

TIZEN Development Environment

March, 2016
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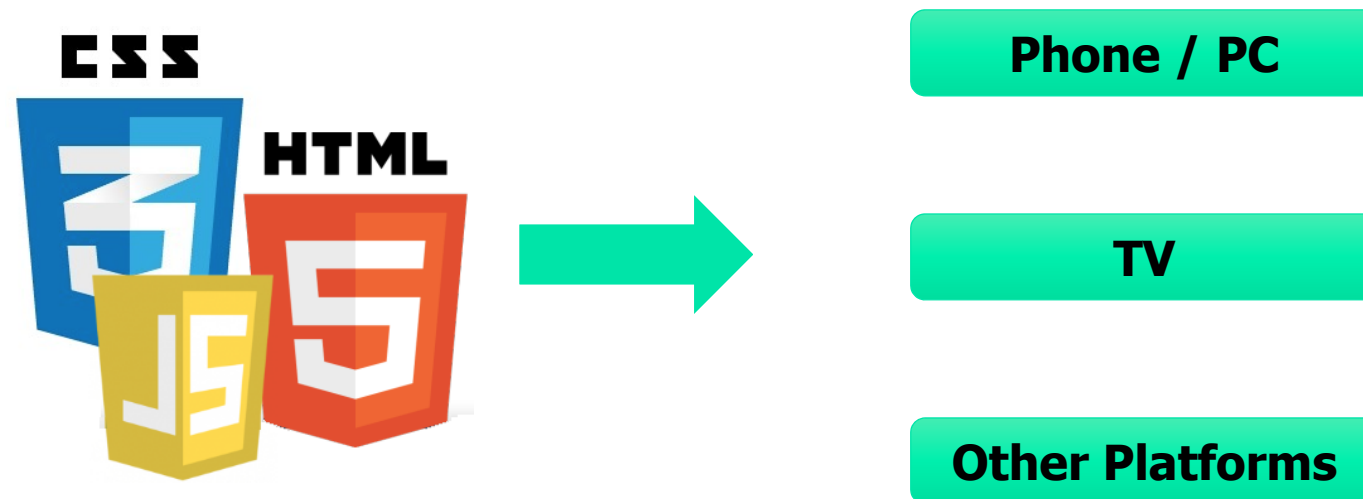
<http://embedded.dankook.ac.kr/~baeksj>

■ 앱 개발 모델

- ✓ 구 네이티브 앱 : C++
- ✓ 웹 앱 : HTML5, CSS, JavaScript, jQuery
- ✓ 네이티브 앱 : C, C++

	모바일	기어	카메라
구 네이티브	○	✕	✕
웹	○	○	✕
네이티브	○	○	○

- 웹 애플리케이션
 - ✓ 한번 개발로 다양한 기기 및 플랫폼 지원
 - ✓ 초기 진입 용이
 - ✓ HTML5, CSS, JavaScript, jQuery, ...



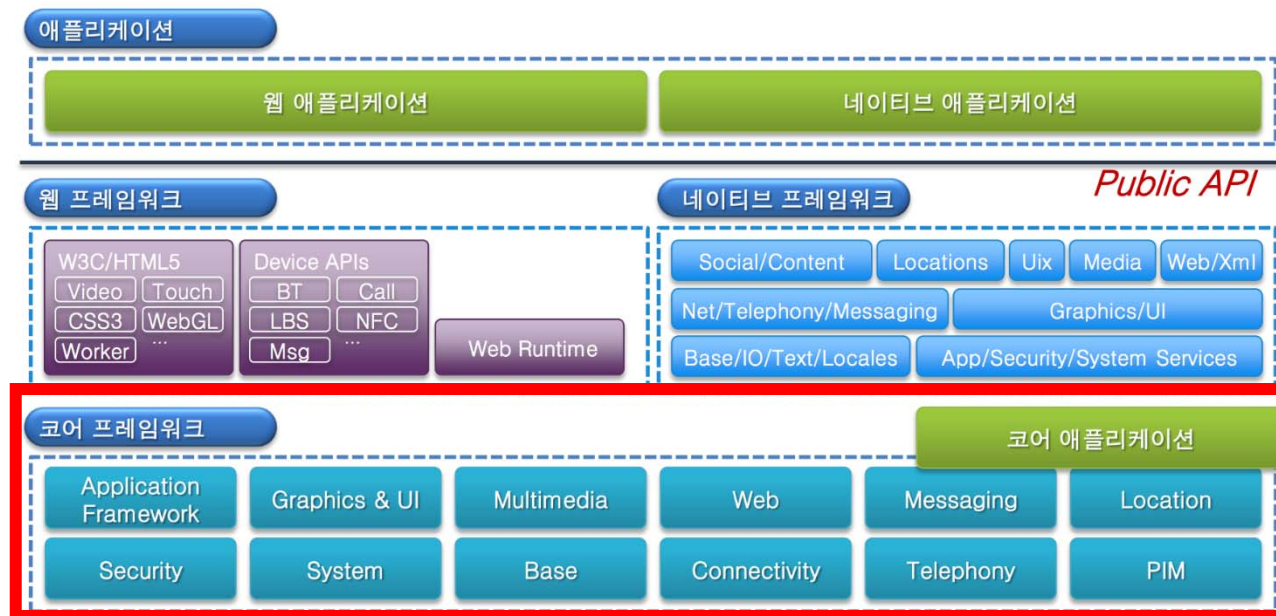
■ 디바이스 API

- ✓ 자바스크립트 기반의 디바이스 제어 API
- ✓ 애플리케이션의 라이프 사이클, 스케줄, 데이터 싱크, NFC 등 기존 네이티브 API와 동등한 수준의 API를 제공
- ✓ Category
 - Tizen Common
 - Application
 - Communication
 - Content
 - Input/Output
 - Social
 - System
 - User Interface

■ 웹 런타임

- ✓ 웹 애플리케이션을 담고 있는 컨테이너
- ✓ 웹 애플리케이션을 스탠드얼론으로 설치, 구동할 수 있도록 하는 엔진
- ✓ 웹 애플리케이션을 조금 더 최적화된 형태로 구동할 수 있음
- ✓ 애플리케이션 관리
 - Profile, Life cycle
- ✓ API 서포트
 - W3C, Device
- ✓ 보안, 프라이버시
 - Profile, Source code...

- 네이티브 프레임워크
 - ✓ C/C++로 애플리케이션 개발
 - ✓ 빠르고 가벼운 라이브러리
 - ✓ 네이티브 API 및 EFL API로 구성
 - ✓ 웹 및 구 네이티브 프레임워크의 기반
 - ✓ NX300 및 기어2의 많은 앱이 EFL로 개발됨



■ 오픈 소스

- ✓ 타이젠이 사용하는 수 많은 오픈 소스
 - X Windows, Cairo, EFL for UI & Graphics
 - Gstreamer, PulseAudio, OpenAL for Multimedia
 - Connman, Bluez, libsoup, wpa_supplicant for Connectivity
 - WebKit2 for Web
 - SMACK & OpenSSL for Security
 - Dbus, glibc for Base
 - Sqlite for Database & PIM
 - Linux for OS Kernel
 - Eclipse for Tizen SDK
 - QEMU, U-Boot for Target Emulator
 - GCC, llvm, cmake, gbs for build
 - 기타등등

■ 오픈 소스

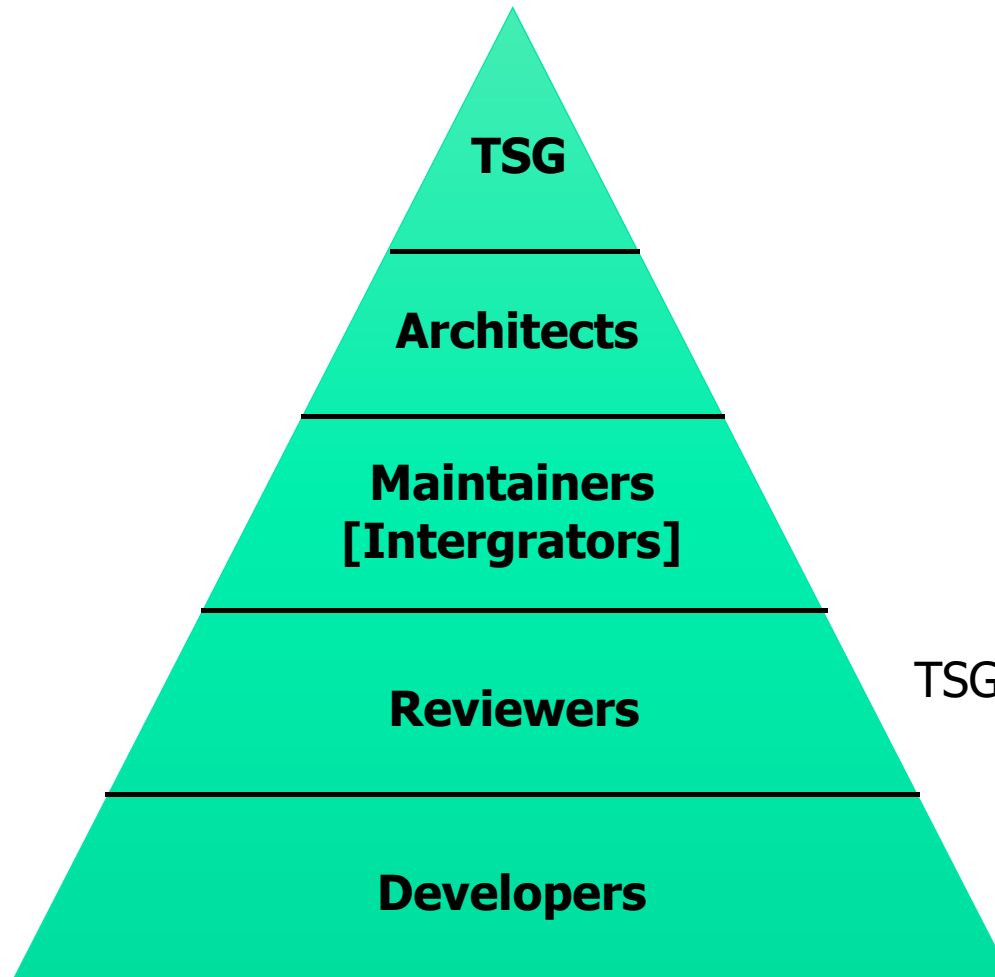
- ✓ 타이젠에서 수정한 패치가 해당 오픈소스에도 반영 됨
 - Linux, WebKit2, EFL, GStreamer, U-Boot, FFMPEG, GTK+, WebCL, Cairo, Bluez, QEMU, GCC 등



■ 오픈 소스

- ✓ 타이젠을 위해 신규 구현한 모듈을 오픈소스로 공개
 - app-core, app-service, slp-pkgmgr, WRT(Web RunTime), system- server, sensor-fw, libslp-pm, msg-service, email-service, telephony-daemon, aud io-session-manager, contacts-service, slp- calendar, accounts-svc, sync- fw, cert-svc, secure-storage, nfc- manager 등

