READER\_WRITE

No	Column ID	Title of Column	Type	Length	NULL
1	SN	Serial No.	NUMERIC	6	NotNull
2	UUID	UUID	VARCHAR	50	NotNull
3	FILE_SN	File Serial Number	NUMERIC	20	NotNull
4	FILE_NM	File name	VARCHAR	255	Null
5	FILE_COURS	File directory	VARCHAR	2000	Null
6	FILE_TYPE	File type	VARCHAR	40	Null
7	UPDT_DT	Date updated	DATE		Null
8	FILE_SIZE	File size	NUMERIC	8	Null
9	USEYN	Activation	CHAR	1	Null

- FILE\_DETAIL\_INFO

No	Column ID	Title of Column	Type	Length	NULL
1	FILE_SN	File Serial Number	NUMERIC	20	NotNull
2	FILE_STRE_COURS	File directory	VARCHAR	2000	Null
3	STRE_FILE_NM	Stored file name	VARCHAR	255	Null
4	ORIGNL_FILE_NM	Original file name	VARCHAR	255	Null
5	FILE_EXTSN	File extension	VARCHAR	20	Null
6	FILE_CN	File contents	BLOB		Null
7	FILE_SIZE	File size	NUMERIC	8	Null

## ERD



## Configuration Settings

Necessary sections and settings for using file information inquiry feature of the mobile device, provided by FileReadWriteAPI Device API Guide Program, are as follows.

Device Application

**config.xml**

Plugin

```

<featurename="File">
<paramname="ios-package" value="CDVFile"/>
</feature>
<featurename="FileTransfer">
<paramname="ios-package" value="CDVFileTransfer"/>
</feature>
<featurename="Capture">
<paramname="ios-package" value="CDVCapture"/>
</feature>
<featurename="InterfaceAPI">
<paramname="ios-package" value="EgovInterface"/>
</feature>
  
```

```

        ExternalHosts

<accessorigin="ExternalHosts"/>
    [Project_Name]/eGovModule/EGovComModule.h

#define kSERVER_URL        @"Server_URL"
    Server Application

    context-properties.xml

    • Upload directory

<entrykey="fileStorePath" value="File_Save_Path"/>
    resource/egovframework/sqlmap/sql-map-config_[DB_NAME].xml

<sqlMapresource="egovframework/sqlmap/hyb/ios/dvc/EgovFileReaderWriteriOSAPIGuide_SQL_[
DB_NAME].xml"/>

```

## Related features

FileReadWriteAPI Device API Guide Program is comprised of features to a) inquire file information within mobile device and b) send inquired file information to server and inquire it.

Read file from mobile device

### Business Logic

- Check the network. If the network is not Wi-Fi, function based on user approval.
- File systems available for inquiry on iOS platform is restricted to files under Document folder.

### Related Codes

Updates the local file system

```

function fn_egov_localStorageInfo() {
    console.log("[DeviceAPI Guide] fn_egov_localStorageInfo : Success ");
    window.requestFileSystem(LocalFileSystem.PERSISTENT, 0,
        function(fs){ // success get file system
            fileSystem = fs;
            dirEntry = fs.root;
            rootDirEntry = fs.root;
            fn_egov_readDirectory();
            console.log("fn_egov_localStorageInfo : success callback");
            //listDir(dirEntry);
        }, function(evt){ // error get file system
            console.log("File System Error: "+evt.target.error.code);
        }
    );
}

```

Create instance and acquire information in order to acquire directory information

```

function fn_egov_readDirectory() {
    console.log("[DeviceAPI Guide] fn_egov_readDirectory : Success ");
    var directoryReader = dirEntry.createReader();
}

```

```
        directoryReader.readEntries(fn_egov_listDir, fn_egov_fileError);
    }
}
```

Gets directory information

```
function fn_egov_goDirectory(directoryEntry) {
    dirEntry = directoryEntry;
    fn_egov_readDirectory();
}
```

