Developing Tizen Apps with the Tizen SDK

* This document is based on Tizen 2.4 SDK

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Prerequisites for the Tizen SDK

System Requirements for Tizen SDK

The following table lists the operating systems supported by the Tizen SDK.

OS	Version	Bit
Ubuntu	14.04/12.04	32 and 64
Microsoft Windows	8/7	32 and 64
Mac OS X	10.10 (Yosemite) / 10.9 (Mavericks) / 10.8 (Mountain Lion)	64

For more instructions on how to check the system specifications, see **Appendix: Checking System Specifications** (pages 83-84).

System Requirements for Tizen SDK

The following table lists the processor and memory requirements for the Tizen SDK.

Component	Minimum	Recommended
Processor Speed	2 GHz	3 GHz and above
Processor Type	Intel Dual-Core	Intel Core i5 and above
Memory	3 GB	4 GB and above
Disk Space	6 GB free	6 GB and above

Note

The Tizen SDK can be installed on AMD processors, but may not perform properly due to absence of the Intel Hardware Accelerated Execution Manager (HAXM), which accelerates the speed of Tizen application emulation.

System Requirements for Tizen Emulator

CPU & Screen Resolution

The following table lists the CPU and screen resolution requirements for the Tizen Emulator.

Component	Requirement
CPU	Recommended: support for Intel VTx* (Virtualization Technology)
Screen resolution	Recommended: 1280 x 1024

* For more instructions on how to check for Intel VTx support, see **Appendix: Checking CPU VTx Support** (pages 85-86).

System Requirements for Tizen Emulator

The following table lists the Graphic Card requirements for the Tizen Emulator.

Brand	Product
NVIDIA	GeForce 8300 GS, GeForce 8500 GT, GeForce GT 220, GeForce GT 430, GeForce GT 530, GeForce GT 330M, GeForce GTX 550Ti, Quadro NVS 290 and later versions
ATI	RADEON HD 4850, RADEON HD 5450 and later versions
Intel	HD Graphics 2000, HD Graphics 2500, HD Graphics 4000 and later versions

For more instructions on how to update the graphic card driver, see **Appendix: Checking and Updating the Graphic Card Driver** (pages 87-88).

JDK Requirements

Tizen SDK requires the JDK (Java Development Kit) installation for using the Java Runtime (VM).

Java 7 or higher is required for the Tizen SDK to work properly, and as of January 2016, it is recommended to install Oracle JDK 8 for the Tizen.

Do not install Open-JDK.

Note

Tizen SDK is a development tool based on the Eclipse IDE, which essentially requires the JDK installation as well.

For instructions on how to check and uninstall the existing JDK in your system, see **Appendix: Checking and Uninstalling the JDK** (page 89).

JDK Requirements

Download Oracle JDK 8 from http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html.

1. Select Accept License Agreement .
2. Download the installer (`.exe` file) according to your system environment.

Java SE Development Kit 8u65

You must accept the Oracle Binary Code License Agreement for Java SE to download this software.

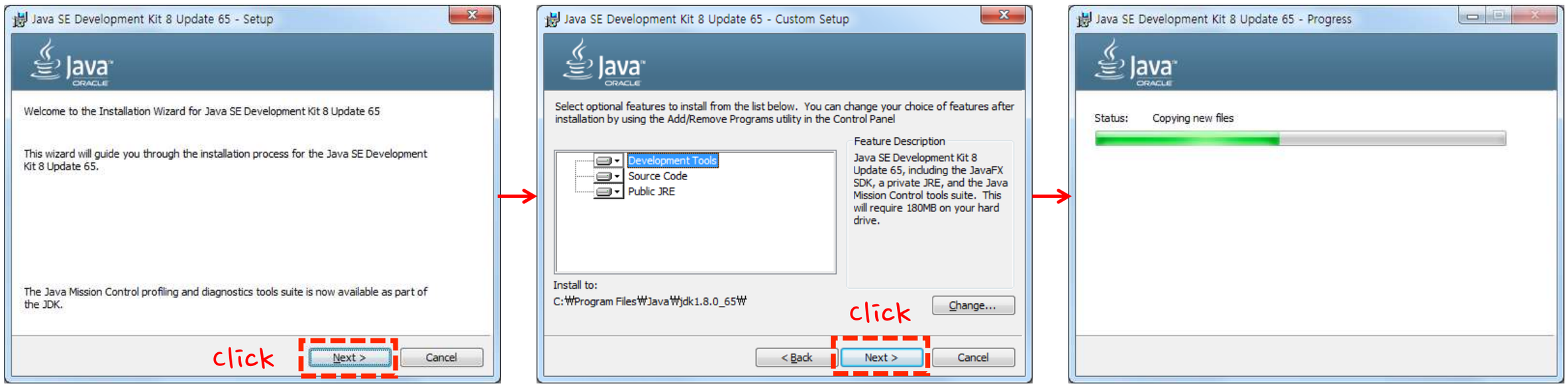
click ○ **Accept License Agreement** ◉ **Decline License Agreement**

Product / File Description	File Size	Download
Linux ARM v6/v7 Hard Float ABI	77.69 MB	jdk-8u65-linux-arm32-vfp-hflt.tar.gz
Linux ARM v8 Hard Float ABI	74.66 MB	jdk-8u65-linux-arm64-vfp-hflt.tar.gz
Linux x86	154.67 MB	jdk-8u65-linux-i586.rpm
Linux x86	174.84 MB	jdk-8u65-linux-i586.tar.gz
Linux x64	152.69 MB	jdk-8u65-linux-x64.rpm
Linux x64	172.86 MB	jdk-8u65-linux-x64.tar.gz
Mac OS X x64	227.14 MB	jdk-8u65-macosx-x64.dmg
Solaris SPARC 64-bit (SVR4 package)	139.71 MB	jdk-8u65-solaris-sparcv9.tar.Z
Solaris SPARC 64-bit	99.01 MB	jdk-8u65-solaris-sparcv9.tar.gz
Solaris x64 (SVR4 package)	140.22 MB	jdk-8u65-solaris-x64.tar.Z
Solaris x64	96.74 MB	jdk-8u65-solaris-x64.tar.gz
Windows x86	181.24 MB	jdk-8u65-windows-i586.exe
Windows x64	186.57 MB	jdk-8u65-windows-x64.exe

Choose the right version, 32bits (x86) or 64bits (x64).

JDK Requirements

Install the JDK by following the instructions.



Do not change the installation folder from the default location.

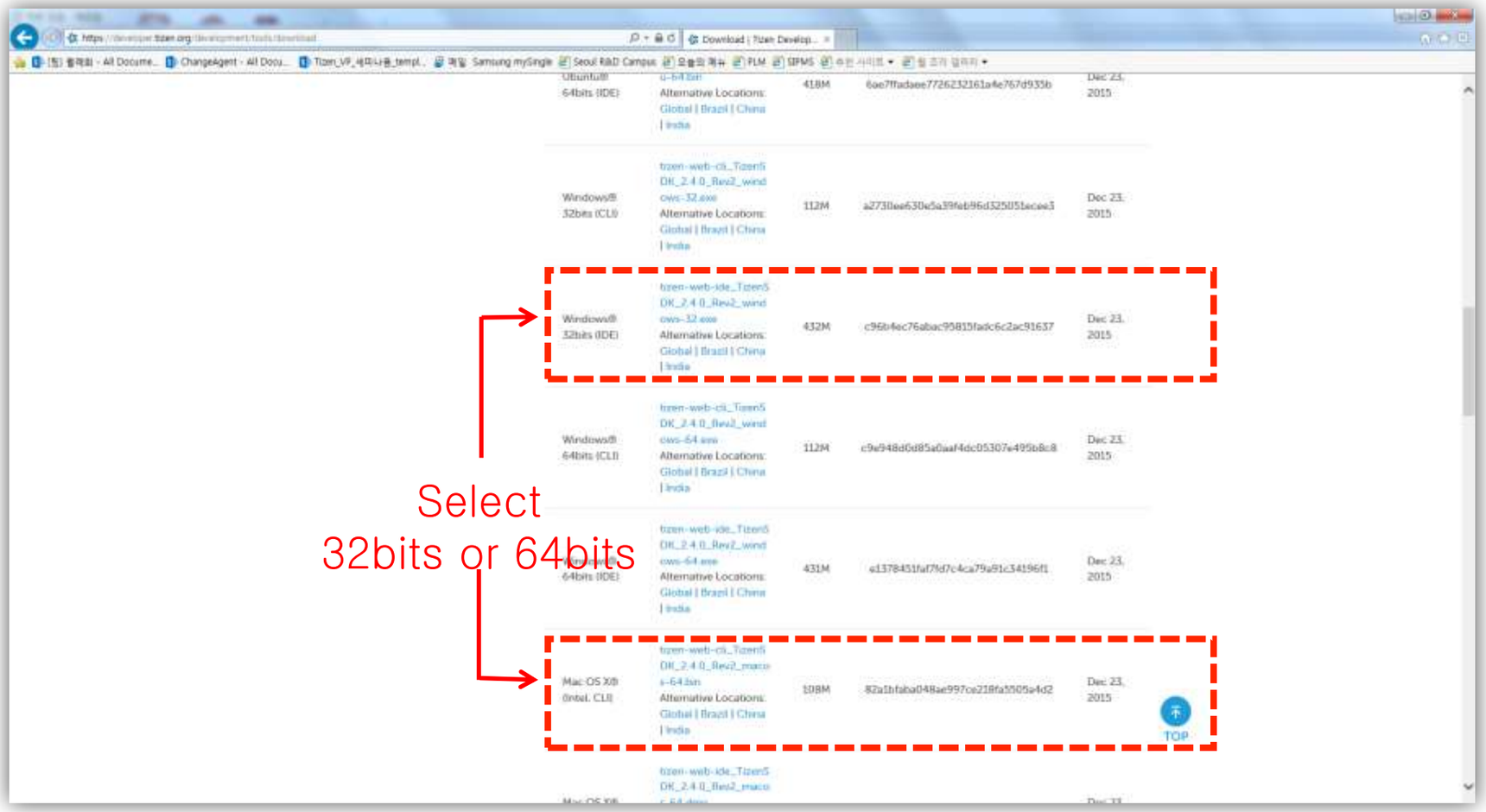
Tizen SDK Installation

Tizen SDK Installation

Downloading the installer

Download Tizen SDK installer from https://developer.tizen.org/downloads.

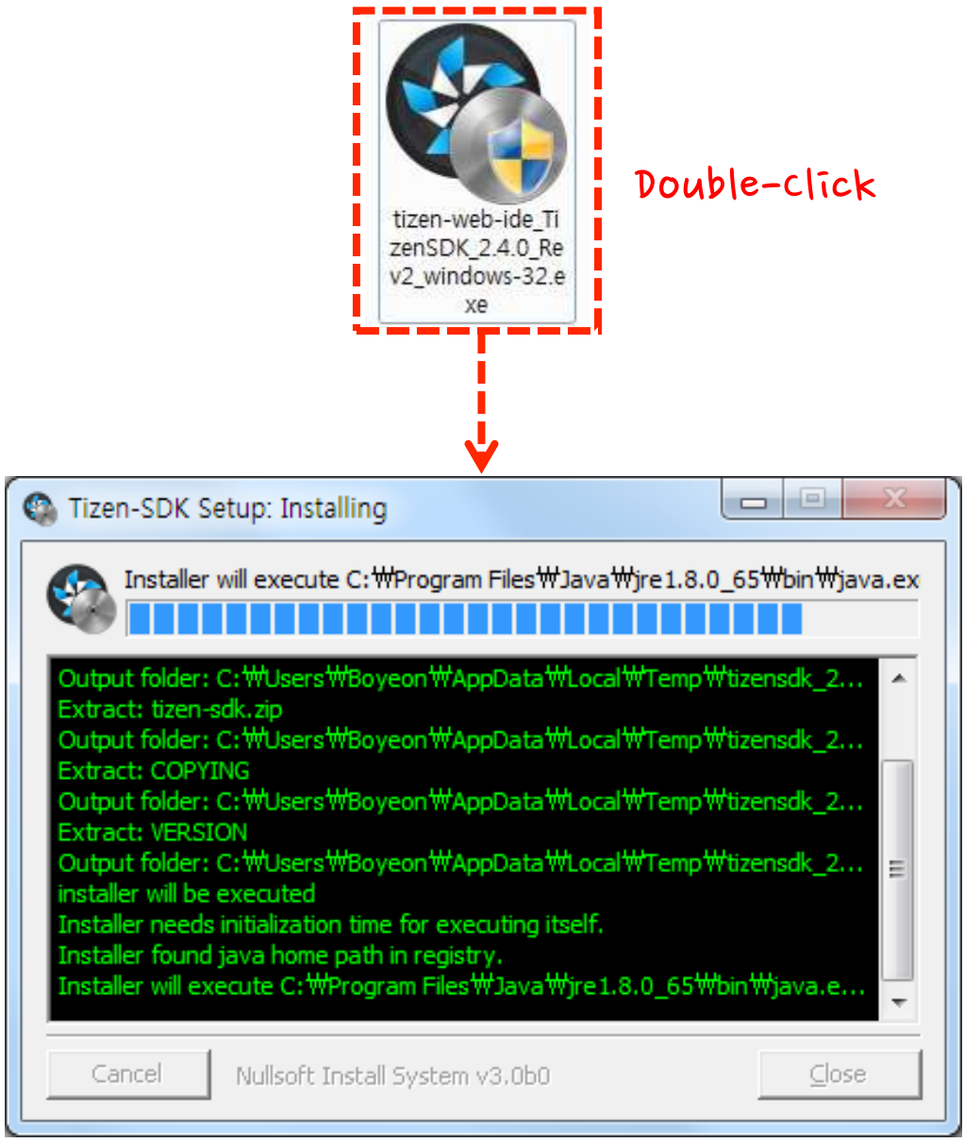
Choose the Tizen SDK installer (IDE) according to your system environment.



For more information about the IDE and CLI options, see **Appendix: Tizen SDK Installation Options – IDE and CLI** (page 90).

Tizen SDK Installation

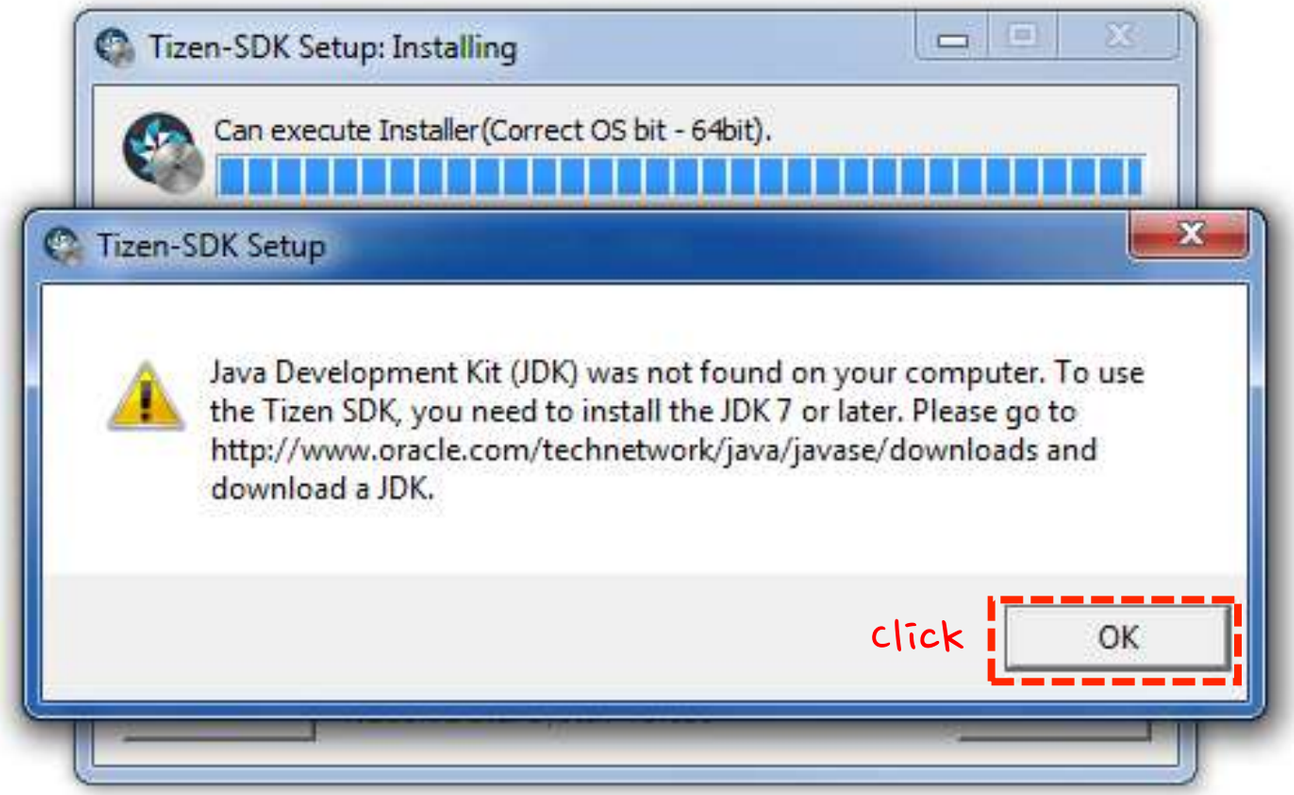
Double-click on the installer (`.exe` file), and the installer starts verifying the system
requirements prior to the installation of Tizen SDK.



Tizen SDK Installation

If the JDK is not installed on your computer, the following pop-up appears.

Click **OK** and install the JDK before installing the Tizen SDK.

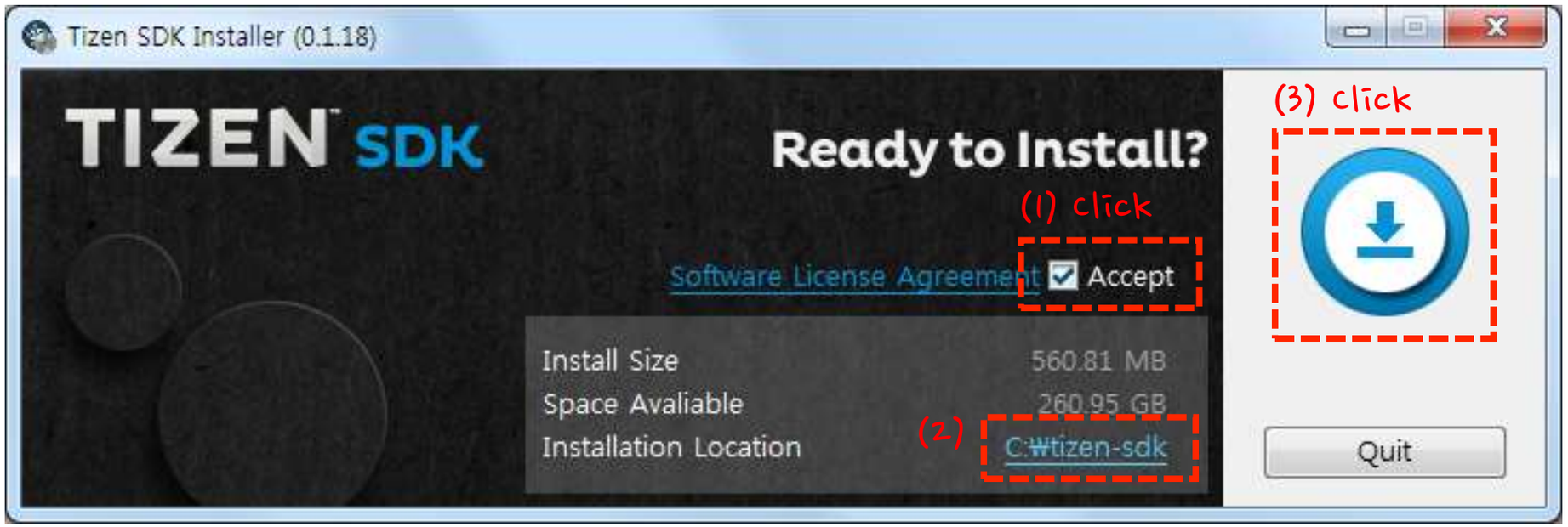


For more information about the JDK requirements and how to install JDK, see **JDK Requirements** (page 7-9).

Tizen SDK Installation

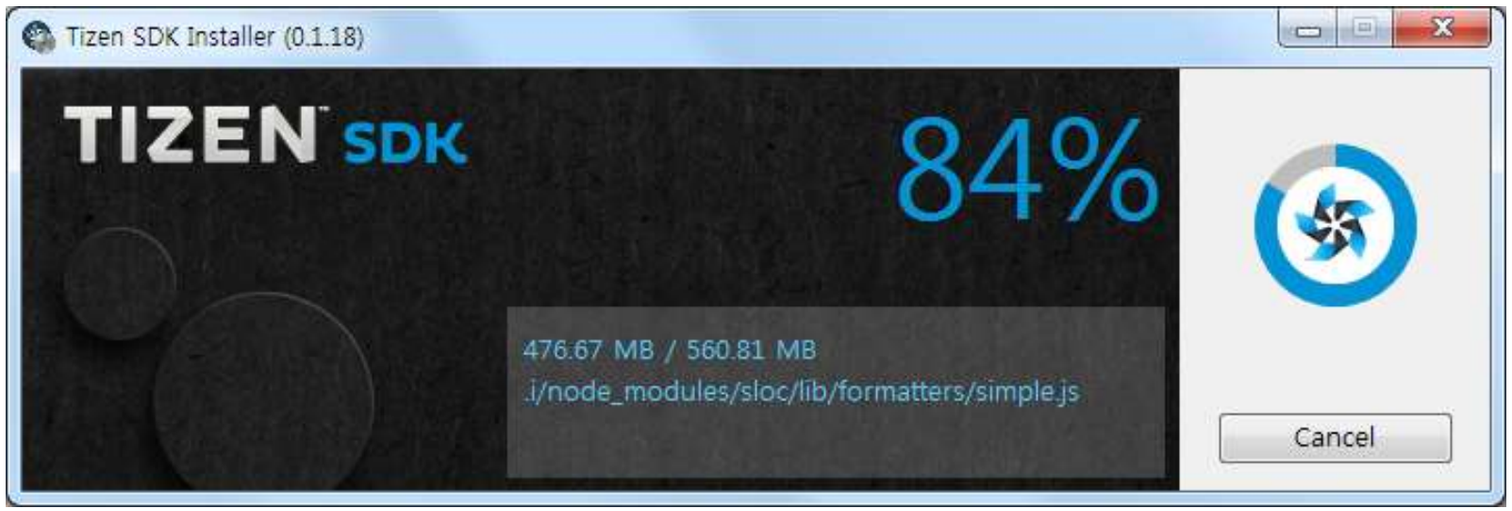
When the installer window appears, start installation by following the steps:

1. Accept the **Software License Agreement.**
2. Confirm the **Installation Location**. The directory must be empty.
3. Click the **Install** button on the right to continue.

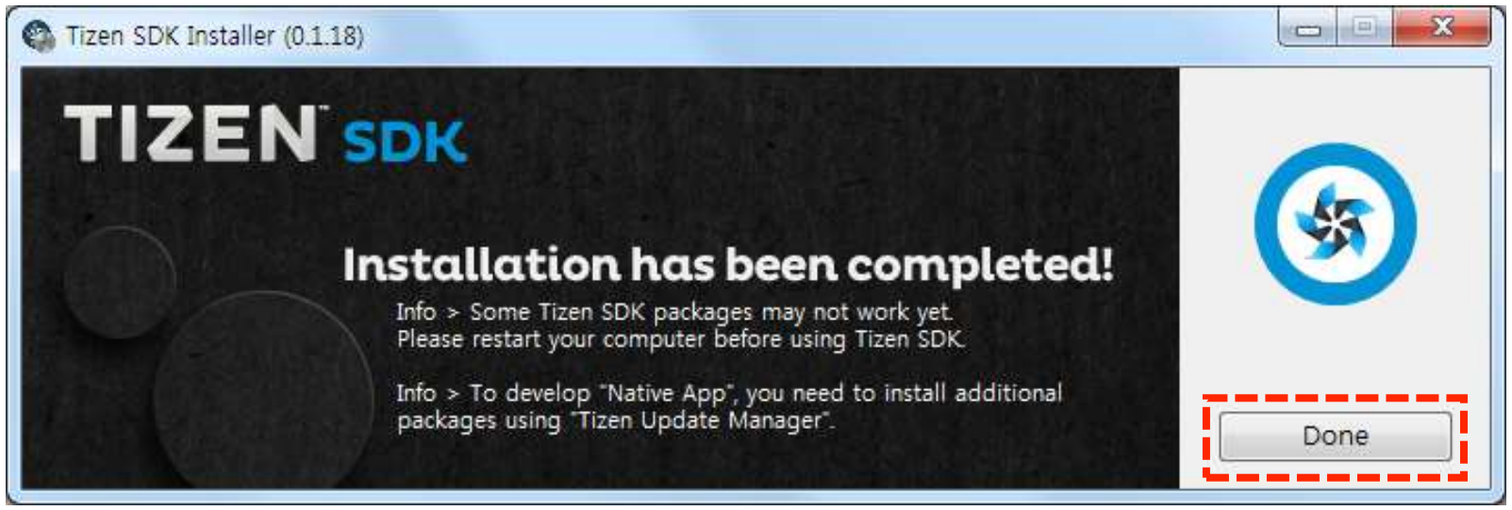


Tizen SDK Installation

The installer installs the basic packages (IDE for Web application development) for the Tizen SDK.



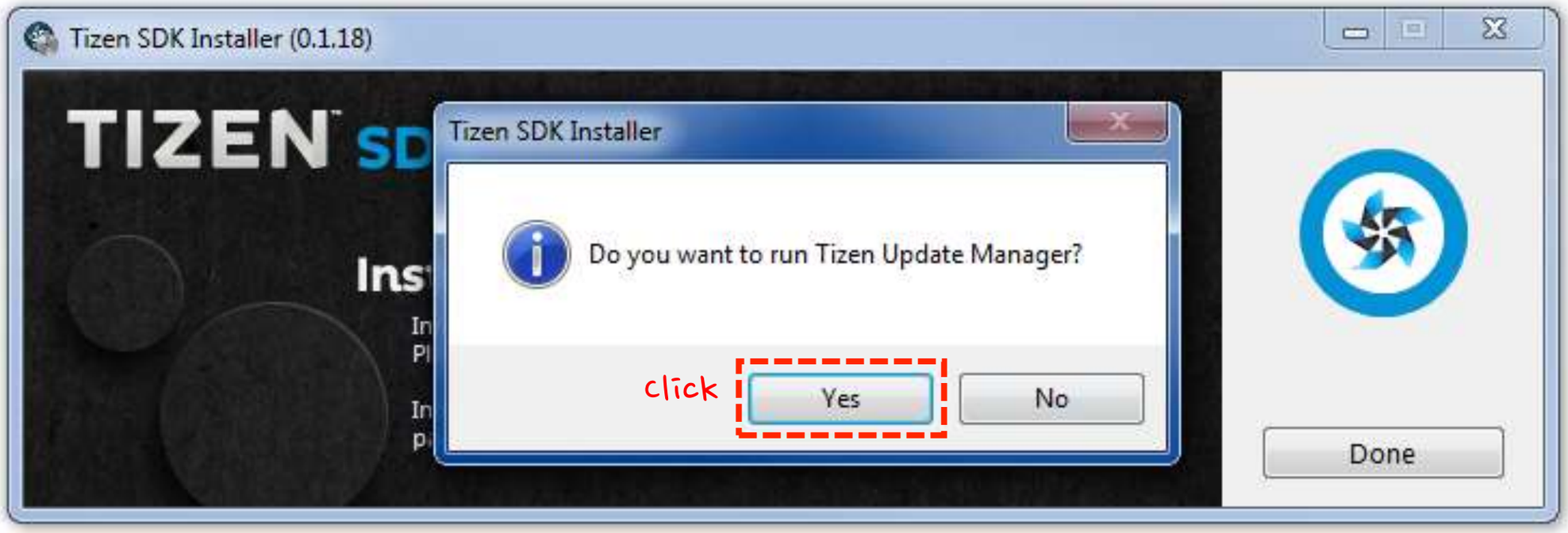
When the installation is completed, click **Done**.



click

Run the Update Manager to install additional packages required for the development of Tizen applications.

Click **Yes** on the prompt message upon the completion of the SDK installation.

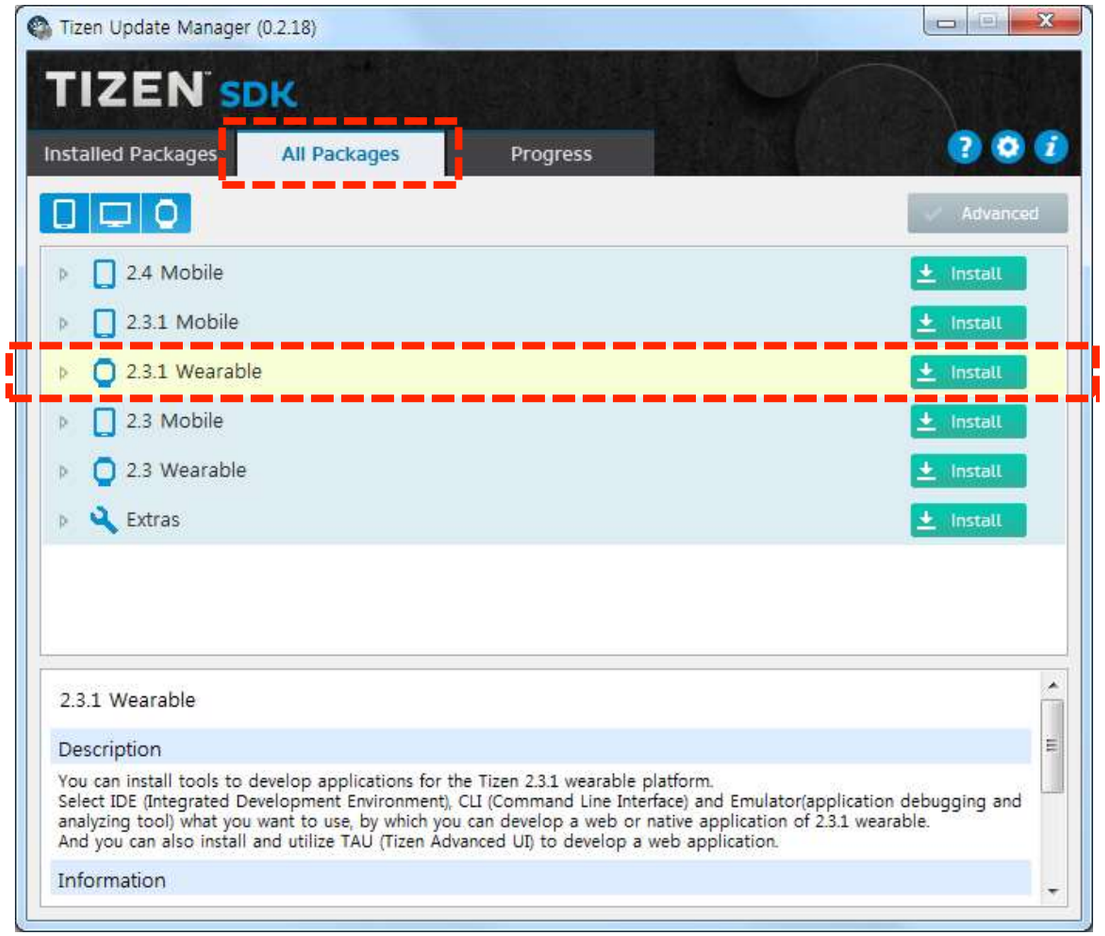


Later, you can launch the **Update Manager-<version>** from Windows **Start Menu** > **All Programs** > **Tizen SDK-<version>**.

When the Update Manager is launched, it shows the **All Packages** tab, which lists all the available packages that can be installed at the moment.

Select a specific platform and profile (2.4 Mobile, 2.3.1 Mobile, 2.3 Mobile, 2.3.1 Wearable, or 2.3 Wearable) you want to install.

For the purpose of this tutorial, the 2.3.1 Wearable package is used.

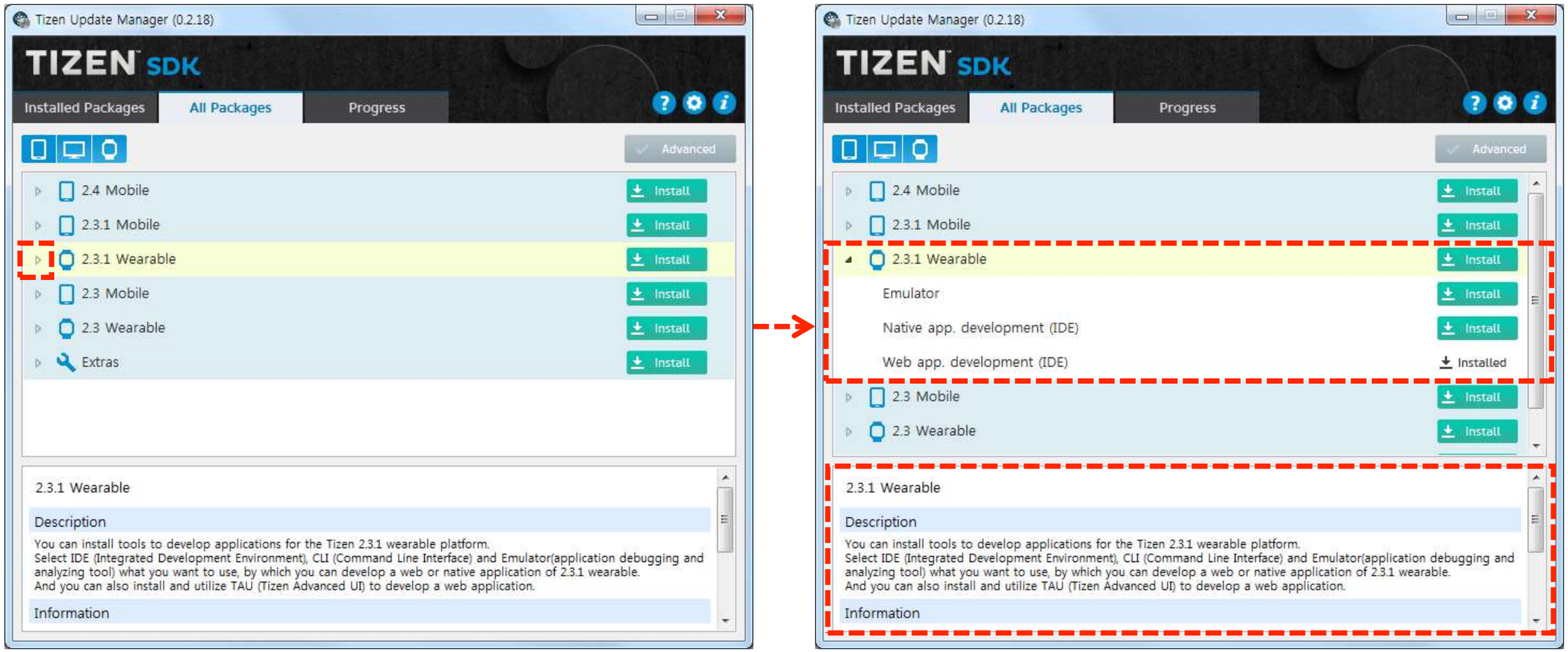


Tizen SDK Installation

Installing Additional Packages

Click the arrow on the left and expand to view the components of the package.

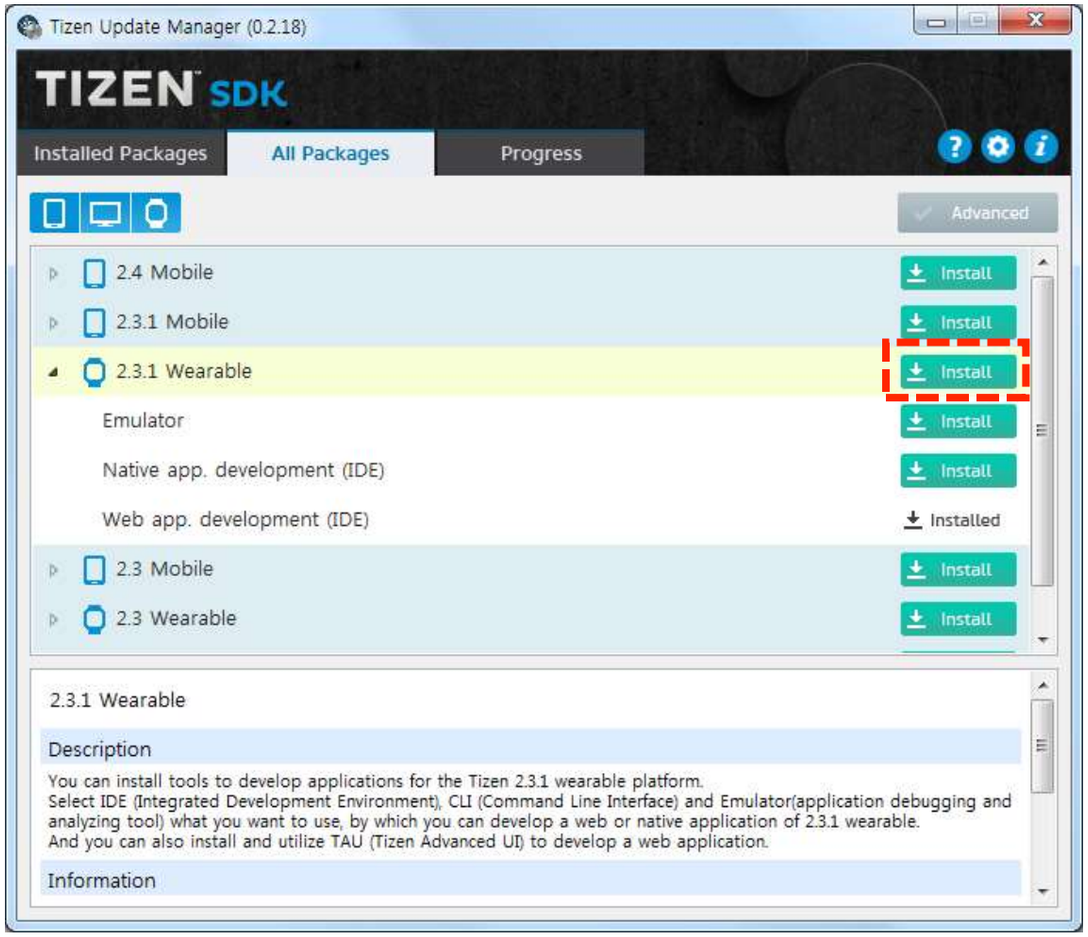
The description of each component is provided at the bottom of the window.