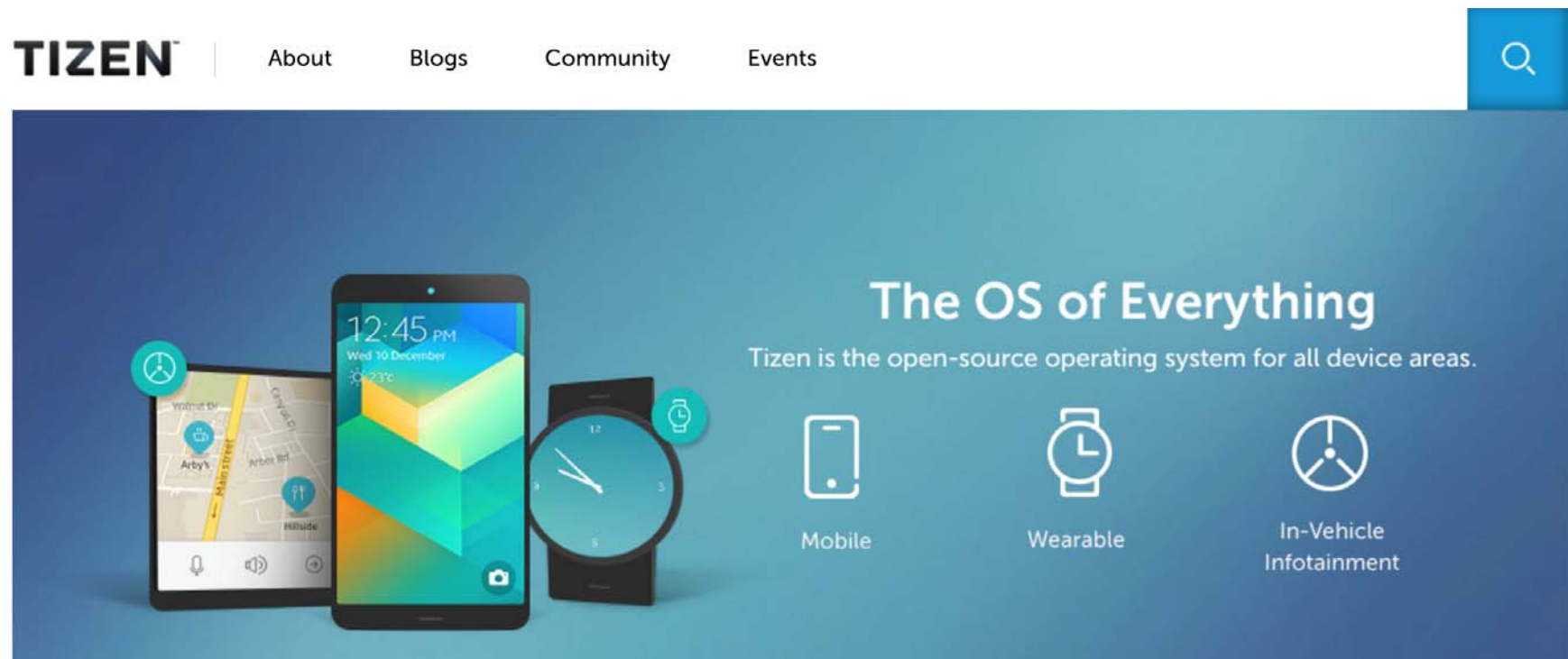
- 오픈 소스 개발 모델



TSG = Technical Steering Group

■ Tizen 웹사이트

- ✓ <http://www.tizen.org> - 메인 웹사이트
- ✓ <http://developer.tizen.org> - 애플리케이션 개발자 용
- ✓ <http://source.tizen.org> - 플랫폼 개발자용



■ 소스코드

- ✓ 소스코드 공개
- ✓ Git : <http://review.tizen.org/git/>
- ✓ Gerrit : <http://review.tizen.org/gerrit>

[projects /](#)

re

[List all projects](#)

Project	Description	Owner
All-Projects.git	Access inherited by all other...	summary shortlog log tree
Legacy-Projects.git		summary shortlog log tree
Lock-Projects.git		summary shortlog log tree
Private-Projects.git		summary shortlog log tree
Public-Projects.git		summary shortlog log tree
adaptation/alsa-scenario-scen-data-0-base.git	Domain: System;	summary shortlog log tree
adaptation/alsa-scenario-scen-data-0-mc1n2.git	Domain: System;	summary shortlog log tree
adaptation/ap_samsung/audio-hal-e3250.git		summary shortlog log tree
adaptation/ap_samsung/audio-hal-e4x12.git		summary shortlog log tree
adaptation/ap_samsung/camera-firmware.git		summary shortlog log tree
adaptation/ap_samsung/device-manager-plugin-exynos.git	Domain: System;	summary shortlog log tree
adaptation/ap_samsung/device-manager-plugin-exynos3250.git		summary shortlog log tree
adaptation/ap_samsung/gst-plugins-camera-e3250.git		summary shortlog log tree
adaptation/ap_samsung/gst-plugins-e4x12.git	Domain: Multimedia;	summary shortlog log tree
adaptation/ap_samsung/gst-plugins-fimcconvert.git	Domain: Multimedia;	summary shortlog log tree
adaptation/ap_samsung/gst-plugins-s5pc2xx.git	Domain: Multimedia;	summary shortlog log tree
adaptation/ap_samsung/libcamsrcjpegenc-hw-e3250.git		summary shortlog log tree
adaptation/ap_samsung/libdrm-slp-gem.git	Domain: Graphics & UI Framework;	summary shortlog log tree
adaptation/ap_samsung/libomxil-e3250-v4l2.git		summary shortlog log tree
adaptation/ap_samsung/libomxil-e4x12.git	Domain: Multimedia;	summary shortlog log tree
adaptation/ap_samsung/libomxil-s5pc2xx.git	Domain: Multimedia;	summary shortlog log tree
adaptation/ap_samsung/libtbn-emulator.git	Domain: Graphics & UI Framework;	summary shortlog log tree
adaptation/ap_samsung/libtbn-exynos4412.git	Domain: Graphics & UI Framework;	summary shortlog log tree

■ 설치 순서

1. Oracle JDK Java SE 8 설치
2. Tizen SDK 2.4 설치
3. Tizen Emulator device 생성
4. Security profile 설정

■ Oracle JDK 설치

- ✓ <http://www.oracle.com/technetwork/java/javase/downloads>



The screenshot displays the Oracle Java SE Downloads page. At the top, there is the Oracle logo and a navigation bar with links for Sign In/Register, Help, Country, Communities, I am a..., and I want to..., along with a search box. Below this is a secondary navigation bar with links for Products, Solutions, Downloads, Store, Support, Training, and Partner. A breadcrumb trail indicates the current location: Oracle Technology Network > Java > Java SE > Downloads. On the left side, there is a vertical menu with links to various Java products. The main content area has tabs for Overview, Downloads, Documentation, Community, Technologies, and Training. The 'Downloads' tab is active, and the heading 'Java SE Downloads' is visible. Two download options are shown: 'Java Platform (JDK) 8u73 / 8u74' and 'NetBeans with JDK 8'. The first option is highlighted with a red box.

■ Oracle JDK 설치

- ✓ 개발환경에 맞는 파일을 다운
 - Accept License Agreement 체크 후 다운

Java SE Development Kit 8u73
You must accept the [Oracle Binary Code License Agreement for Java SE](#) to download this software.

Accept License Agreement **Decline License Agreement**

Product / File Description	File Size	Download
Linux ARM 32 Hard Float ABI	77.73 MB	jdk-8u73-linux-arm32-vfp-hflt.tar.gz
Linux ARM 64 Hard Float ABI	74.68 MB	jdk-8u73-linux-arm64-vfp-hflt.tar.gz
Linux x86	154.75 MB	jdk-8u73-linux-i586.rpm
Linux x86	174.91 MB	jdk-8u73-linux-i586.tar.gz
Linux x64	152.73 MB	jdk-8u73-linux-x64.rpm
Linux x64	172.91 MB	jdk-8u73-linux-x64.tar.gz
Mac OS X x64	227.25 MB	jdk-8u73-macosx-x64.dmg
Solaris SPARC 64-bit (SVR4 package)	139.7 MB	jdk-8u73-solaris-sparcv9.tar.Z
Solaris SPARC 64-bit	99.08 MB	jdk-8u73-solaris-sparcv9.tar.gz
Solaris x64 (SVR4 package)	140.36 MB	jdk-8u73-solaris-x64.tar.Z
Solaris x64	96.78 MB	jdk-8u73-solaris-x64.tar.gz
Windows x86	181.5 MB	jdk-8u73-windows-i586.exe
Windows x64	186.84 MB	jdk-8u73-windows-x64.exe

■ Oracle JDK 설치

- ✓ 다운로드 받은 파일 압축 해제

```
$ tar xvzf jdk-8u45-linux-x64.tar.gz
```

- ✓ 압축풀린 디렉토리 이동

```
$ sudo mkdir -p /usr/lib/jvm/jre1.8.0  
$ sudo mv jdk1.8.0_45/* /usr/lib/jvm/jre1.8.0/
```

- ✓ Oracle JDK 실행 설정

```
$ sudo update-alternatives --install <link> <name> <path> <priority>  
$ sudo update-alternatives --install /usr/bin/java java /usr/lib/jvm/jre1.8.0/bin/java 0
```


■ Oracle JDK 설치

- ✓ 필수 패키지 설치

```
$ sudo apt-get install expect gtk2-engines-pixbuf libgnome2-0 qe  
mu-user-static libwebkitgtk-1.0-0 gettext gksu module-init-tools li  
budev-dev libsdl1.2debian ruby
```

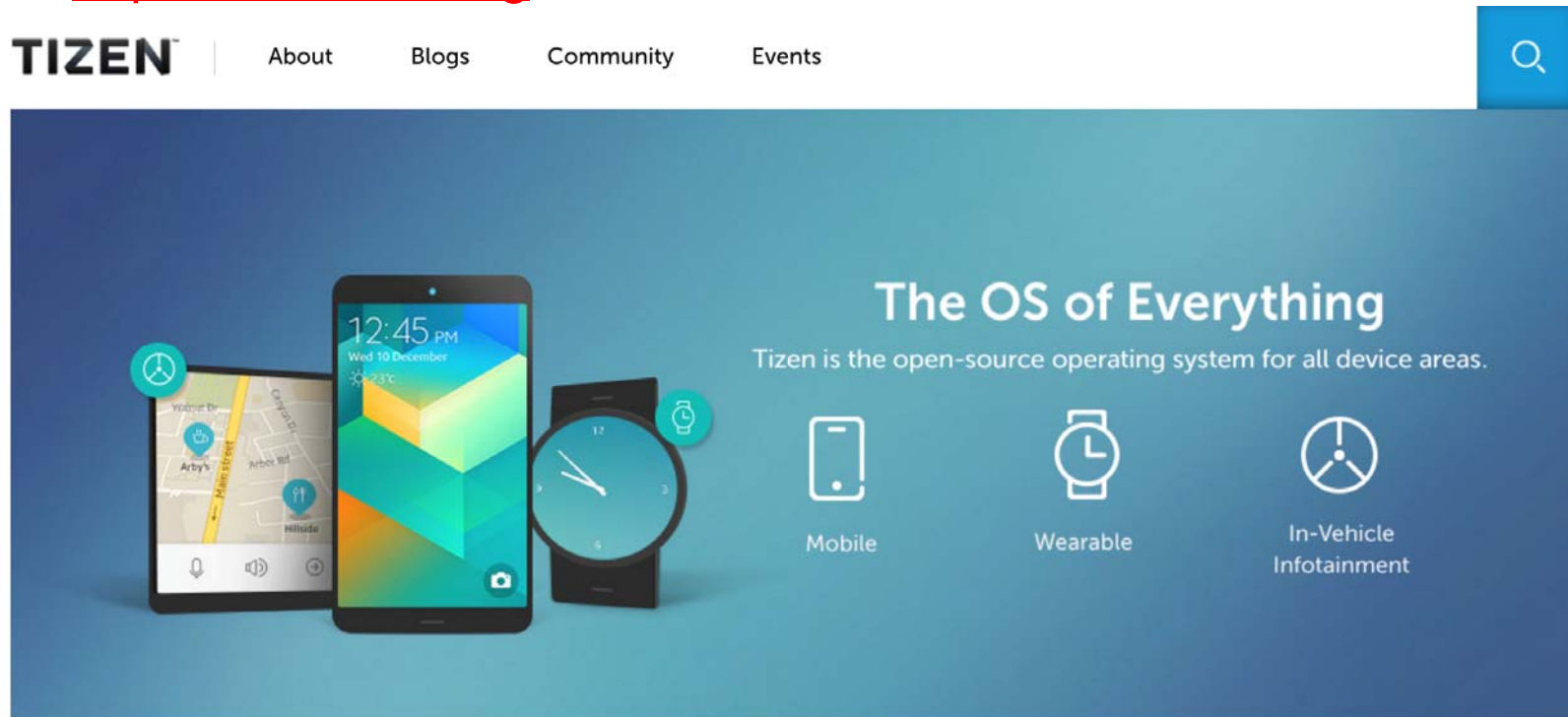
- ✓ 설치된 JDK 확인

```
$ java -version
```

```
java version "1.8.0_45"  
Java(TM) SE Runtime Environment (build 1.8.0_45-b14)  
Java HotSpot(TM) Server VM (build 25.45-b02, mixed mode)
```

