

# TIZEN™ DEVELOPER CONFERENCE MAY 7-9, 2012



## **Hands-On Lab**

Introduction to the Software Development Platform  
Getting Started with the Tizen SDK

# Contents

Introducing the Software Development Platform

Getting started with the SDK:

- Overview of SDK for Tizen web app development

Demonstrations:

- A tour of the IDE
- How to use the Emulator
- The Simulator and other tools
- Deploying an app to the Software Development Platform

# Software Development Platform

- Software Development Platform is provided to help Tizen developers experience Tizen Larkspur and the Development Tools



- The device must be set to the current date and time. Otherwise, you will be unable to deploy a web app to it.

# Device specification

## Hardware

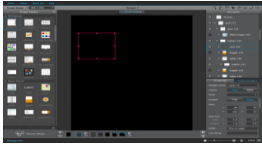
<b>Display</b>	4.65" HD(1280x720) sAMOLED+
<b>CPU</b>	C210( Cortex A9 1.2GHz Dual-core)
<b>Memory</b>	1GB RAM + 16GB eMMC
<b>Camera / Flash</b>	8MP AF / LED Flash + 2MP Front
<b>Connectors</b>	MicroUSB, USB 2.0, 3.5mm earjack
<b>Wireless Connectivity</b>	BT v4.0, WiFi a/b/g/n(2.4GHz/5GHz)
<b>GPS</b>	A-GPS(w/o Glonass)
<b>Dimension, Weight</b>	153.9 x 76.36 x 14.8mm
<b>Battery capacity</b>	1750 mAh

## Software

<b>OS</b>	TIZEN Larkspur
<b>Application Lists</b>	Internet, Calculator, Clock Contacts, Calendar, Gallery Memo, Messages, Music Phone, Settings, Search
<b>Audio</b>	MP3, AAC, AAC+, eAAC+
<b>Video</b>	MPEG4, H.263, H.264

# Tizen All-in-One SDK

WYSIWYG GUI design/editing



Project management & easy code editing



Static & Dynamic Analysis

```
shell.c:11
$select = appendText($select, " || " VALUES(' | ");
rc = sqlite3_step($tableInfo);
while( rc==SQLITE_ROW ){
    const char *zText = (const char *)sqlite3_col_text($select, $select, "zText", 0);
    $select = appendText($select, "zText, '");
    rc = sqlite3_step($tableInfo);
    if( rc==SQLITE_ROW ){
        $select = appendText($select, " || " | ");
    }else{
        $select = appendText($select, " | " );
    }
}
return;
```



Live SDK update



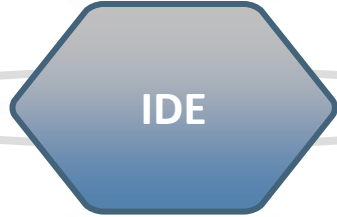
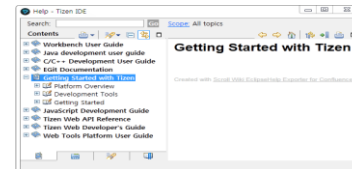
Test/debugging