Tizen SDK Installation

Installing Additional Packages

For the purpose of this tutorial, install all components of the 2.3.1 Wearable package by clicking **Install**.

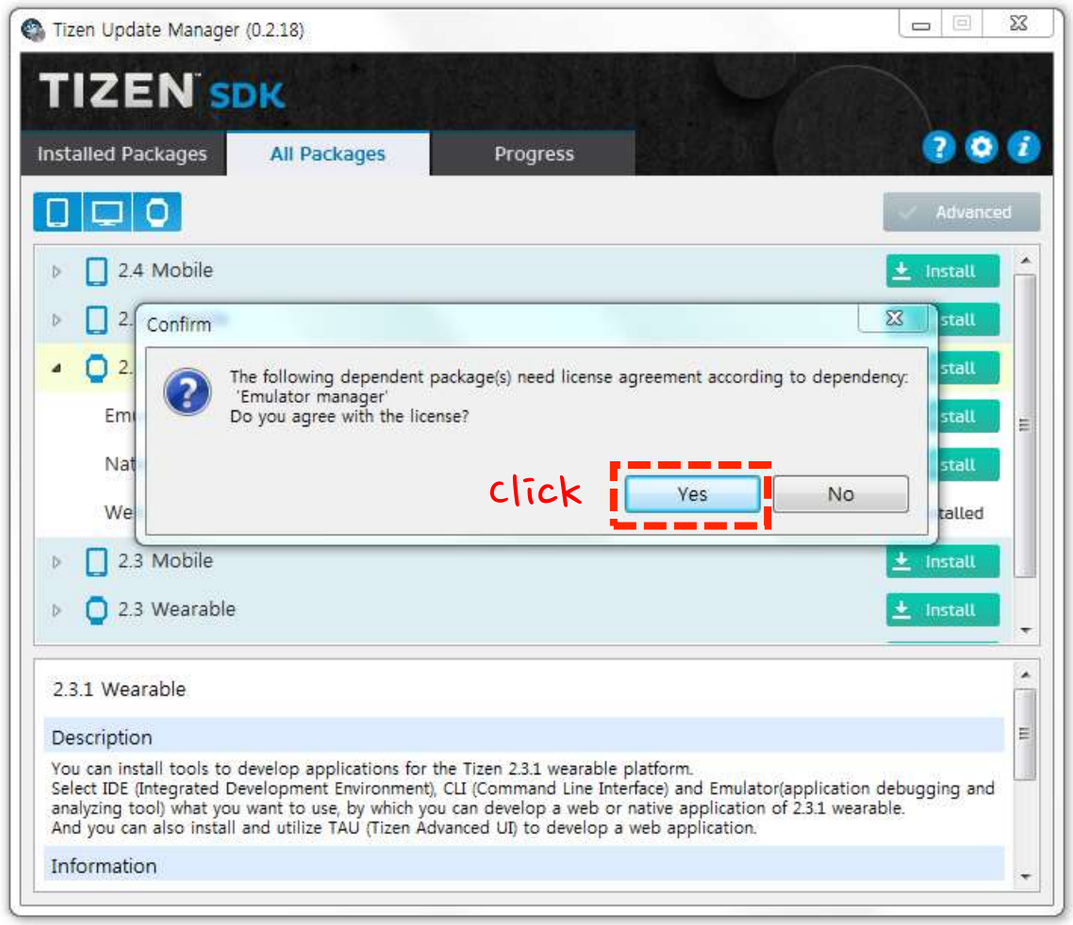


click

Tizen SDK Installation

Installing Additional Packages

The update manager automatically detects and installs any dependent packages required.

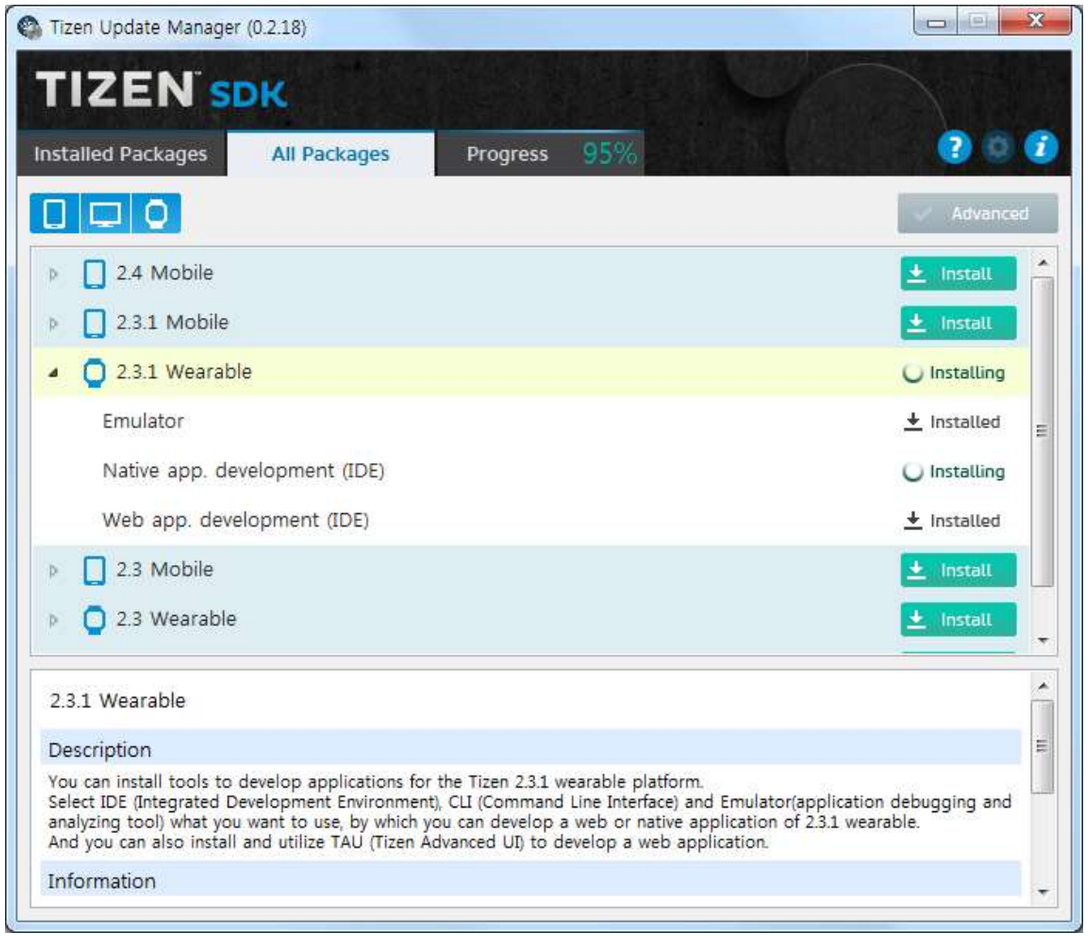


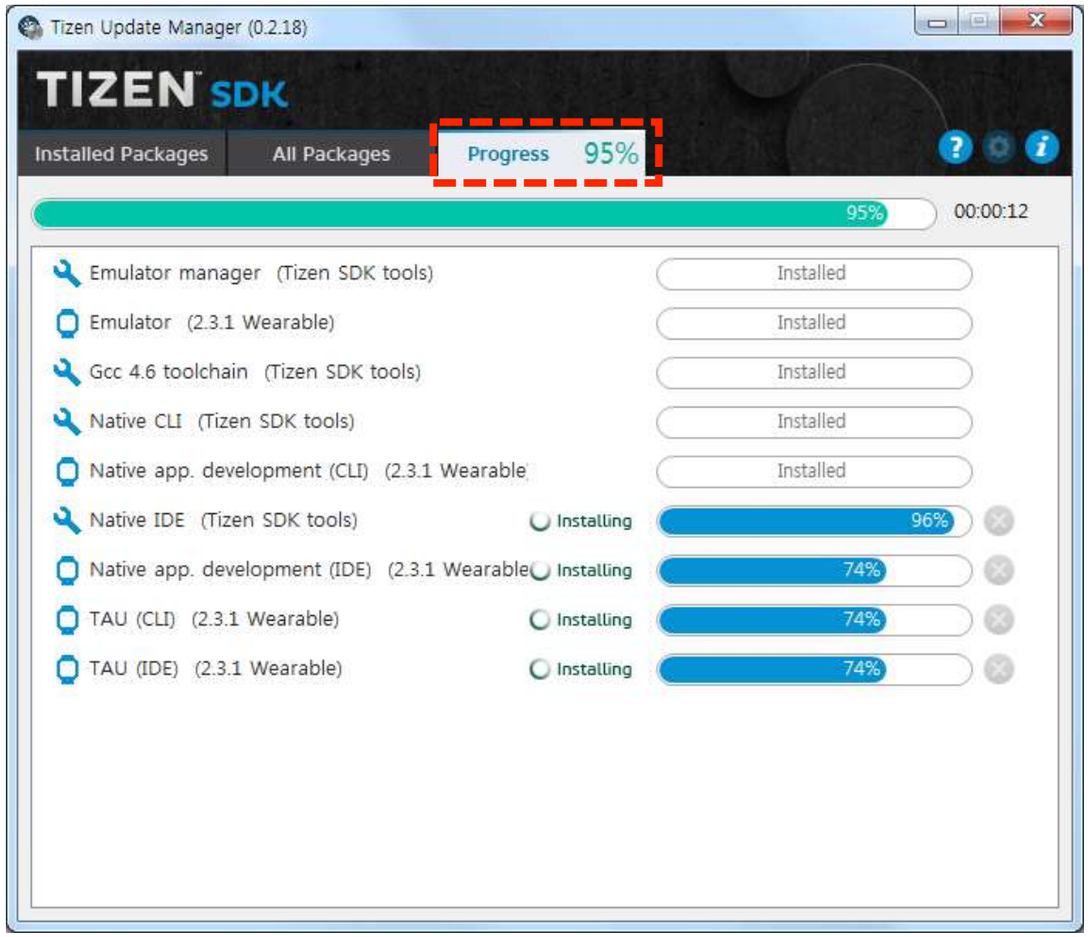
Click **Yes** to automatically install all the required packages.

Tizen SDK Installation

Installing Additional Packages

Do not switch off the update manager while it is downloading and installing packages. Downloading and installing may take a few minutes.



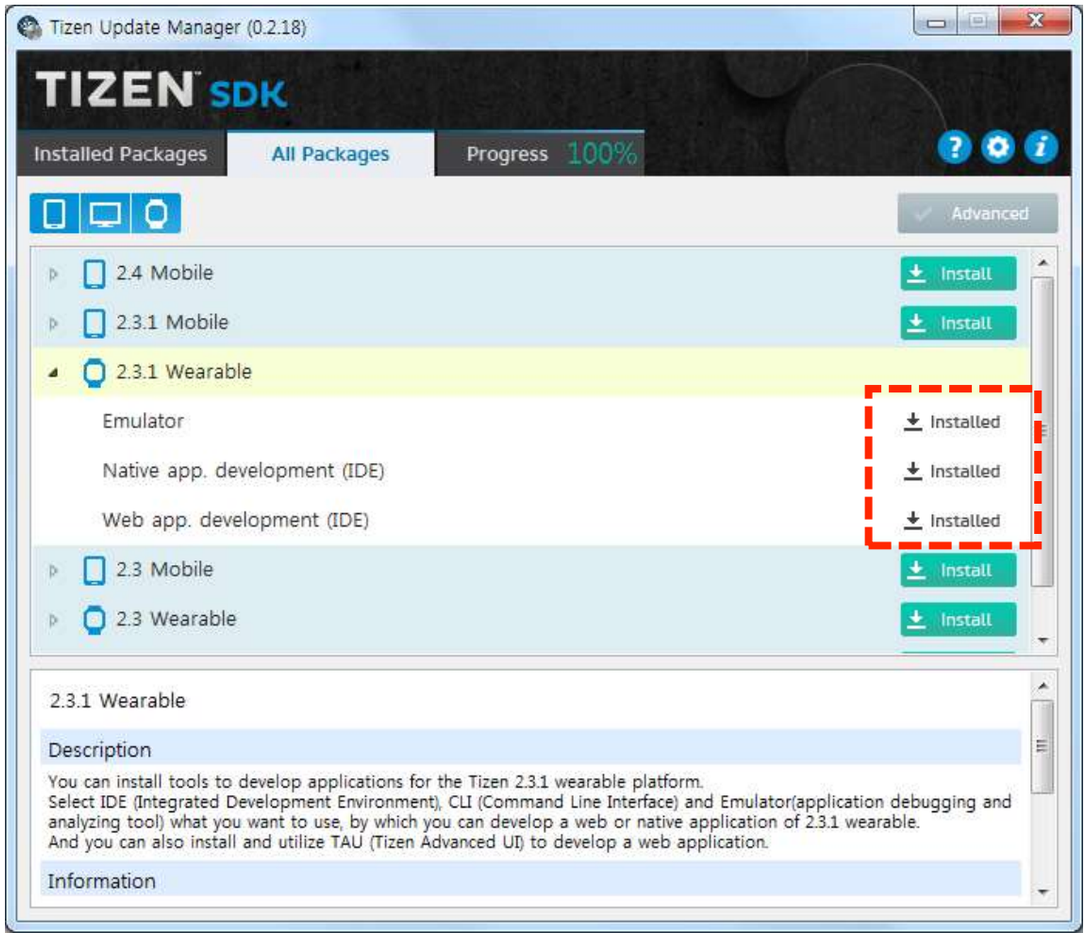


Select the **Progress** tab to view the detailed progress of the installation.

Tizen SDK Installation

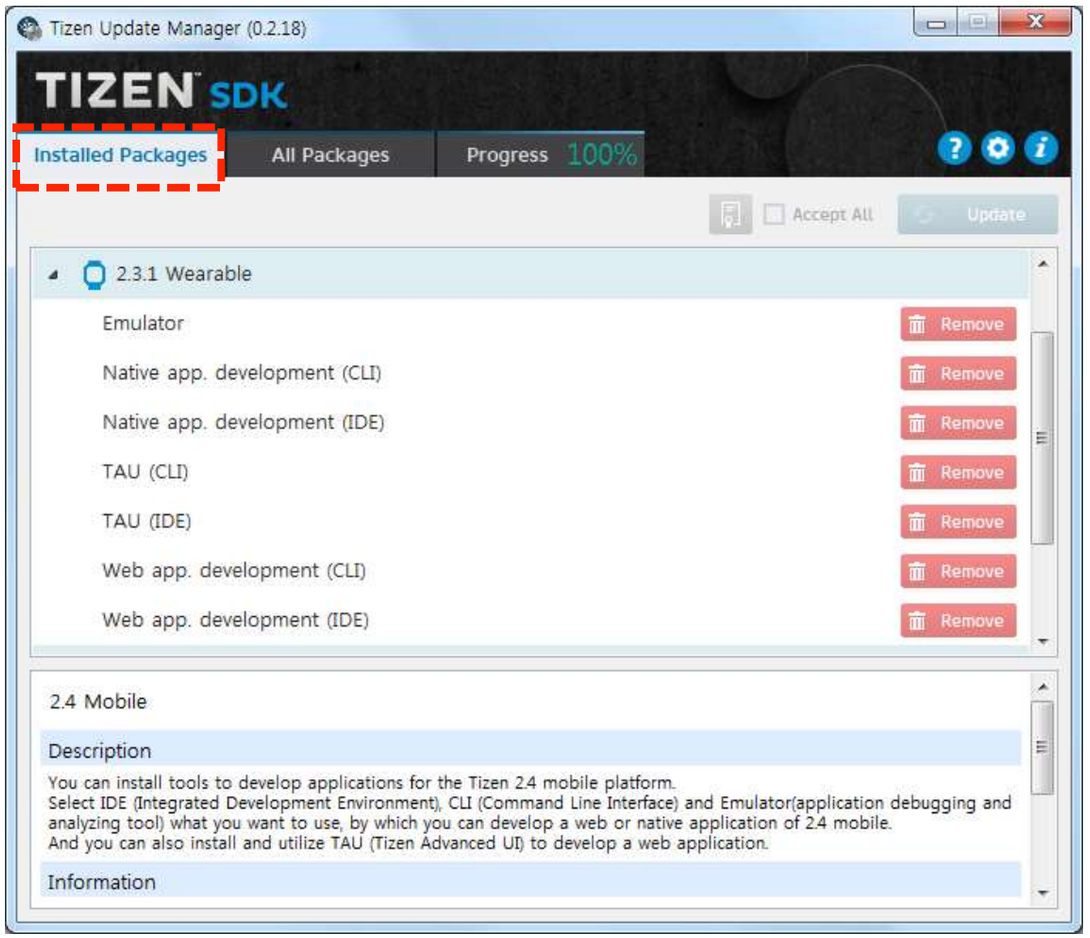
Installing Additional Packages

The **Install** button changes to **Installed** when the packages are installed.



Confirming and Removing Packages

Select the **Installed Packages** tab to confirm the installed packages.
You can also remove a package if you want.



Tizen SDK Installation

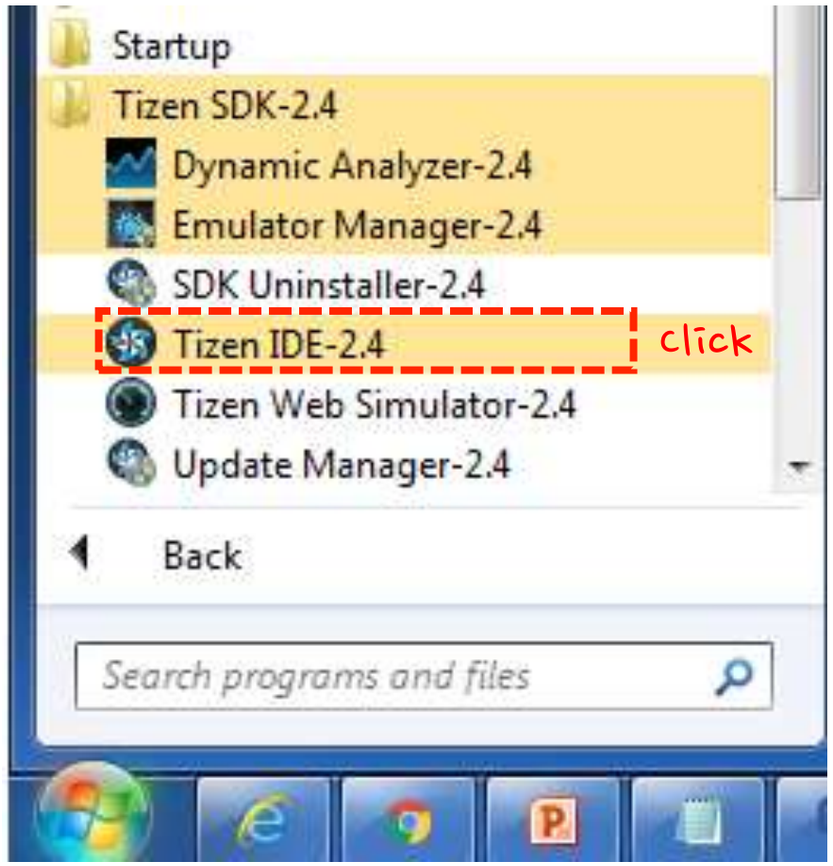
Uninstalling the Tizen SDK

To uninstall the entire Tizen SDK, launch the **SDK Uninstaller-<version>** from Windows **Start Menu** > **All Programs** > **Tizen SDK-<version>**.

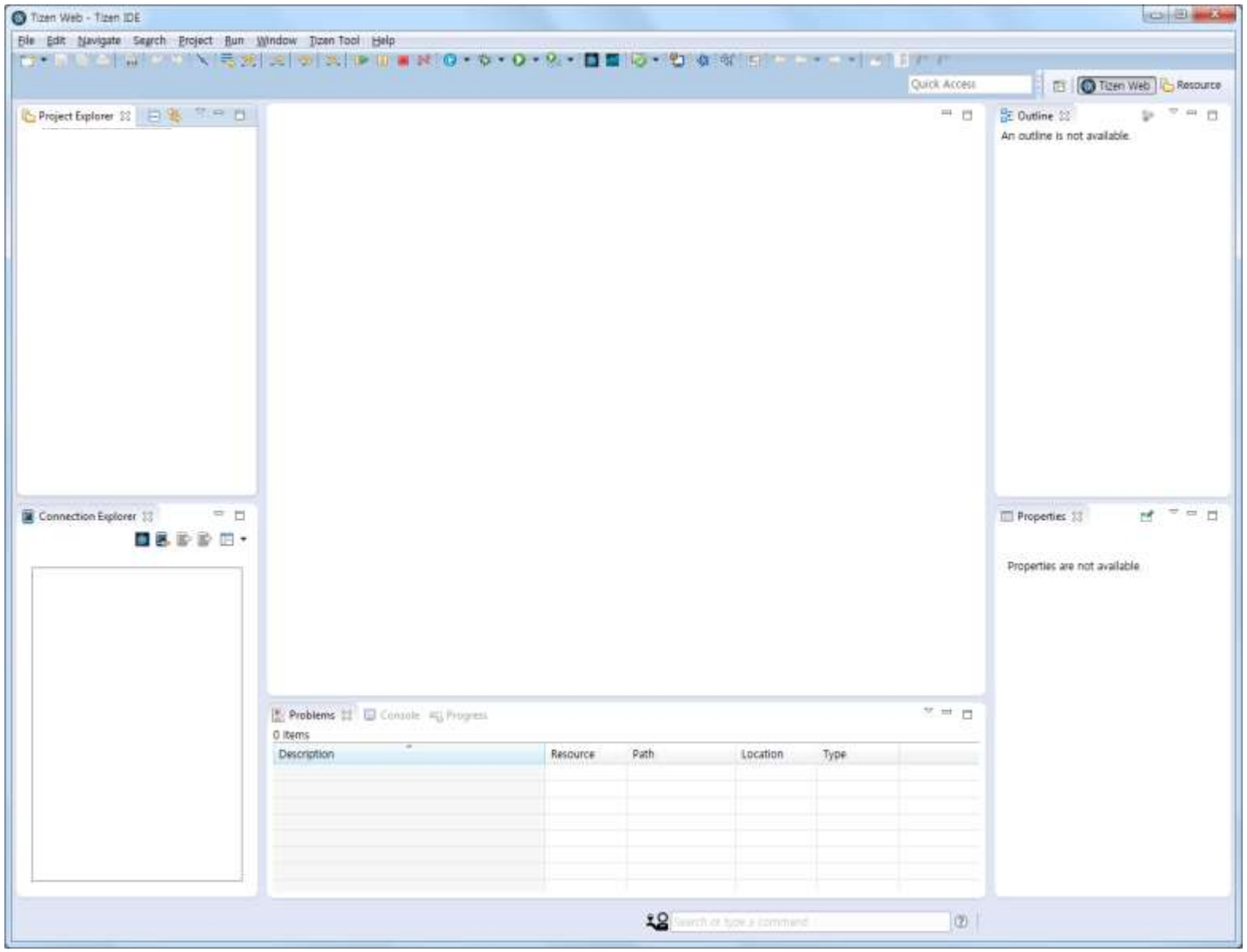
Running Applications on the Emulator

Running Applications on the Emulator

Launch **Tizen IDE-<version>** from Windows **Start Menu** > **All Programs** > **Tizen SDK-<version>**.

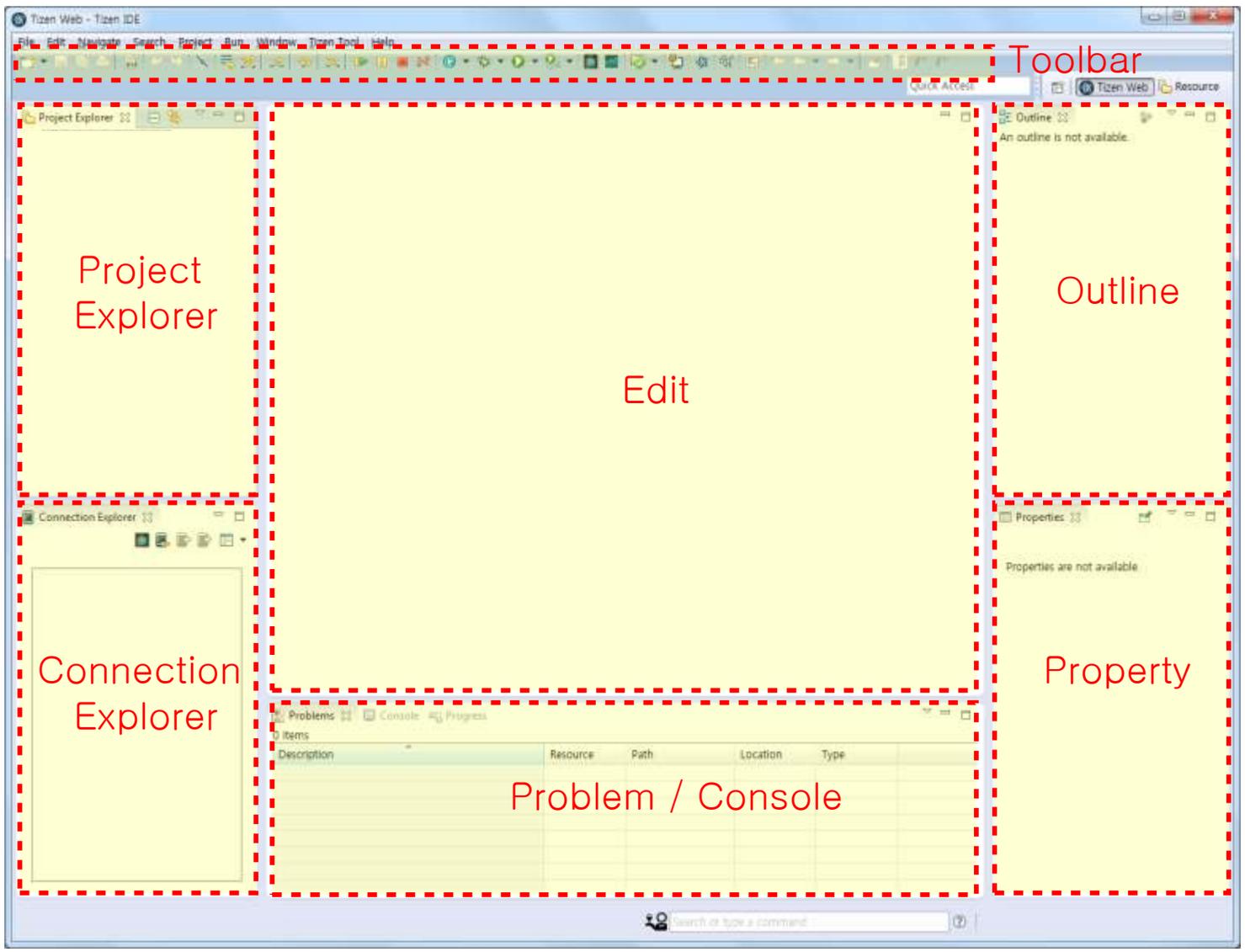


The Tizen IDE is launched successfully.



Tizen IDE is a branded version of the Eclipse IDE.

Tizen IDE is composed of the following sections.

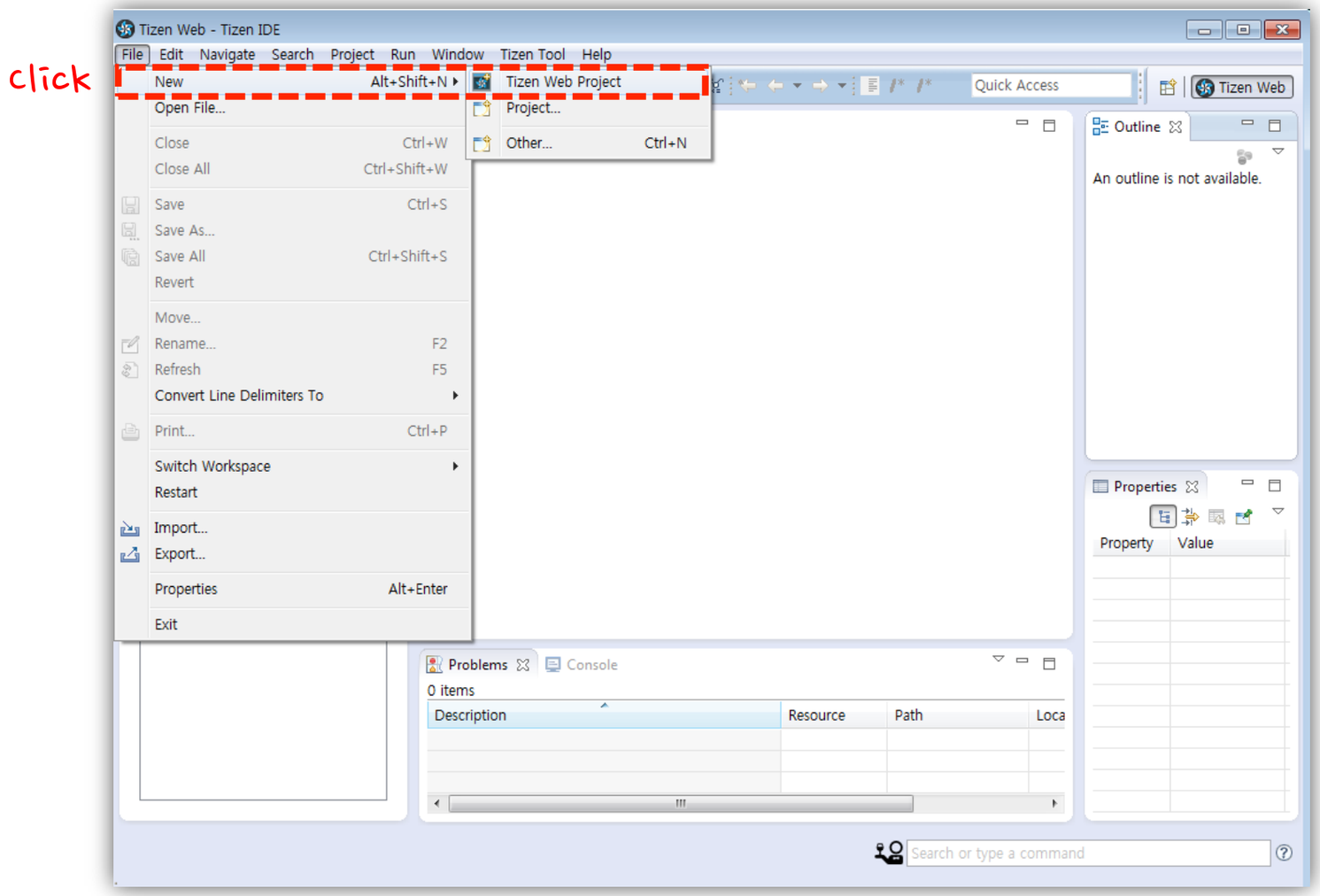


For more information about each section, see the **Appendix: Tizen IDE Views** (page 99).

Running Applications on the Emulator

In this tutorial, a Tizen Web application project is created.

Go to **File > New > Tizen Web Project**.



Creating the Application Project

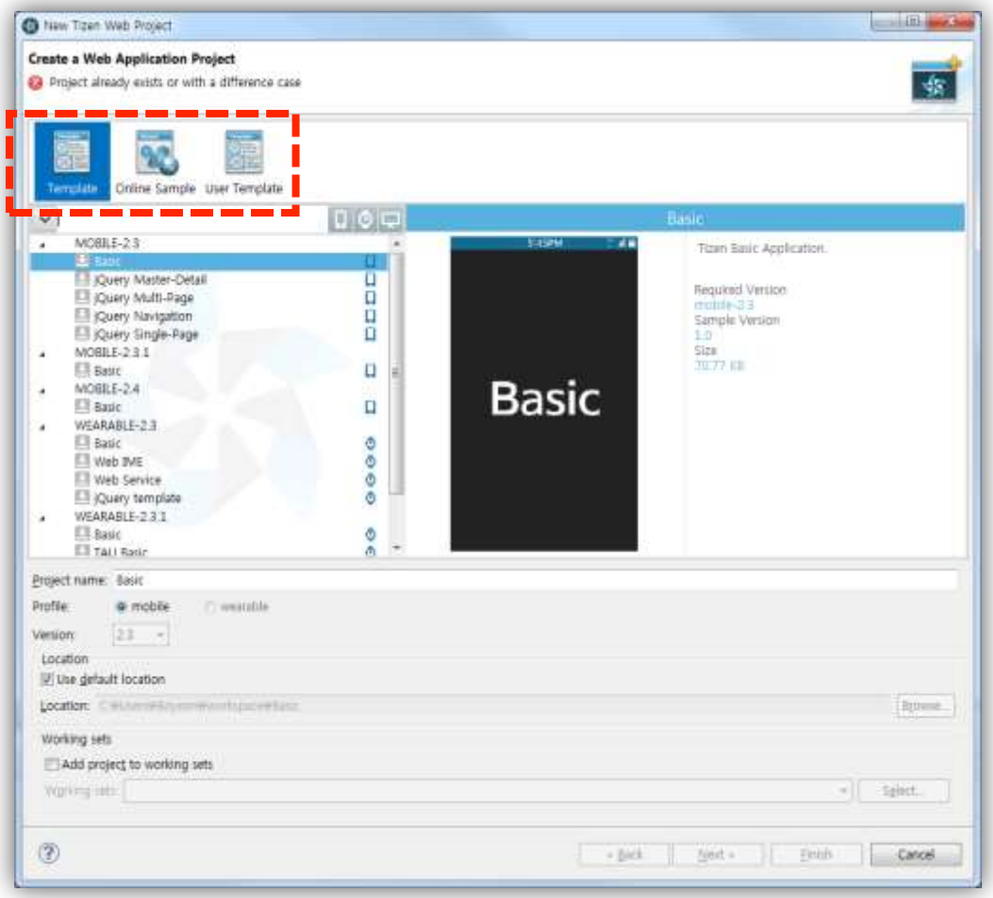
Generating the Author Certificate

Creating the Emulator Instance

Running the Application on the Emulator

Running Applications on the Emulator

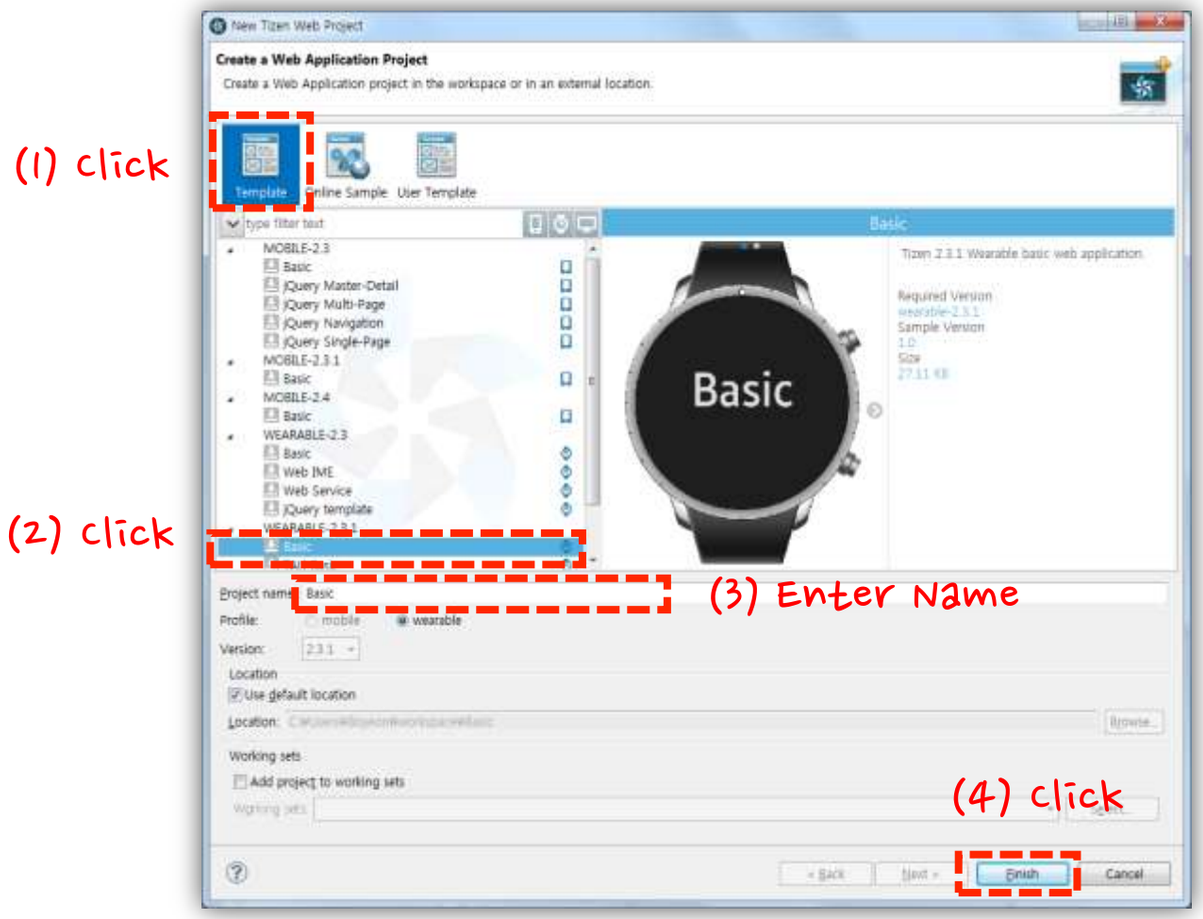
The New Tizen Web Project pop-up appears, and there are 3 project types you can choose from.



For more information about each project type, see **Appendix: Tizen SDK Project Types** (pages 100-102).