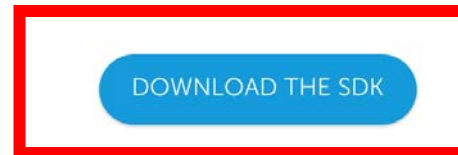
■ Tizen SDK 설치

✓ <http://www.tizen.org>



TIZEN 2.4 SDK RELEASE

The Tizen SDK is a comprehensive set of tools for developing Tizen web and native applications. Create your own app today.



■ Tizen SDK 설치

- ✓ 운영체제에 맞는 파일 다운로드

Platform	Installer	File Size	MD5 Checksum	Update Date
Ubuntu® 32bits (CLI)	tizen-web-cli_TizenS DK_2.4.0_Rev2_ubunt u-32.bin Alternative Locations: Global Brazil China India	108M	f3e8e1bfec24a8eea56ec84502bd2690	Dec 2015
Ubuntu® 32bits (IDE)	tizen-web-ide_TizenS DK_2.4.0_Rev2_ubunt u-32.bin Alternative Locations: Global Brazil China India	417M	8540823f39057db24cf9b73eea1b276a	Dec 2015

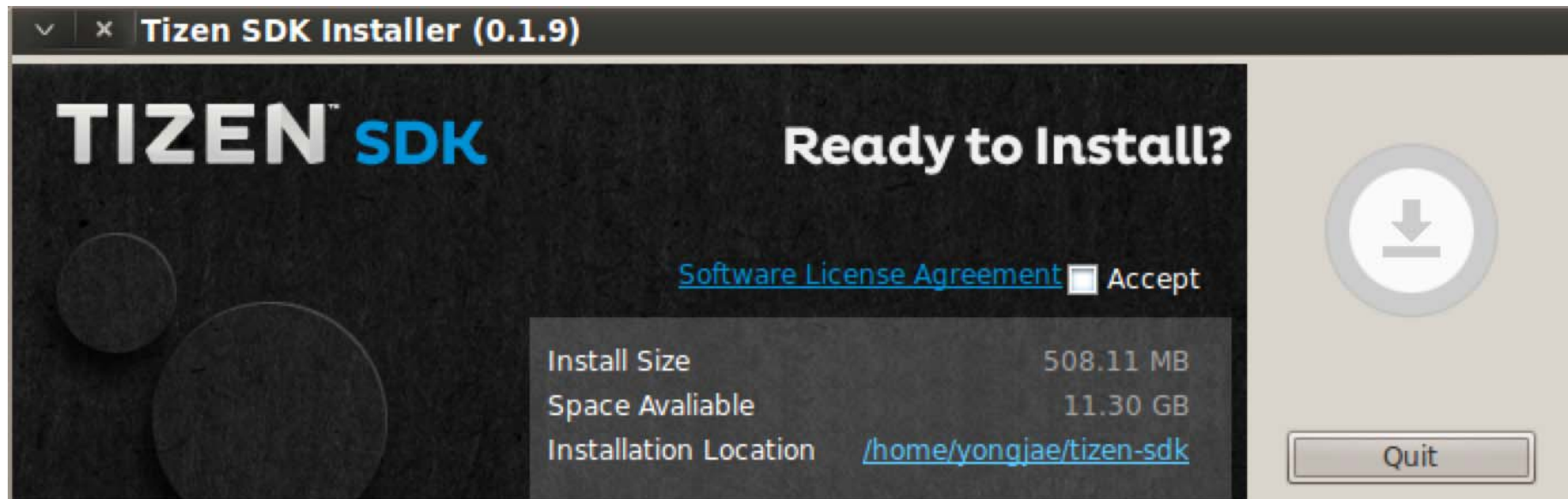
■ Tizen SDK 설치

- ✓ 다운로드 받은 파일 실행 권한 부여

```
$ chmod +x tizen-web-ide_TizenSDK_2.4.0_Rev2_ubuntu-32.bin
```

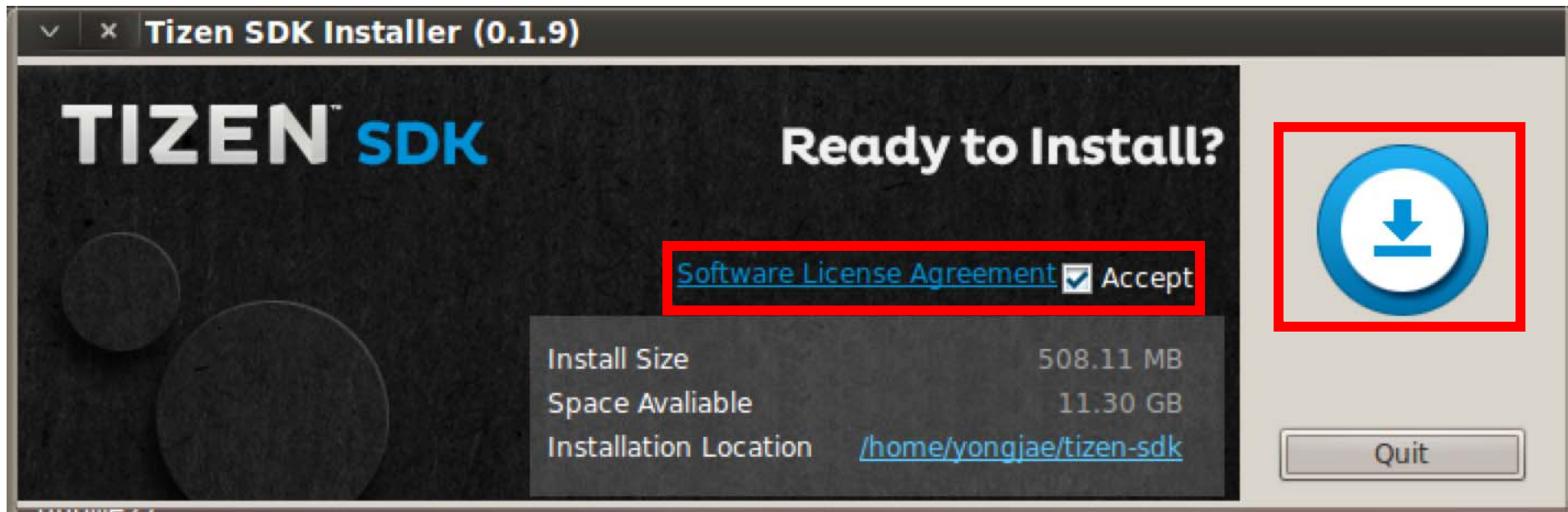
- ✓ 다운로드 받은 파일 실행

```
$ ./tizen-web-ide_TizenSDK_2.4.0_Rev2_ubuntu-32.bin
```

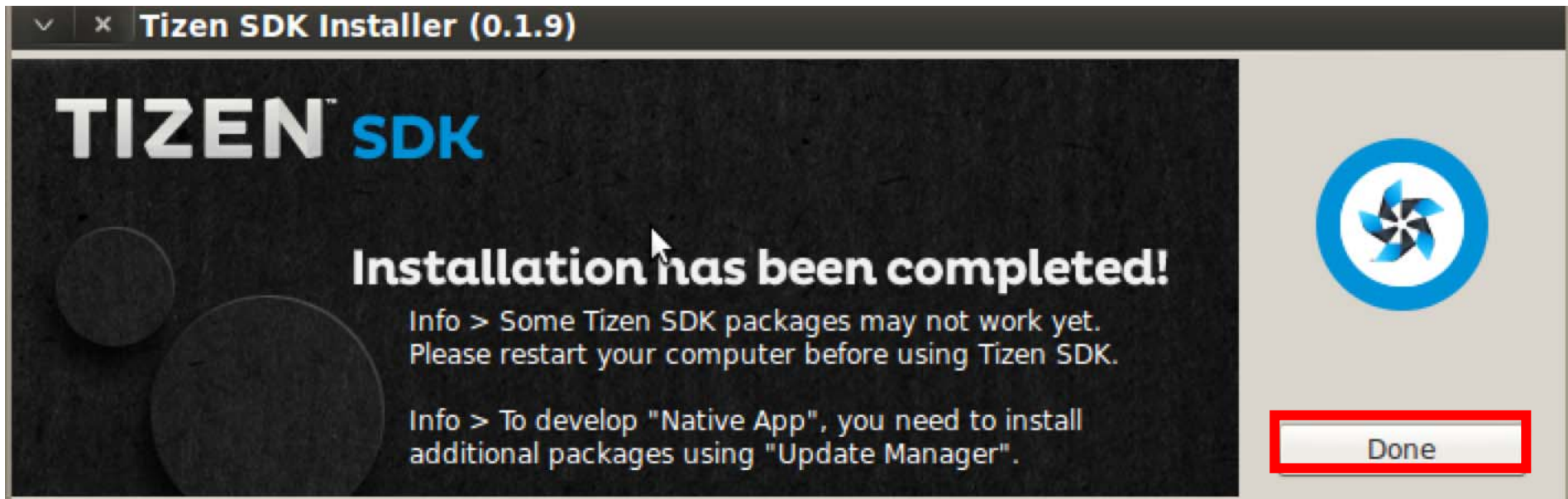


■ Tizen SDK 설치

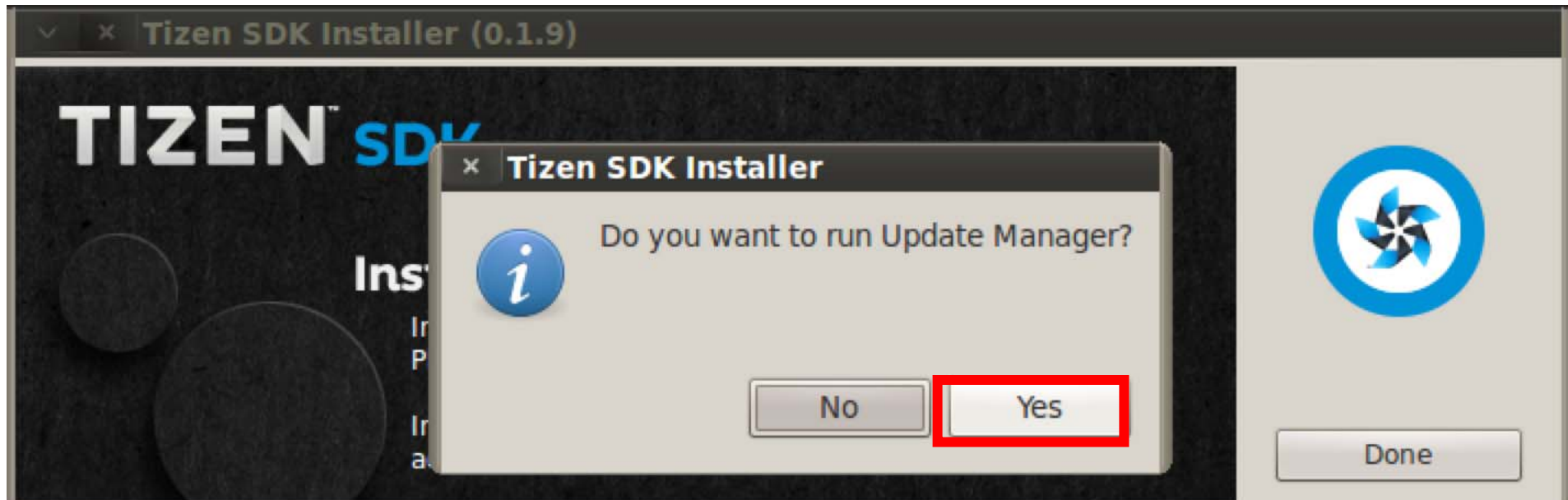
- ✓ Software License Agreement 체크 후 다운로드 버튼 클릭