Build system & Toolchain

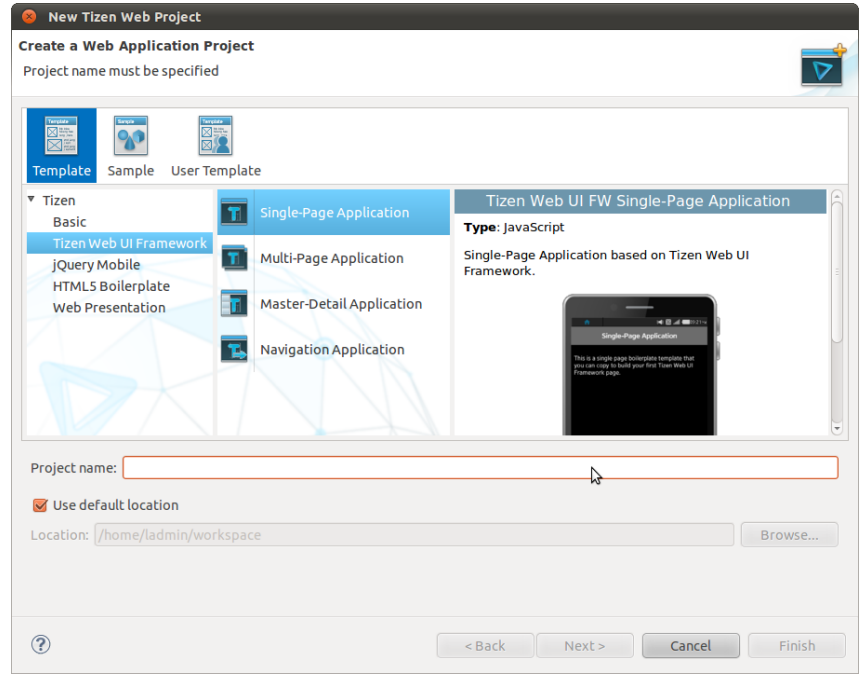
- OBS
- Rootstrap management
- Cross compiler, packaging
- Project compatibility
- SDB

Help Contents



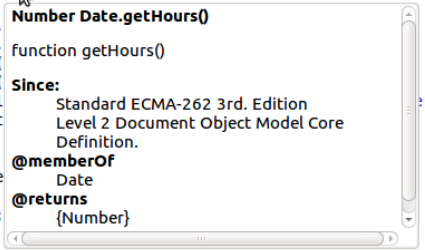
# Project Management

- Project Wizard
  - Templates
  - Tizen sample applications
  - User-defined templates



# Easy code editing

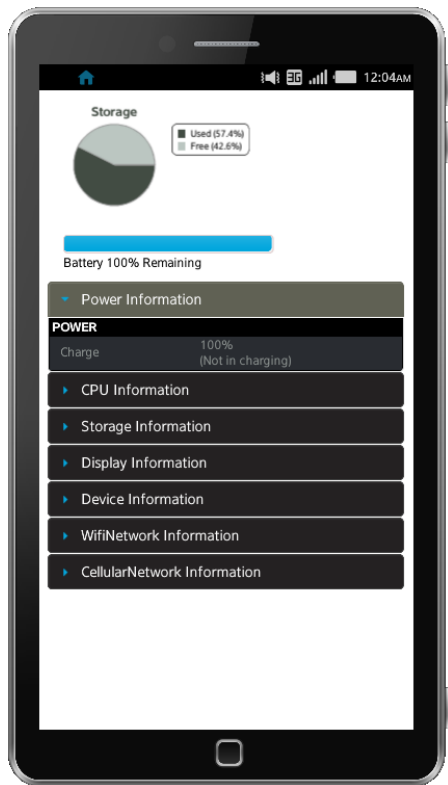
```
function startTime() {  
    var today = new Date();  
    var h = today.getHours();  
  
    var m = today.  
    var s = today.  
    m = checkTime(  
    s = checkTime(  
    document.getEl  
    t = setTimeout  
}  
  
function checkTime  
if (i < 10) {  
    i="0" + i;  
}  
return i;  
}
```



```
tizen.  
}  
  
▲ alarm AlarmManager - Tizen  
▲ application Application - Tizen  
▲ bluetooth BluetoothManager - Tizen  
▲ calendar CalendarManager - Tizen  
▲ call CallManager - Tizen  
▲ constructor Function - Object  
▲ contact ContactManager - Tizen  
▲ filesystem FileSystemManager - Tizen  
▲ lbs LBS - Tizen  
▲ mediaContent MediaSourceManager - Tizen  
▲ messaging Messaging - Tizen  
  
Press 'Ctrl+Space' to show Template Proposals
```

- Hover
  - Access API documentation from within the code
- Auto-completion
  - Find Tizen APIs & avoid typing errors