Running Applications on the Emulator

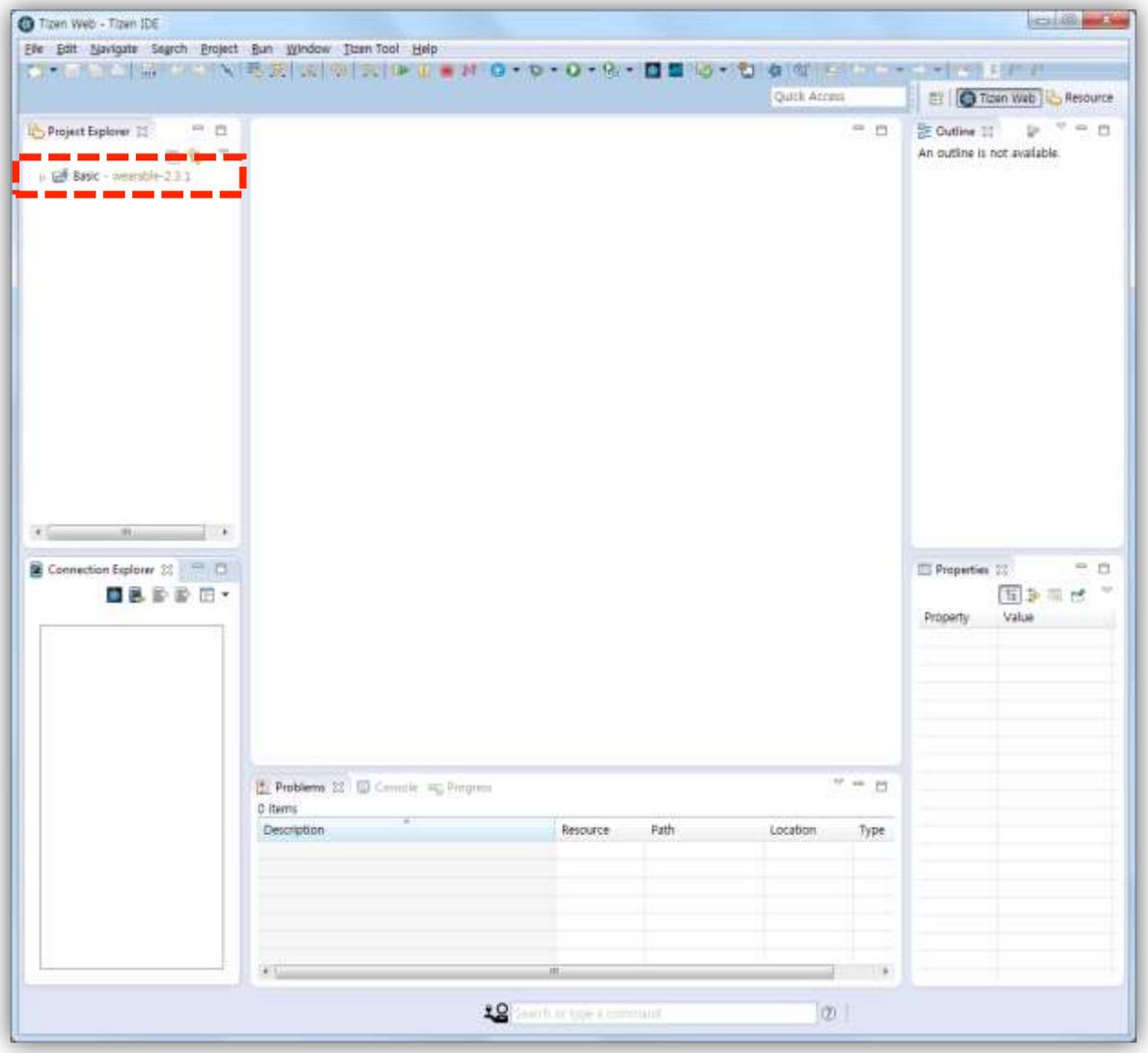
In the **New Tizen Web Project** pop-up window, (1) select the **Template** tab, (2) select **WEARABLE-2.3.1 > Basic** template application, (3) enter the project name as "myFirstApp", and (4) click **Finish**



Creating the Application Project | Generating the Author Certificate | Creating the Emulator Instance | Running the Application on the Emulator

Running Applications on the Emulator

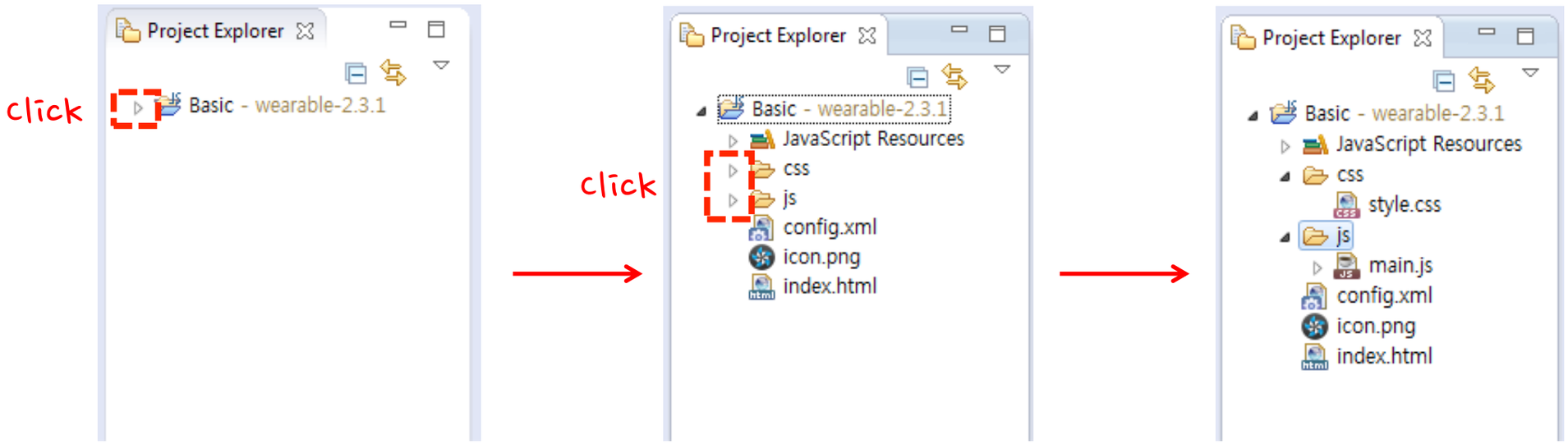
The new project is created and shown in the **Project Explorer**.



Creating the Application Project → Generating the Author Certificate → Creating the Emulator Instance → Running the Application on the Emulator

Running Applications on the Emulator

1. Click the arrow on the left of the project name to expand and view the file structure.
2. Click the arrow on the left of a folder to expand and view files inside the folder.



Creating the Application Project → Generating the Author Certificate → Creating the Emulator Instance → Running the Application on the Emulator

Running Applications on the Emulator

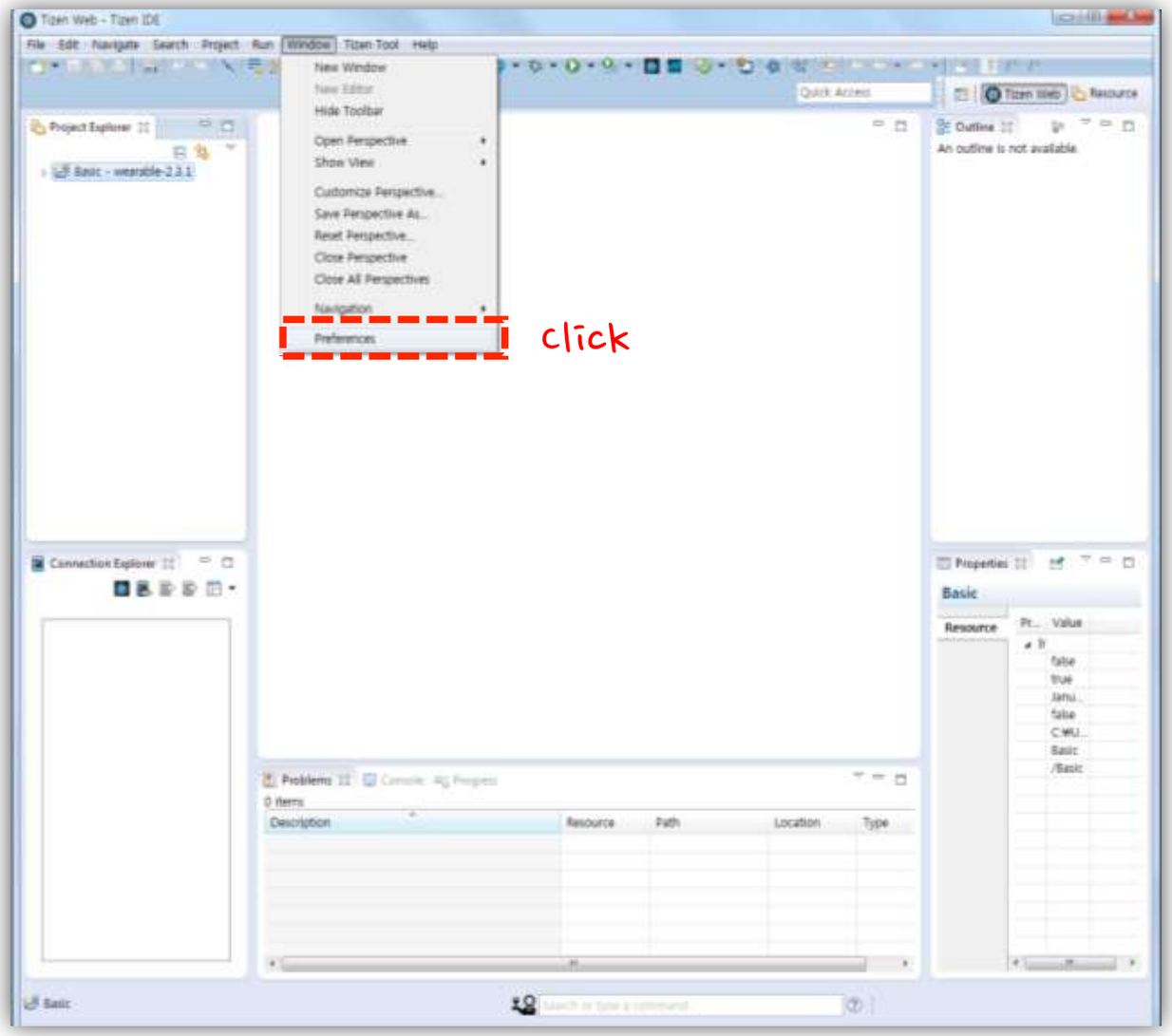
To install and run applications on devices, you must sign the application package by generating a vendor-specific certificate and registering it in the IDE. (The certificate policy may vary between different vendors and/or models.)

Since an emulator is a pseudo device as well, applications to be installed and run on the emulator must also be signed with certificates generated from the Tizen SDK.

Security profile is a tool for managing certificates and it helps generating, registering, and activating certificates in Tizen SDK.

Running Applications on the Emulator

Open **Window > Preferences** to set a security profile for generating certificates.



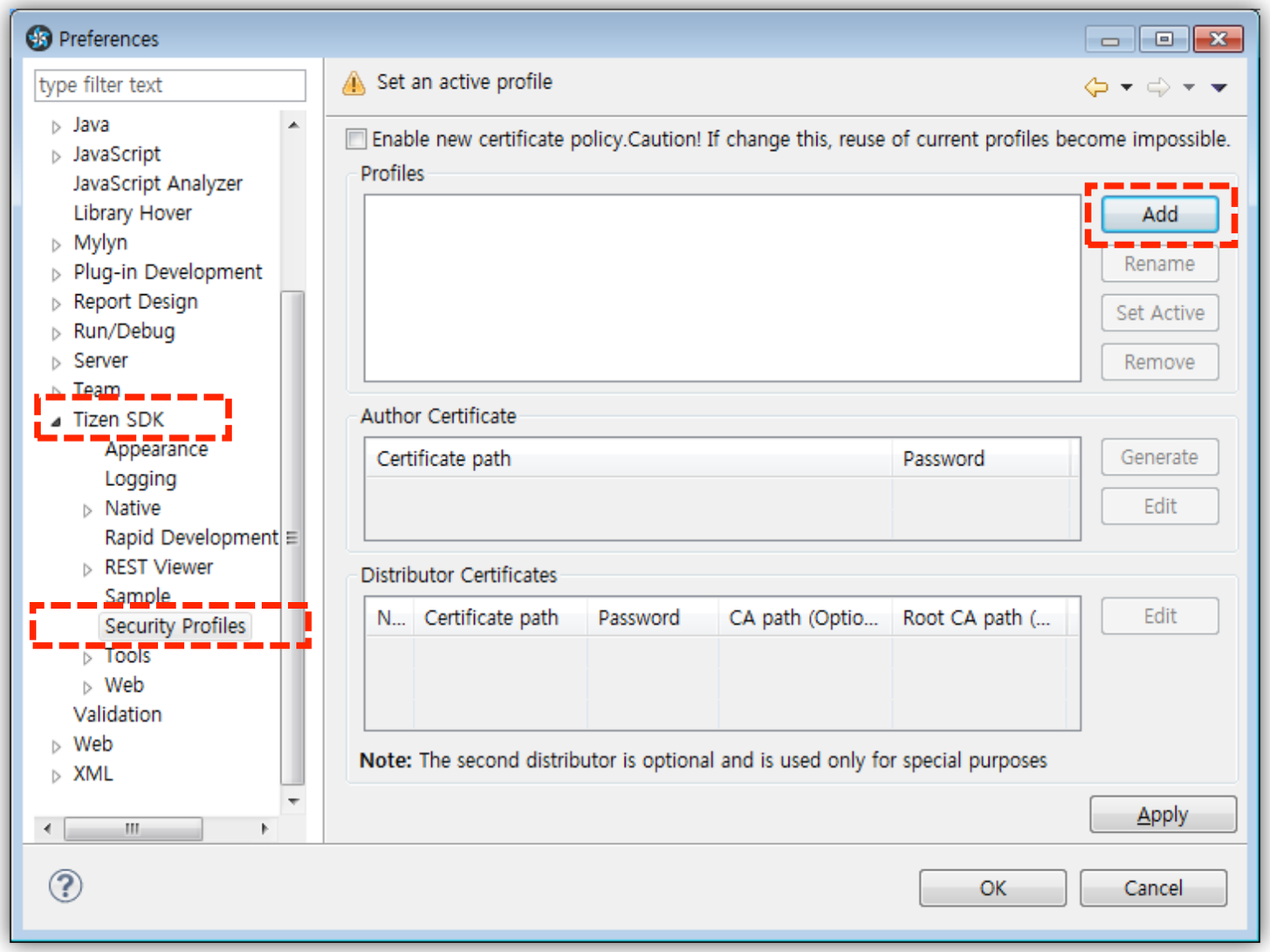
Creating the Application Project → Generating the Author Certificate → Creating the Emulator Instance → Running the Application on the Emulator

Running Applications on the Emulator

Go to **Tizen SDK > Security Profiles,** and click **Add**.

(1) click

(2) click

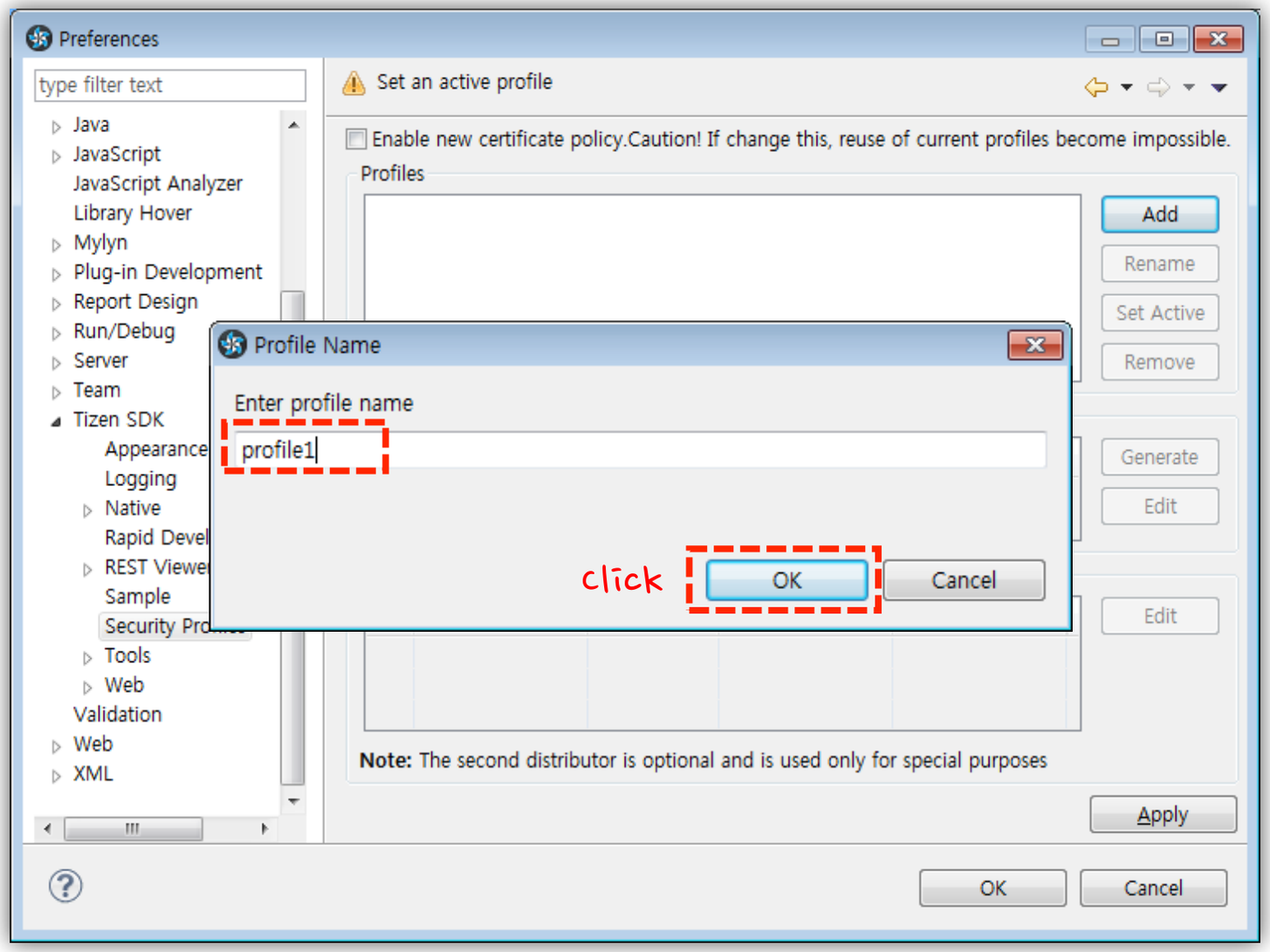


(3) click

Creating the Application Project | Generating the Author Certificate | Creating the Emulator Instance | Running the Application on the Emulator

Running Applications on the Emulator

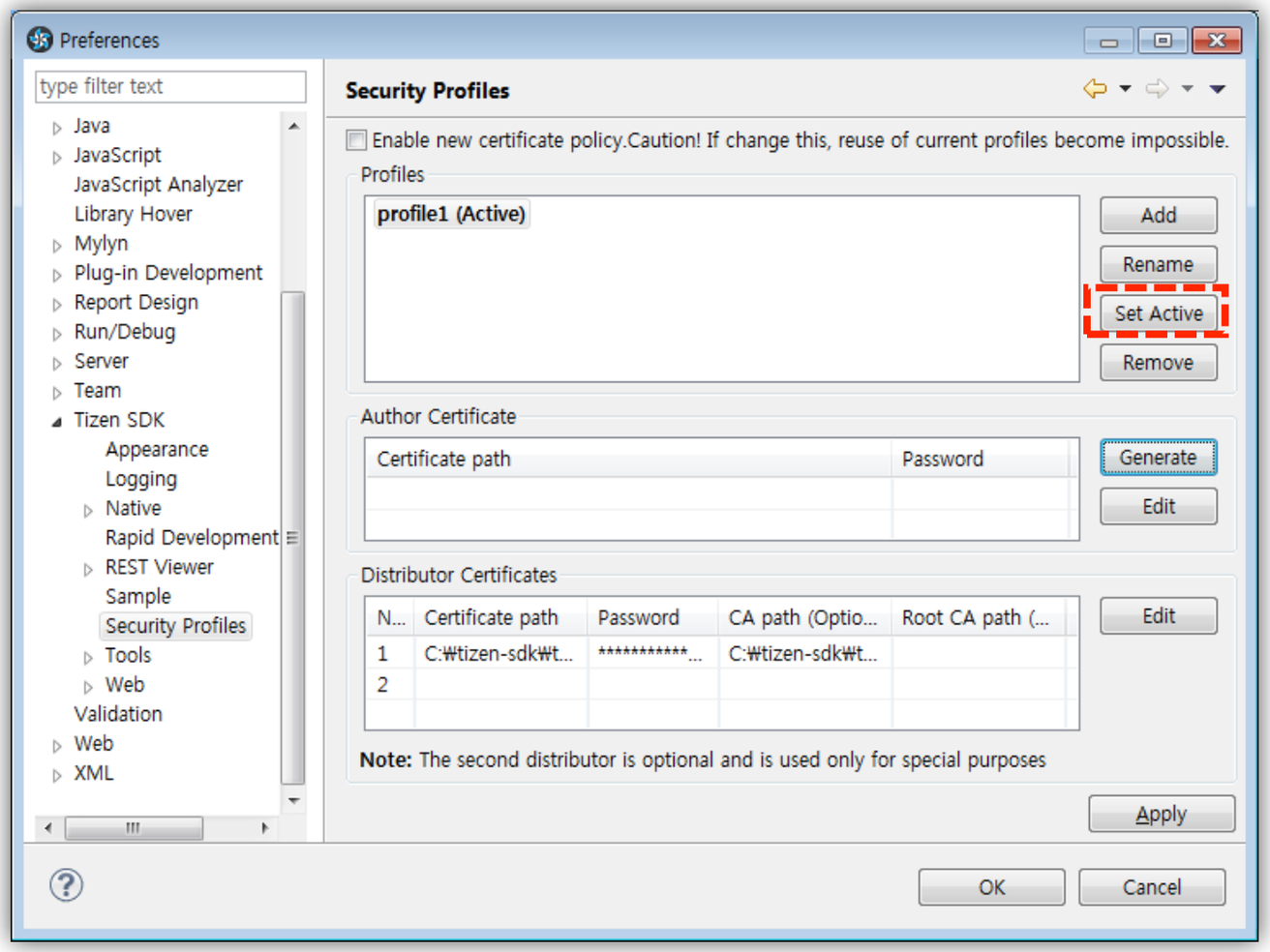
Enter a profile name and click **OK**.



Creating the Application Project | Generating the Author Certificate | Creating the Emulator Instance | Running the Application on the Emulator

Running Applications on the Emulator

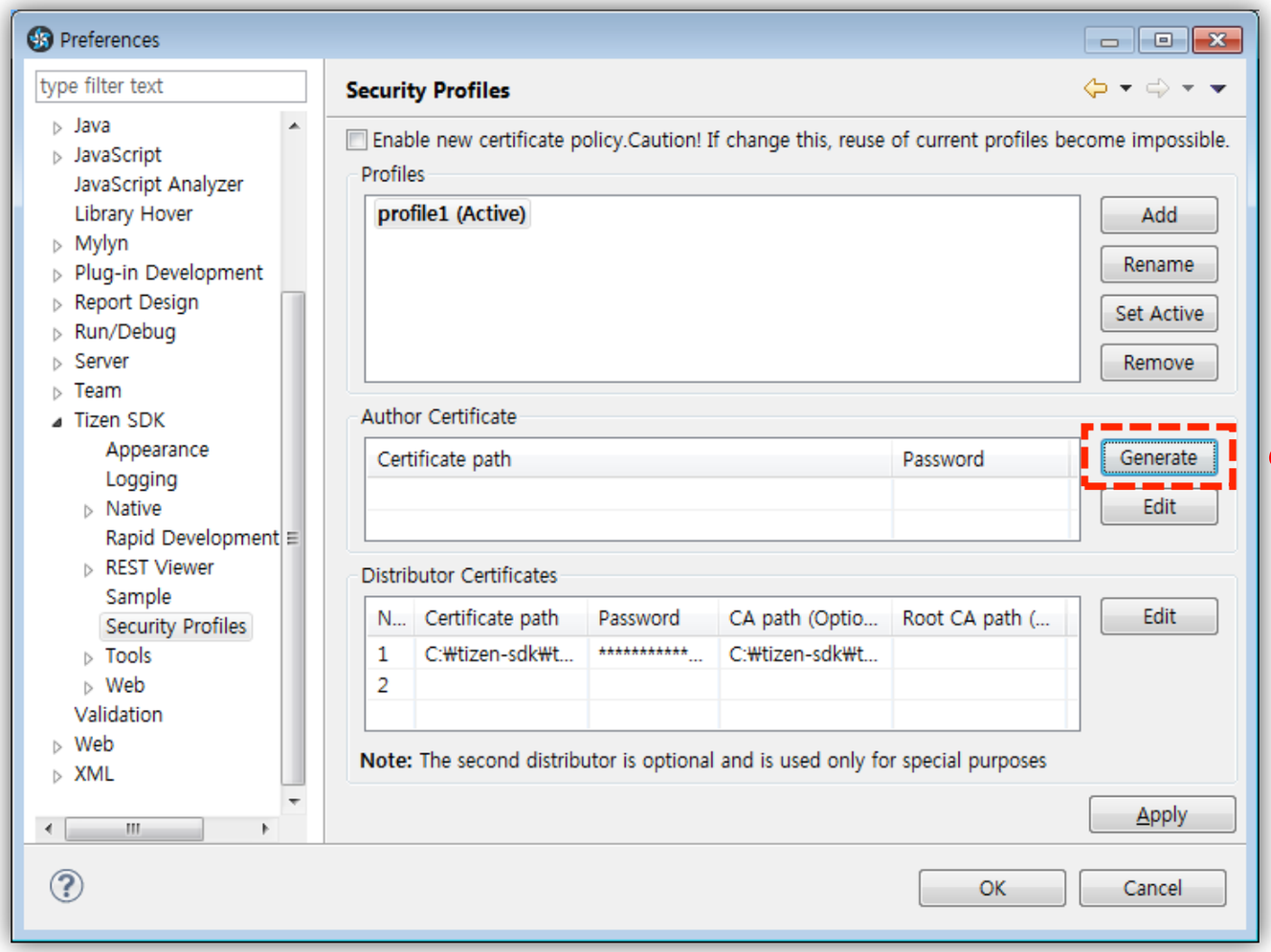
Set the profile active by clicking **Set Active**.
If there is only one profile on the list, the profile is automatically set active.



Creating the Application Project → Generating the Author Certificate → Creating the Emulator Instance → Running the Application on the Emulator

Running Applications on the Emulator

Click **Generate**.

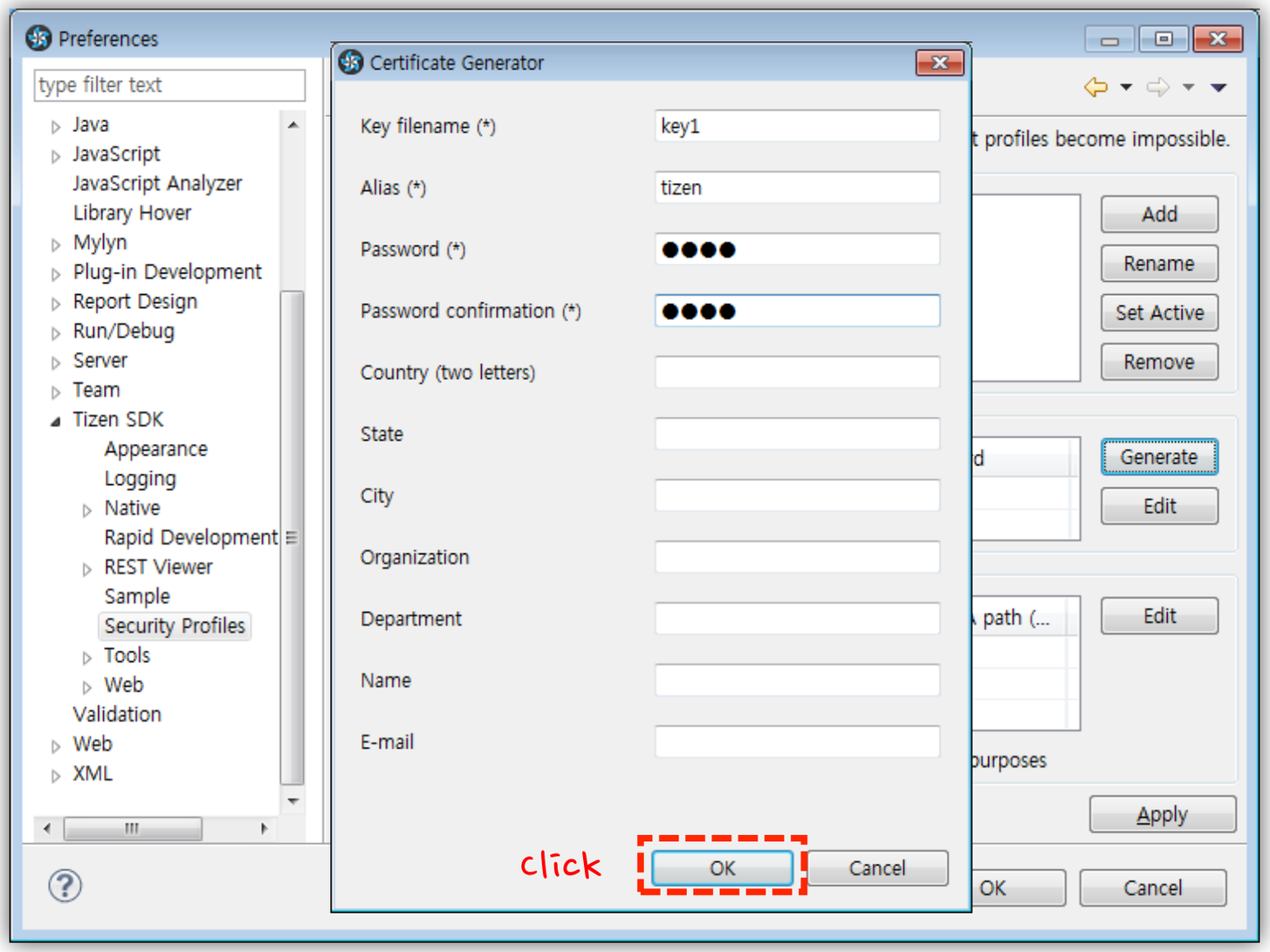


click

Creating the Application Project → Generating the Author Certificate → Creating the Emulator Instance → Running the Application on the Emulator

Running Applications on the Emulator

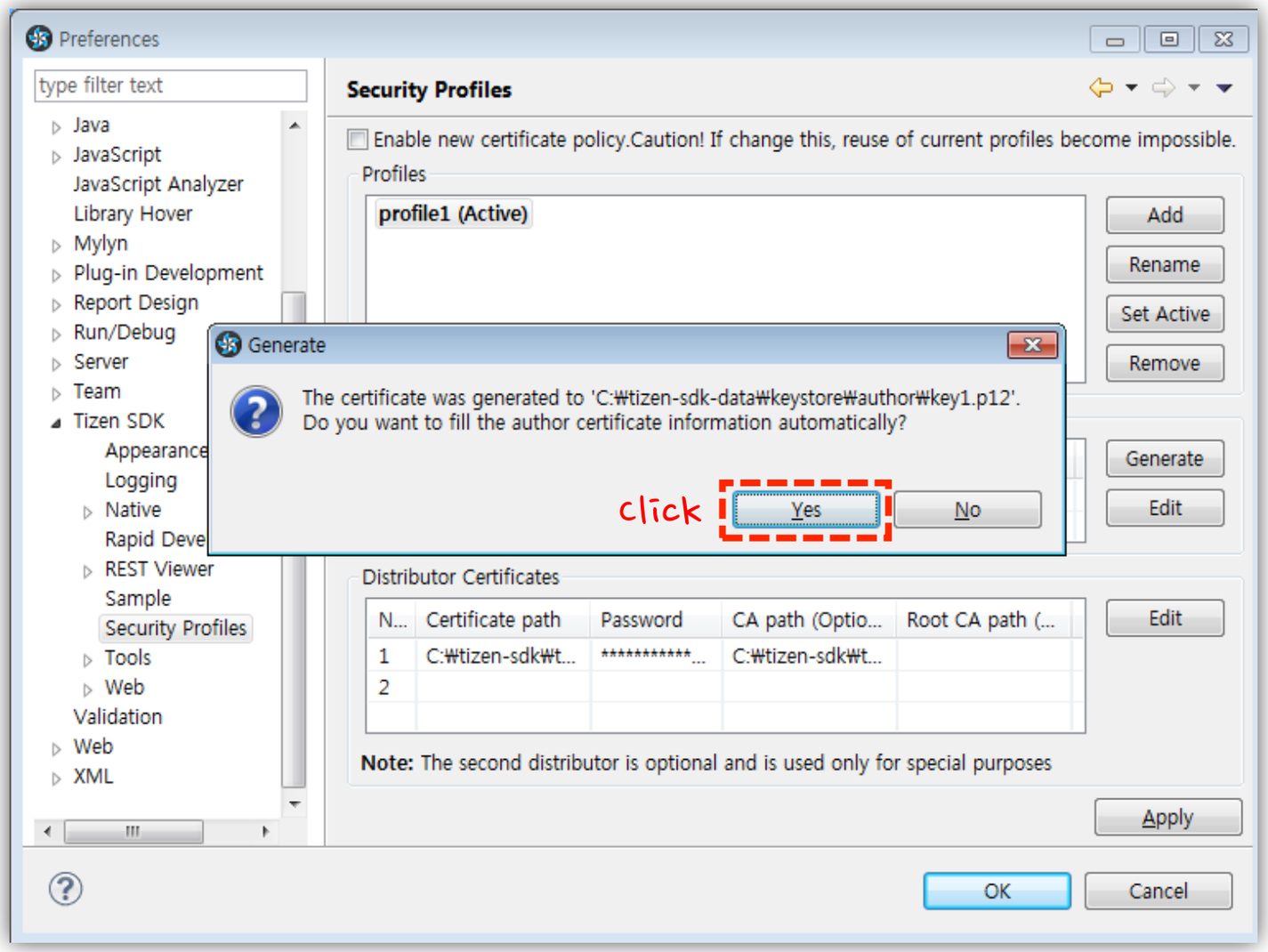
Fill in the information in the **Certificate Generator**.



Creating the Application Project → Generating the Author Certificate → Creating the Emulator Instance → Running the Application on the Emulator

Running Applications on the Emulator

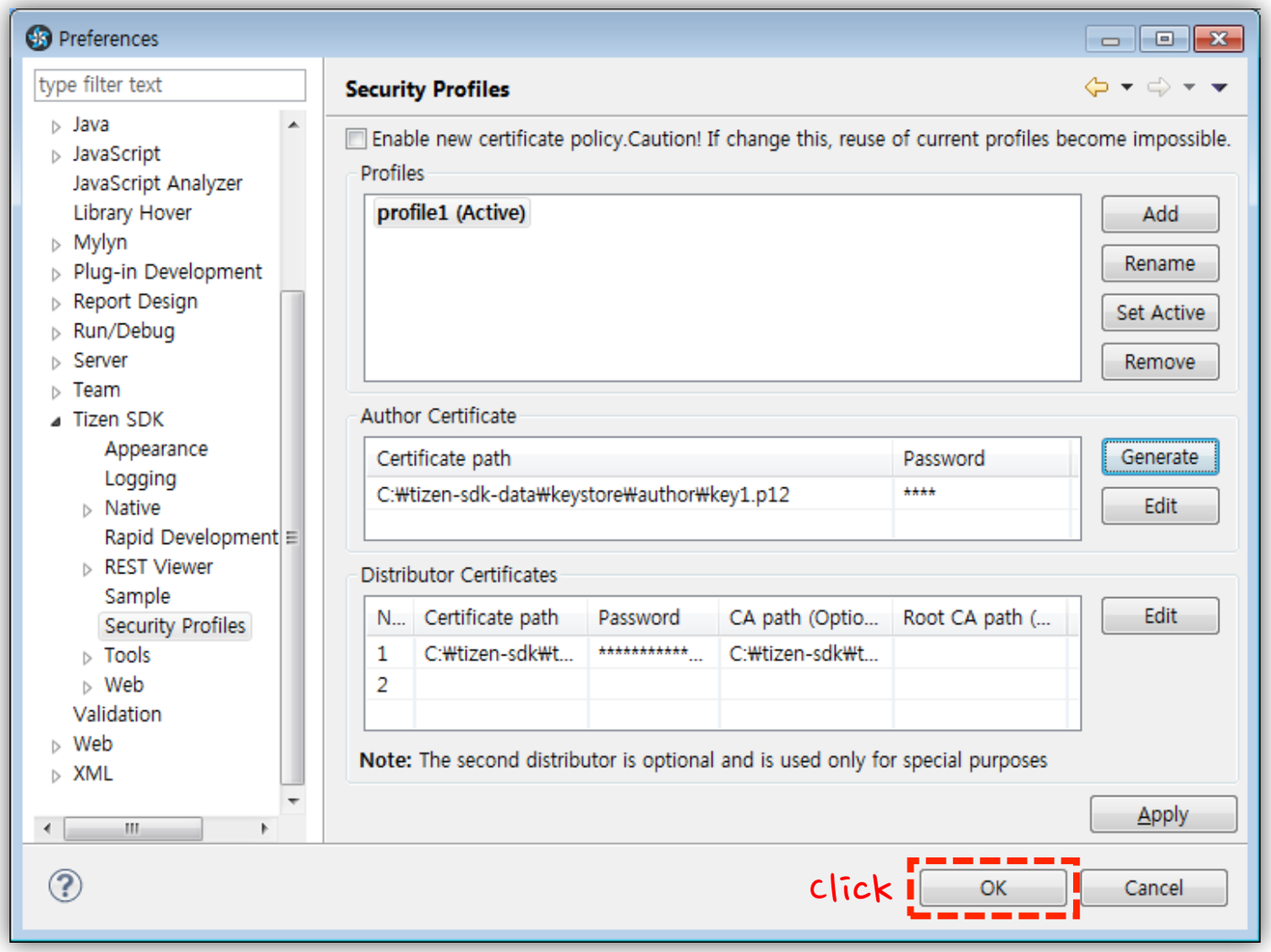
Click **Yes** to fill the author certificate information automatically.