Gets location information in the current file system

```
function fn_egov_chdir(dir) {
    if (dir == "../") {
        dirEntry.getParent(fn_egov_goDirectory, fn_egov_fileError);
    } else if (dir == "/") {
        console.log("fn_egov_chdir : go to root Dir");
        dirEntry = fileSystem.root;
        fn_egov_readDirectory();
    } else {
        dirEntry.getDirectory(dir, {}, fn_egov_goDirectory, fn_egov_fileError);
    }
}
```

## **Related Screen and Implementation Manual**







delete : delete selected file Close: Exit

Write file in mobile device

#### **Business Logic**

- Check the network. If the network is not Wi-Fi, function based on user approval.
- Uses video capture feature in order to write files.

#### **Related Codes**

Calls video capture feature of the device.

```
function fn_egov_captureVideo() {
```

```

navigator.device.capture.captureVideo(fn_egov_captureSuccess, fn_egov_captureError, {limit:
2});
}

```

Copy inquired video file to Document folder

```

function fn_egov_onResolveFileSuccess(fileEntry) {
    var date = new Date().getTime();
    console.log("[DeviceAPI Guide] fn_egov_onResolveFileSuccess : " + fileEntry.name + "
created");
    fileEntry.copyTo(rootDirEntry, "M" + date + ".MOV", fn_egov_onFileCopySuccess,
fn_egov_fail);
}

```

### Related Screen and Implementation Manual



Capture video: takes video and saves file

Send created file to server

### **Business Logic**

- Check the network. If the network is not Wi-Fi, function based on user approval.
- File transfer to outside system uses FileTransfer API.

### **Related Codes**

Calls file upload on selected file(s).

```
function fn_egov_request_uploadFile(fileName){
    $.mobile.showPageLoadingMsg();
    dirEntry.getFile(fileName, null, fn_egov_uploadFile, fn_egov_fail);
}
```

Upload file(s) delivered through a parameter

```
function fn_egov_uploadFile(fileEntry) {
    var options = new FileUploadOptions();
    options.fileKey="file";
    options.fileName=fileEntry.name;
    options.mimeType="video/quicktime";

    var params = {uuid : device.uuid};
    options.params = params;

    console.log("fn_egov_uploadFile : " + options.params.uuid);
    var ft = new FileTransfer();
    ft.upload(fileEntry.fullPath, serverURL + "/frw/fileUpload.do?uuid=" + encodeURIComponent(device.uuid),
    fn_egov_onFileUploadSuccess, fn_egov_fail, options);
}
```

File upload Success Callback Function

```
function fn_egov_onFileUploadSuccess(r) {
    //debug code
    console.log("Code = " + r.responseCode);
    console.log("Response = " + r.response);
    console.log("Sent = " + r.bytesSent);

    if(r.responseCode == 200 && r.response == "%22ok%22"){
        navigator.notification.alert("File upload completed. Check server list.", null, 'Info');
    }else{
        navigator.notification.alert("File upload failed", null, 'Info');
    }
    $.mobile.hidePageLoadingMsg();
    console.log("[DeviceAPI Guide] fn_egov_onFileUploadSuccess : Completed ");
}
```

## Related Screen and Implementation Manual

Action	URL	Controller method	QueryID
File upload	/frw/fileUpload.do	fileUpload	





upload : Send File to Server

Restore sent file to device

#### **Business Logic**

- Check the network. If the network is not Wi-Fi, function based on user approval.
- File transfer to outside system uses FileTransfer API.