# Test - Emulator

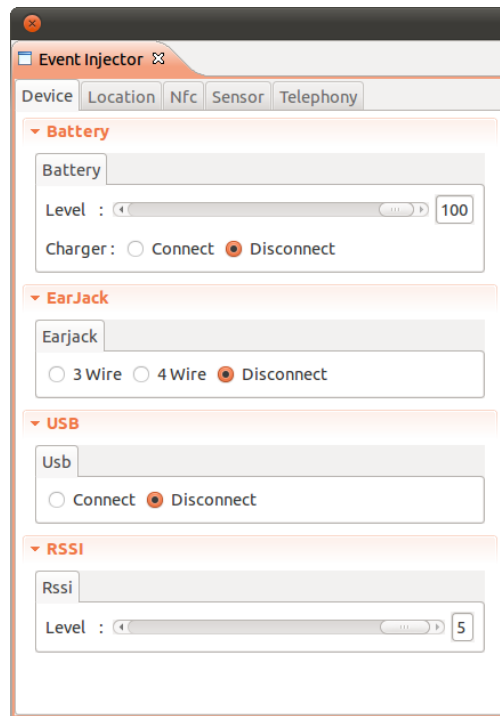


- Virtual machine
  - based on QEMU
  - x86 support (ARM support planned for future)
- Emulator Manager
  - configure screen resolution & RAM size
  - create multiple images
- HW Virtualization support
  - KVM (Kernel-based Virtual Machine in Linux) & HAXM (Hardware Accelerated eXecution Manager in Windows)

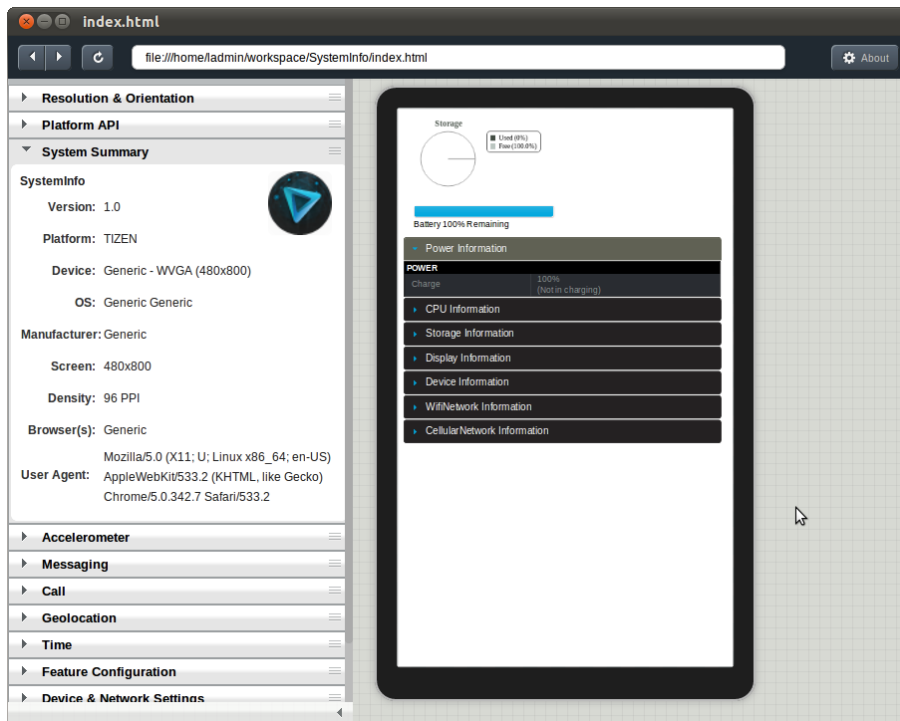


# Test - Event Injector

- Device
  - device levels & connections
- Location
  - virtual GPS with the Location Injector
- NFC
  - attach & detach an NFC tag
- Sensor
  - inject position & motion based events
- Telephony
  - generate SMS messages & calls