Creating the Application Project → Generating the Author Certificate → Creating the Emulator Instance → Running the Application on the Emulator

Running Applications on the Emulator

Security profile has been registered successfully. Click **OK**.



Creating the Application Project

Generating the Author Certificate

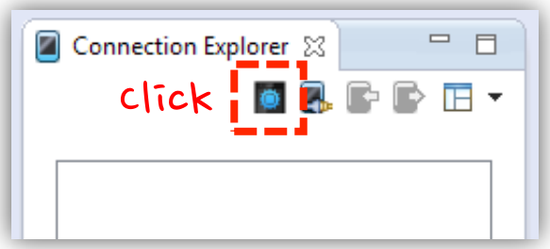
Creating the Emulator Instance

Running the Application on the Emulator

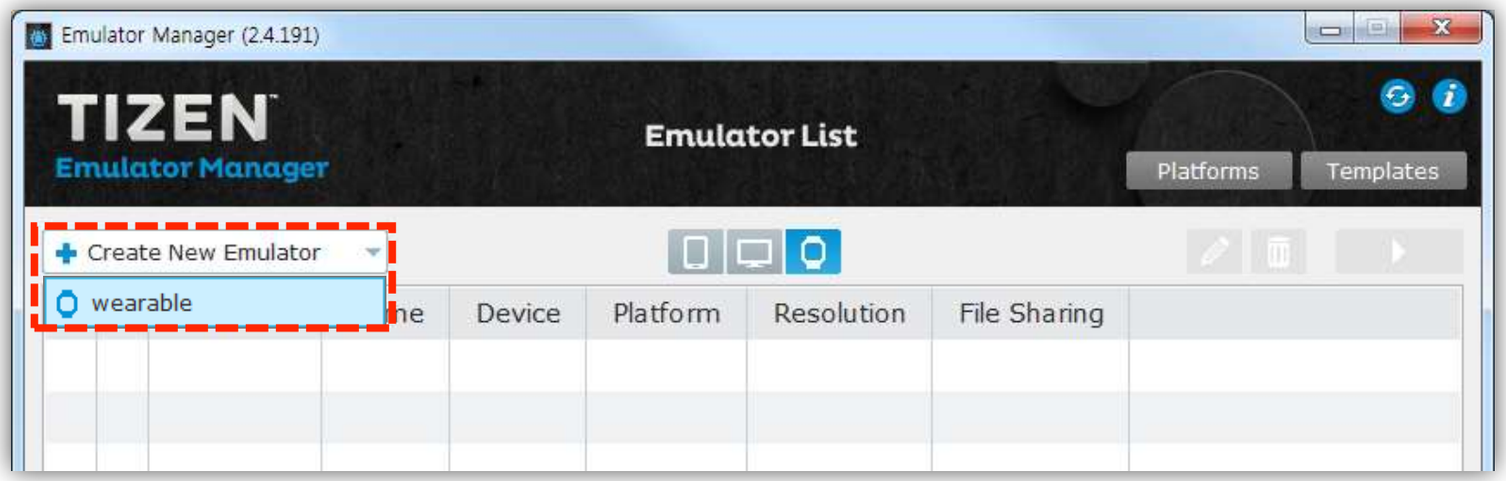
Running Applications on the Emulator

Launch an Emulator instance.

Launch the **Emulator Manager** by clicking the icon  in the **Connection Explorer**.



Click **Create New Emulator > Wearable**.



Creating the Application Project

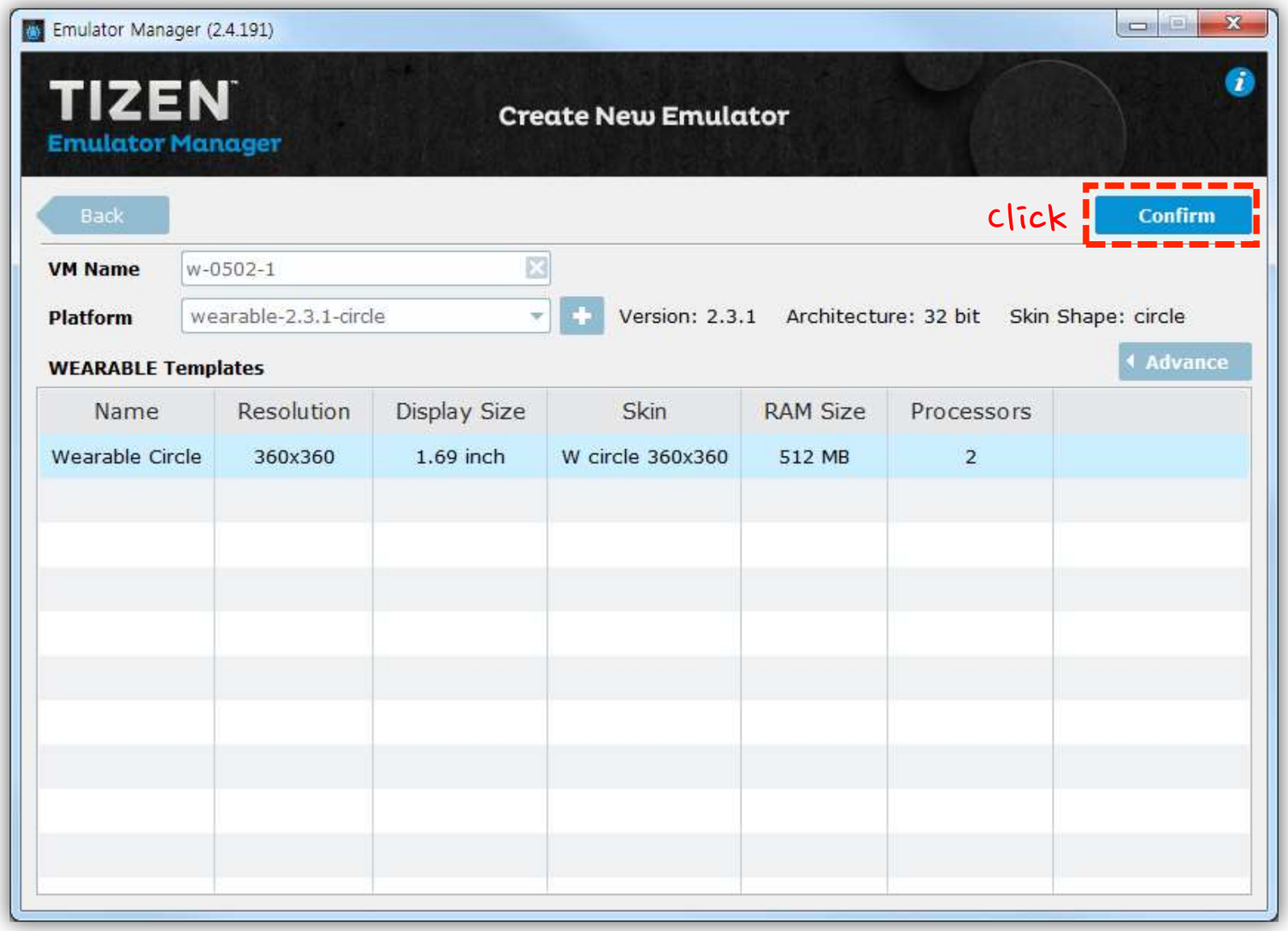
Generating the Author Certificate

Creating the Emulator Instance

Running the Application on the Emulator

Running Applications on the Emulator

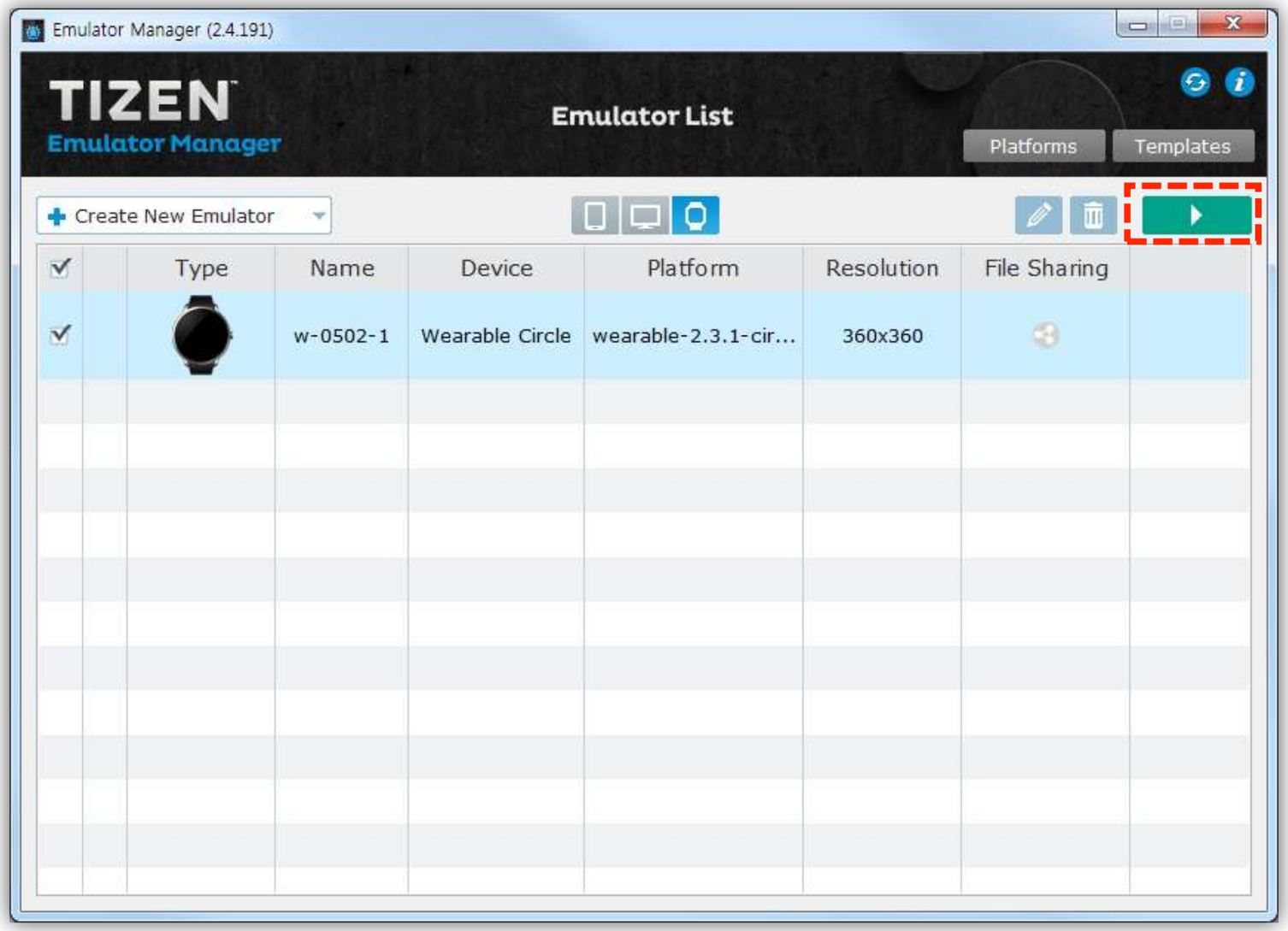
Click **Confirm**.



Creating the Application Project → Generating the Author Certificate → Creating the Emulator Instance → Running the Application on the Emulator

Running Applications on the Emulator

Click the play button to launch the emulator instance.



Creating the Application Project

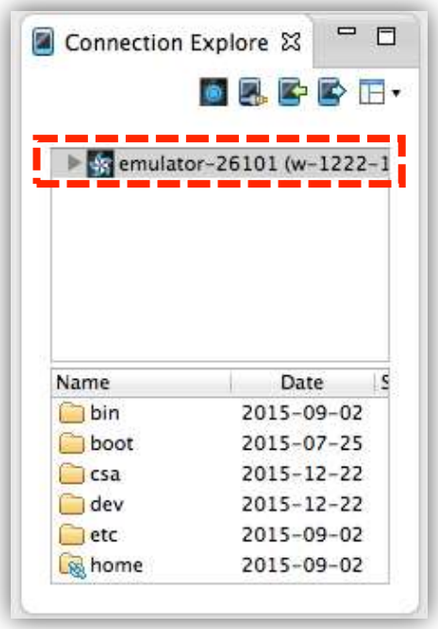
Generating the Author Certificate

Creating the Emulator Instance

Running the Application on the Emulator

Running Applications on the Emulator

The Emulator is launched in its own window, and the structure of the emulator is shown in the **Connection Explorer**.



Creating the Application Project

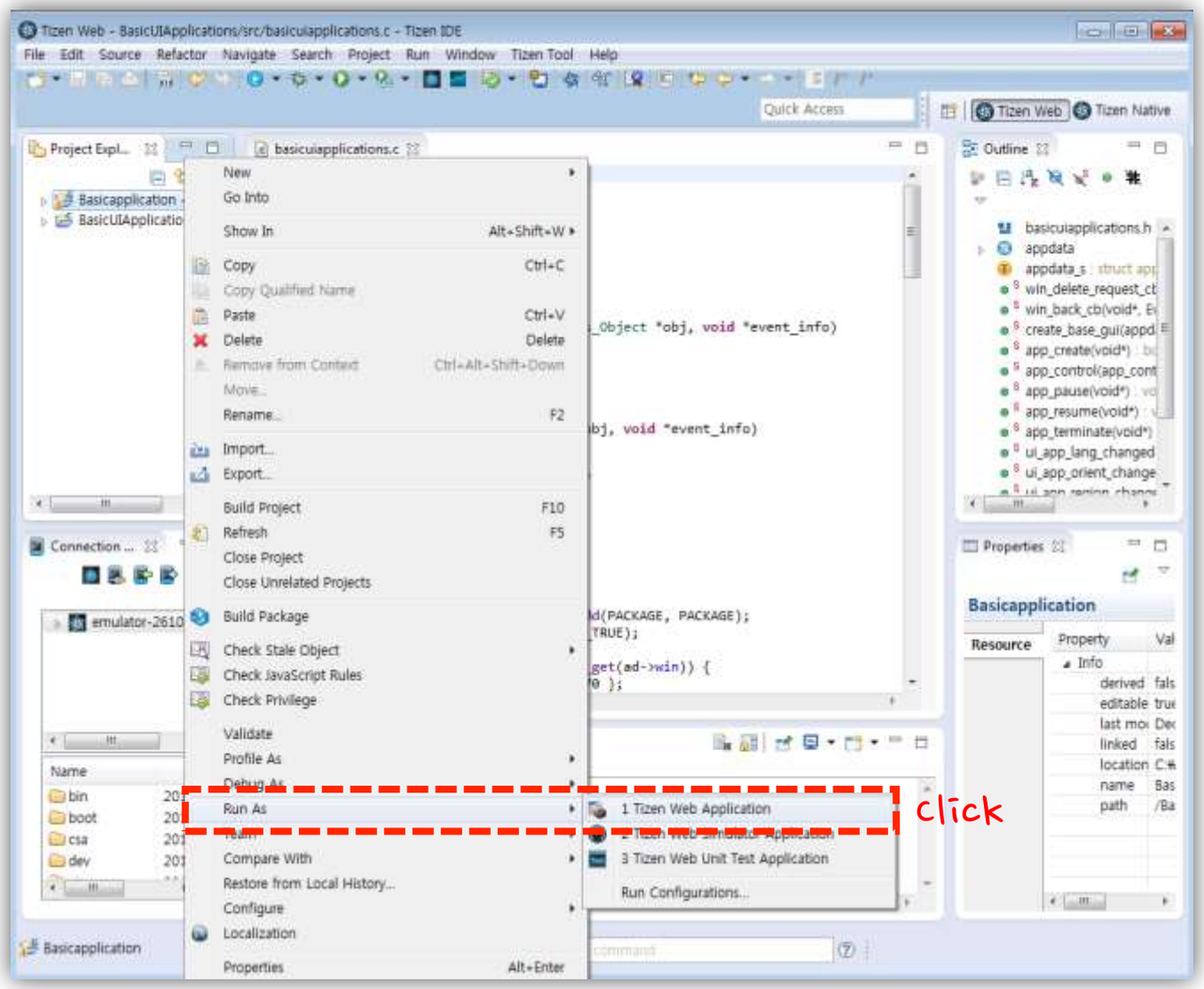
Generating the Author Certificate

Creating the Emulator Instance

Running the Application on the Emulator

Running Applications on the Emulator

Right-click on the project title, and select **Run As > Tizen Web Application** while the Emulator display of the is switched on.



Creating the Application Project → Generating the Author Certificate → Creating the Emulator Instance → Running the Application on the Emulator

Running Applications on the Emulator

The application is launched in the Emulator successfully.

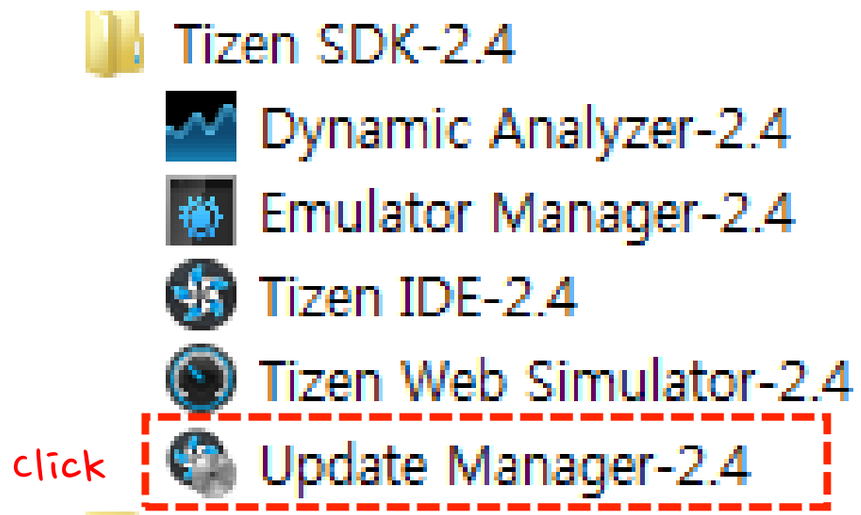
Creating the Application Project → Generating the Author Certificate → Creating the Emulator Instance → Running the Application on the Emulator

Running Applications on the Target Device

Running Applications on a Target Device

The **Certificate Extension** is an extra package of Tizen SDK. It is required for generating an author certificate for **commercial devices**, such as Samsung Gear S2, and registering it in the IDE.

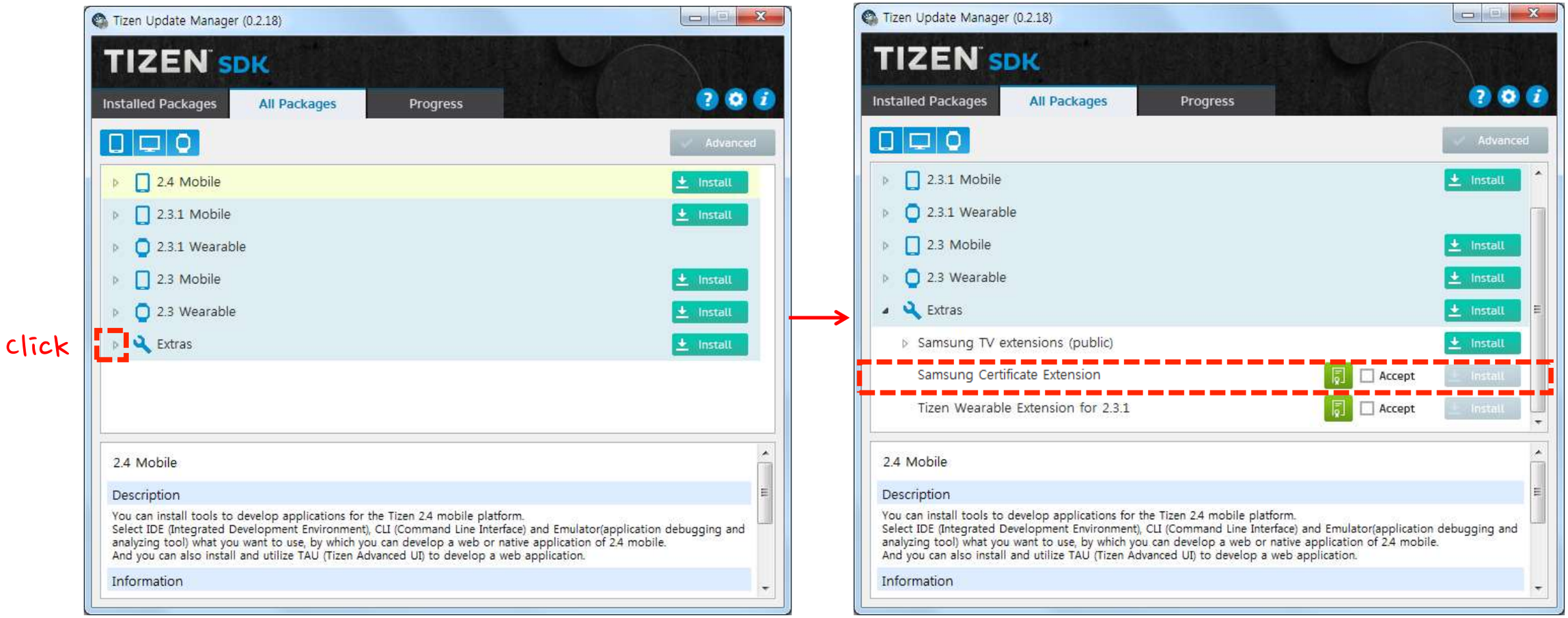
To install the Certificate Extension, close the IDE, and launch **Update Manager-<version>** from **Start > All Programs > Tizen SDK-<version>**.



Installing the Certificate Extension → Connecting the Target Device → Generating the Author & Distributor Certificates → Running the Application on the Emulator

Running Applications on a Target Device

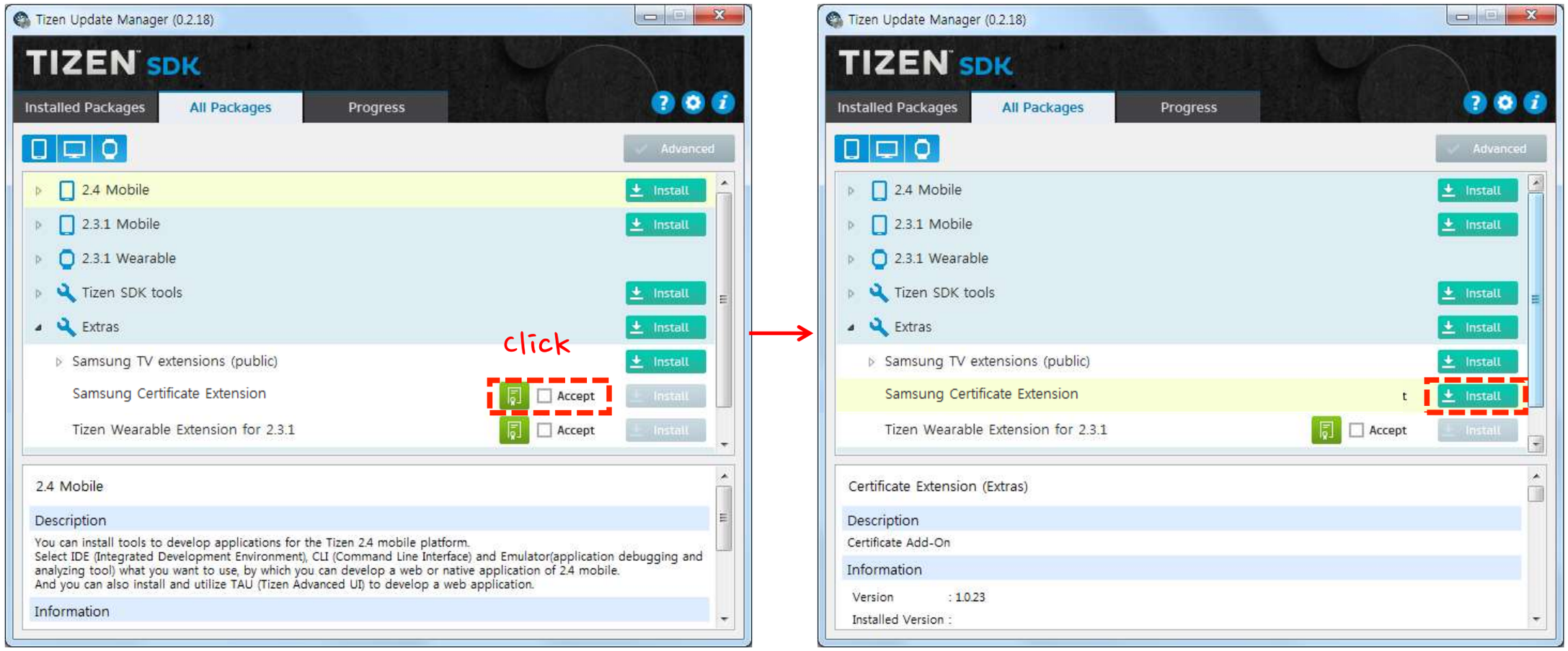
In **All Packages** tab, click the arrow on the left of Extra and expand to see the **Certificate Extension**.



Installing the Certificate Extension → Connecting the Target Device → Generating the Author & Distributor Certificates → Running the Application on the Emulator

Running Applications on a Target Device

1. Click the **Accept** checkbox to accept the EULA (End User License Agreement).
2. Click **Install**.

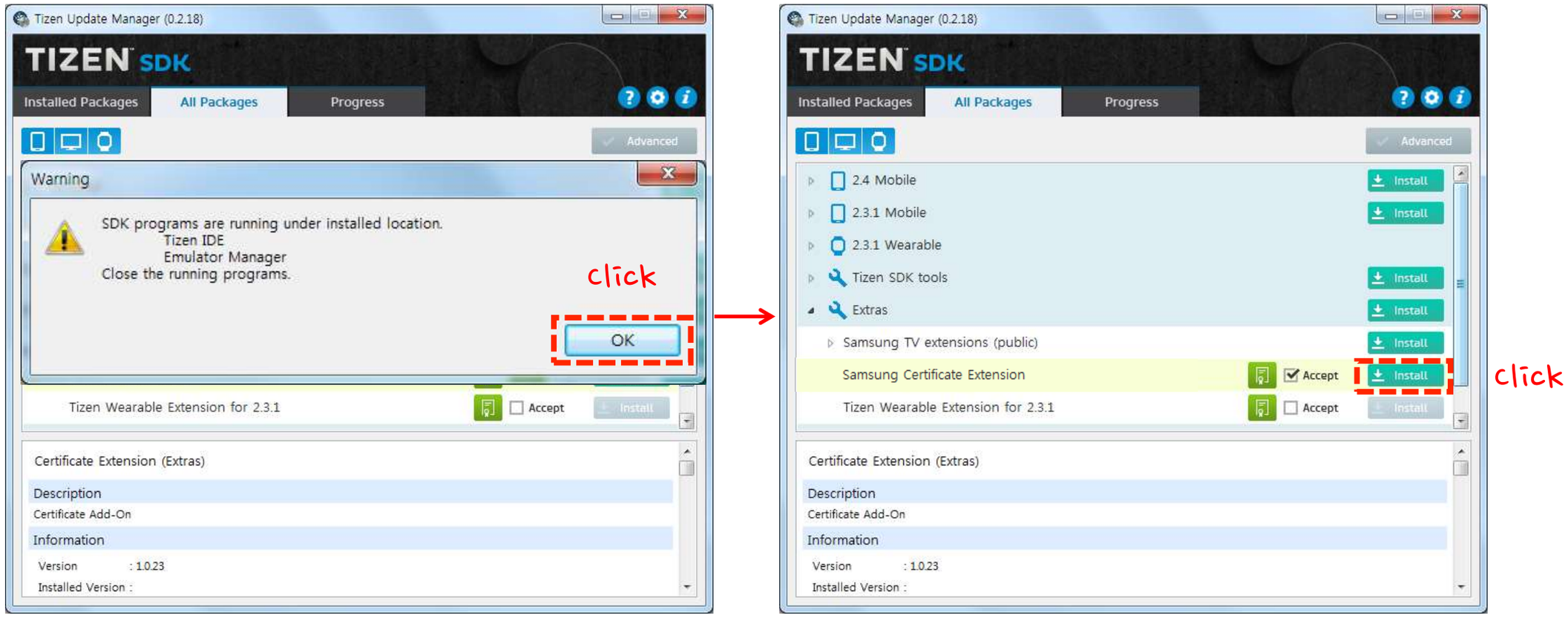


Installing the Certificate Extension → Connecting the Target Device → Generating the Author & Distributor Certificates → Running the Application on the Emulator

Running Applications on a Target Device

If any of the SDK programs are still running on the system, the following pop-up appears.

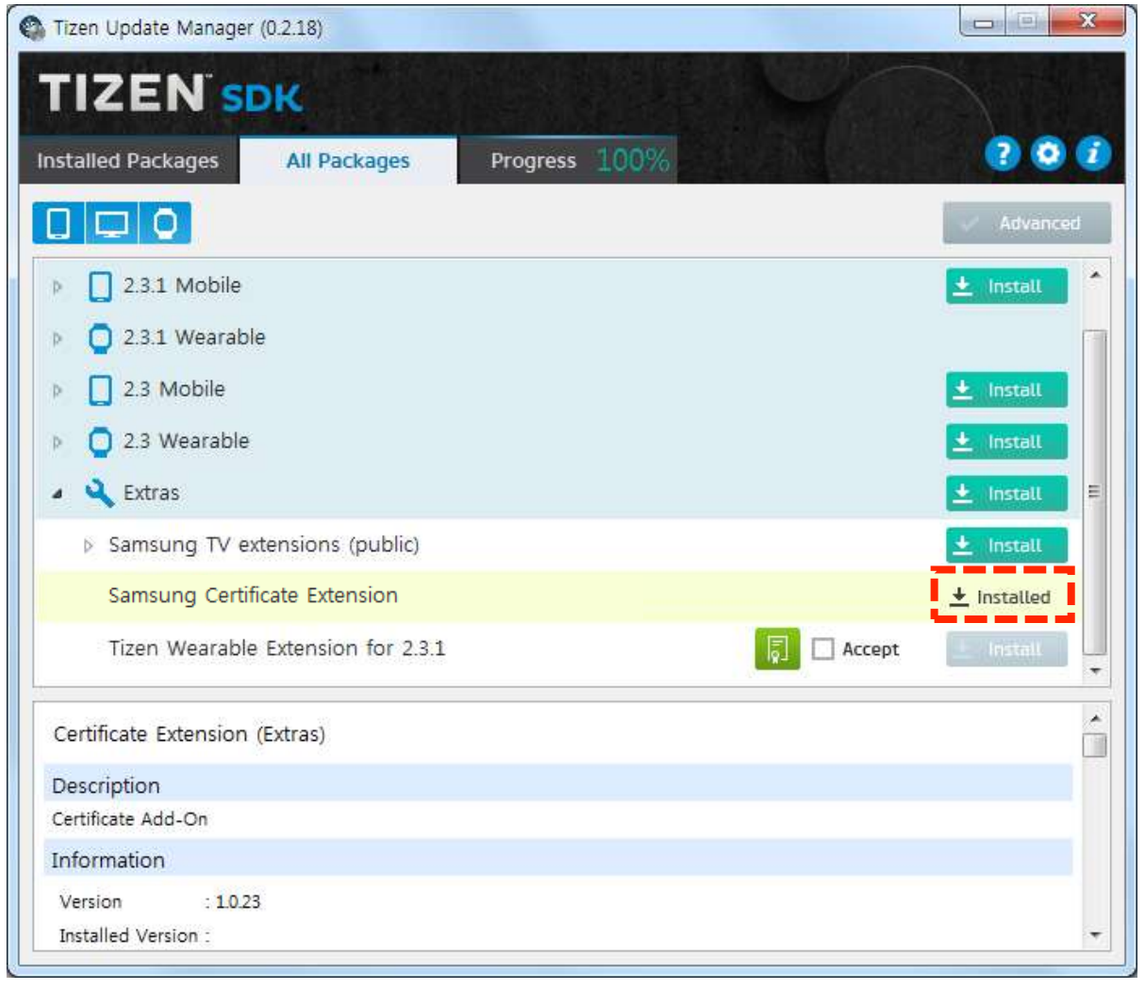
1. Click **OK**, and close all the SDK programs.
2. After closing all the programs, click **Install**.



Installing the Certificate Extension → Connecting the Target Device → Generating the Author & Distributor Certificates → Running the Application on the Emulator

Running Applications on a Target Device

Close the Update Manager when the Certificate Extension is installed.



Installing the Certificate Extension

Connecting the Target Device

Generating the Author & Distributor Certificates

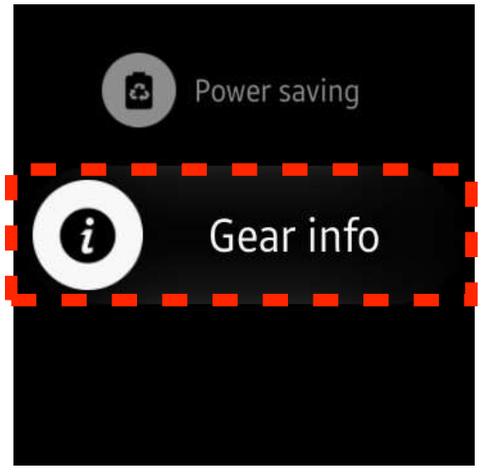
Running the Application on the Emulator

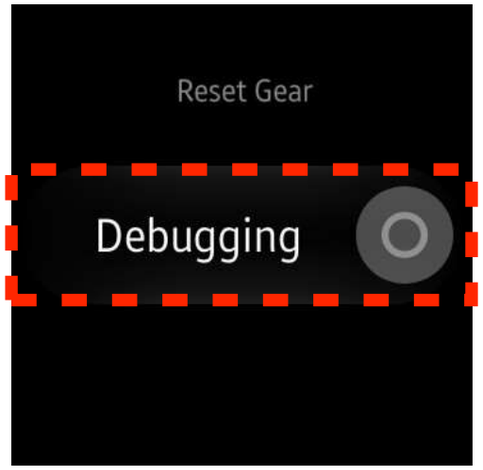
Running Applications on a Target Device

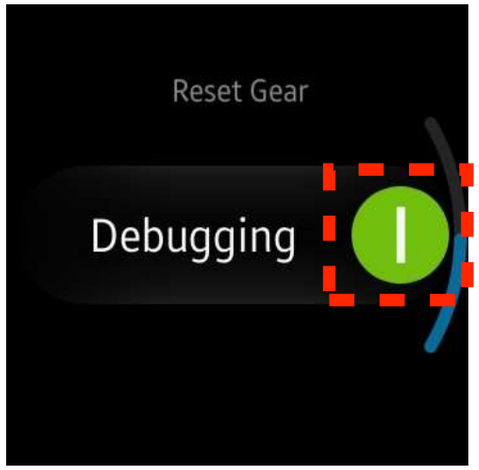
For Gear S2, you must connect the device to the computer using Wi-Fi.
For devices that can be connected using USB cable, you can simply connect the device to the computer with an USB cable.