#### **Related Codes**

Prints file list inquired in server in a list form

```
function fn_egov_make_FileInfoList(data){  
    var list_html = "";  
    var totcnt = data.fileInfoList.length;
```

```

fileInfoList = data.fileInfoList;

for (var i = 0; i < totcnt; i++) {
    result = data.fileInfoList[i];

    var linkVal = "javascript:fn_egov_open_down_dialogue("" + i + "");";

    list_html += '<li><a href="" + linkVal + "">';
    list_html += '<h3>' + result.fileNm + '</h3>';
    list_html += '<p><strong>Size : ' + result.fileSize + '</strong></p></a></li>';

}

var theList = $('#fileList');
theList.html(list_html);

$.mobile.changePage("#serverFileList", "slide", false, false);
theList.listview("refresh");
console.log("[DeviceAPI Guide] fn_egov_make_FileInfoList : Completed");
}

```

Create process selection dialogue on the selected file (delete or download)

```

function fn_egov_open_down_dialogue(fileNum) {
    var btnItem = [{id : 'button1', value: "download"},
        {id : 'button2', value: "delete"}];
    jActionSheet(" 'File Info', 'c', btnItem , function(r) {
        if(r == "download"){
            fn_egov_downloadFile(fileNum);
        }else if(r == "delete"){
            fn_egov_delete_fileInfo(fileNum);
        }
    });
}

```

Download selected file from server

```

function fn_egov_downloadFile(fileNum){

    if(!fn_egov_network_check(true)){
        return false;
    }
    var fileTransfer = new FileTransfer();
    $.mobile.showPageLoadingMsg();
    fileTransfer.download(
        serverURL + "/frw/fileDownload.do?uuid=" +
        encodeURI(device.uuid) + "&fileSn=" + encodeURI(fileInfoList[fileNum].fileSn),
        rootDirEntry.fullPath + "/" + fileInfoList[fileNum].fileNm,

```



```

function(entry) {
    console.log("download complete: " + entry.fullPath);
    navigator.notification.alert("Download Complete. Confirm by
reading files..", null, 'Info');

    $.mobile.hidePageLoadingMsg();

    console.log("[DeviceAPI Guide] fn_egov_downloadFile :
Completed");

},
function(error) {
    console.log("download error source " + error.source);
    console.log("download error target " + error.target);
    console.log("download error code" + error.code);
    $.mobile.hidePageLoadingMsg();
}
);
}

```

#### Related Screen and Implementation Manual

Action	URL	Controller method	QueryID
File download	/frw/fileDownload.do	fileDownload	“fileReaderWriteriOSAPIDAO.selectFileInfo”