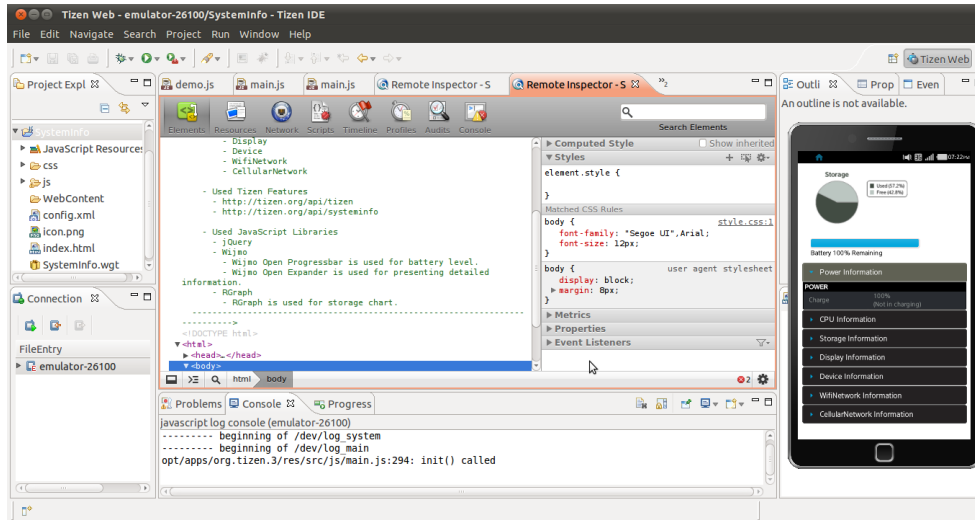
# Test - Simulator



- Quickly run & debug Tizen web applications
- Based on Ripple-UI Framework & runs on Google Chrome
- Simulates Tizen Web APIs via JavaScript backend

# Debugging and Profiling

- Remote Inspector, integrated in Tizen SDK
  - JavaScript Debugging, DOM Inspection, CSS Style Inspection, Resources Inspection, Timeline and Profiles



# Demonstrations

1. A tour of the IDE
2. How to use the Emulator
3. The Simulator and other tools
4. Deploying an app to the Software Development Platform

# Conclusion

- Introduced the SDK features
- Shown how to use the IDE, Emulator, Simulator and Software Development Platform to develop & test web apps
- Shown the documentation: APIs and tutorials
- SDK Larkspur is available now – install from Tizen USB drive or download from <https://developer.tizen.org/sdk>
- Development is ongoing and includes:
  - Web app GUI Builder
  - Static/dynamic analysis tools for web app
  - ARM emulator
  - Event injector improvements

**TIZEN™** DEVELOPER  
CONFERENCE  
MAY 7-9, 2012

# TIZEN™ DEVELOPER CONFERENCE MAY 7-9, 2012



## **Web Application Debugging with the Tizen SDK**

Bob Spencer

# Outline

- Tizen Application Development Lifecycle
- SDK Setup
- Debugging with the
  - Tizen Emulator
  - Tizen Web Simulator
  - Tizen Device