For connecting a Gear S2 device using Wi-Fi:

1. Switch on the Debugging mode in **Settings > Gear info**.



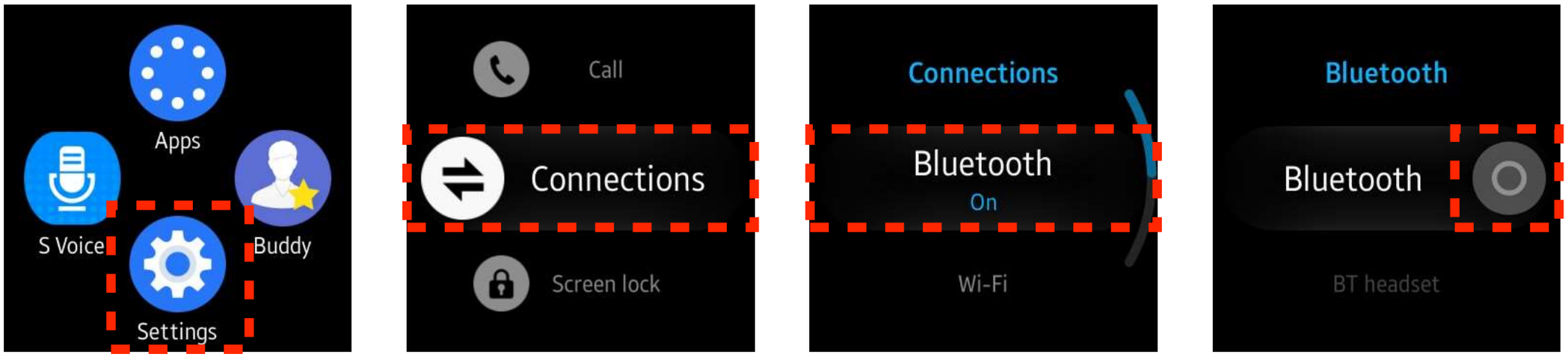




Installing the Certificate Extension → Connecting the Target Device → Generating the Author & Distributor Certificates → Running the Application on the Emulator

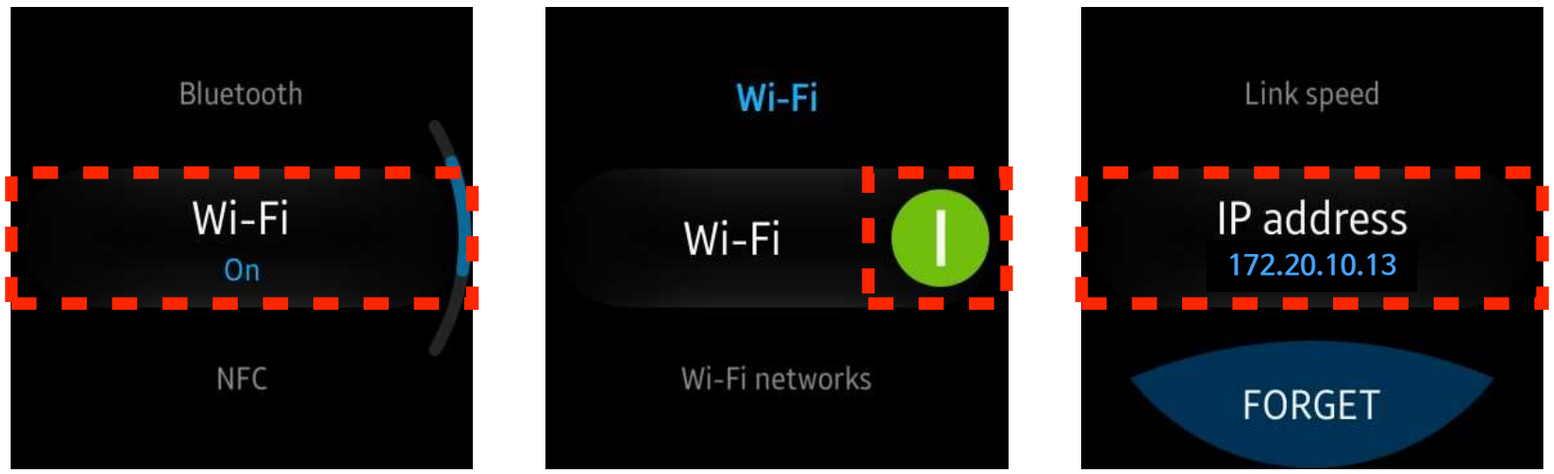
Running Applications on a Target Device

2. Switch off Bluetooth in **Settings > Connections**.



3. Switch on Wi-Fi in **Settings > Connections** and note the IP address.

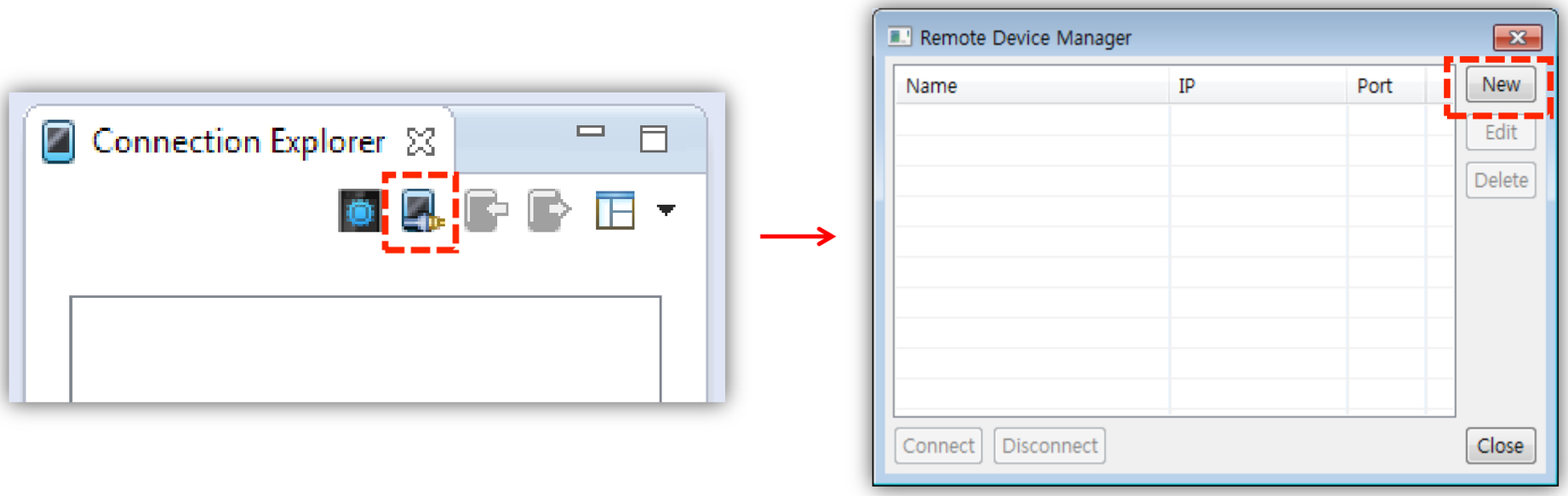
The device and the computer must be connected to the same Wi-Fi network.



Installing the Certificate Extension → Connecting the Target Device → Generating the Author & Distributor Certificates → Running the Application on the Emulator

Running Applications on a Target Device

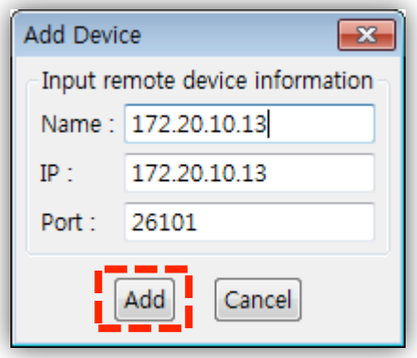
Launch the **Remote Device Manager** by clicking the icon in the **Connection Explorer** and click **New**.



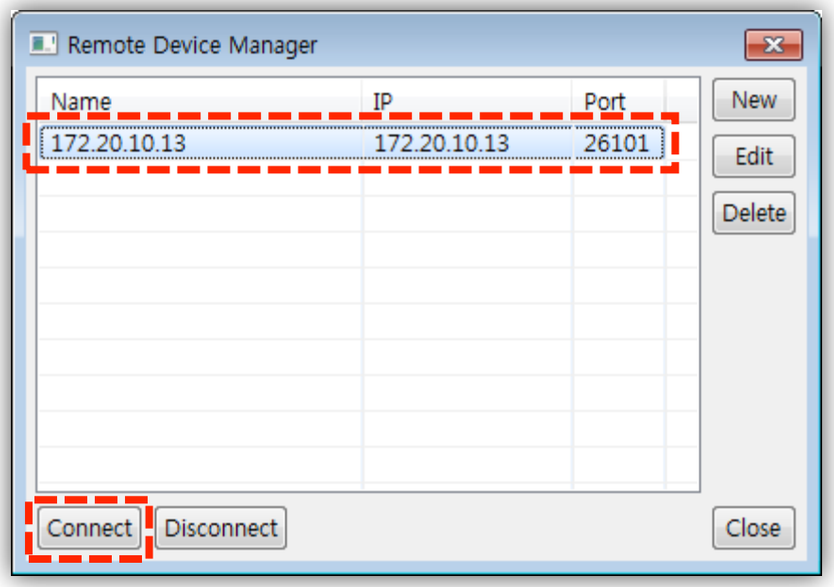
Installing the Certificate Extension | Connecting the Target Device | Generating the Author & Distributor Certificates | Running the Application on the Emulator

Running Applications on a Target Device

Fill in the information about the device and click **Add**.



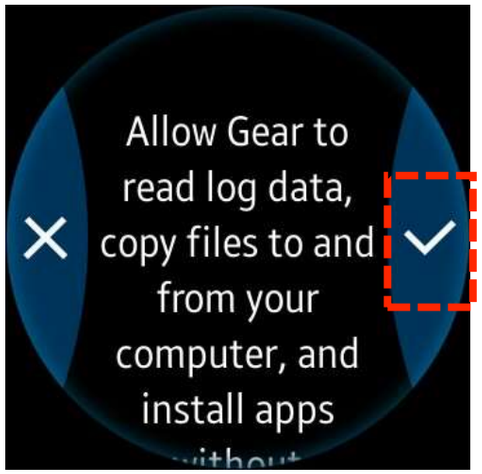
Select the device to connect and click **Connect** button.



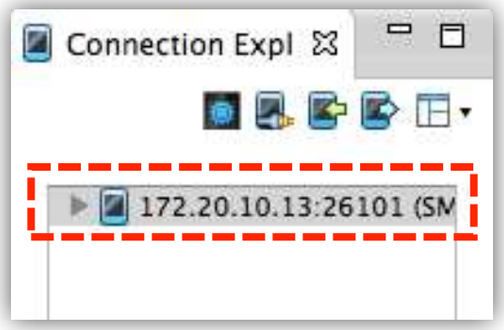
Running Applications on a Target Device

In the first attempt, the connection can fail. In this case, a pop-up appears in the device.

Click the check button to allow Gear to install apps in the device manually.



In the **Connection Explorer**, note that the device is connected successfully.



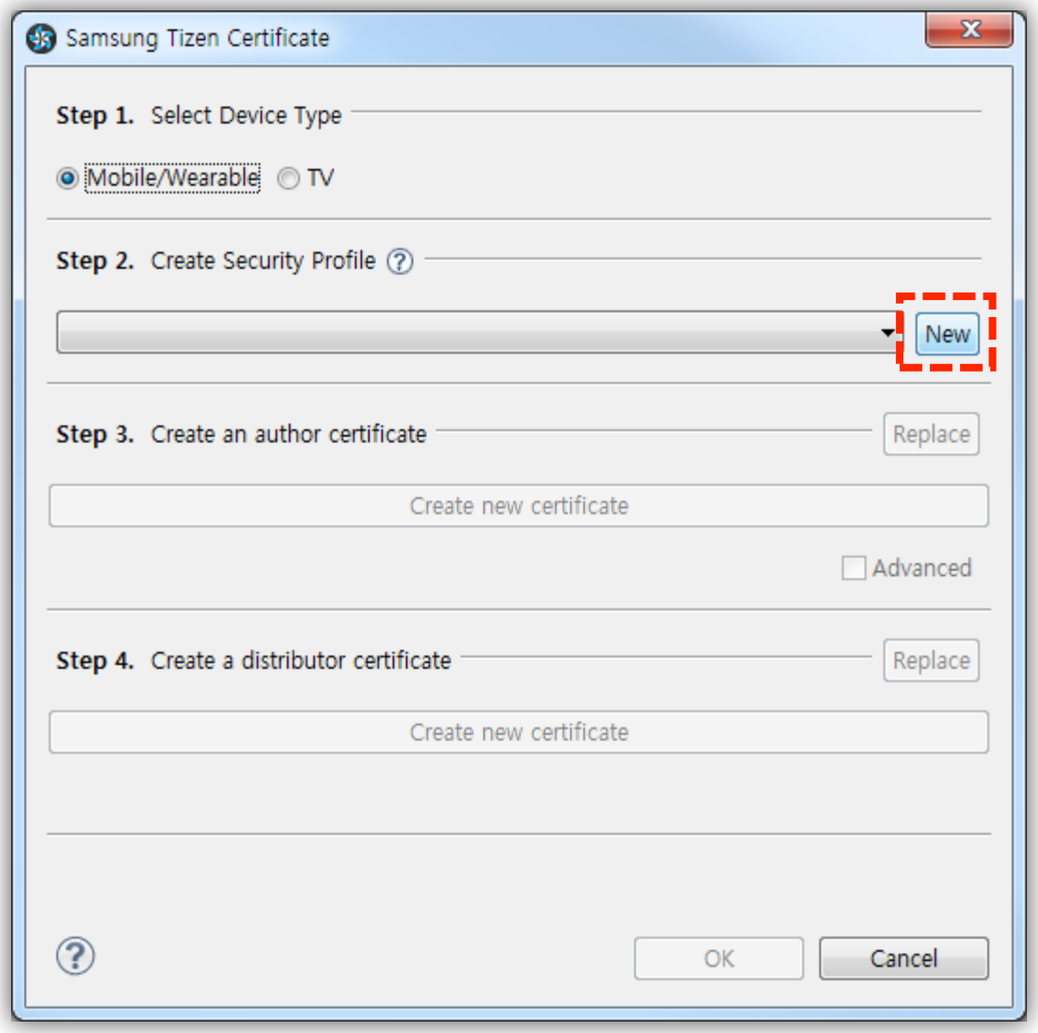
Running Applications on a Target Device

Click the **Certificate** icon to generate and register a developer certificate.

Installing the Certificate Extension → Connecting the Target Device → Generating the Author & Distributor Certificates → Running the Application on the Emulator

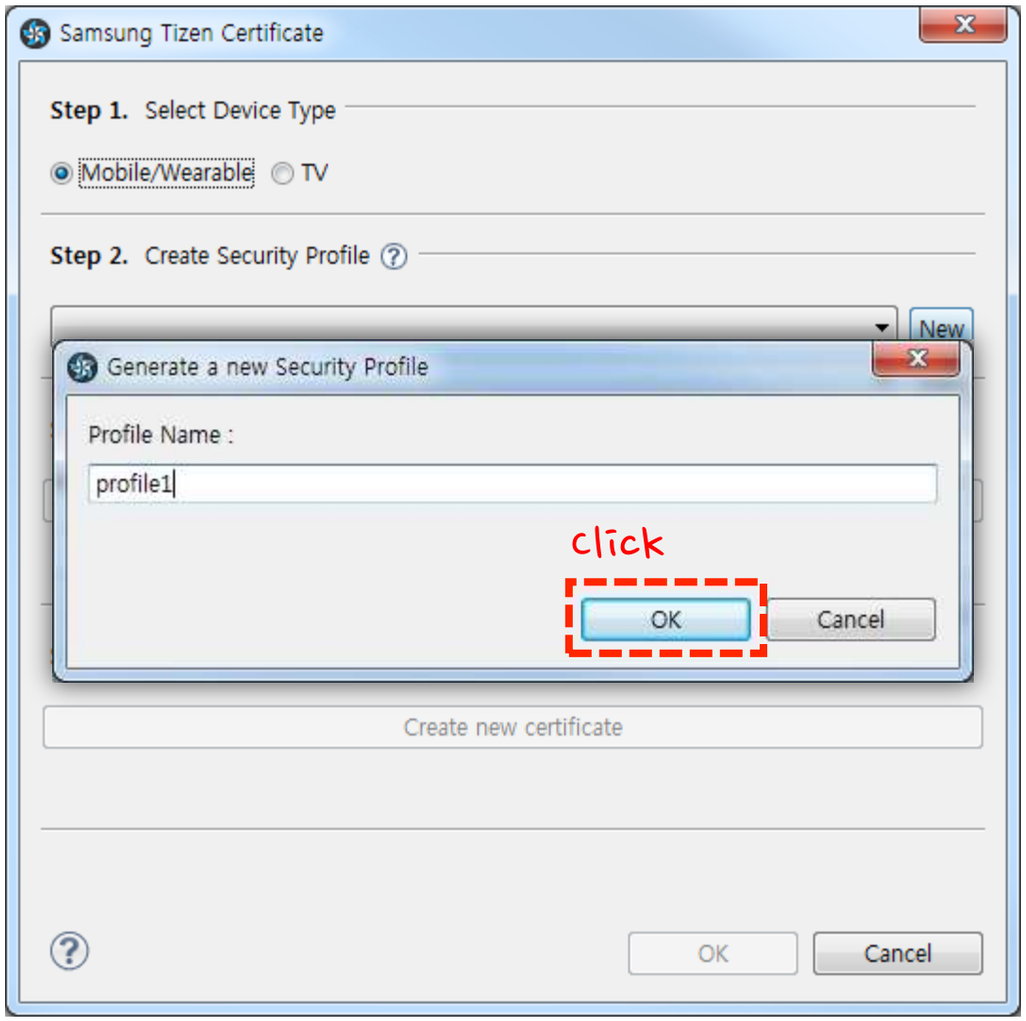
Running Applications on a Target Device

Click **New** to create security profile.



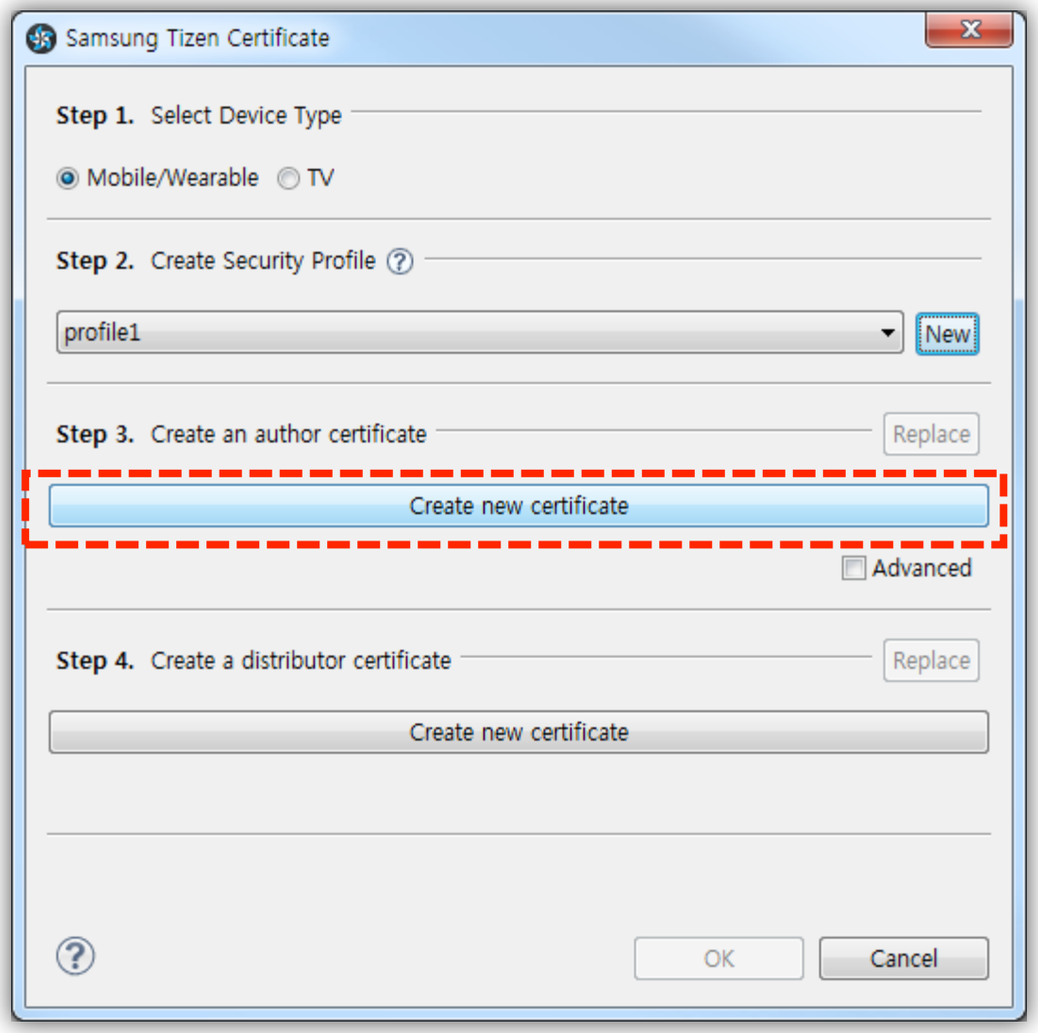
Running Applications on a Target Device

Name the profile and click **OK**.



Running Applications on a Target Device

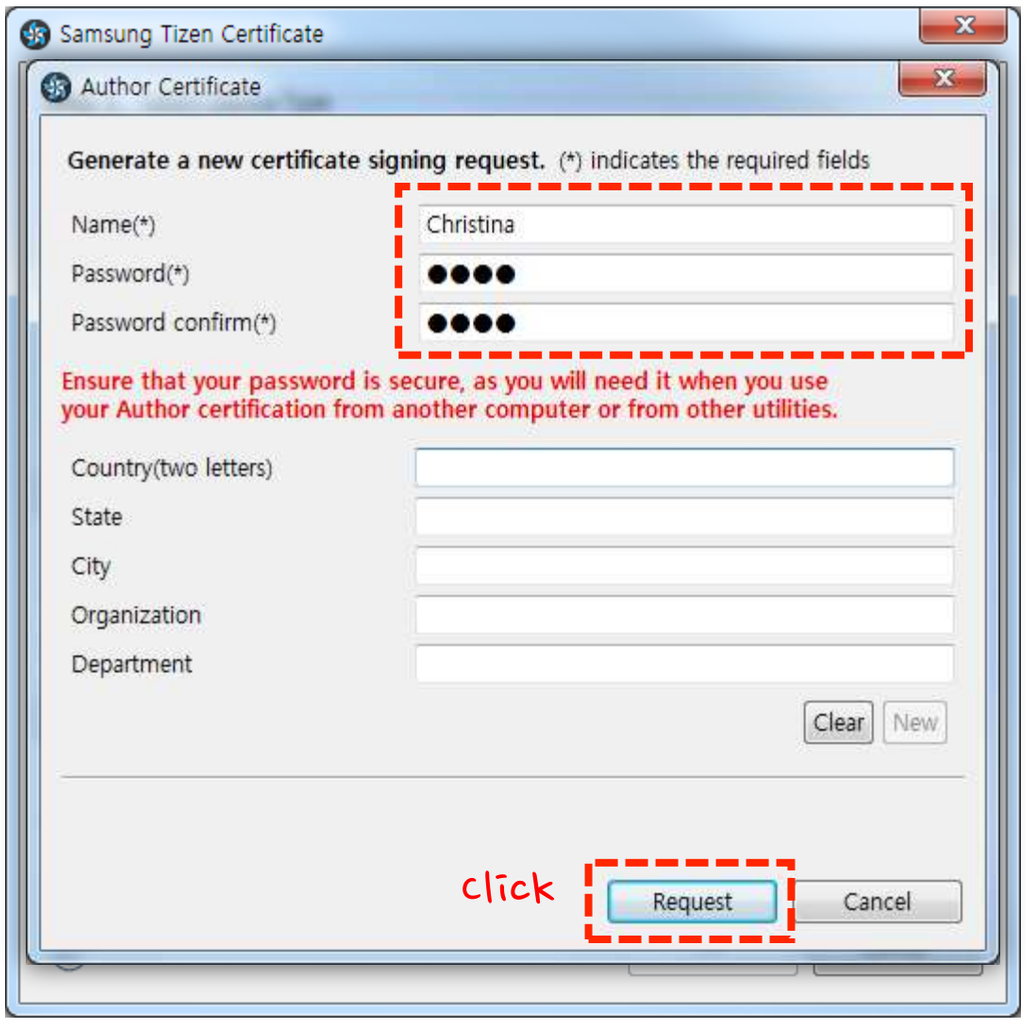
Select **Crete new certificate** to create an **author certificate**.



click

Running Applications on a Target Device

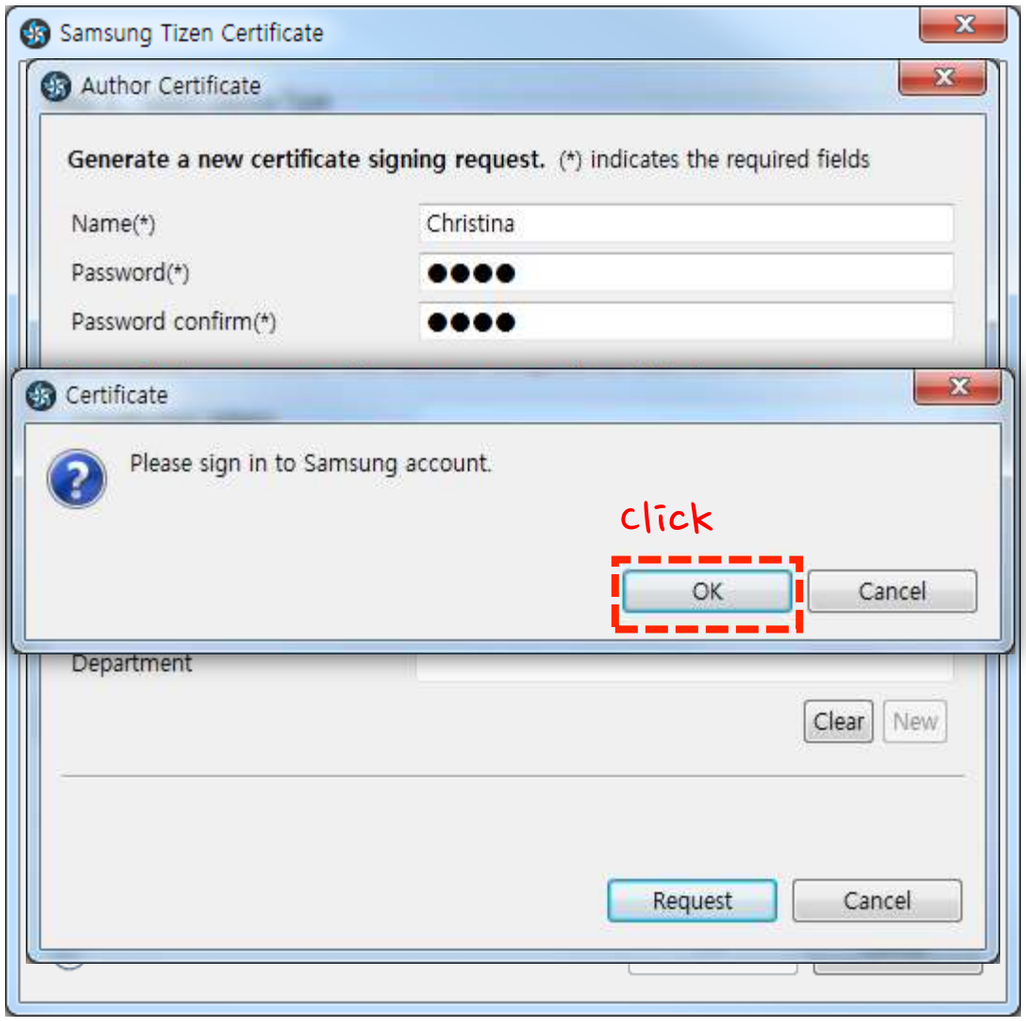
Fill in the information and click **Request**.



Installing the Certificate Extension → Connecting the Target Device → Generating the Author & Distributor Certificates → Running the Application on the Emulator

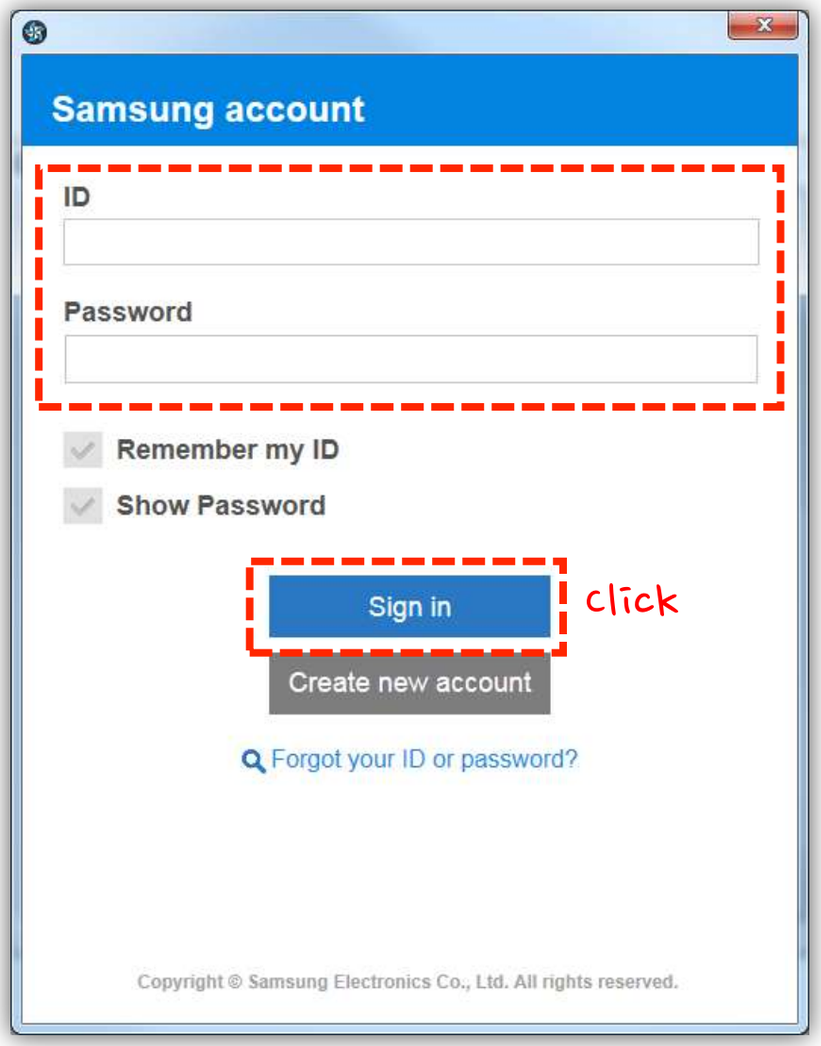
Running Applications on a Target Device

Click **OK**.



Running Applications on a Target Device

Sign in with your Samsung account.



Installing the Certificate Extension

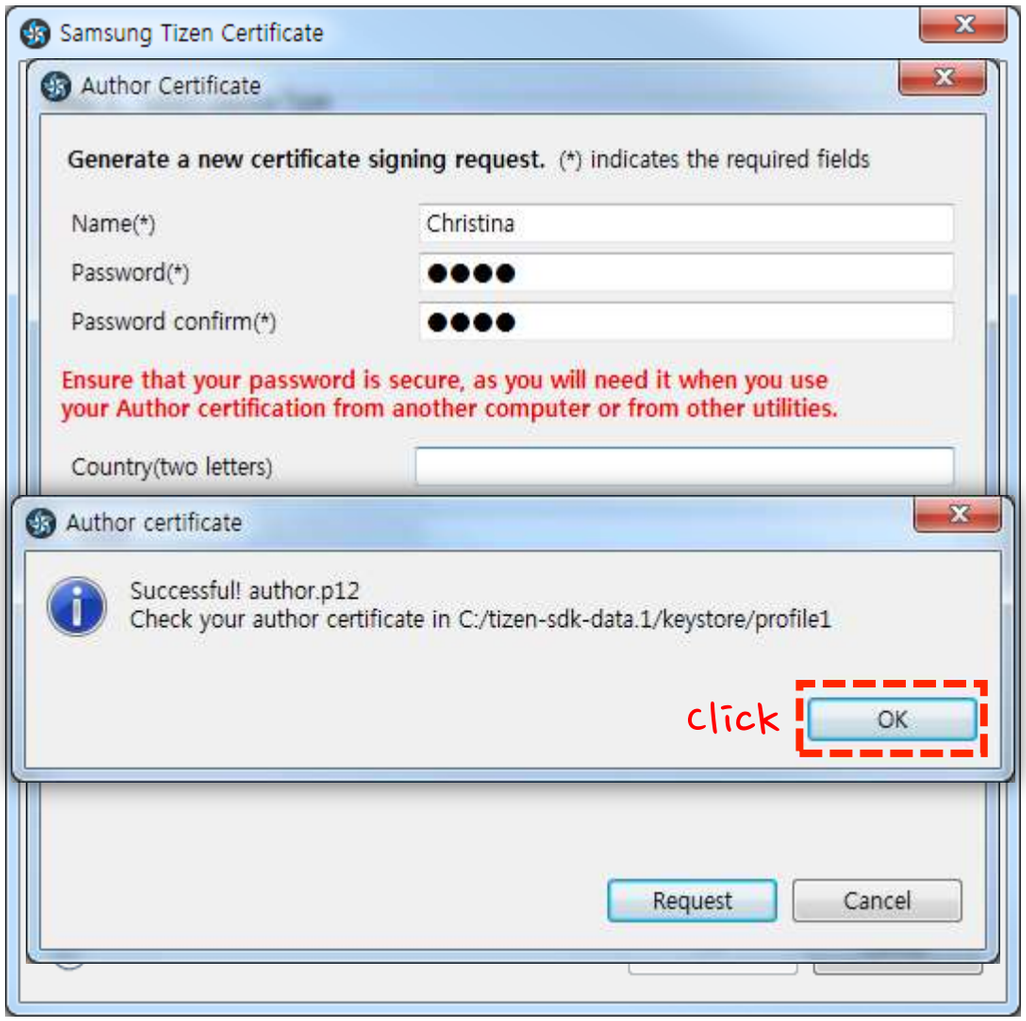
Connecting the Target Device

Generating the Author & Distributor Certificates

Running the Application on the Emulator

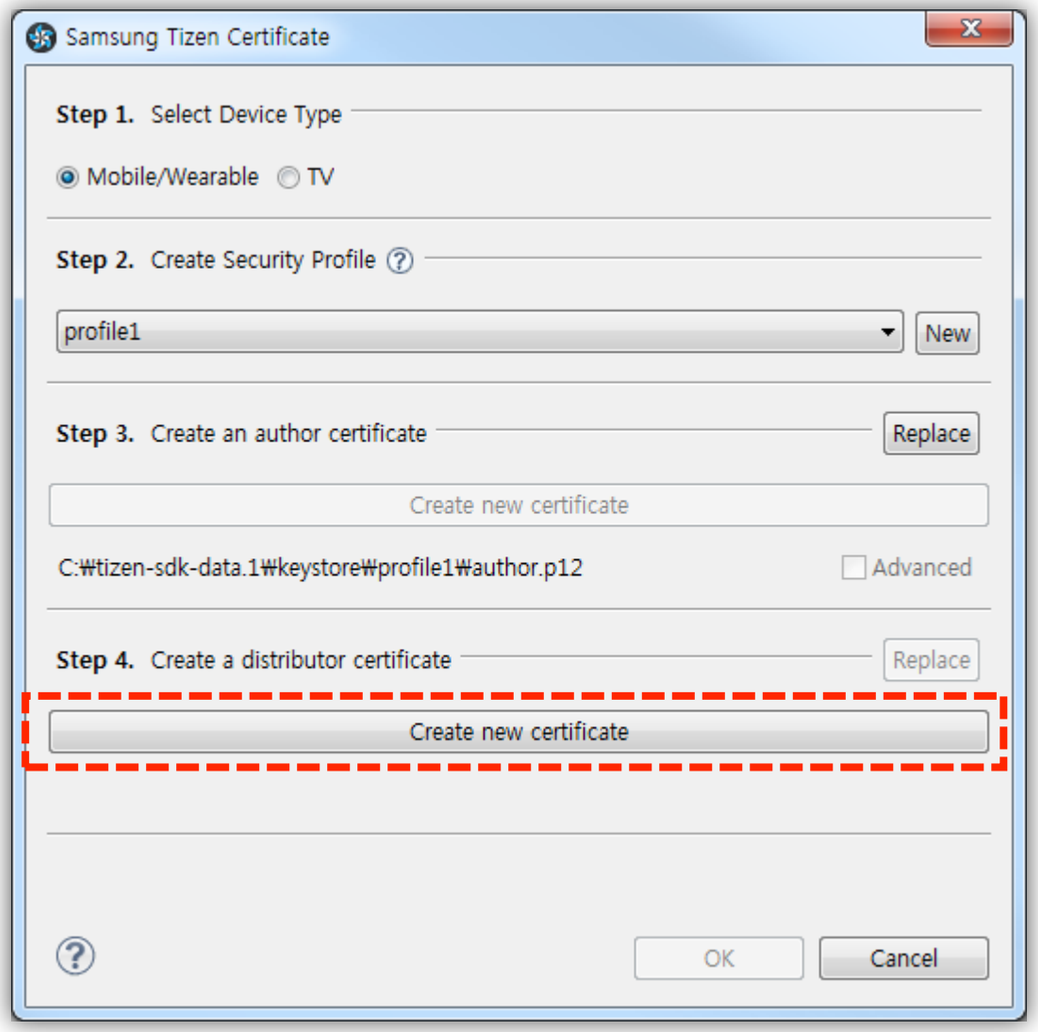
Running Applications on a Target Device

Click **OK**.



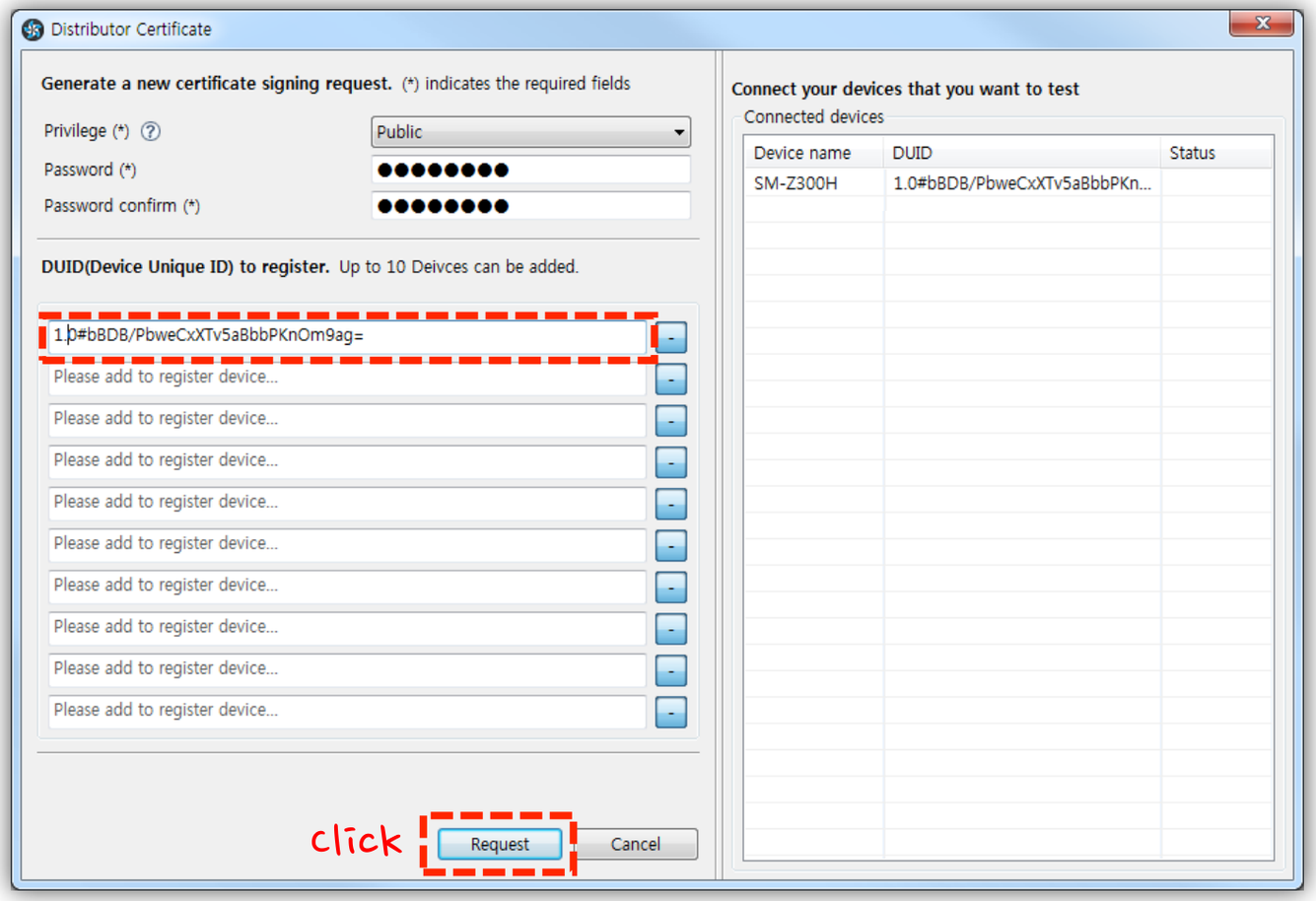
Running Applications on a Target Device

Select **Crete new certificate** to create a **distributor certificate**.