- Tizen SDK 설치
 - ✓ 다운로드 완료후 Done 버튼클릭

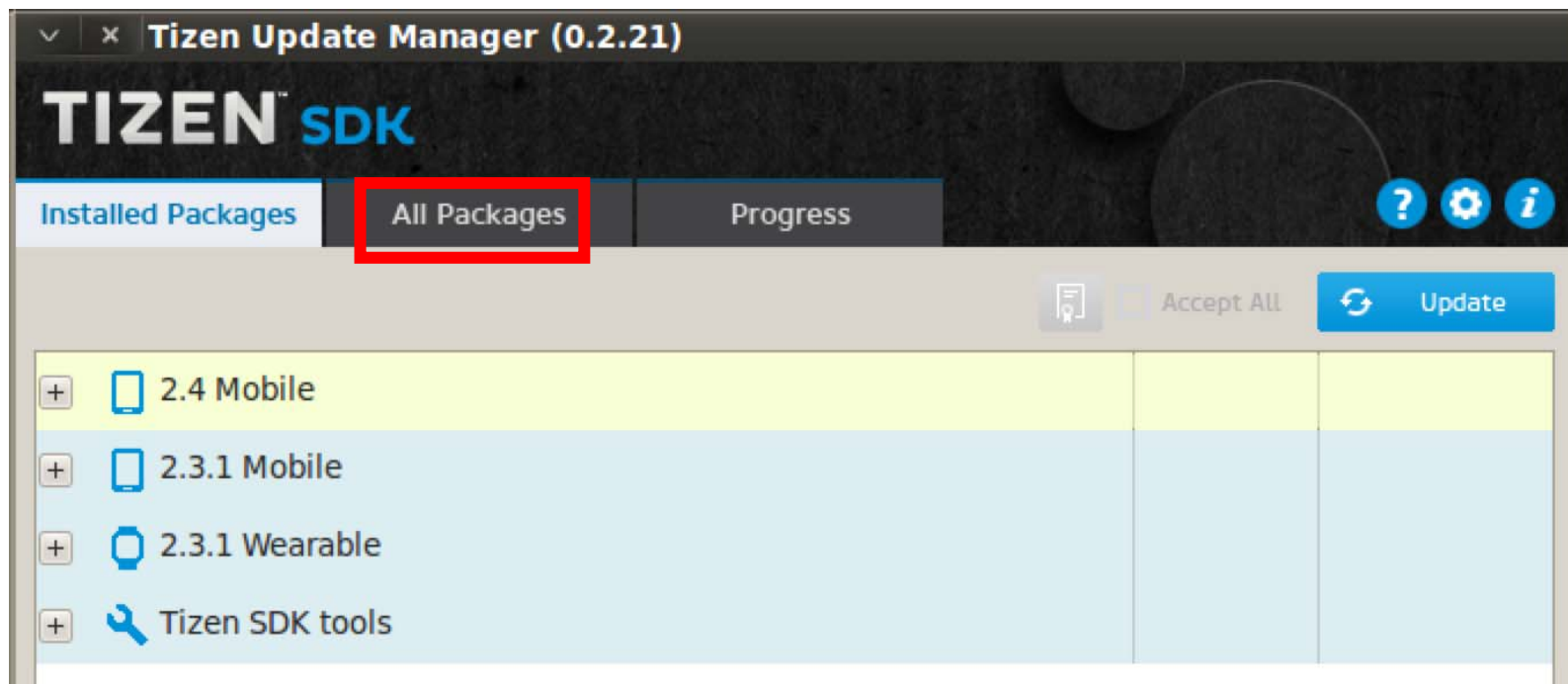


- Tizen SDK 설치
 - ✓ Update Manager 실행

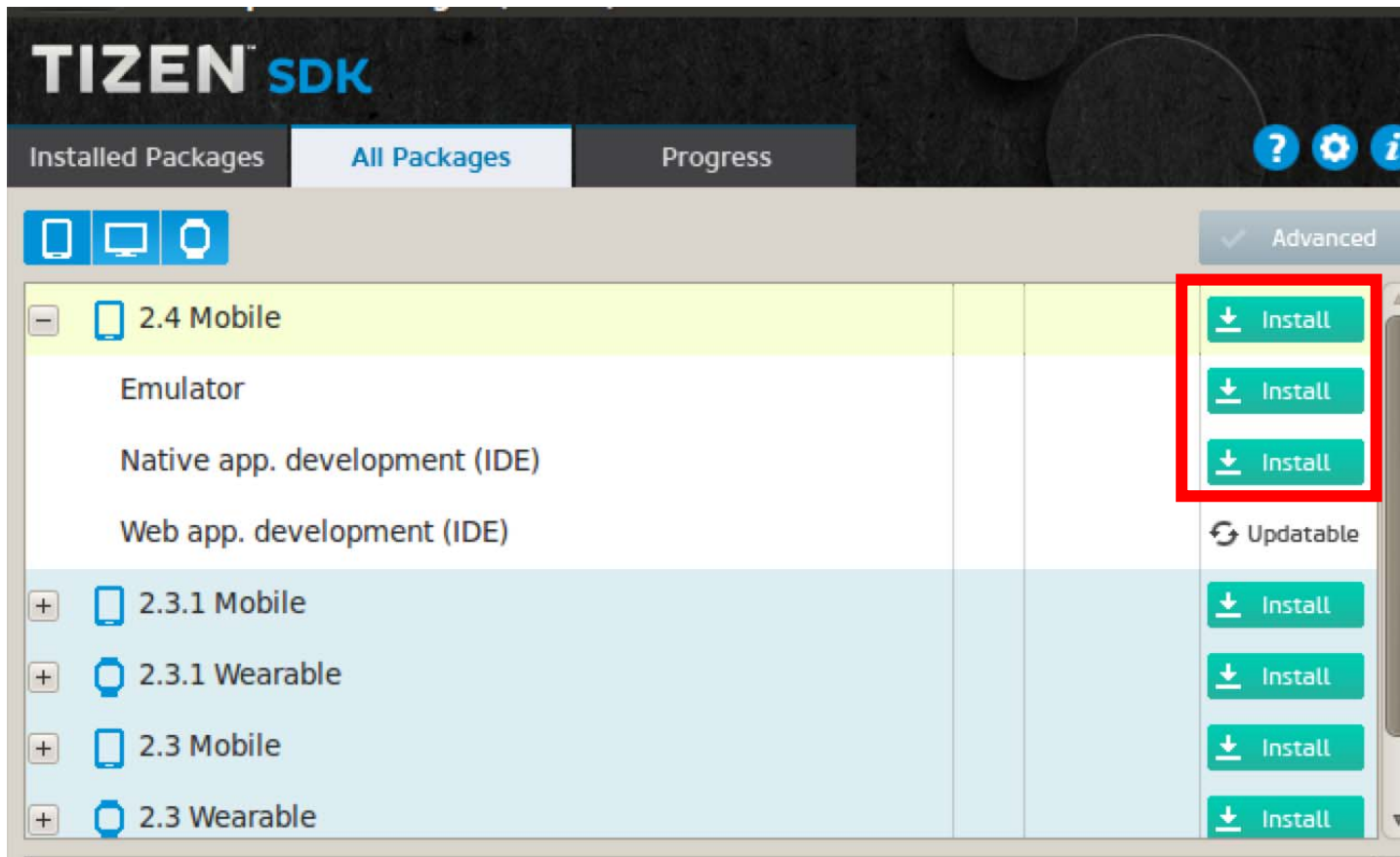


■ Tizen SDK 설치

- ✓ All Packages 탭에서 추가적으로 필요한 패키지 다운



- Tizen SDK 설치
 - ✓ Install 버튼을 통해 설치



■ Tizen IDE 실행