## Resources

- <https://developer.tizen.org>
- Tizen USB drive



# Tizen Application Development Cycle

Develop

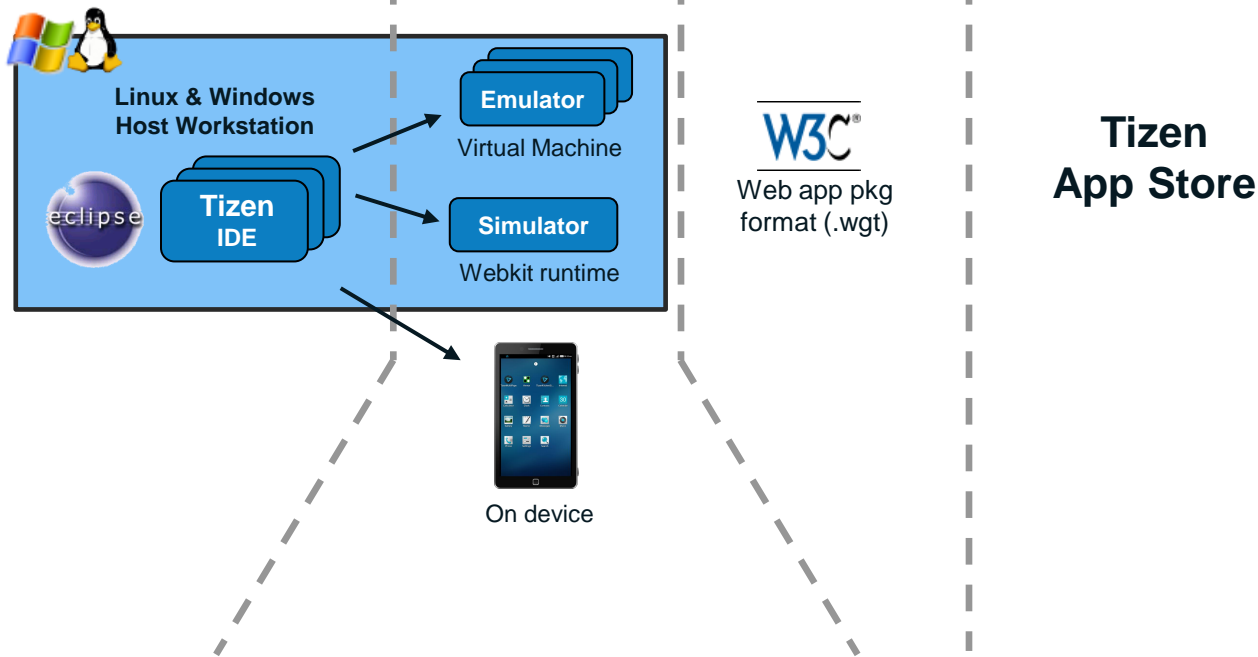
Debug

Package

Distribute

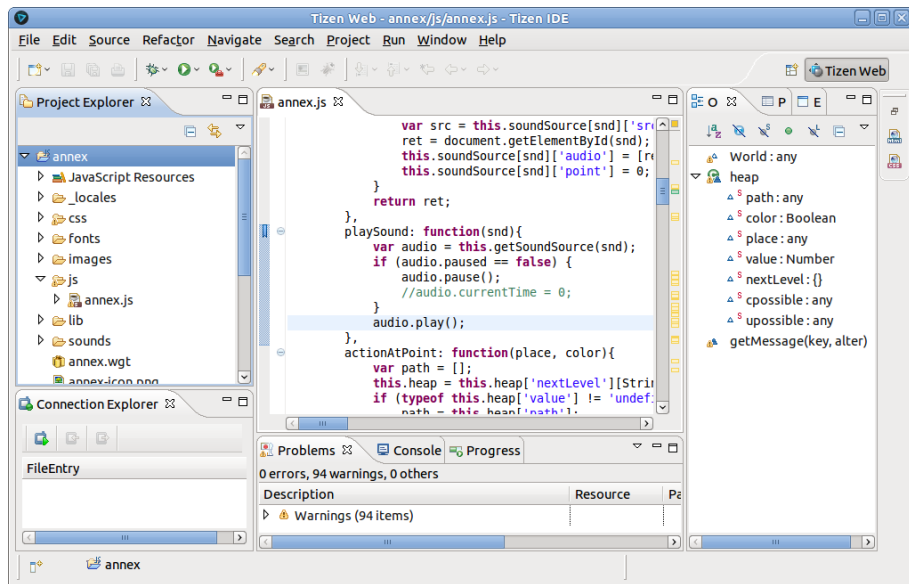
## Features

- Eclipse-based IDE
- Cross-OS support
- Deploy/debug with VM or device
- Device emulation



# Setup

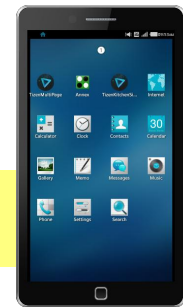
- Ubuntu or Windows (32-bit\*)
  - kvm or HAXM
- Tizen SDK
- Load web app
  - Sample web app (Annex)
  - or
  - Your own web app. See tutorial: “Load web app in Tizen SDK”



# Tizen Emulator

- Start Emulator
- Features
- Terminal
  - From skin or `$ <path>/SDK/sdb/sdb -e shell`
- File sharing
  - `$ sdb -e push <local file> <remote file>`
- Debug sample app
  - Rotation
  - Remote Inspector
    - Breakpoint / Step through code
    - Console