Running Applications on a Target Device

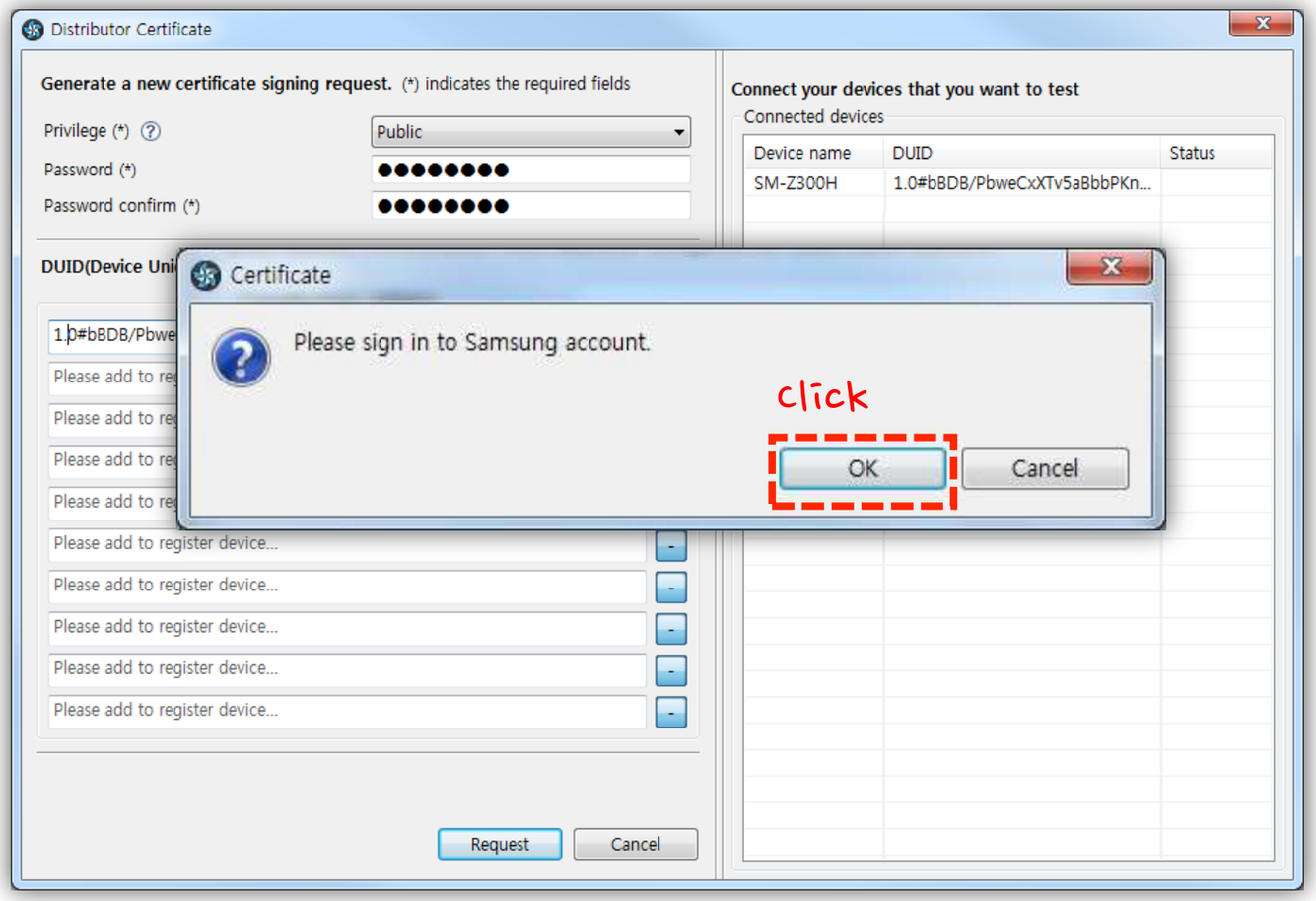
Enter the **Device ID** and click **Request.**
You can cope the DUID from the list on the right.



Installing the Certificate Extension → Connecting the Target Device → Generating the Author & Distributor Certificates → Running the Application on the Emulator

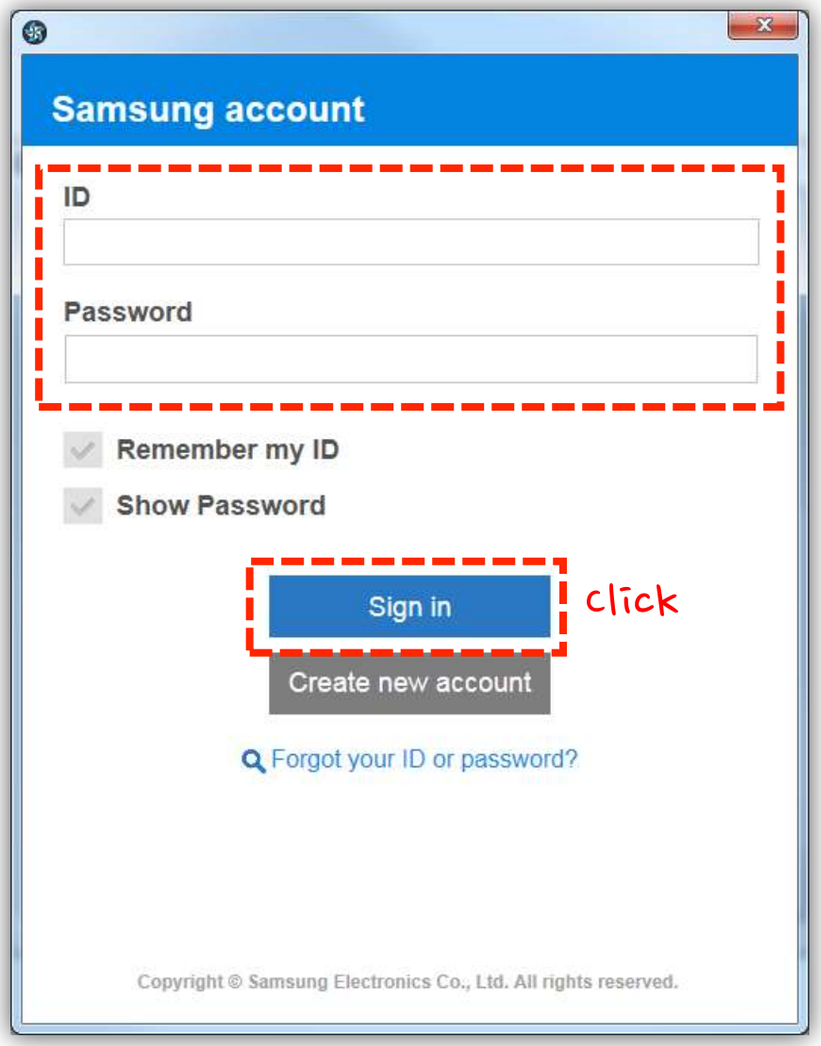
Running Applications on a Target Device

Click **OK**.



Running Applications on a Target Device

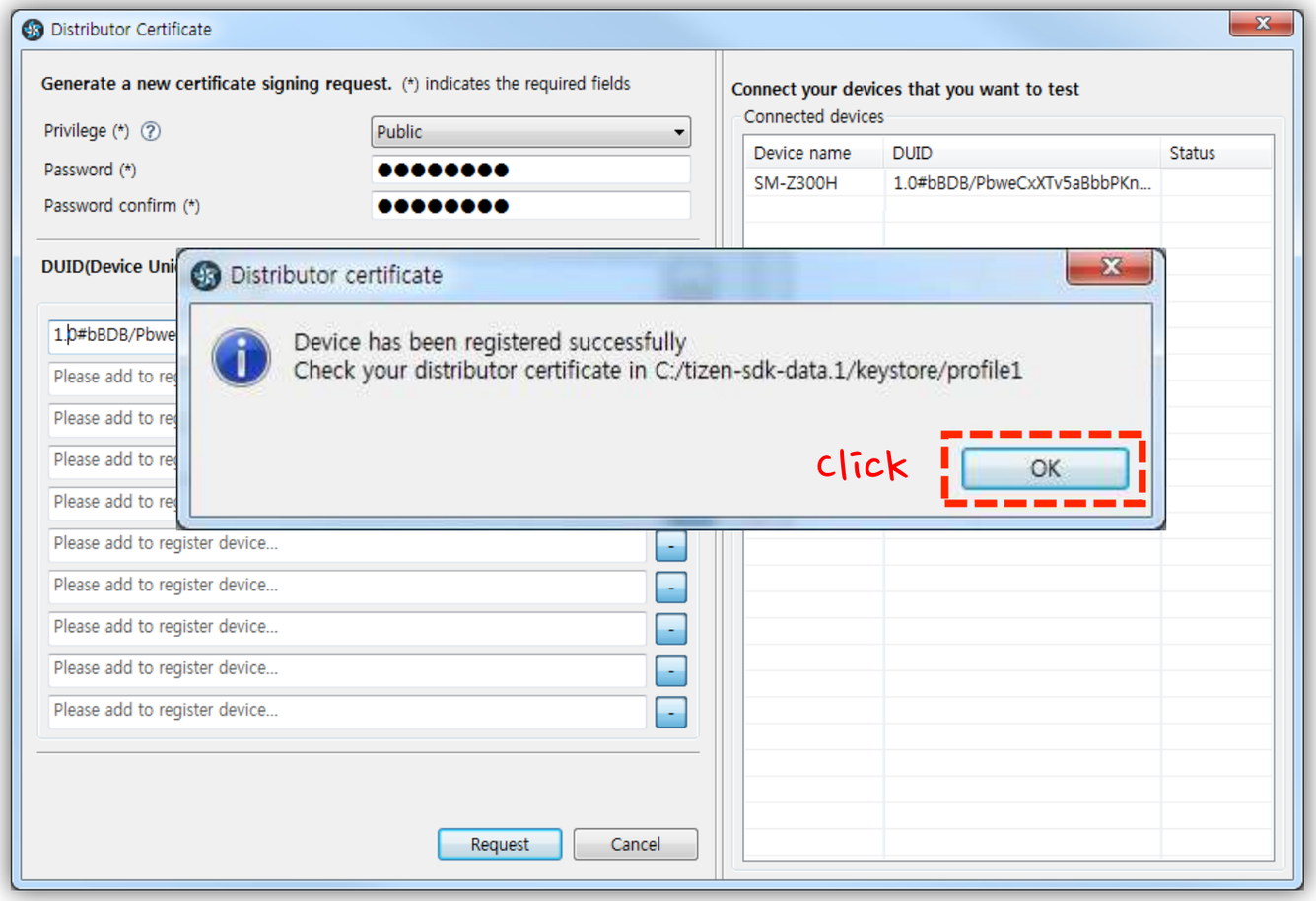
Sign in with your Samsung account.



Installing the Certificate Extension → Connecting the Target Device → Generating the Author & Distributor Certificates → Running the Application on the Emulator

Running Applications on a Target Device

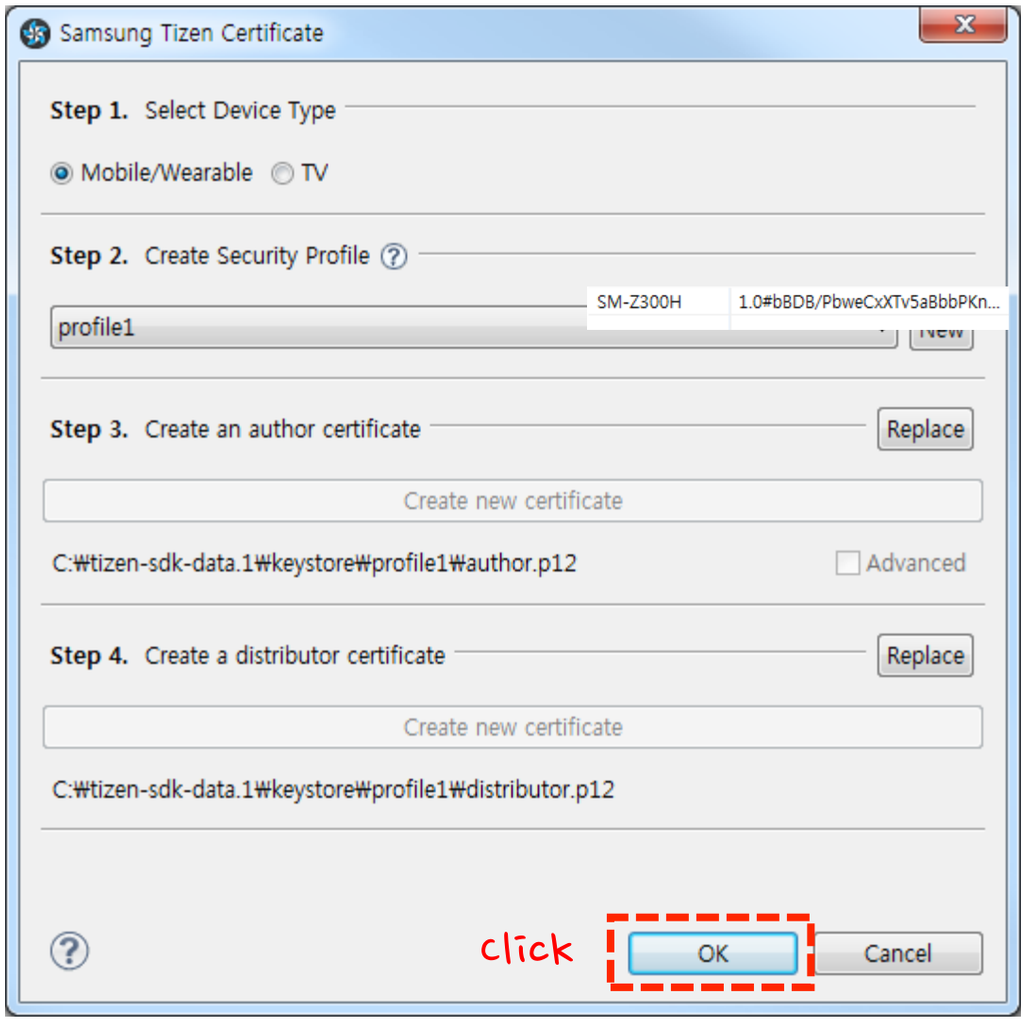
Click **OK** when the device has been registered successfully.



Installing the Certificate Extension → Connecting the Target Device → Generating the Author & Distributor Certificates → Running the Application on the Emulator

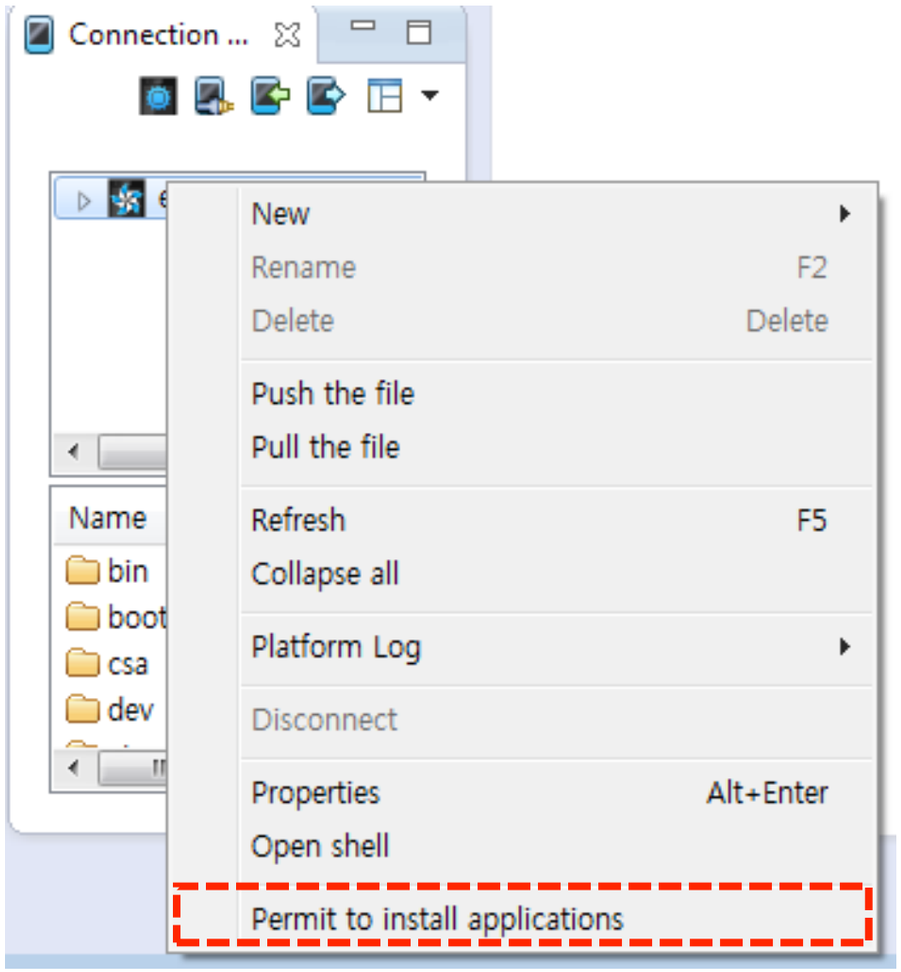
Running Applications on a Target Device

Click **OK**.



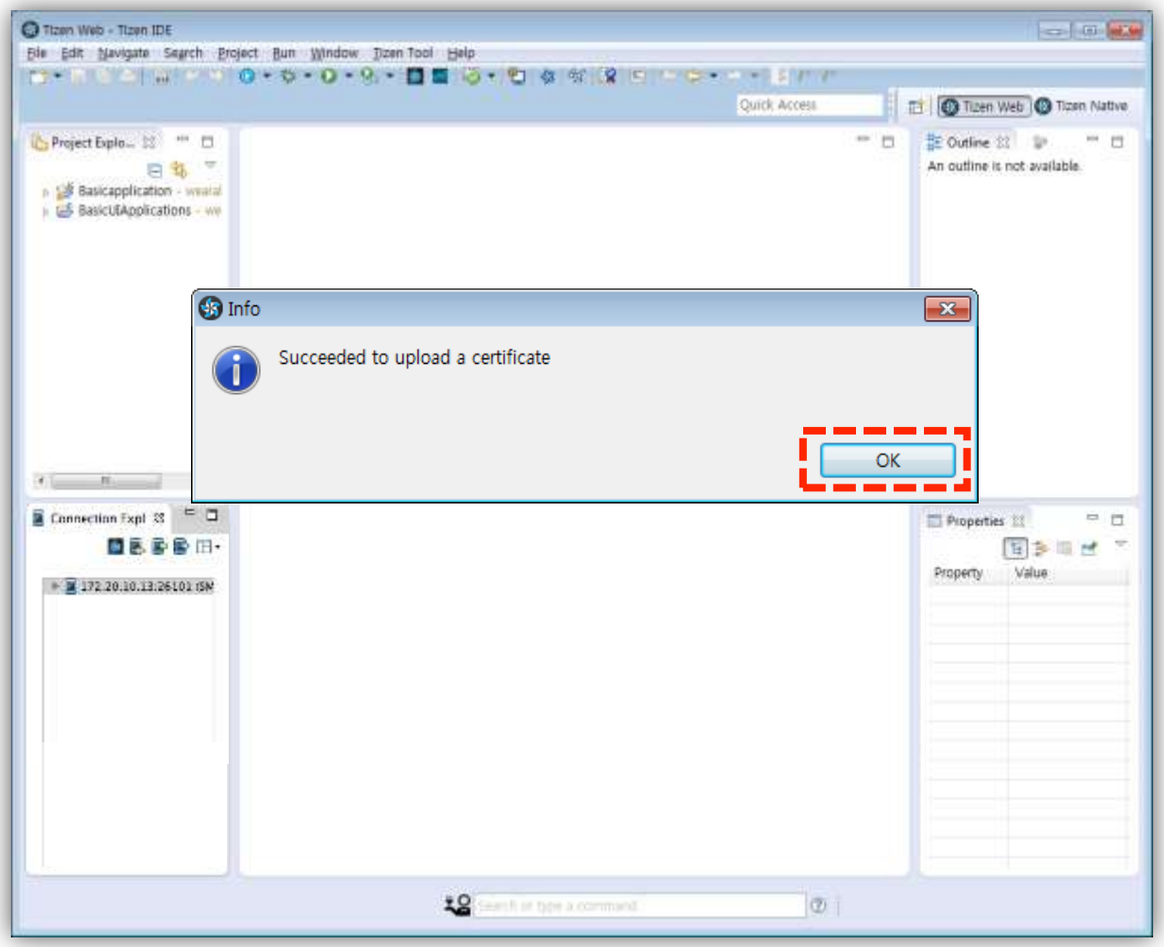
Running Applications on a Target Device

Right-click on the target device in the **Connection Explorer**, and go to **Permit to install applications**.



Running Applications on a Target Device

Click **OK** when the upload is completed.



Installing the Certificate Extension

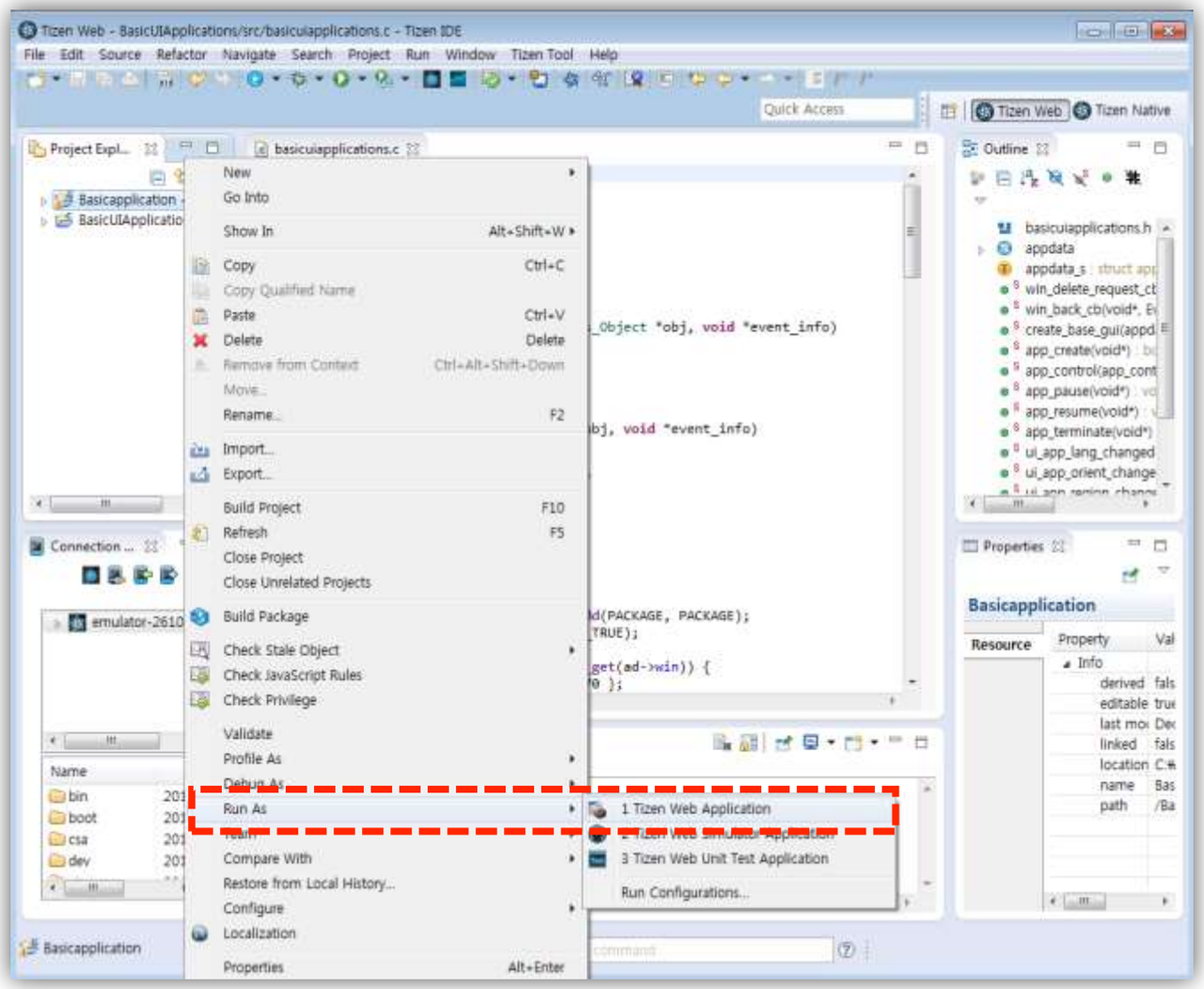
Connecting the Target Device

Generating the Author & Distributor Certificates

Running the Application on the Emulator

Running Applications on a Target Device

Right-click on the project title, and select **Run As > Tizen Web Application** while the Emulator display is switched on.



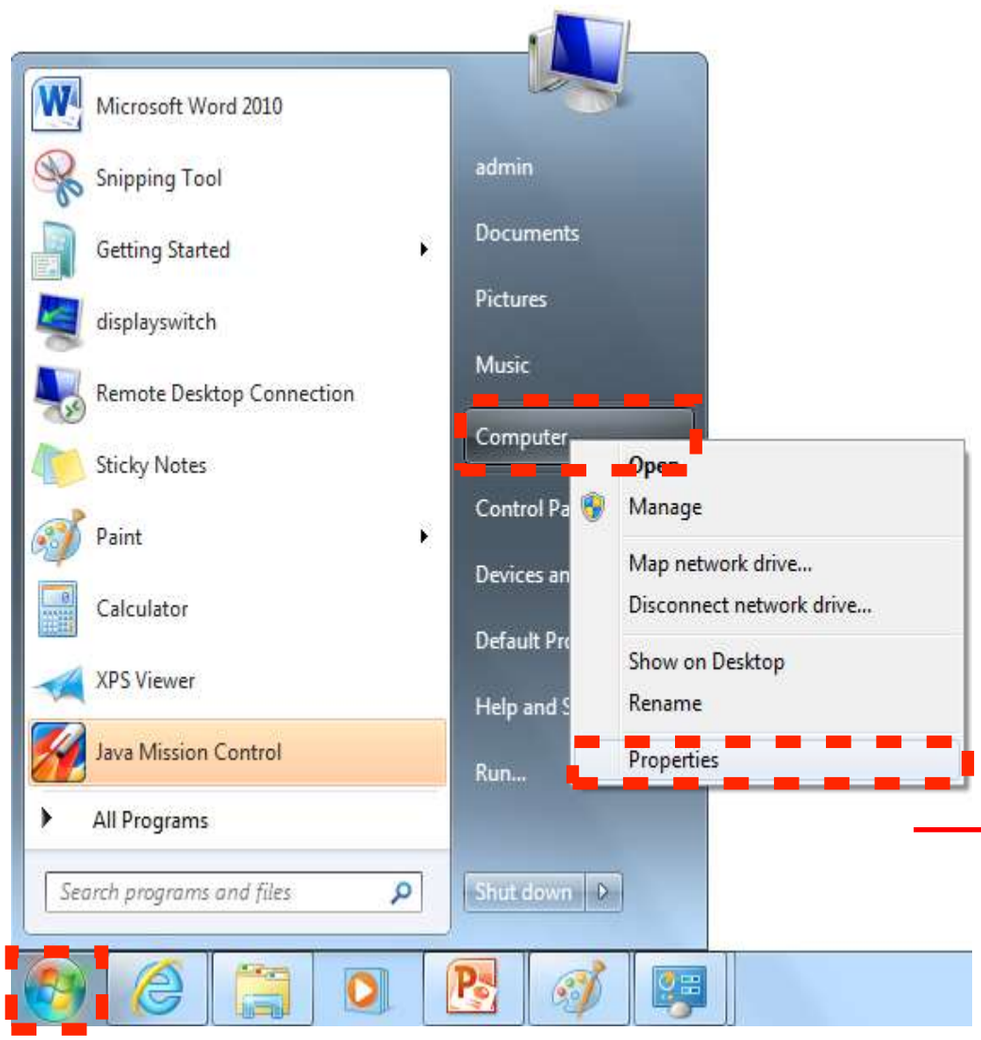
Installing the Certificate Extension → Connecting the Target Device → Generating the Author & Distributor Certificates → Running the Application on the Target Device

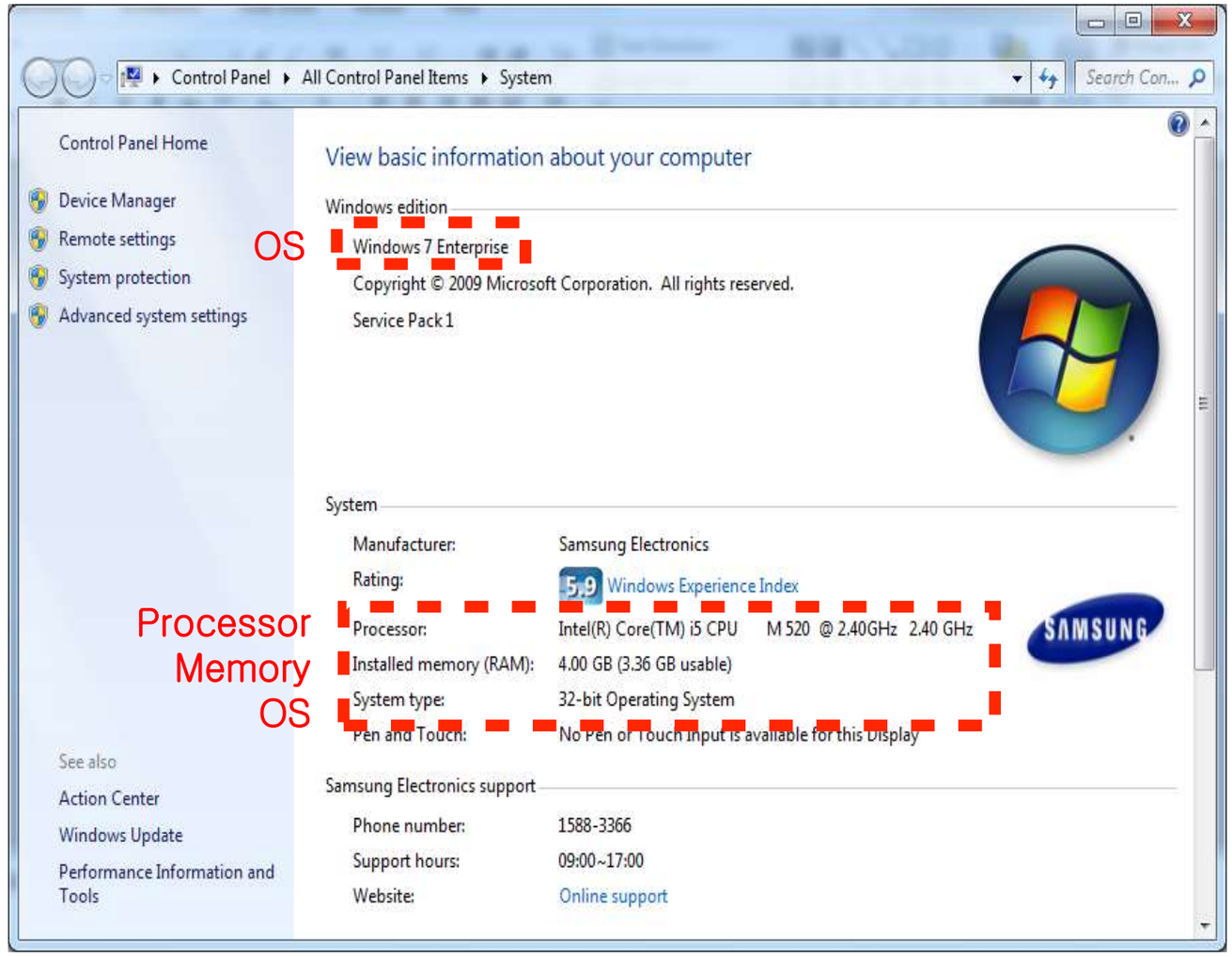
Appendix

Checking System Specifications

OS, Processor, and Memory

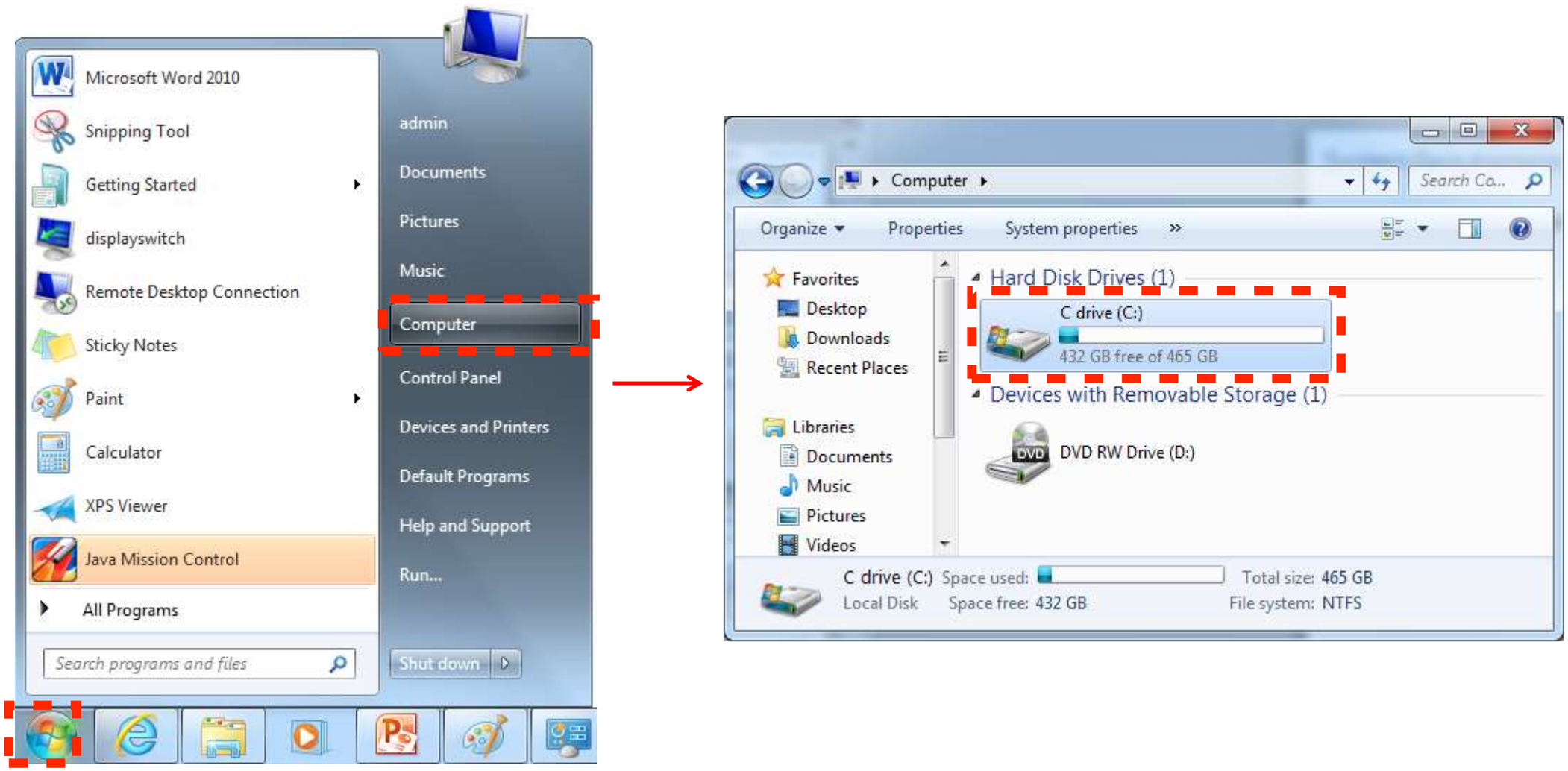
You can view a summary of important information about your computer and operating system by clicking Windows **Start** menu , right-clicking **Computer**, and clicking **Properties.**





Checking System Specifications

You can check the available disk space by clicking the Windows **Start Menu** > **Computer**.

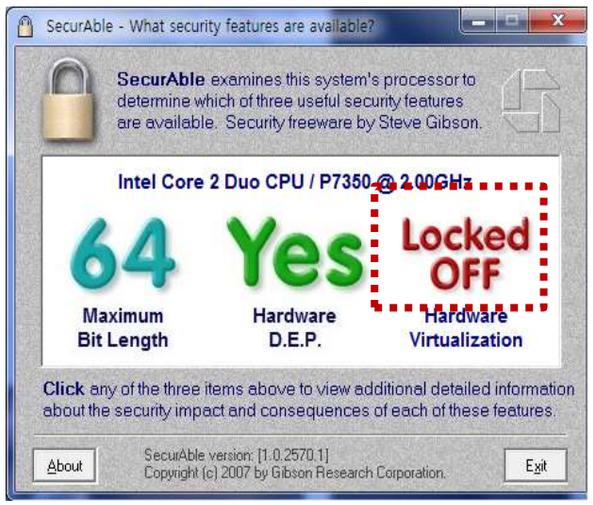


Checking the CPU VTx Support

SecurAble.exe

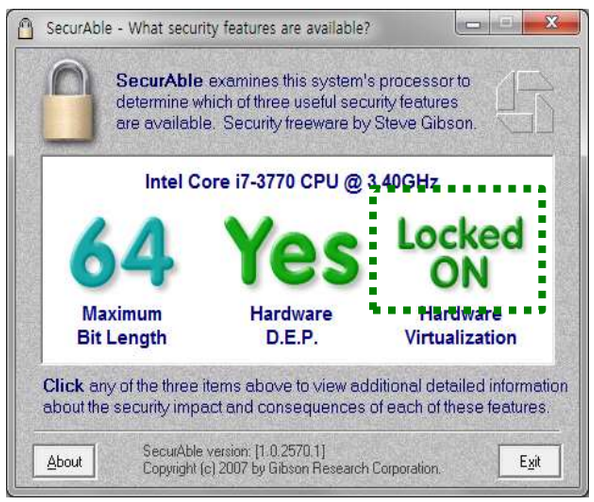
Download the `SecurAble.exe` file from http://securable.en.softonic.com/ and execute the software.