- ✓ 타이젠 IDE 설치 폴더로 이동

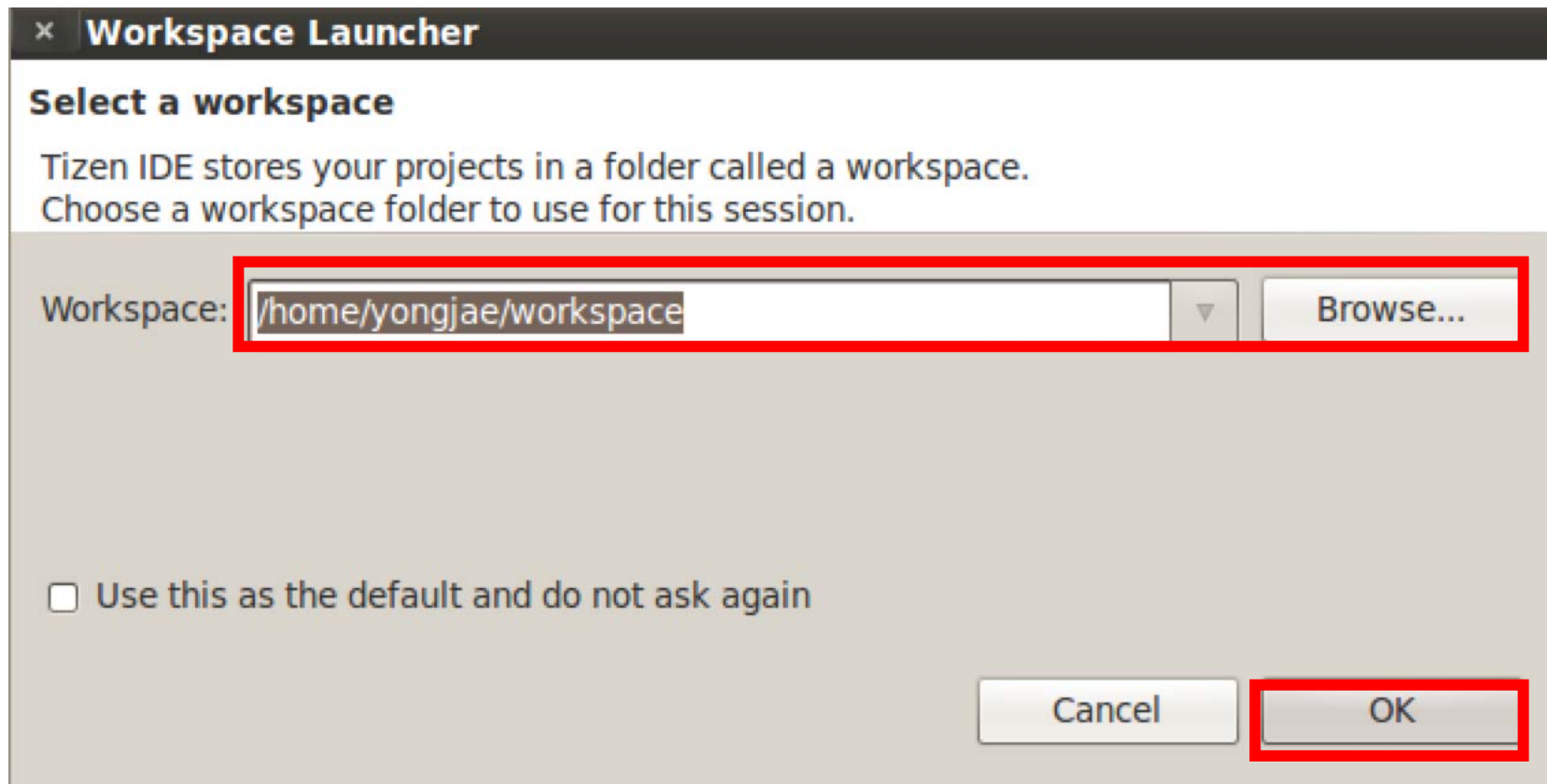
```
$ cd tizen-sdk/ide/
```

- ✓ 타이젠 IDE eclipse 실행

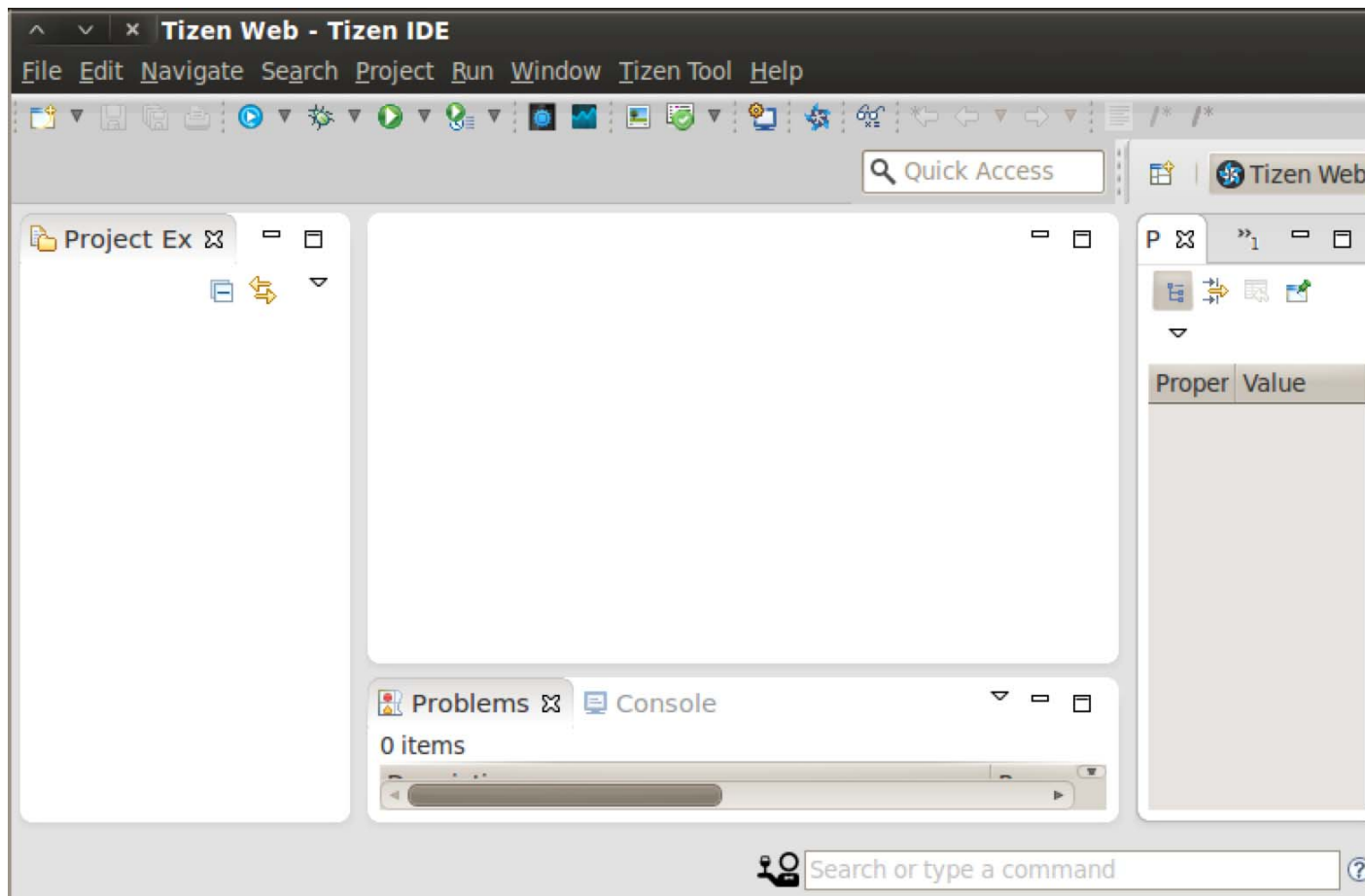
```
$ ./eclipse
```



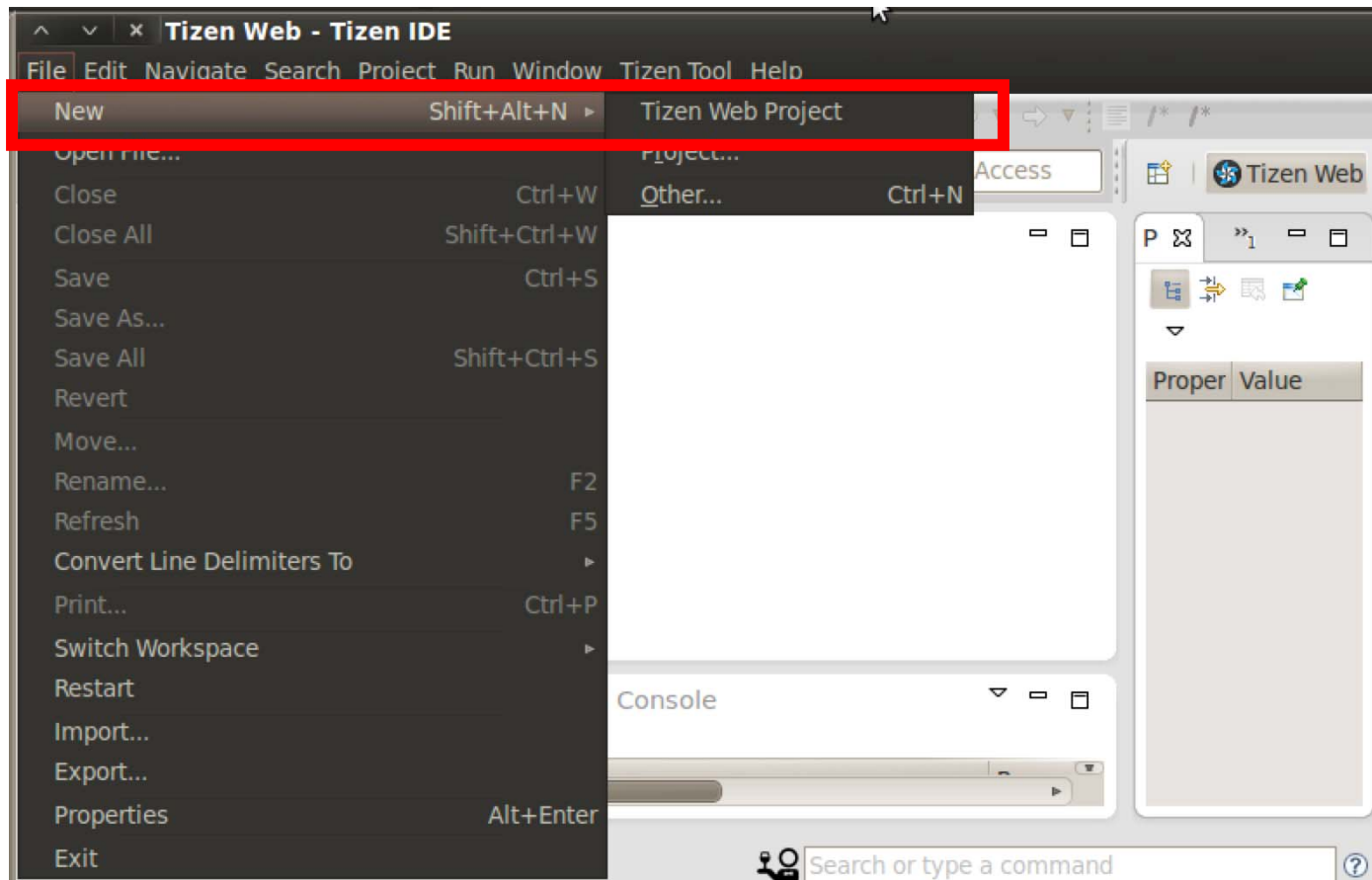
- Tizen IDE 실행
 - ✓ 타이젠 IDE workspace 설정