download: download selected file(s) to device

delete: delete selected file(s) from server list

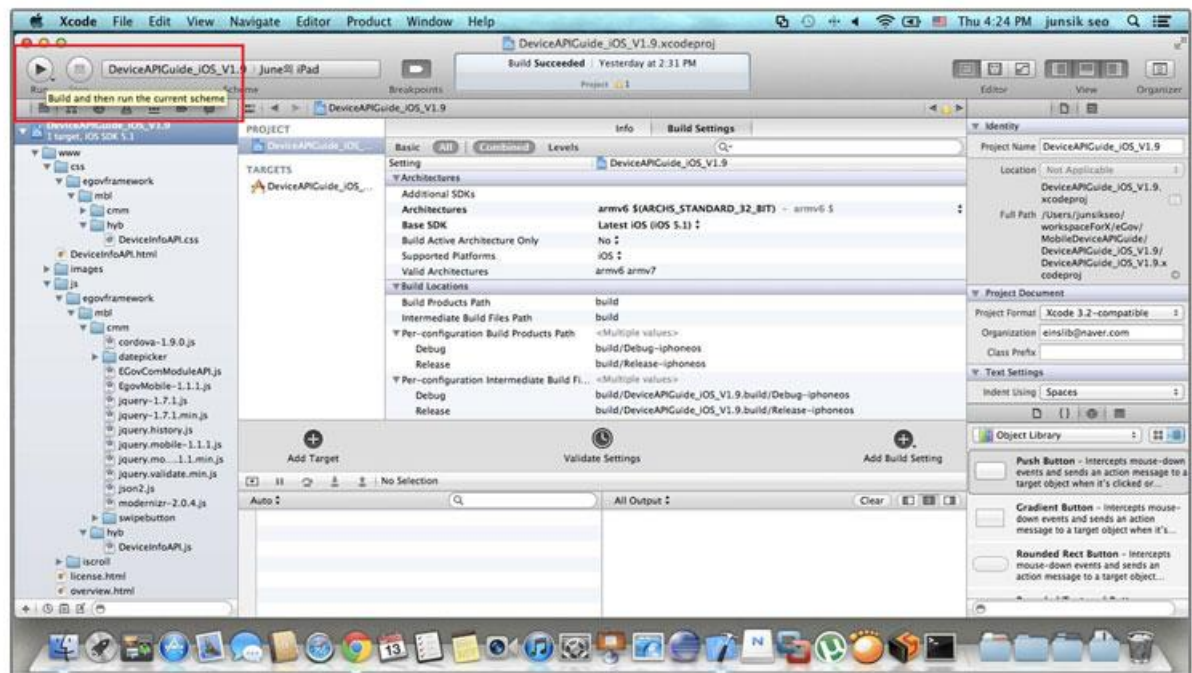
close: exit

## Compiling, debugging, distributing

### Compiling

#### How to compile FileReadWriteAPI Device Applicaton

- Click the triangular button on top left to build the Guide Program and install it to the iPhone Device.

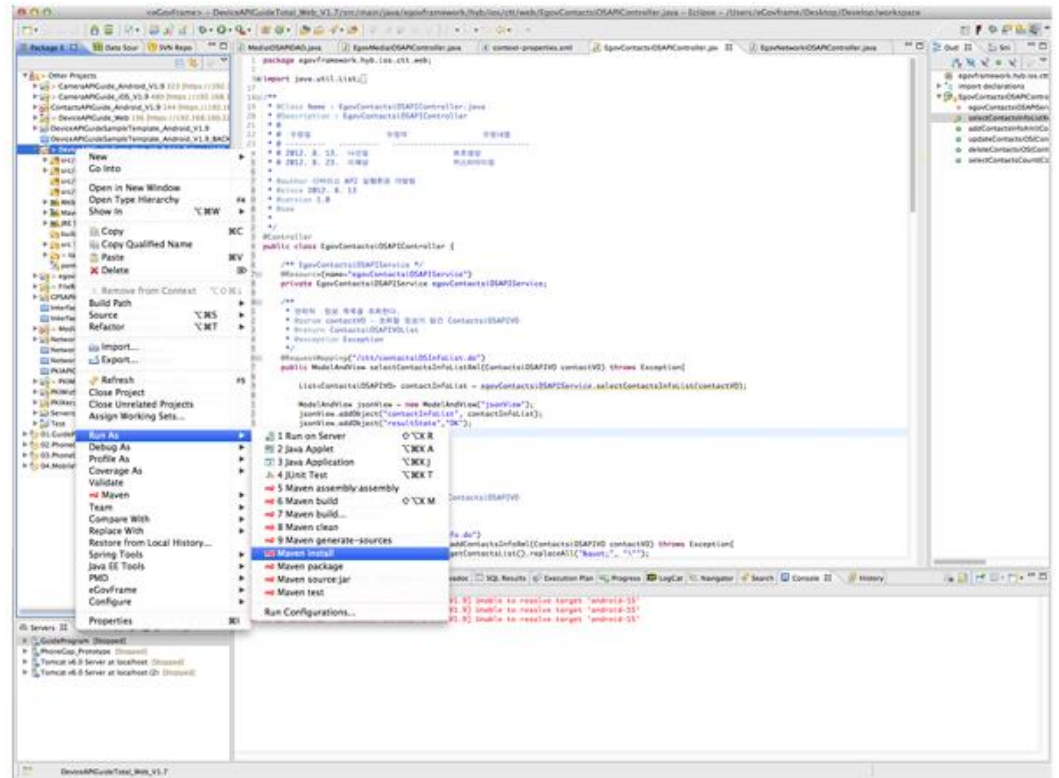


- Upon successful build, the following screen is displayed.