VT supported by CPU but locked off by mainboard



CPU VT supported and HAXM available

CPU VT not supported and HAXM NOT available

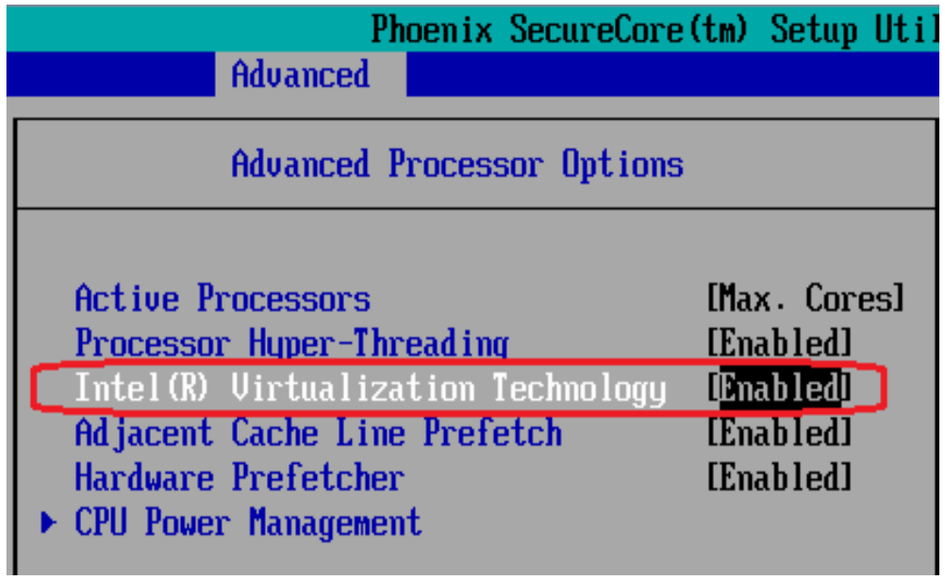


VT supported but locked on by BIOS (BIOS setup required)

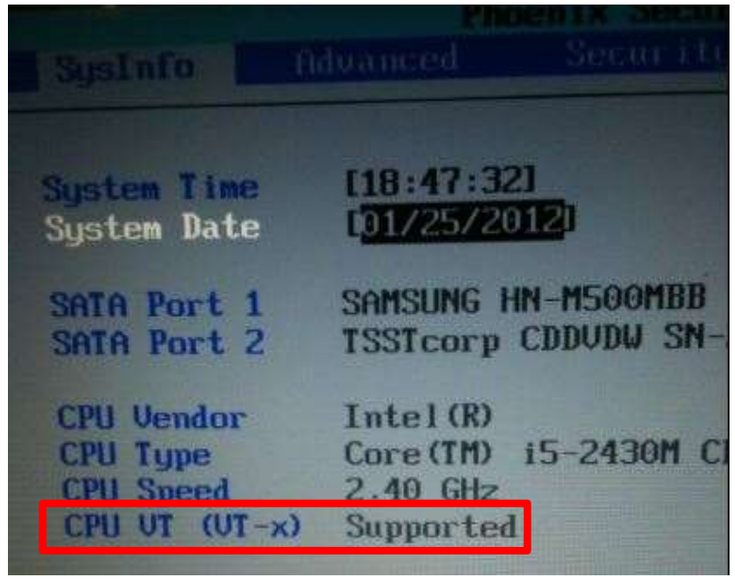
Checking the CPU VTx Support

You have to set the VT option to **enabled** in the BIOS menu.
The entrance point of the BIOS menu depends on the type of the PC mainboard.

CPU VT supported and controllable in BIOS



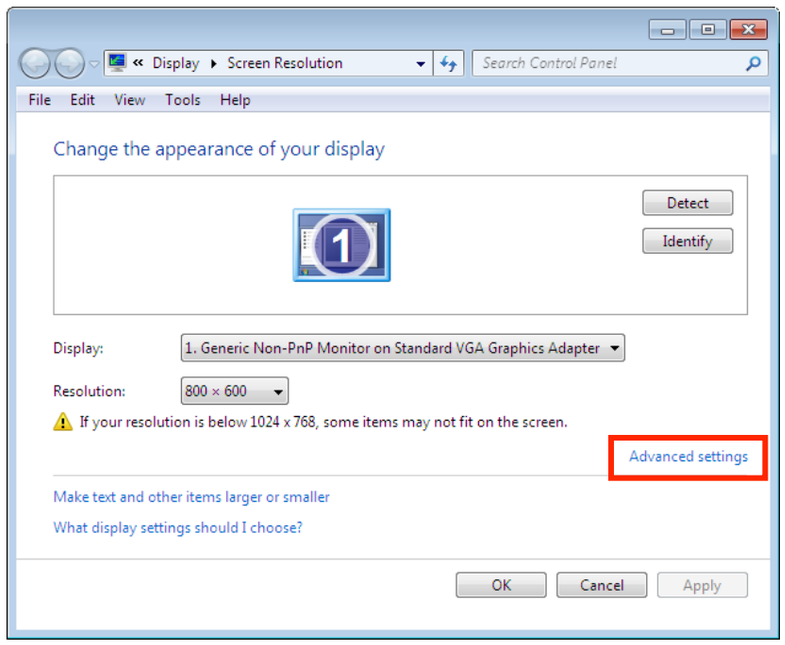
CPU VT supported but NOT controllable in BIOS

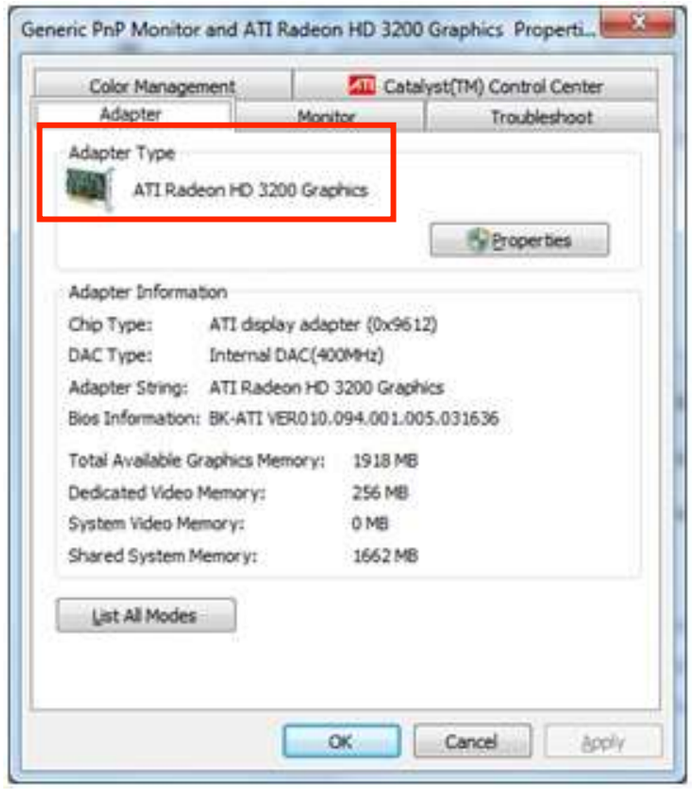


Checking and Updating the Graphic Card Driver

Windows Update

You can check your graphic card driver in your system by clicking Windows St t Menu , right-clicking **Control Panel**, and clicking **Adjust screen resolution > Advanced Settings.**

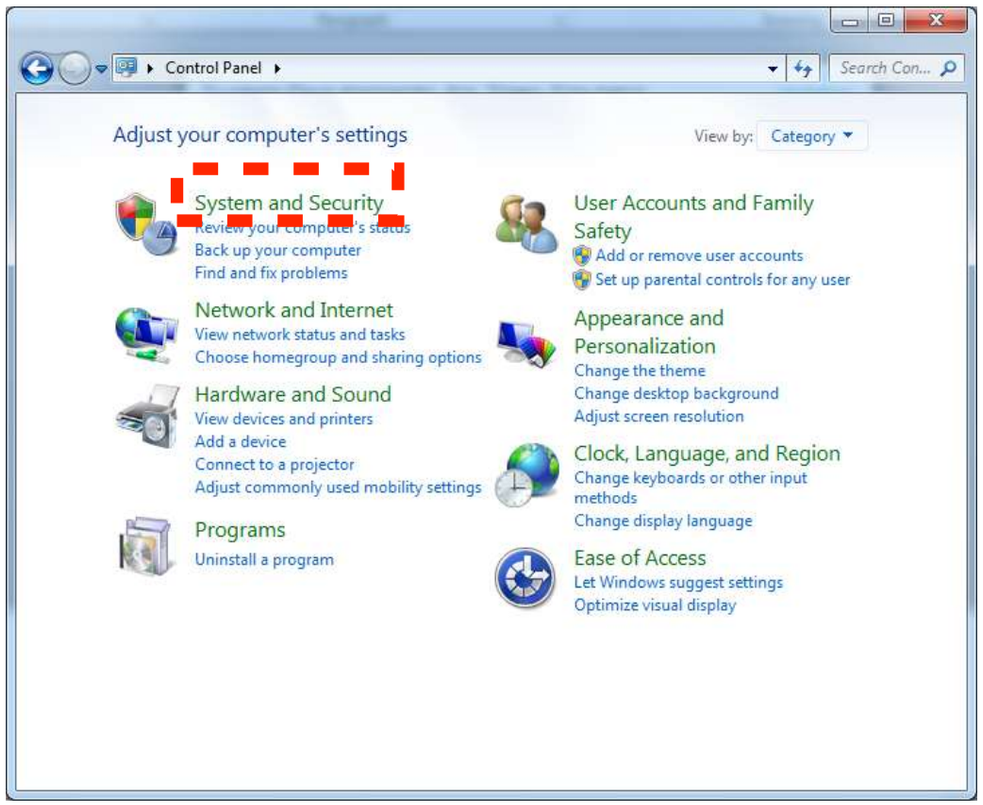


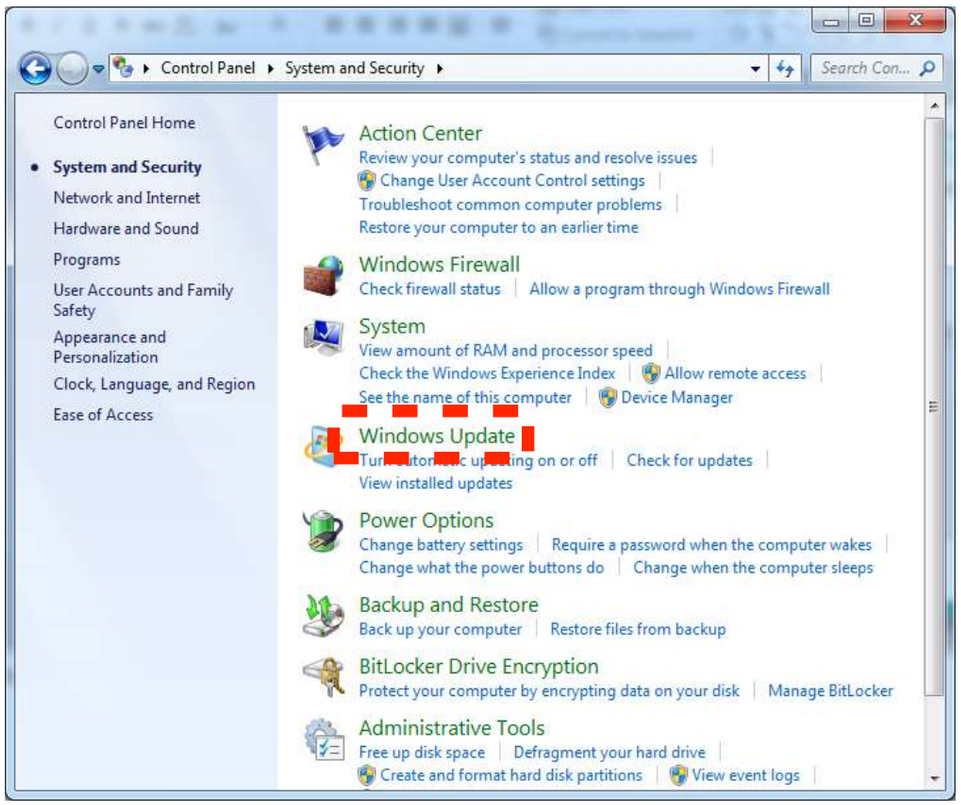


Checking and Updating the Graphic Card Driver

You must update to the latest vendor-provided version of the graphic card driver for OpenGL ES acceleration to use the Tizen Emulator.

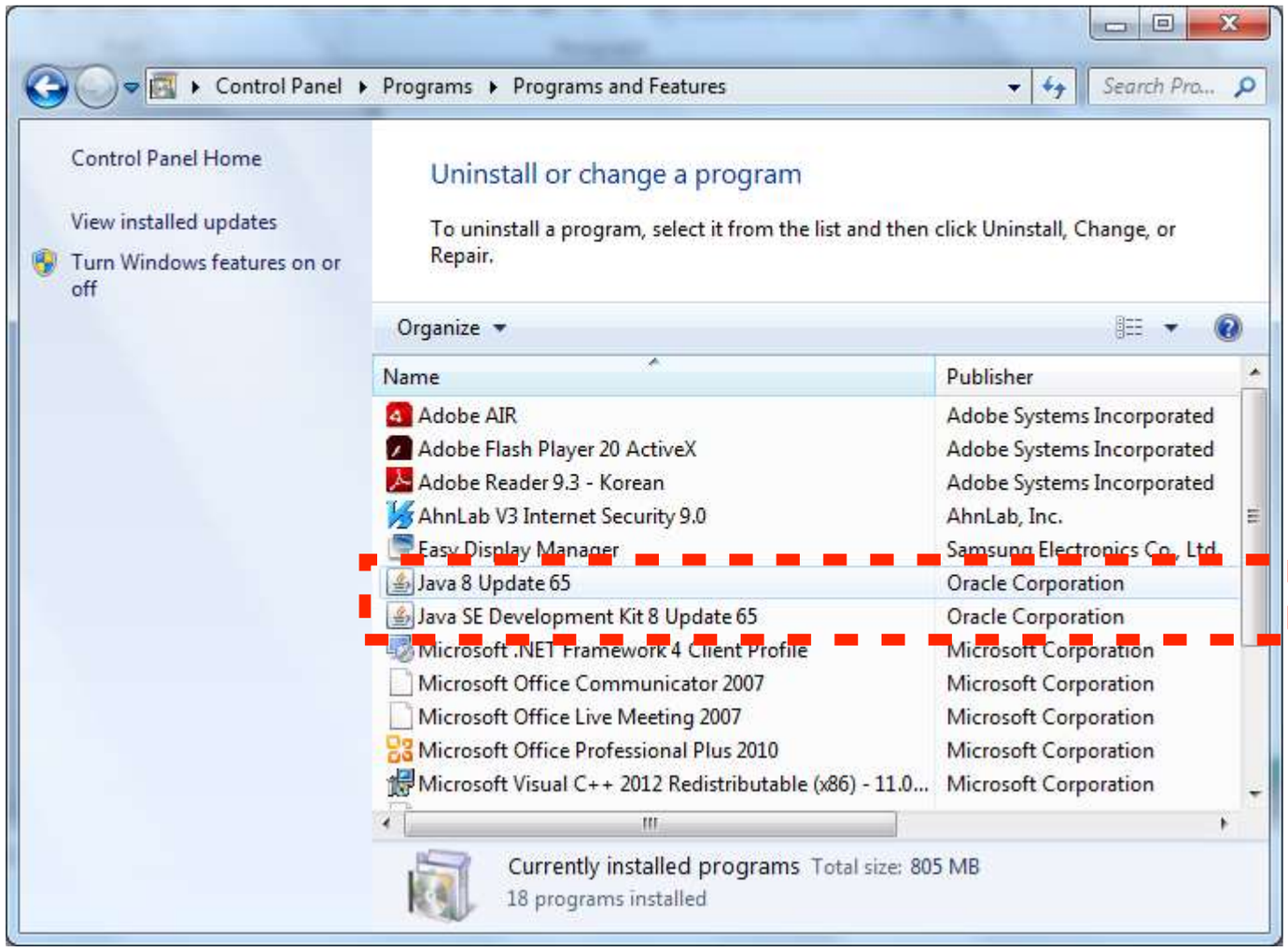
- For Microsoft Windows® 8/7, check and install the necessary drivers in **Control Panel > System and Security > Windows Update**.





Checking and Uninstalling the JDK

Confirm the JDK installation in **Control Panel > Programs > Programs and Features**.



Tizen SDK Installation Options

The Tizen IDE (Integrated Development Environments) provides a development tool with based on the Eclipse IDE.

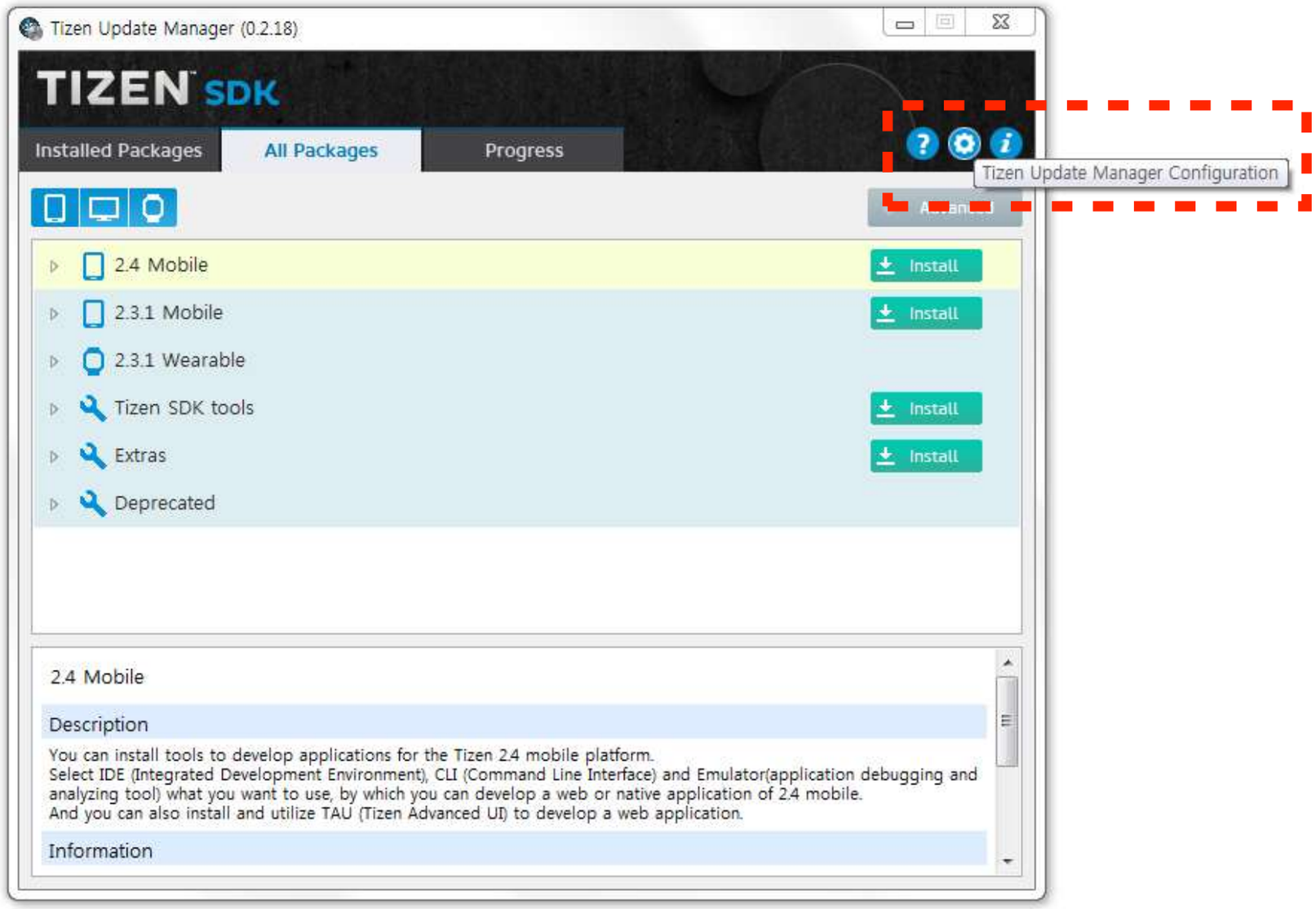
- Provides GUI editor and analysis tools with an excellent UX
- Easy for general users and developers
- Requires relatively high system resources

The Tizen CLI (Command Line Interfaces) provides an environment for creating, building, and packaging projects by using commands on a terminal.

- Suitable for high-level developers with automated build system
- Requires relatively low system resources

Tizen SDK Installation Options

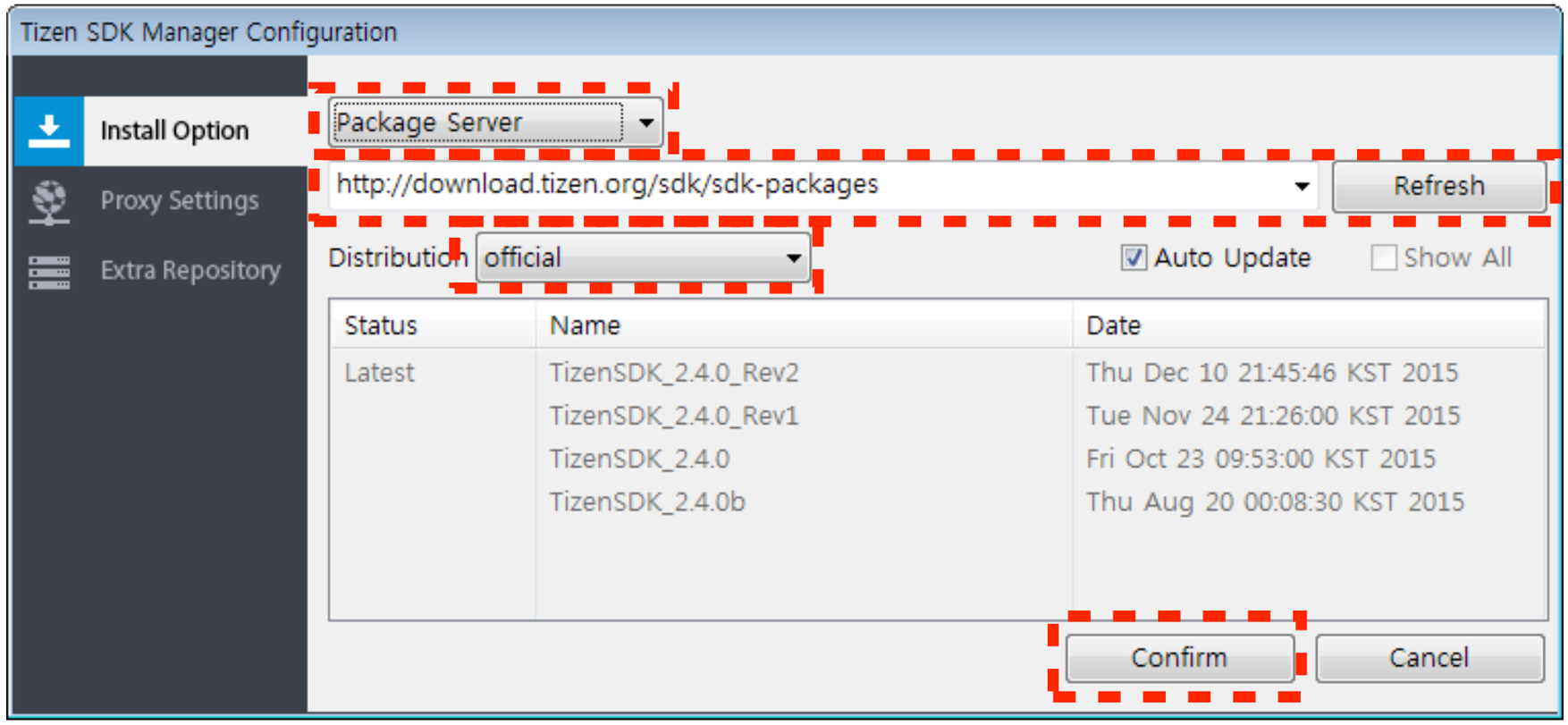
You can change the package server, upload a custom SDK image, change the proxy settings, and add extra repositories in the Advanced Configuration.



Tizen SDK Installation Options

You can install or update the Tizen SDK by using one of the following options.

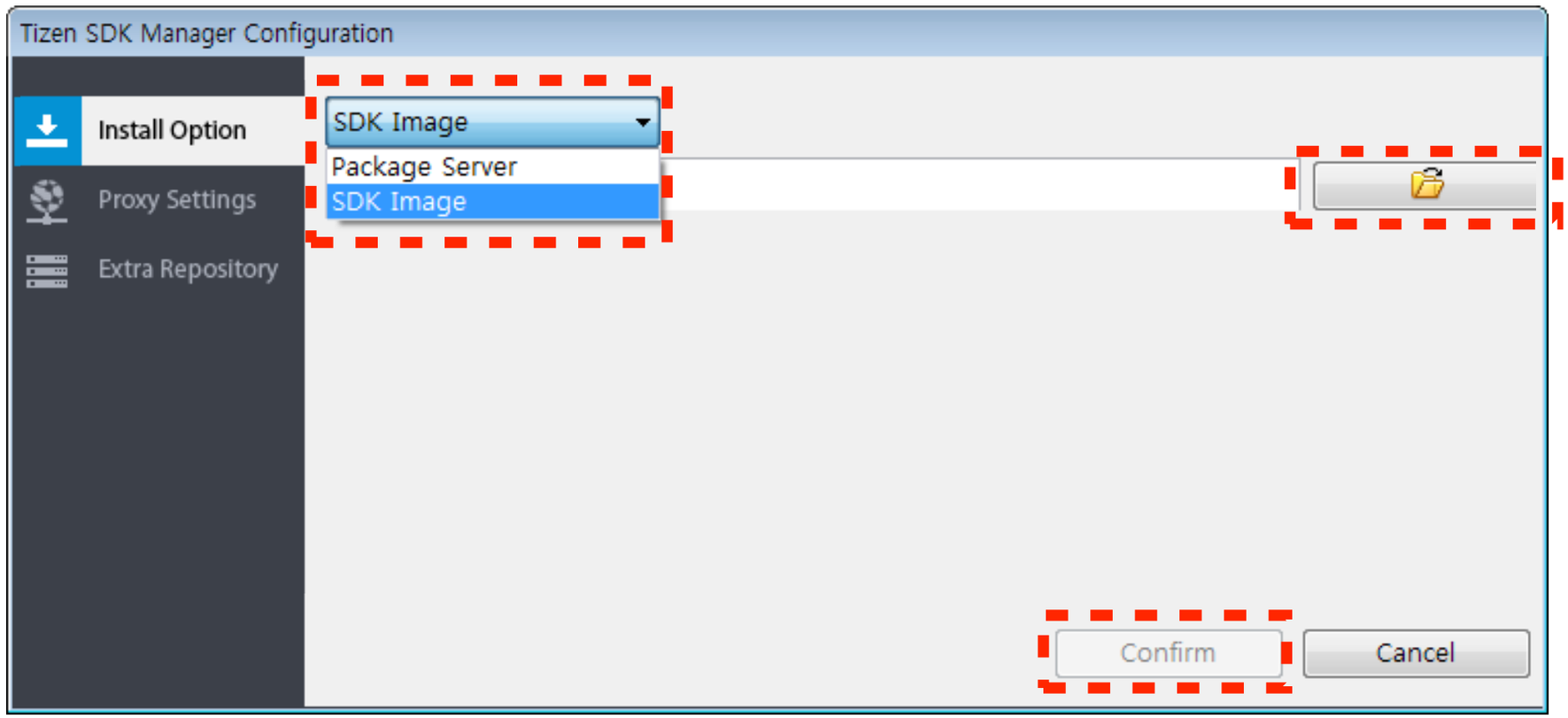
- Configuring the Package Server
  1. In the combo box at the top, select **Package Server**.
  2. In the text box, type an available repository address and click **Refresh**.
  3. In the **Distribution** box, select the distribution you want to download.
  4. Click **Confirm**.



Tizen SDK Installation Options

You can install or update the Tizen SDK by using one of the following options.

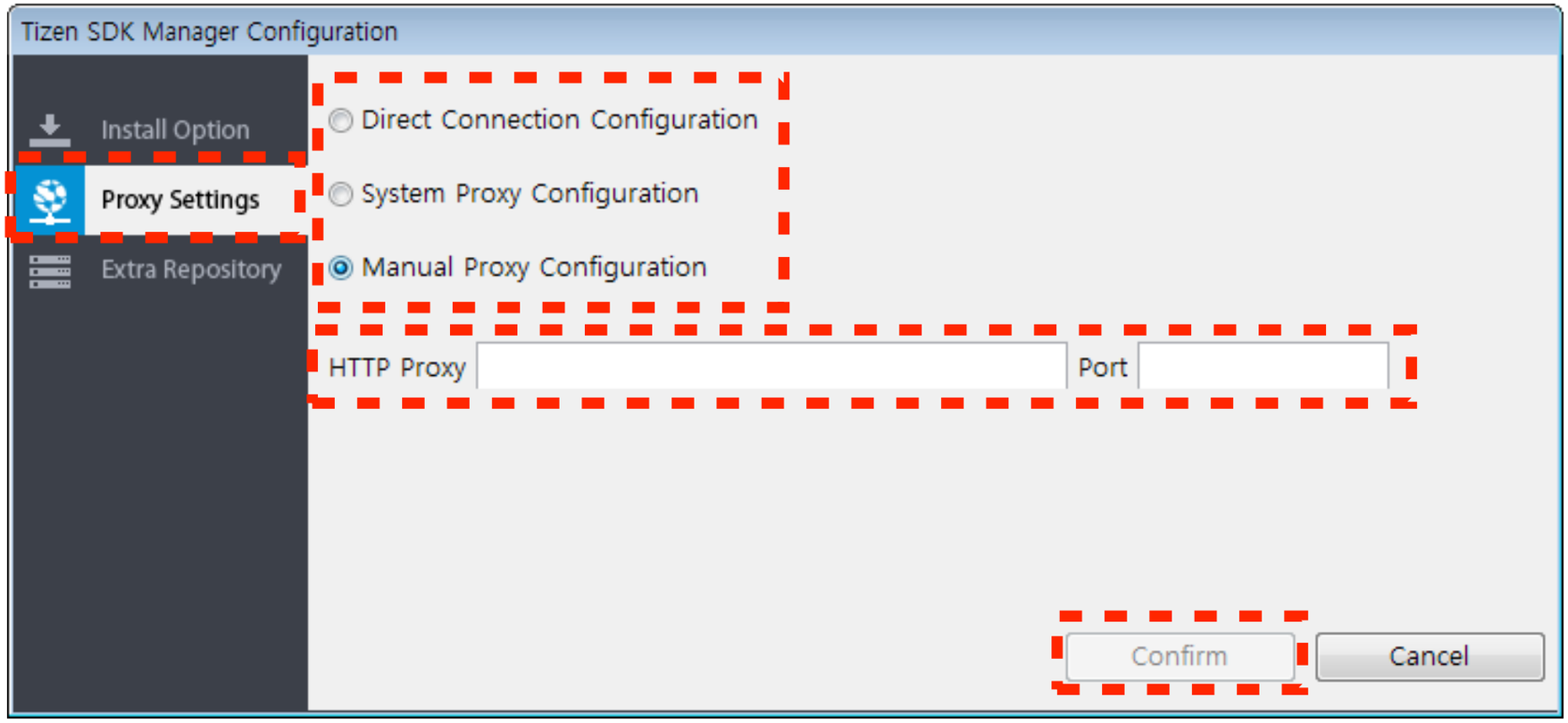
- Configuring the SDK Image
  1. In the combo box at the top, select **SDK Image**.
  2. Click the folder icon, browse to the SDK image file, and click **OK**.
  3. Click **Confirm**.



Tizen SDK Installation Options

You can configure a proxy to connect to a repository server.

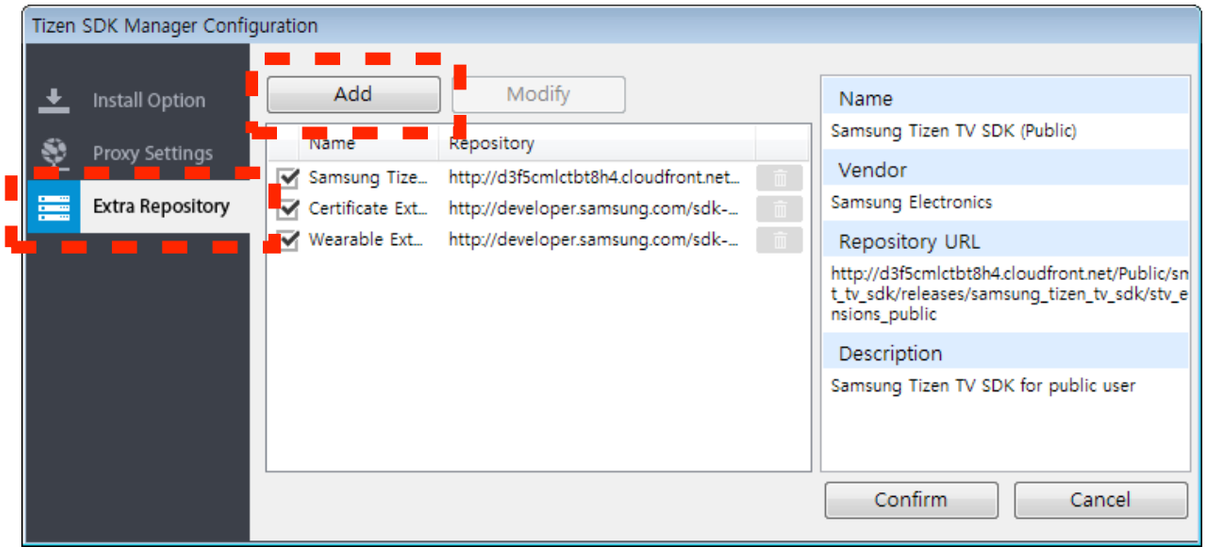
1. Click the **Proxy Settings** tab.
2. Select the configuration you want to use.
3. If you select Manual Proxy Configuration, enter HTTP Proxy and Port in the fields.
4. Click **Confirm**.



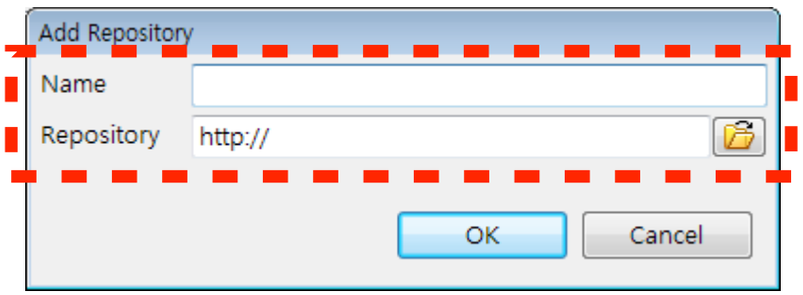
Tizen SDK Installation Options

The Tizen SDK supports extension packages, called extra repositories, contributed by external developers and companies.

To add an extra repository, click the **Extra Repository** tab and click **Add**.

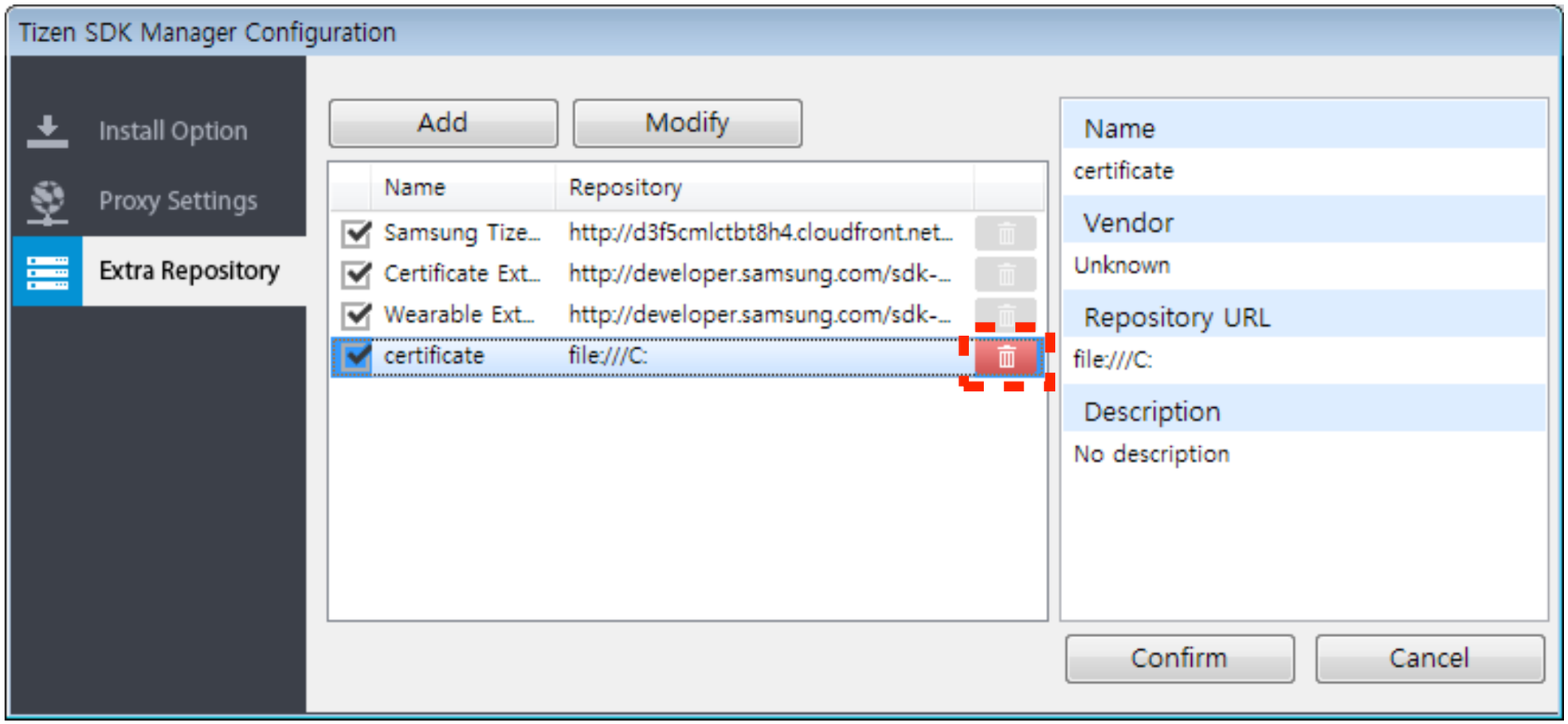


When the **Add Repository** dialog appears, enter the **Name** and **Repository** in the fields. The repository indicates the external server address.