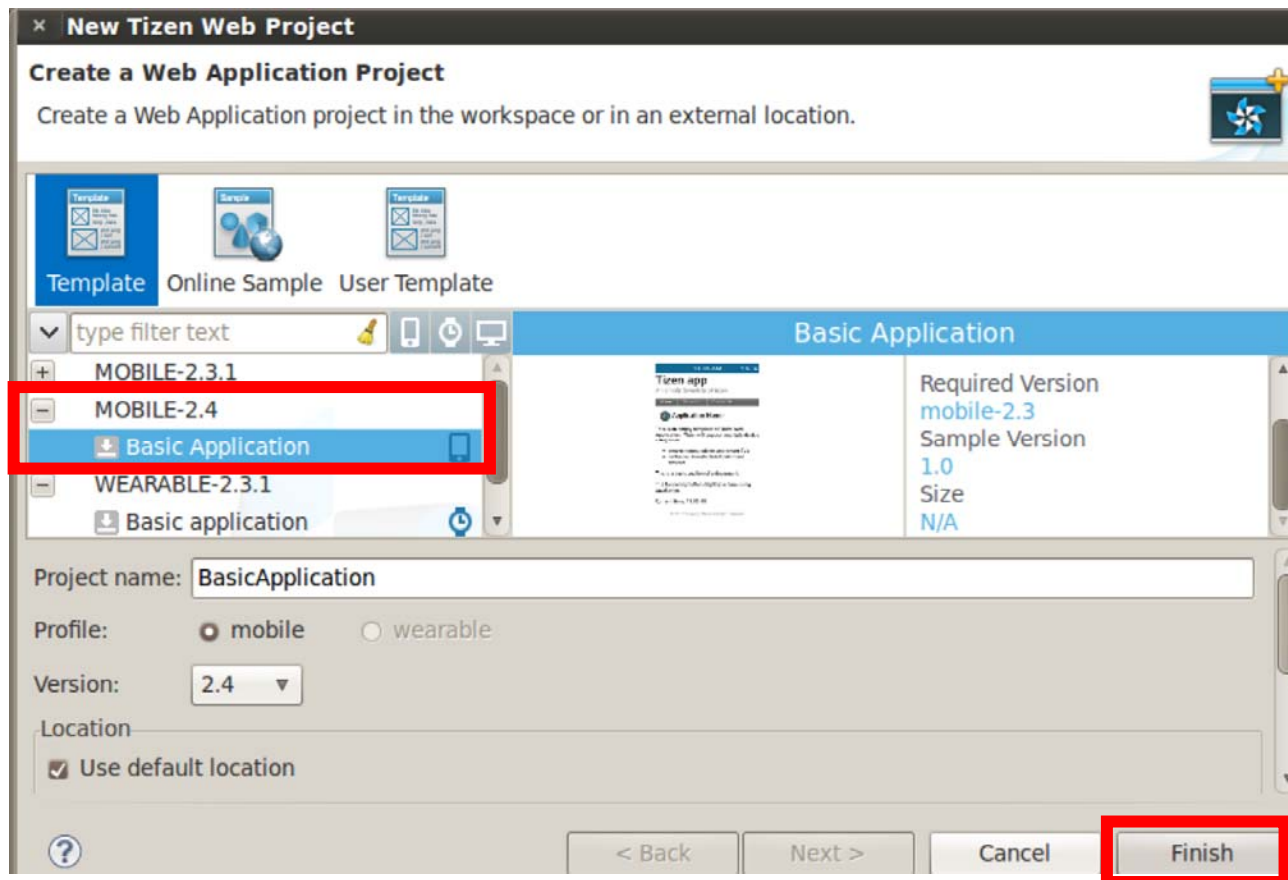
- Tizen IDE 실행
 - ✓ 실행된 타이젠 IDE 화면



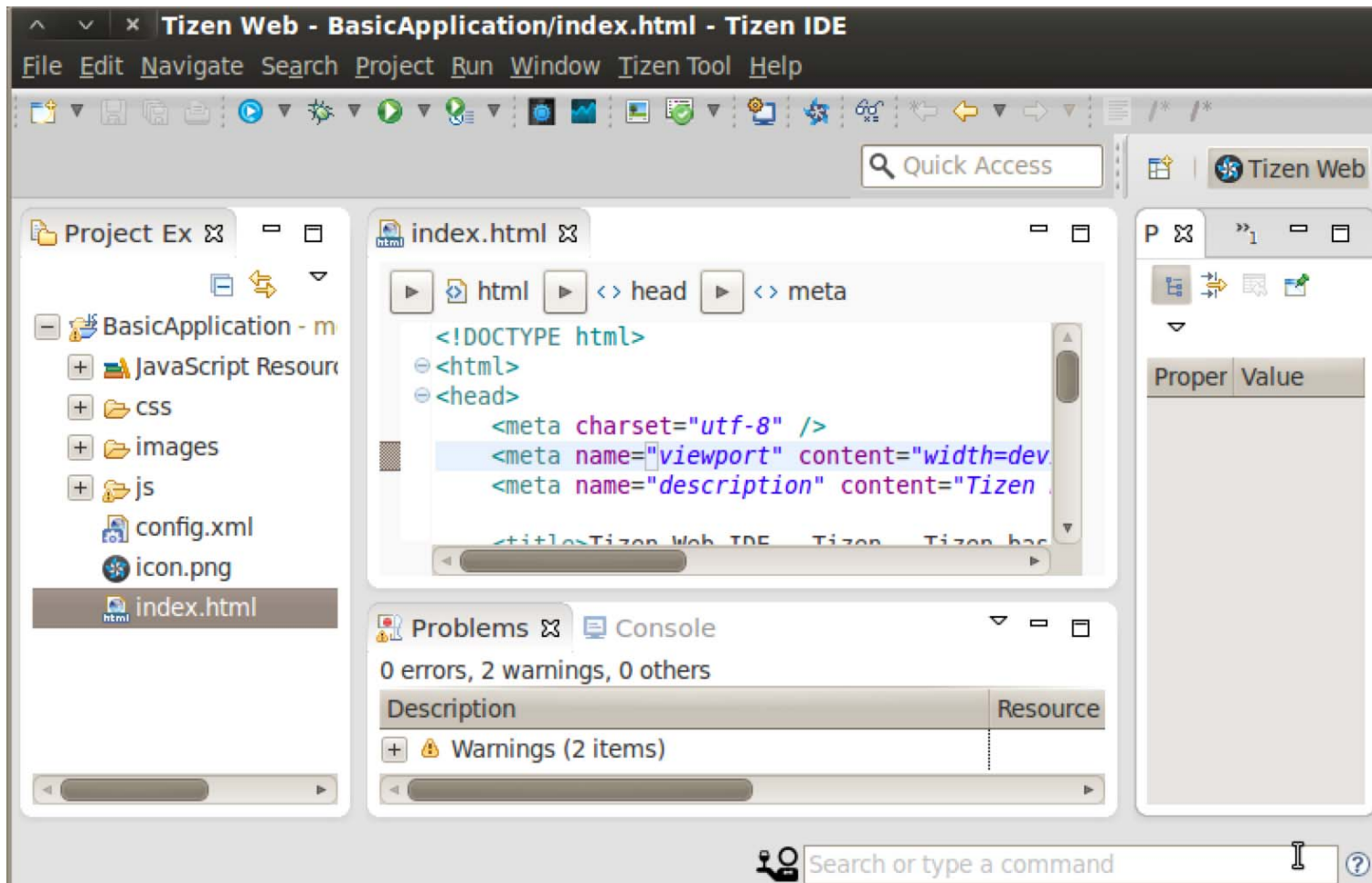
- Tizen IDE 실행
 - ✓ Tizen project 생성
 - File – New – Tizen Web Project



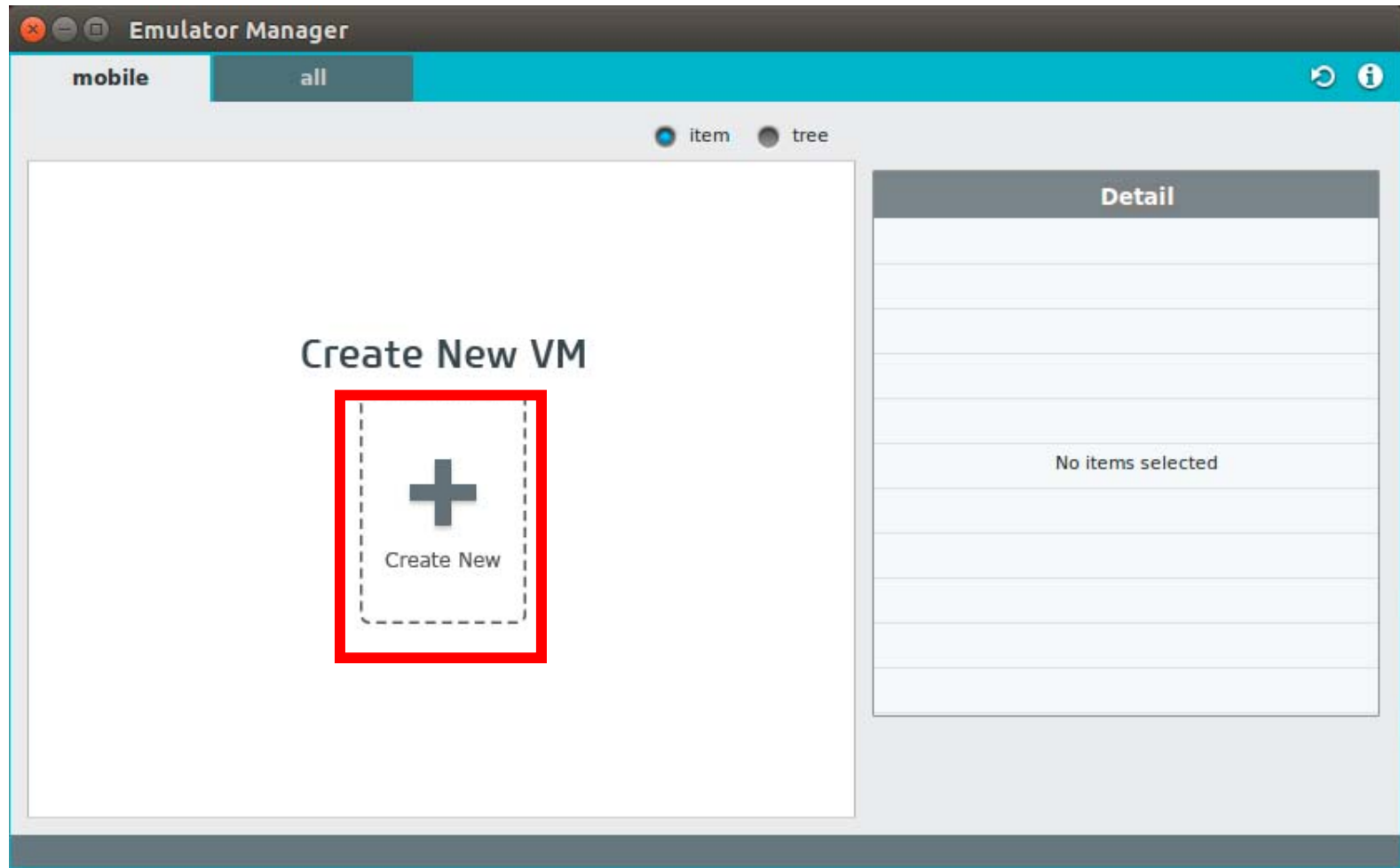
- Tizen IDE 실행
 - ✓ Tizen project 생성
 - Mobile 2-4 – Basic Application 선택 후 finish