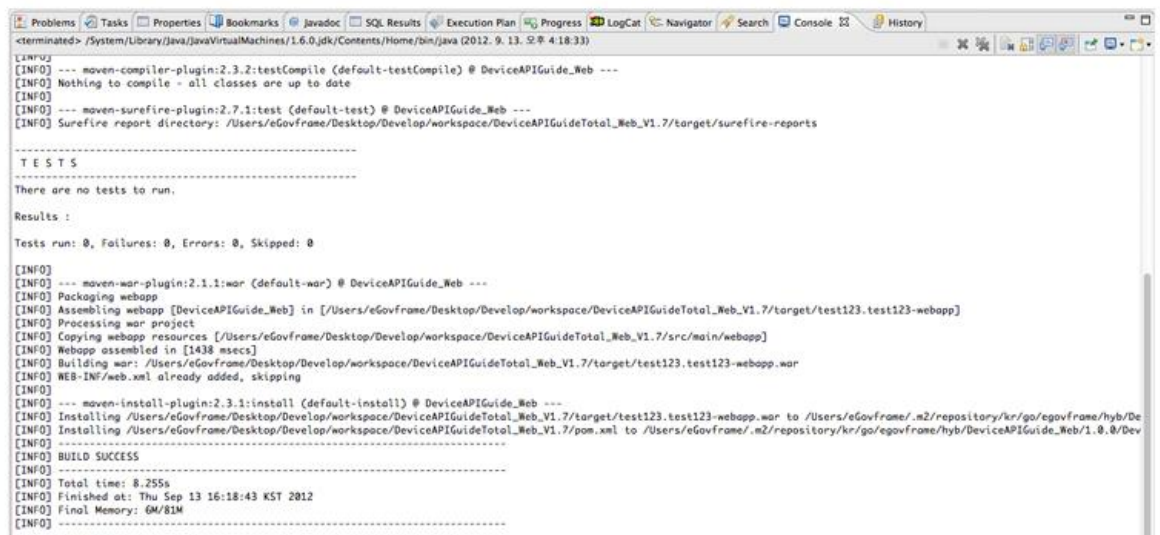


## How to compile FileReadWriteAPI Server Applicaton

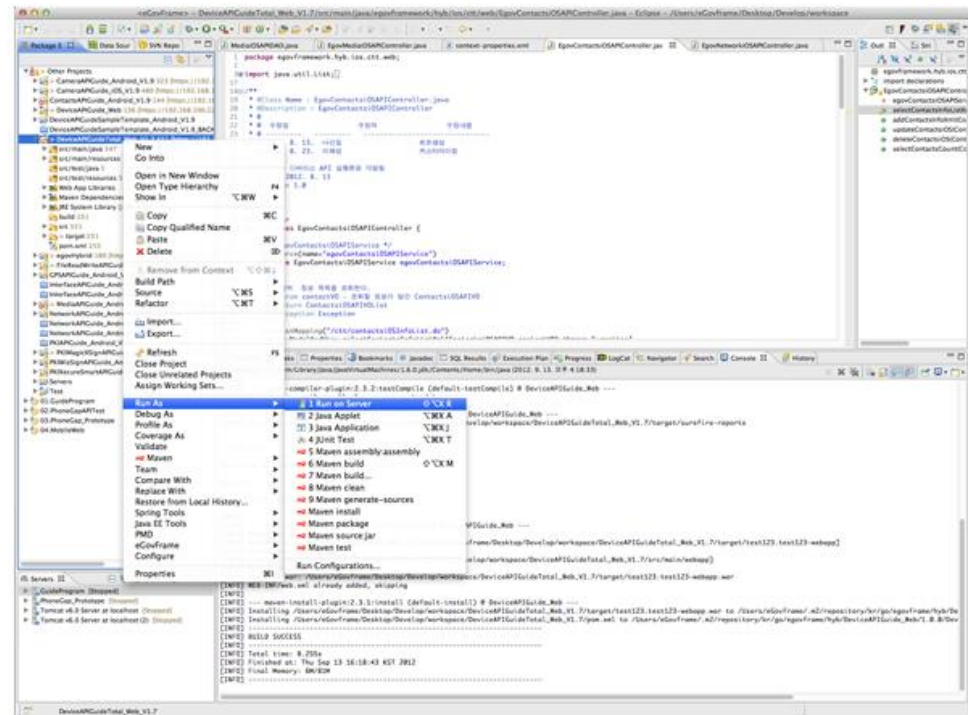
1. Right-click on the project>Run as>Maven install to build.