**Tip: Get acceleration.**  
Linux: KVM; Windows: HAXM



**Tip: In terminal, type “bash”**

**Tip: Unmap F10 in gconf and Eclipse**

```
$ gconftool-2 --type string --set  
/desktop/gnome/interface/menubar_accel "F13"
```

# Tizen Web Simulator

- Start Simulator
- When to use
  - Pros: Fast (run, edit, run), Orientation and scale, Tizen API input panels, Stand-alone (for Mac): <http://01.org/web-simulator>
  - Cons: Not full stack if needing Tizen services, Must discover DOM for application in Web Inspector
- Debug sample app
  - Breakpoint / Step through code

Tip: Use simulator for fast prototyping

# Tizen Device

Tip: Set date/time before debugging

- Connect and discover device
- Terminal and File sharing

```
$ sdb -d shell
$ sdb -d push <local path> <remote path>
$ sdb -d pull <remote path> <local path>
```
- Remote inspector



# Summary

- The Tizen SDK enables 3 debugging environments: emulator, web simulator, and device
- Tips:
  - Accelerate the emulator
  - Use “bash” for shell work
  - Un-map F10 in gnome when debugging with Web/Remote Inspector
  - Use the simulator for fast prototyping
  - Set date/time on the device before debugging

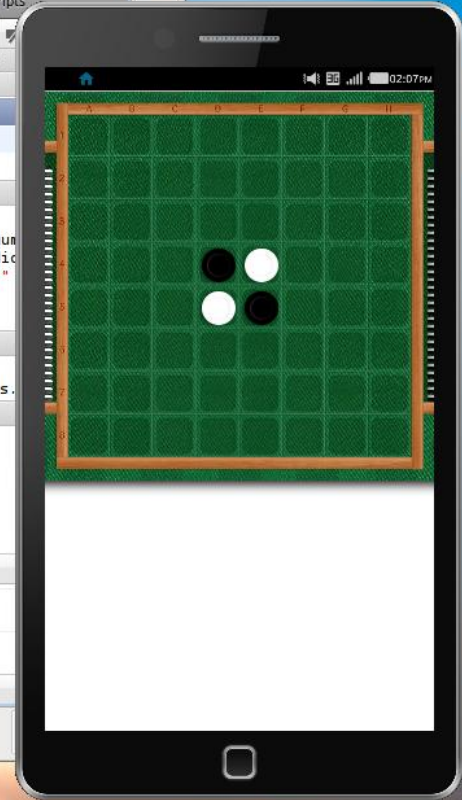
# Q&A

**TIZEN™** DEVELOPER  
CONFERENCE  
MAY 7-9, 2012

# Remote Inspector with Emulator Screenshot

The screenshot displays the Tizen IDE interface with the Remote Inspector tool. The main window shows the source code for `annex.js`. A breakpoint is set at line 136, which is highlighted in blue. The code includes a `playSound` function and an `actionAtPoint` function. The Remote Inspector panel on the right shows the call stack with the current function being `onclick`. The local variables section shows `arguments`, `audio`, and `this`. The console at the bottom shows the command `> snd "snd_hint"`.

```
130     ret = document.getElementById(
131         this.soundSource[snd]['audio']
132         this.soundSource[snd]['point
133     }
134     return ret;
135 },
136 playSound: function(snd){
137     var audio = this.getSoundSource(snd);
138     if (audio.paused == false) {
139         audio.pause();
140         //audio.currentTime = 0;
141     }
142     audio.play();
143 },
144 actionAtPoint: function(place, color){
145     var path = [];
146     this.heap = this.heap['nextLevel'] || [];
147     if (typeof this.heap['value'] != 'undefined')
148         path = this.heap['path'];
149     } else {
150         var act = this.getRevertPath
151         path = act['path'];
152         this.heap = {'color':color,
153     };
154     this.clearTips();
155     $('#pc'+this.step%2+Math.floor(this
156     this.step += 1;
157 }
```





# Tizen Web Simulator Screenshot