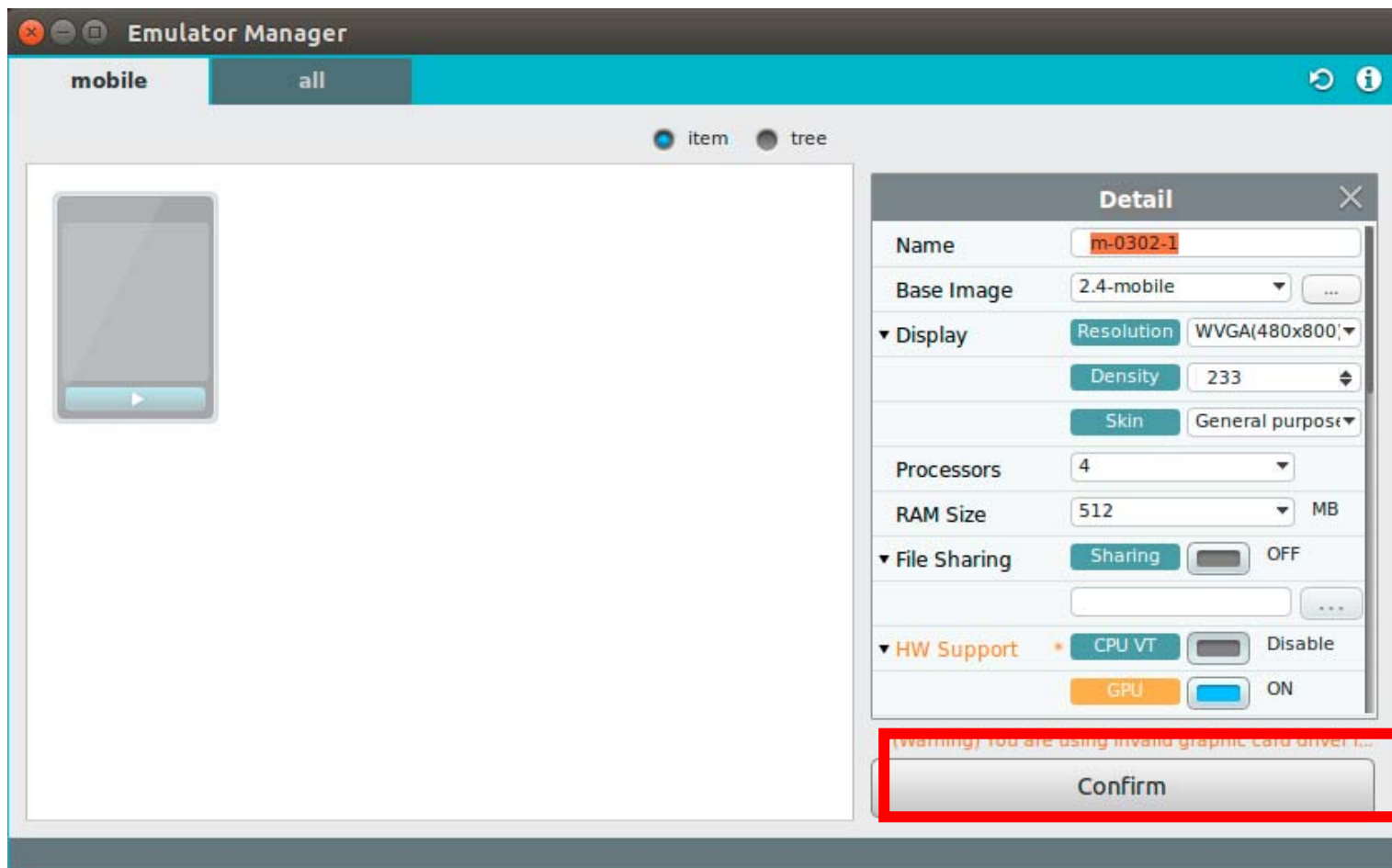
- Tizen IDE 실행
 - ✓ 생성된 Tizen Project



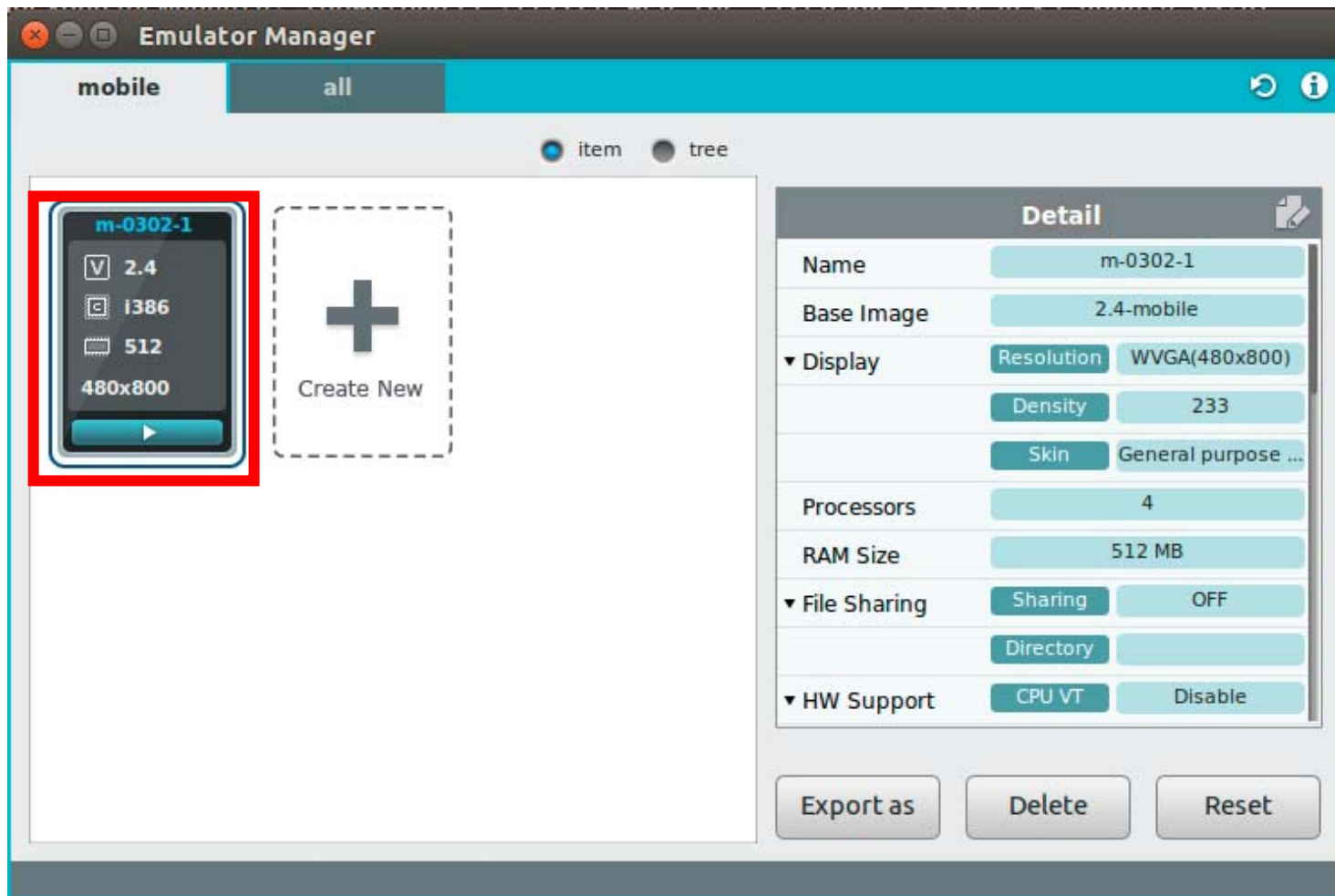
- Tizen Emulator device 설정
 - ✓ Tizen tool > Emulator Manager > Create New



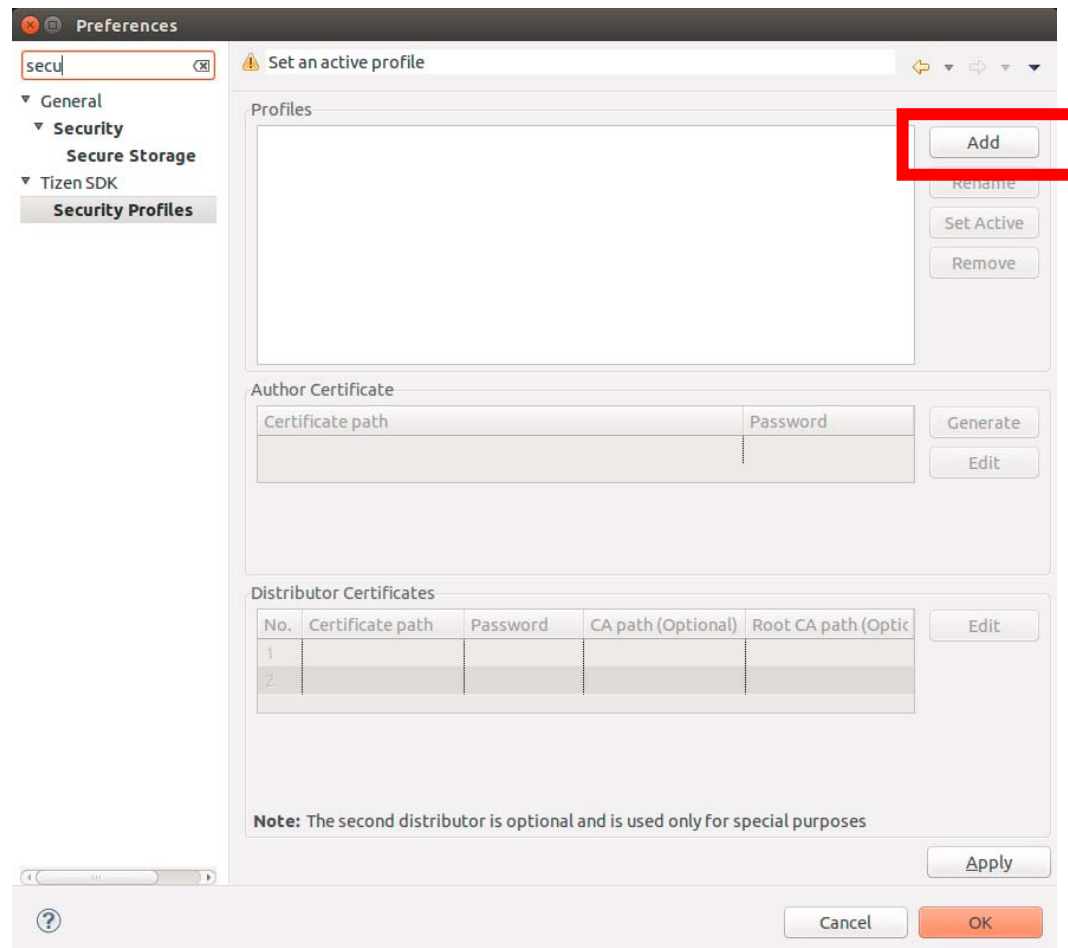
- Tizen Emulator device 설정
 - ✓ Detail 설정후 confirm



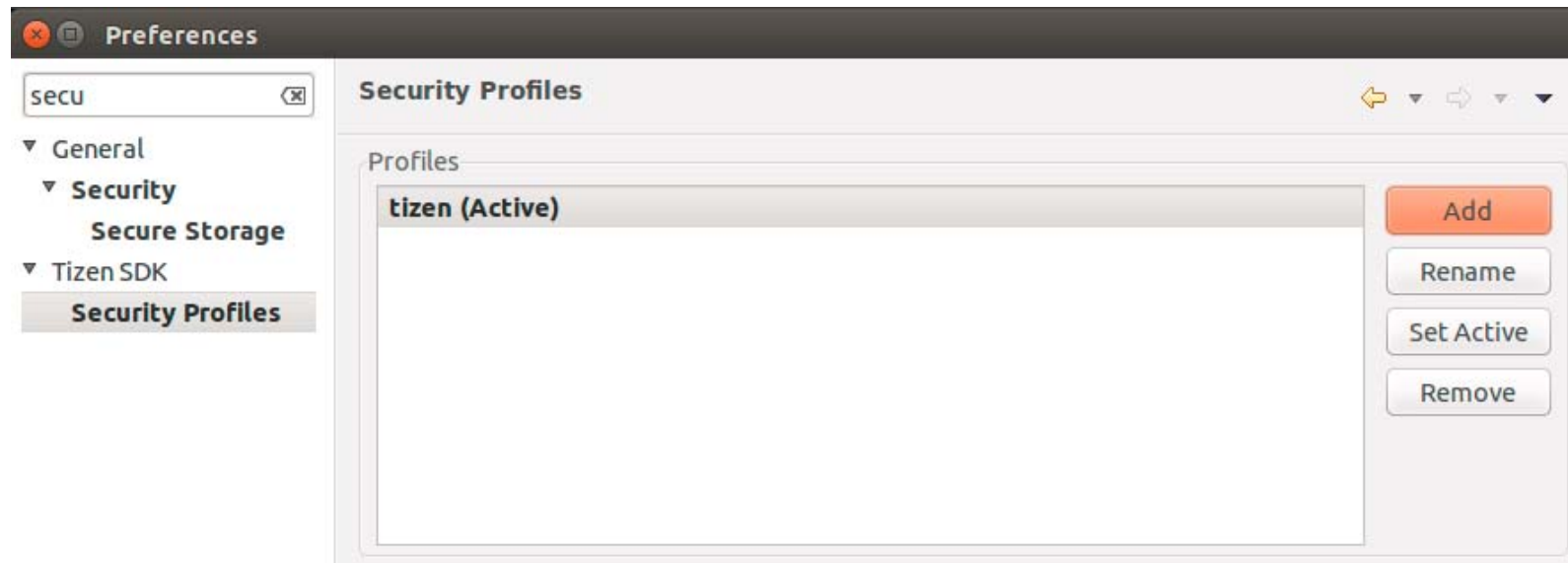
- Tizen Emulator device 설정
 - ✓ 생성된 devices