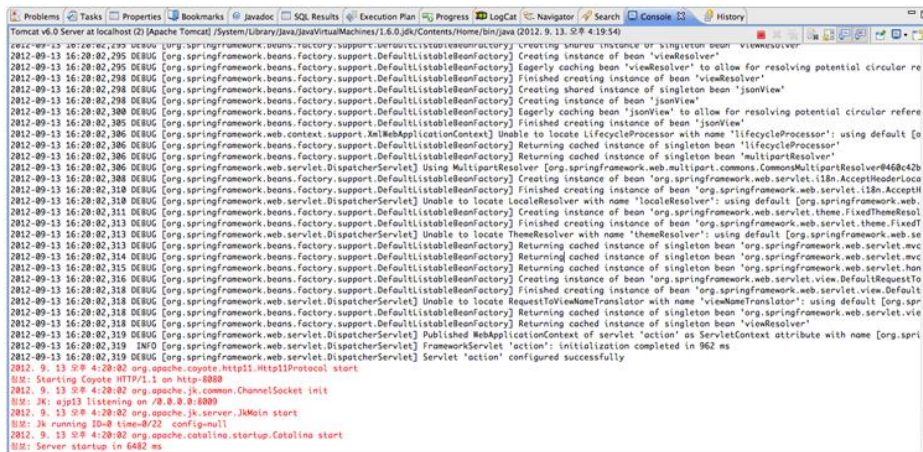
2. Build successful (check console information)



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



4. 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)