- Tizen Security profile 설정
 - ✓ Security profile 생성
 - preference > security profiles >> add



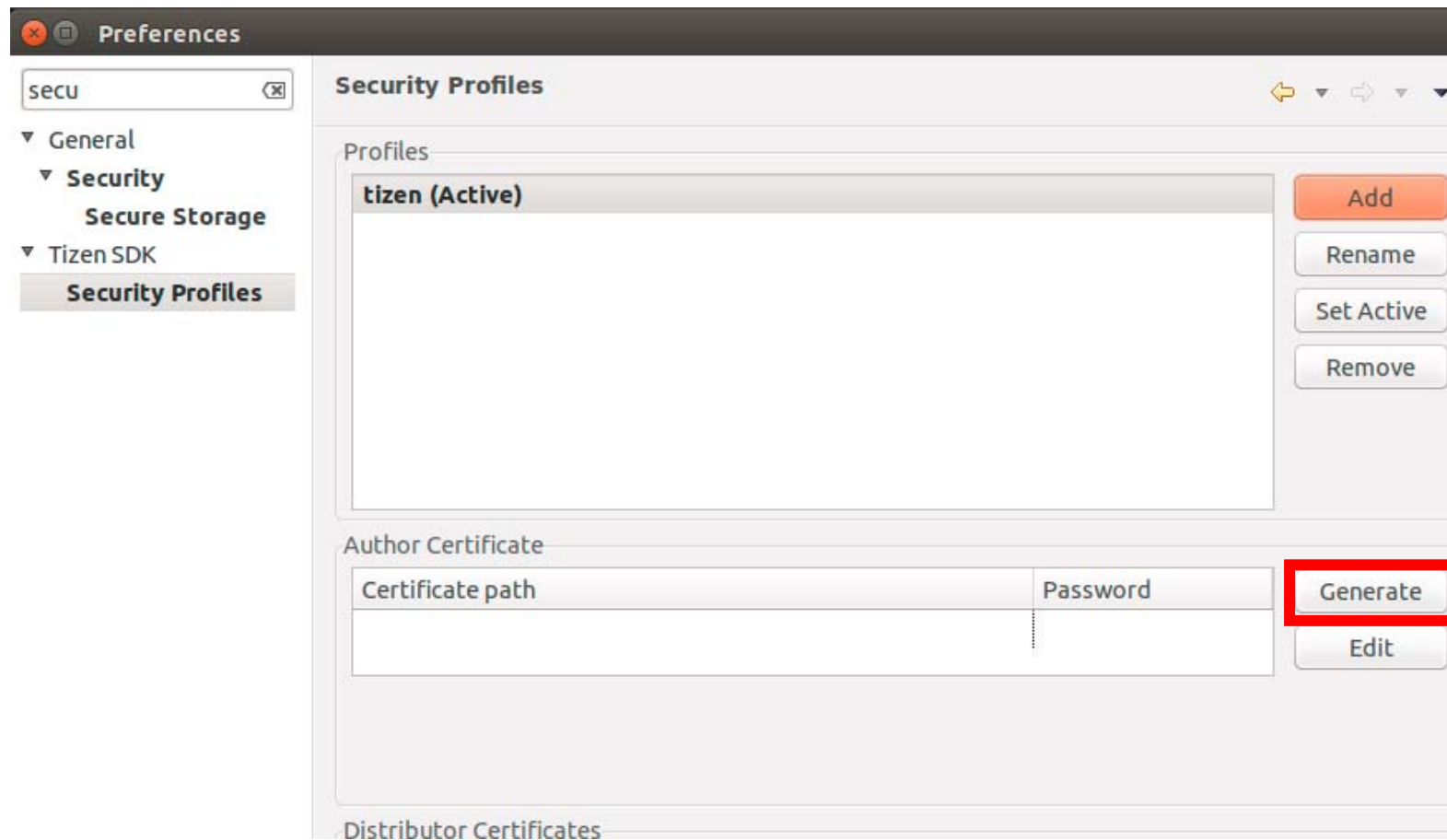
- Tizen Security profile 설정
 - ✓ Security profile 생성
 - Profile 이름 설정 후 확인



■ Tizen Security profile 설정

✓ Security profile 생성

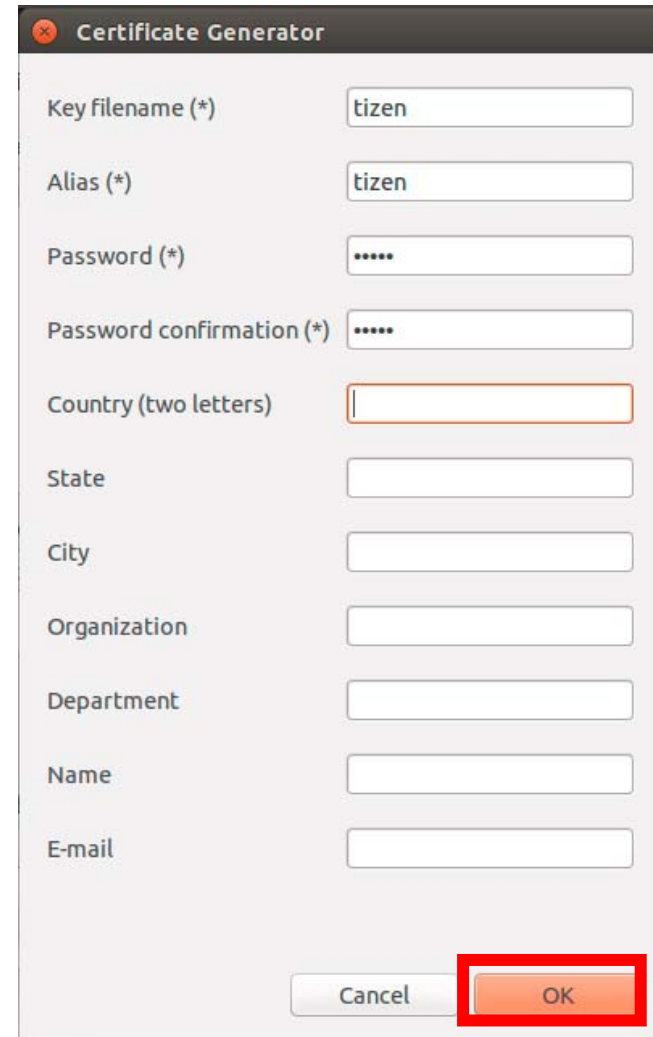
- preference > security profiles >> generate



■ Tizen Security profile 설정

✓ Security profile 생성

- 필요 정보 입력



The image shows a 'Certificate Generator' dialog box with the following fields and values:

Field	Value
Key filename (*)	tizen
Alias (*)	tizen
Password (*)
Password confirmation (*)
Country (two letters)	
State	
City	
Organization	
Department	
Name	
E-mail	

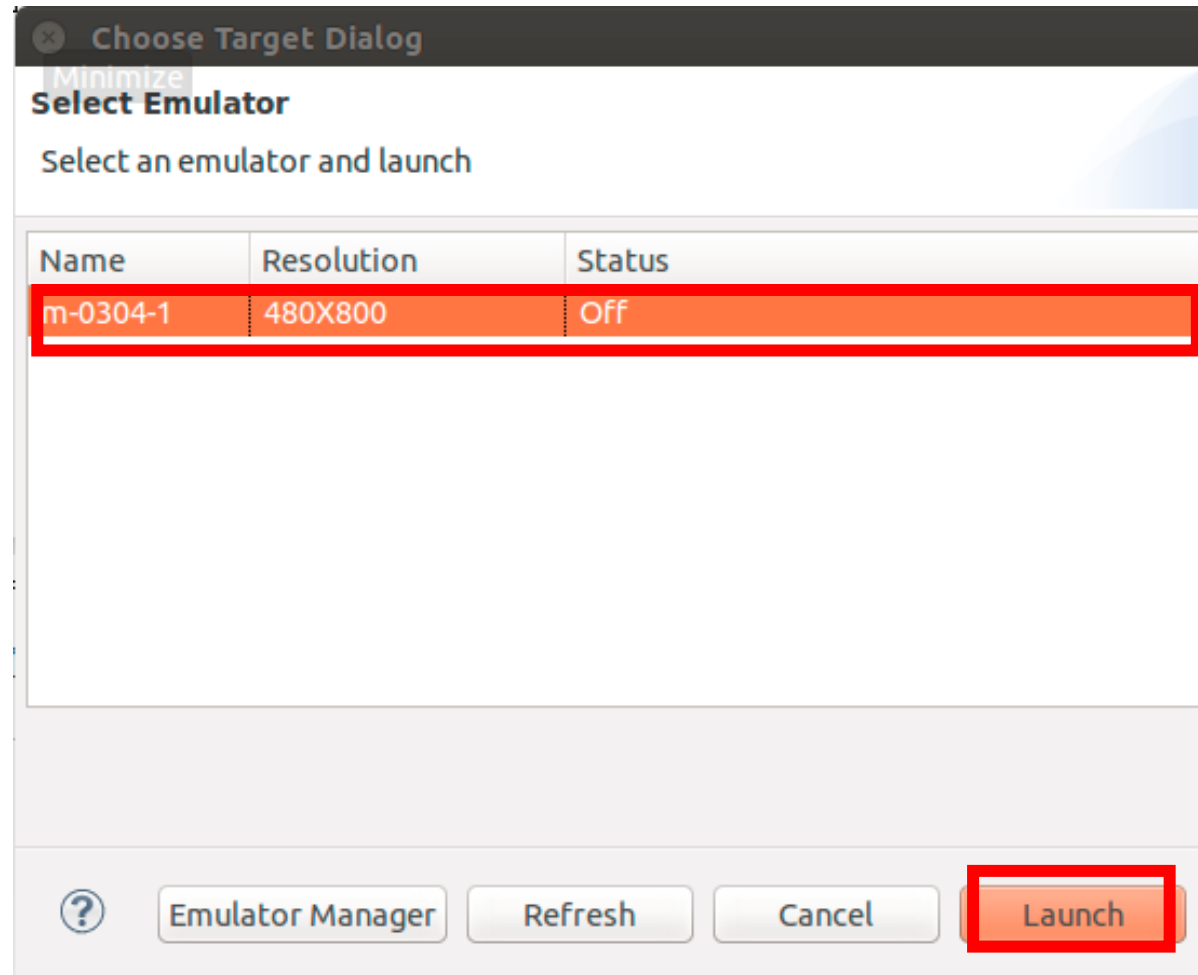
At the bottom right, there are two buttons: 'Cancel' and 'OK'. The 'OK' button is highlighted with a red rectangular border.

- Tizen Project 실행
 - ✓ Index.html 의 body 수정

```
<body>
  <div id="main" class="page">
    <div class="contents">
      <span id="content-text">Easy Tizen</span>
    </div>
  </div>
</body>

</html>
```

- Tizen Project 실행
 - ✓ Run > Run > Emulator 선택 후 실행



- Tizen Project 실행
 - ✓ Emulator에 설치된 Tizen Project 실행