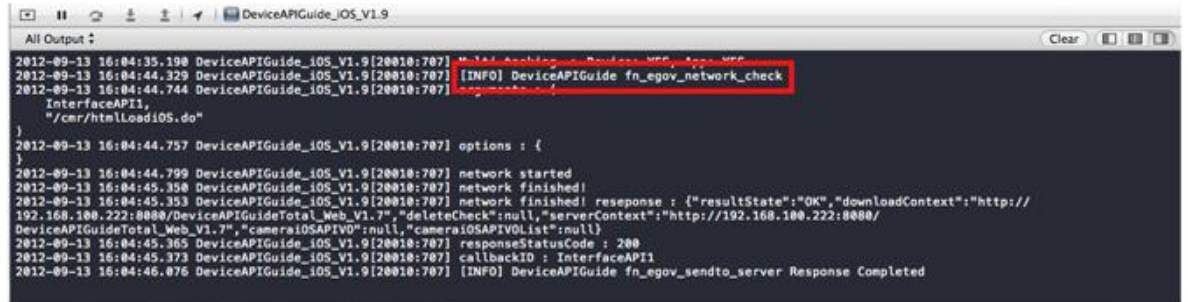


```

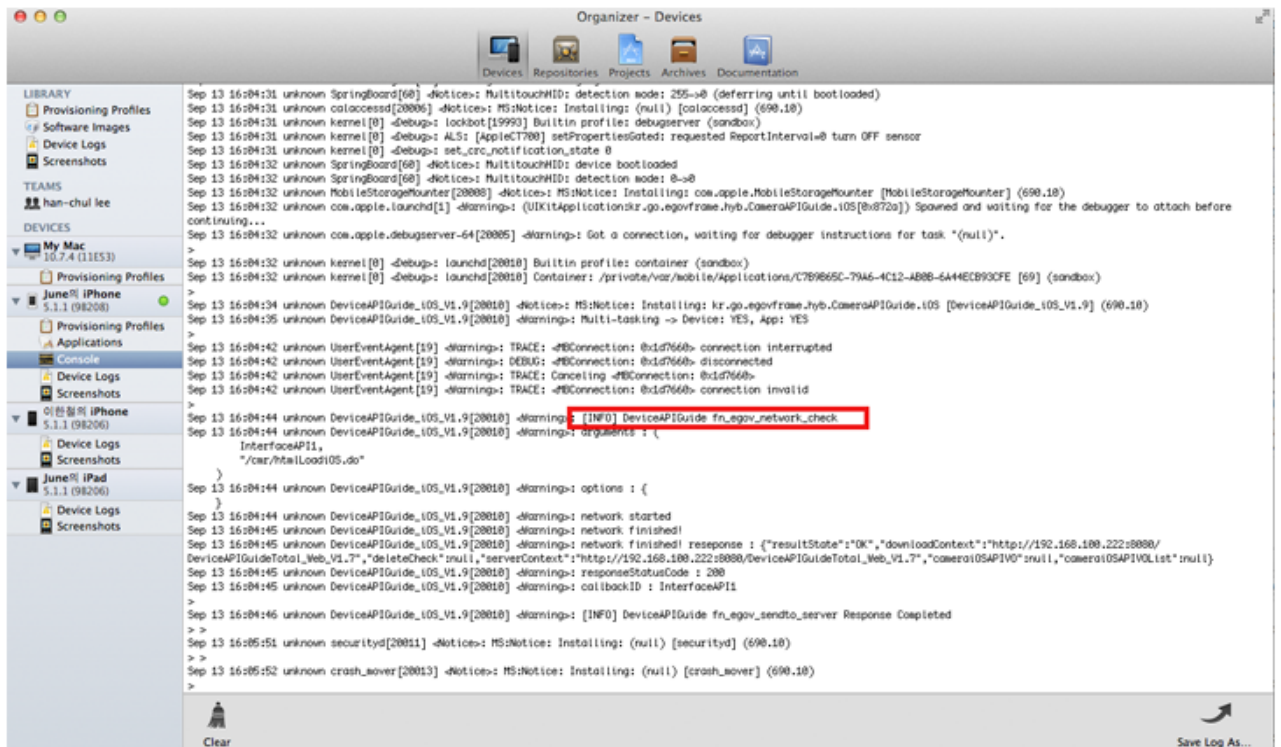
{
    console.log('DeviceAPIGuide fn_egov_network_check');
    var networkState = navigator.network.connection.type;
    ...
}

```

- xCode console window



- Organizer log window



FileReadWriteAPI device API Guide Program will output the following console information for debugging.

[DeviceAPI Guide] fn\_egov\_localStorageInfo : Success

Device file system information inquiry successful



[DeviceAPI Guide] fn_egov_readDirectory : Success	Directory inquiry successful
[DeviceAPI Guide] fn_egov_onFileUploadSuccess : Completed	File transfer to server successful
[DeviceAPI Guide] fn_egov_fileRemoved : Success	File deletion from device successful
[DeviceAPI Guide] fn_egov_fileRemoved : fn_egov_fail	File deletion from device failed
[DeviceAPI Guide] fn_egov_captureSuccess : Success	Video capture successful
[DeviceAPI Guide] fn_egov_onResolveFileSuccess	Inquiry on captured video file successful
[DeviceAPI Guide] fn_egov_onFileCopySuccess : Success	File copy from device successful
[DeviceAPI Guide] fn_egov_make_FileInfoList : Completed	Server file system information inquiry successful
[DeviceAPI Guide] fn_egov_delete_fileInfo : Completed	Deletion of server's file information successful
[DeviceAPI Guide] fn_egov_downloadFile : Completed	File download from server successful

Distribution

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

## References

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