Tizen SDK Installation Options

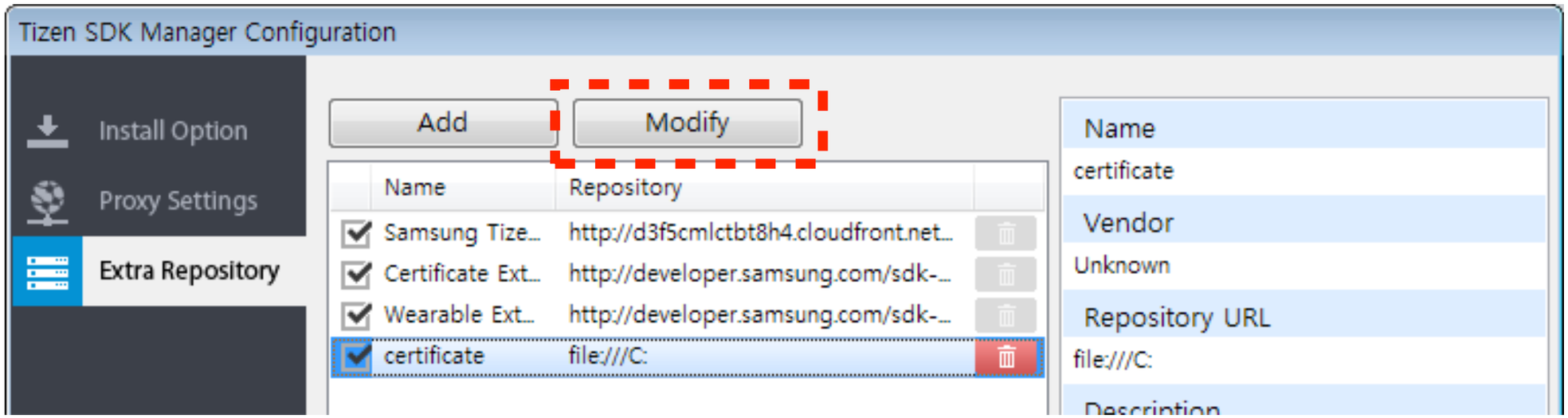
To remove an extra repository, click the Trash icon for the repository in the table, and click **Confirm**.



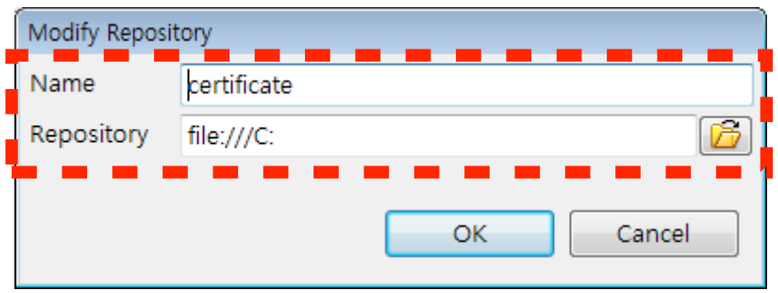
If the external repository is removed, the packages from the external repository are deprecated.

Tizen SDK Installation Options

To modify an extra repository, click the target repository and click **Modify** in the table.

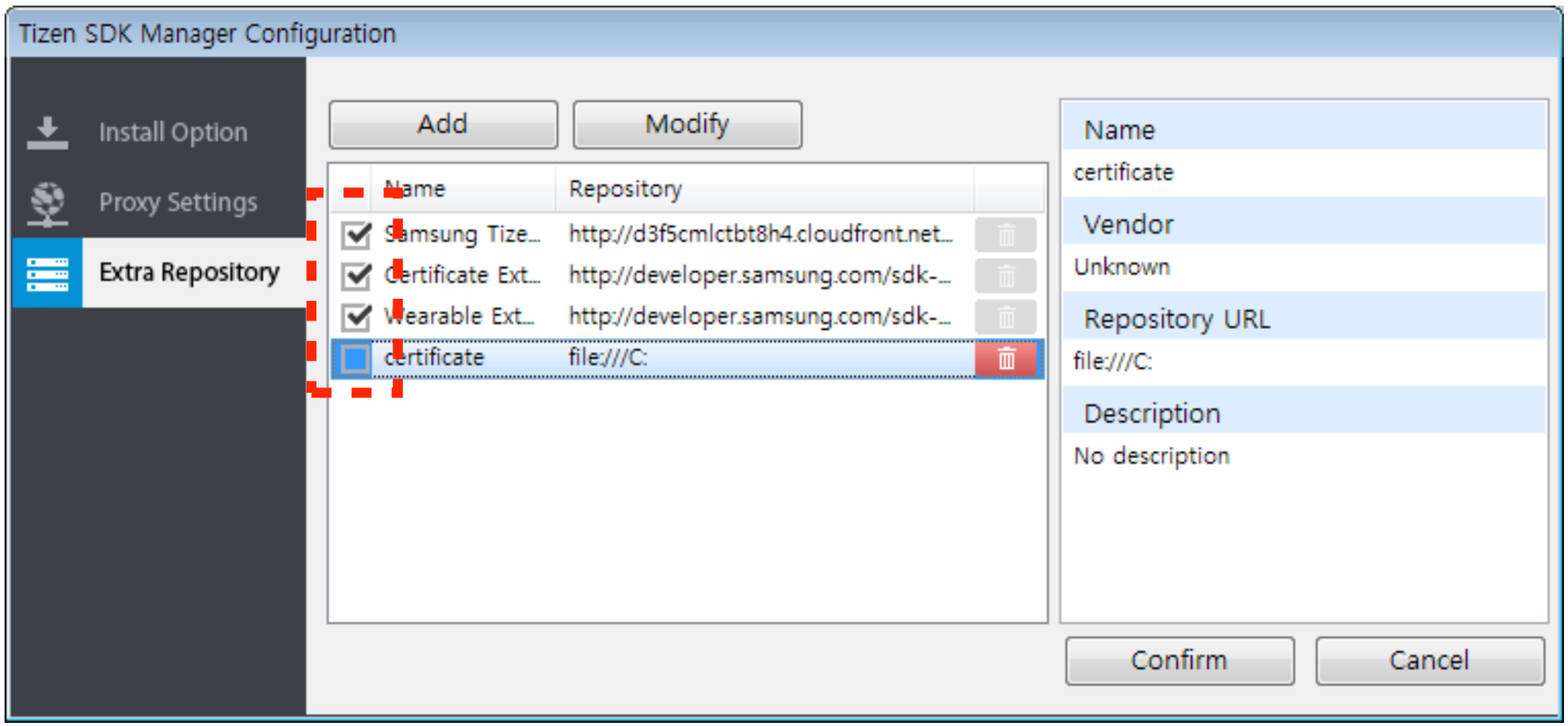


When the **Modify Repository** dialog box appears, modify the **Name** and **Repository** fields. The repository indicates the external server address.
You can also click the folder icon on **Repository** to select a local image file or local server location.



Tizen SDK Installation Options

To activate or deactivate an extra repository, select the check box of the repository to be activated, or clear the check box of the repository to be deactivated.

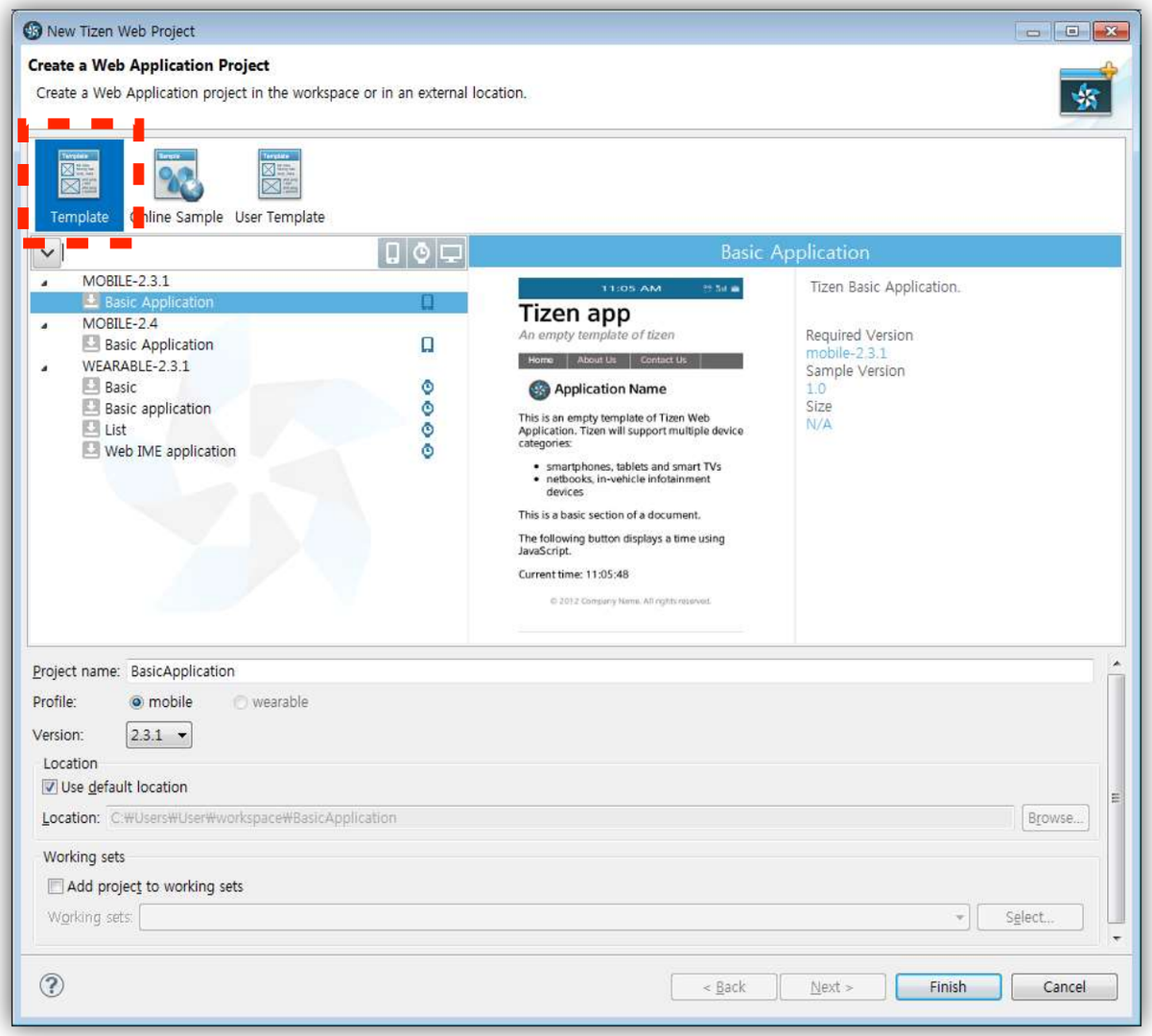


Tizen IDE Views

- The **Project Explorer** view provides a hierarchical view of all resources in the workspace. You can open files for editing, or select resources for operations, such as building, packaging, signing, or validating an application.
- The **Connection Explorer** view shows the devices connected to the system. A list of connected devices is available after connecting a device or launching a Tizen Emulator with a tree view.
- The **Outline** view shows the structure outline and Object hierarchy of C/C++ and Javascript
- The **Property** view shows the property of selected files on **Project Explorer**, such as file path, size, editability, and name.
- The **Problem** view shows the status of build and packaging error or warning.
- The **Console** view shows the target or emulator log when applications are run.
- The **Edit** view is the code editor area.

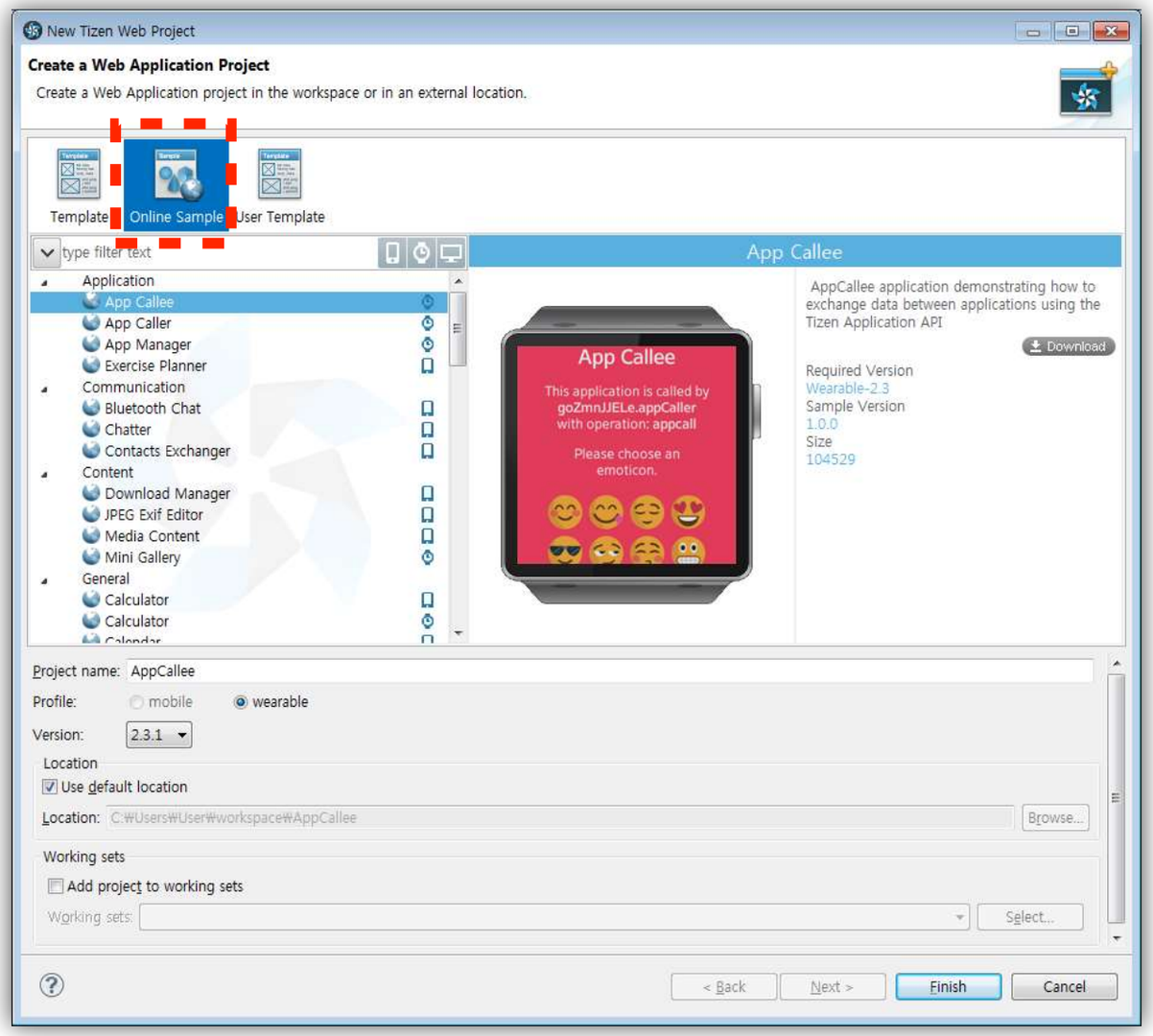
Tizen SDK Project Type

The **Template** tab provides a list of templates with basic structure the developers can use to create their own Web application project.



Tizen SDK Project Type

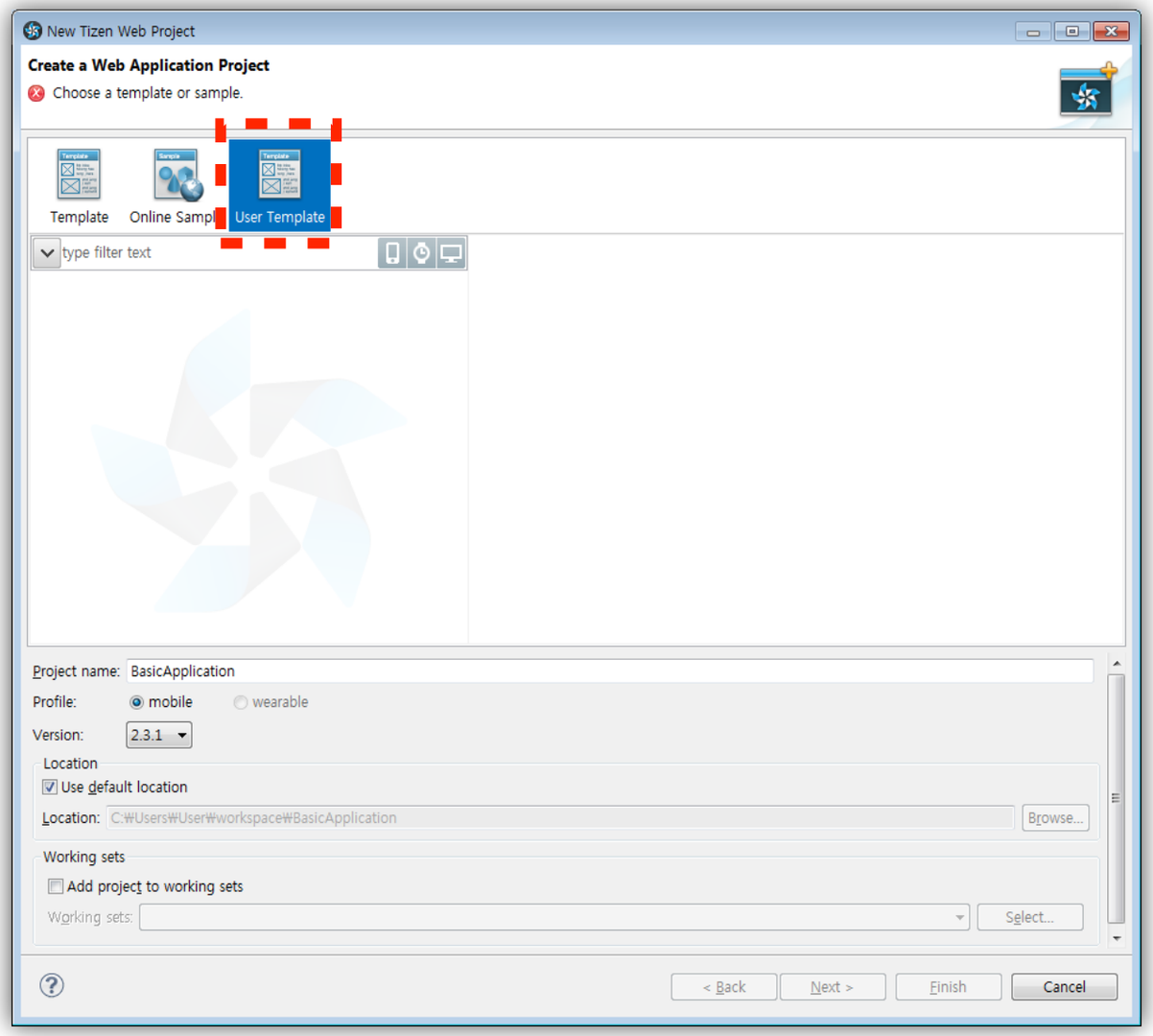
The **Online Sample** tab provides a list of sample applications demonstrating the usage of various APIs and UI design which developers can refer to.



If the list of online samples does not appear properly, see **Appendix: Custom Network Settings** (pages 103-104).

Tizen SDK Project Type

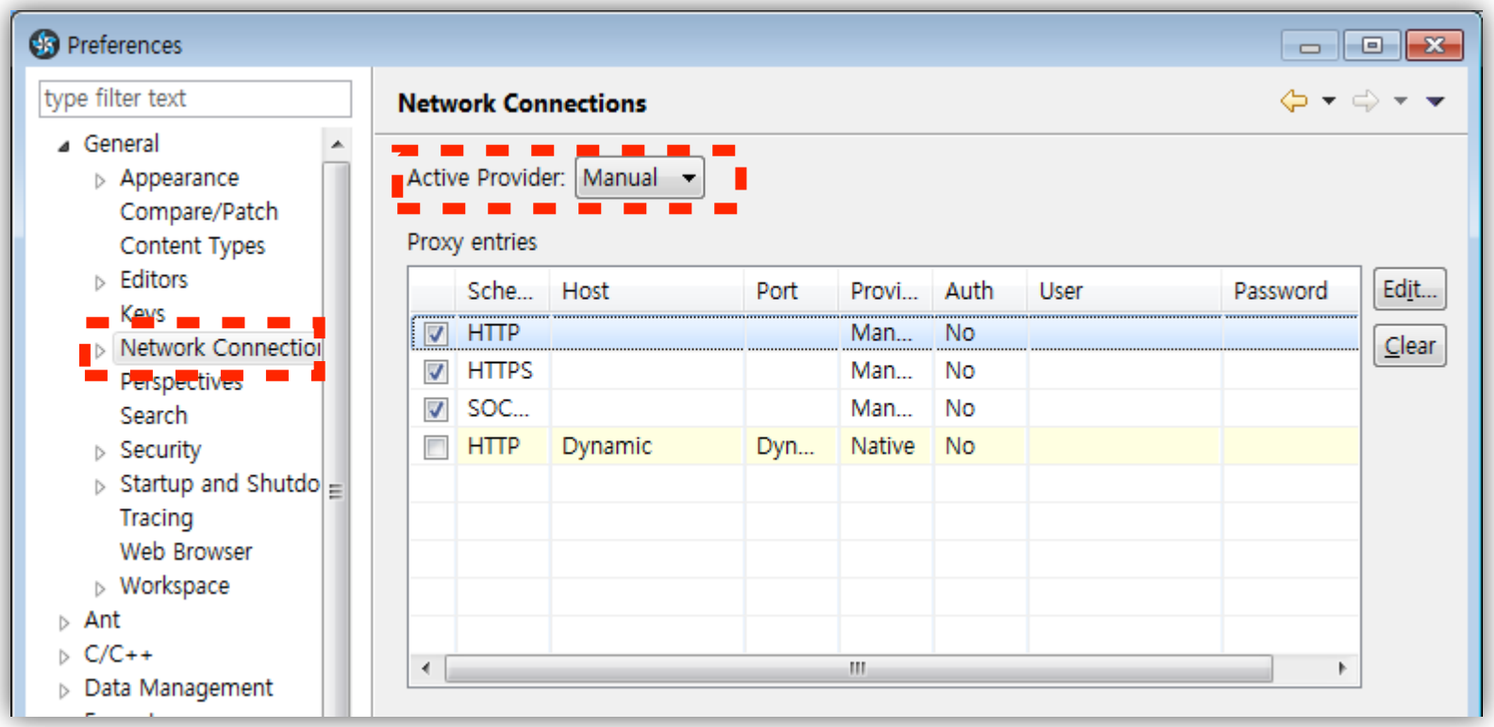
The **User Template** tab provides a list of user-customized templates that can be used as a basis for creating other projects.



Custom Network Settings (for in-campus use only)

If the list of online samples does not appear properly, you may have to change the network settings.

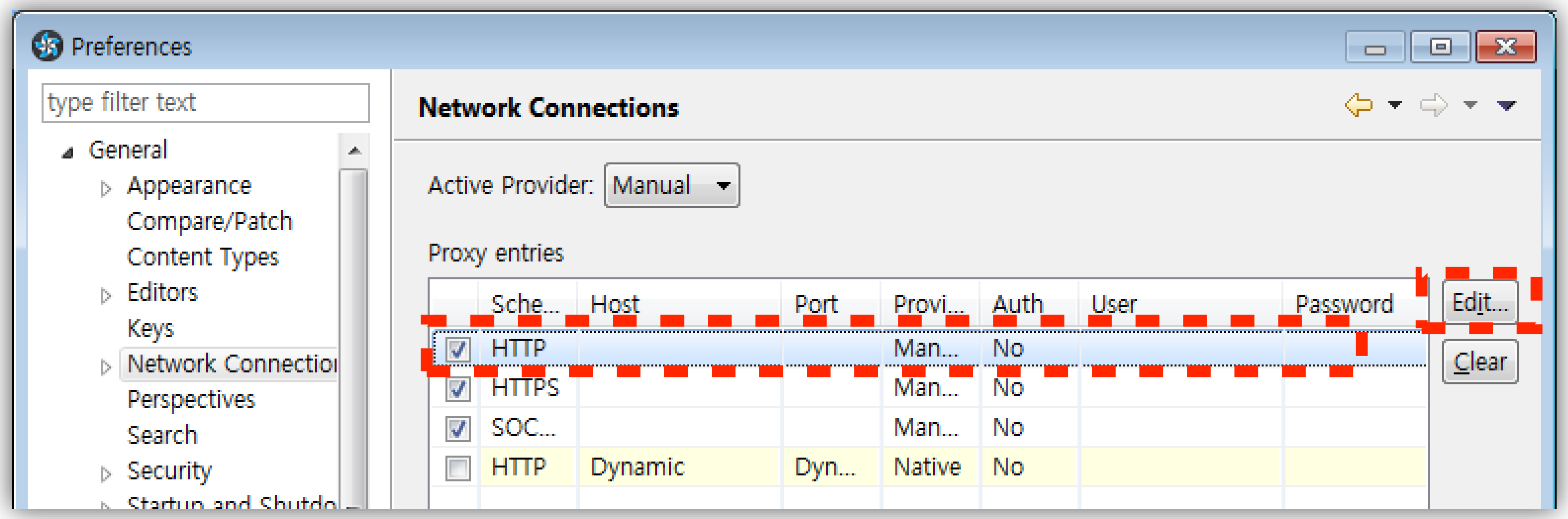
Go to **Window > Preferences > General > Network Connections** and change the **Active Provider** option to **Manual**.



Custom Network Settings

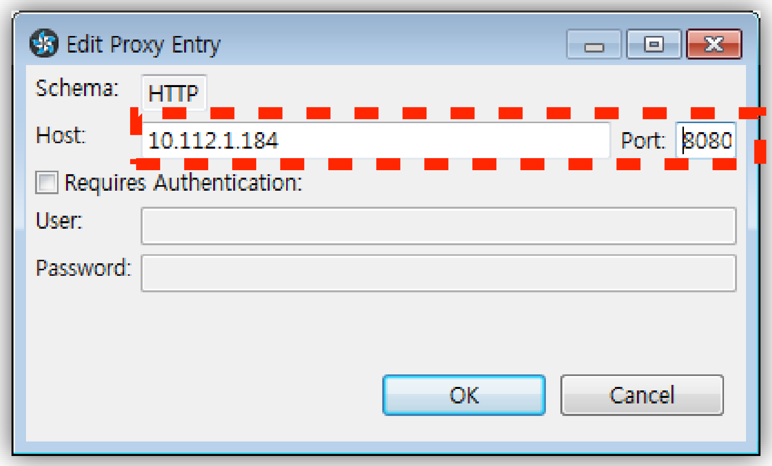
(for in-campus use only)

Select HTTP and click **Edit**.



Change the proxy setting accordingly

For the Seoul R&D campus, the host: 10.112.1.184 and the port is 8080.



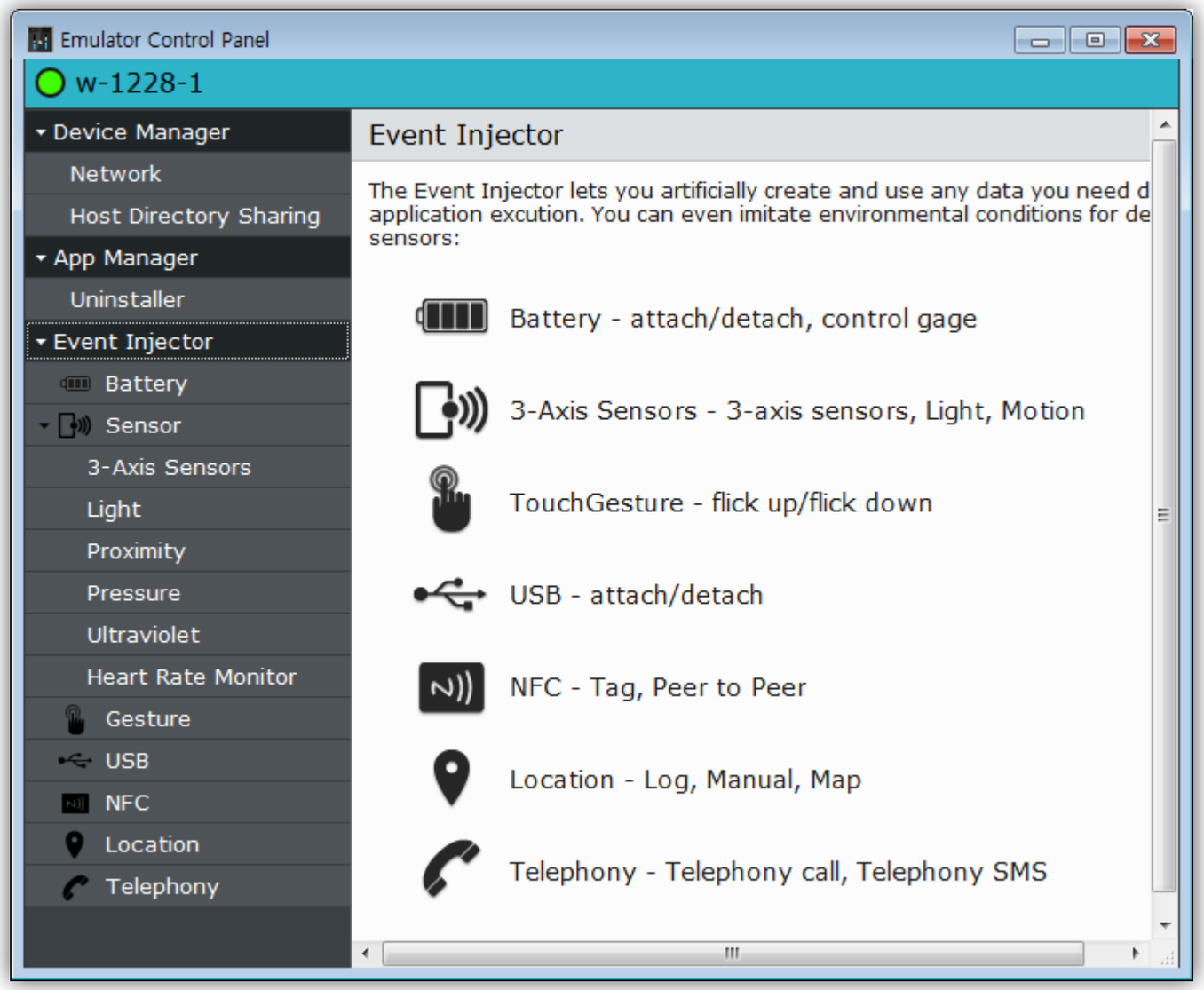
Do the same for HTTPS and click **Apply**.

Emulator Control Panel

Right-click on the Emulator screen to view more options on the Emulator.
Click **Control Panel**.

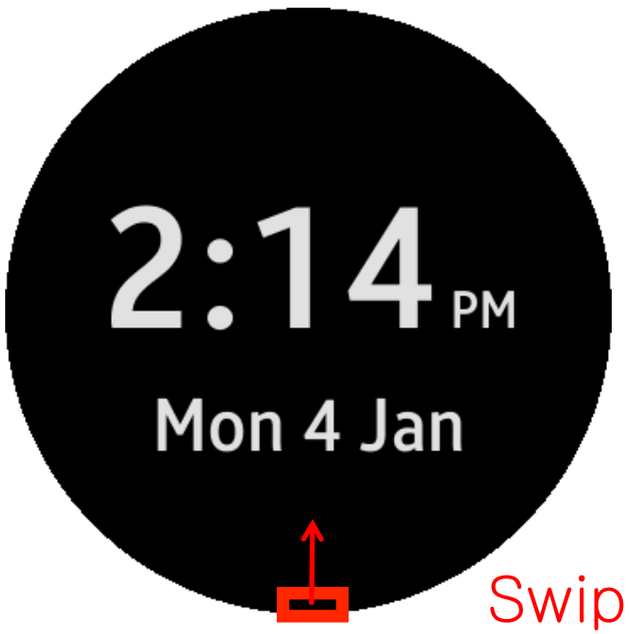
Emulator Control Panel

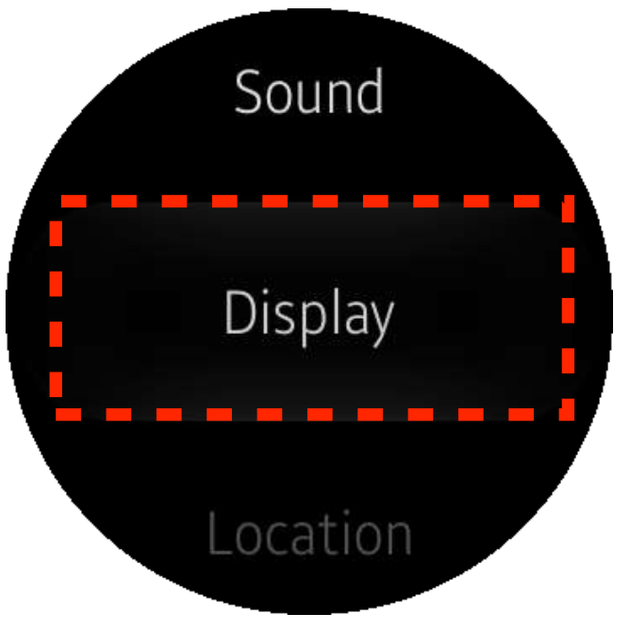
In the **Emulator Control Panel**, developers can create and use any data required during application execution and imitate environmental conditions for the device sensors.

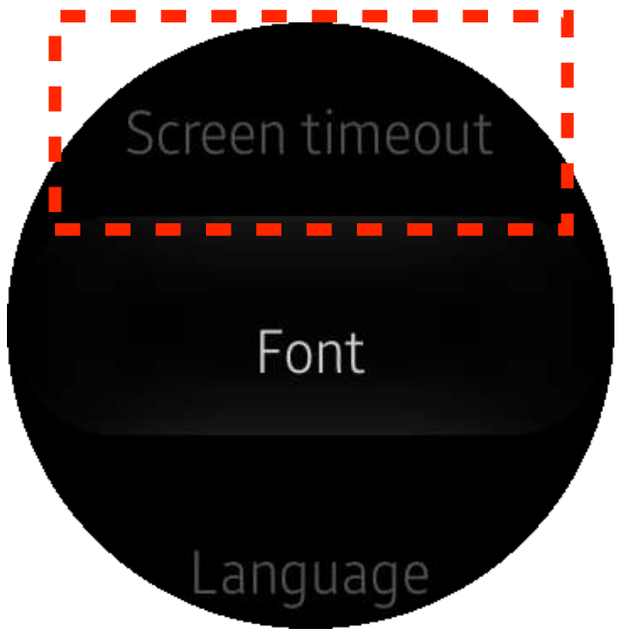


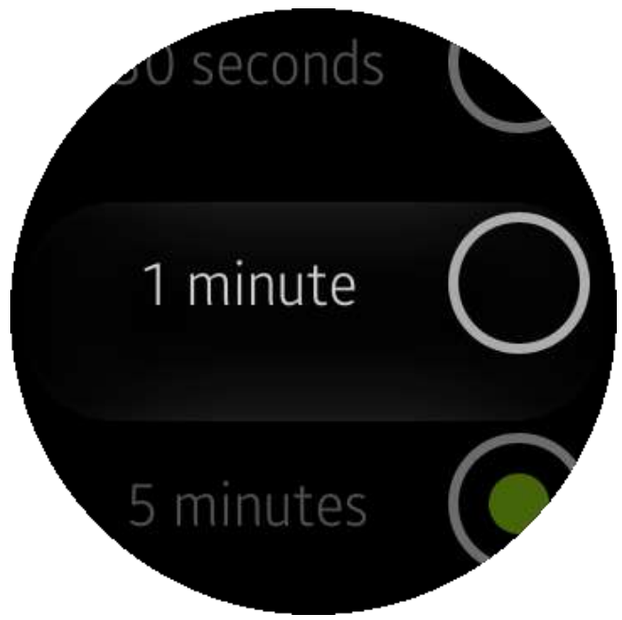
Screen Timeout on the Emulator

You can adjust the screen timeout of the emulator in **Settings** > **Display** > **Screen timeout**.









You can troubleshoot your Tizen SDK installation by referring to the installation log file. The log file is located in a different directory based on your operating system:

- Windows® 7: `%LOCALAPPDATA%\.installmanager\install-log`
- Windows® XP: `%USERPROFILE%\Local Settings\Application Data\.installmanager\install-log`
- Ubuntu, MacOS®: `$HOME/.installmanager/install-log`

If the Install Manager fails to connect to the SDK package server:

- Check whether you can access the Tizen Web site using the Web browser on the system where you are installing the SDK.
- If not, install the SDK using the SDK image.
- Check whether you are using a network proxy. If yes, run the Install Manager. Click **Settings** and select the desired option. If the proxy server needs authentication, an ID and password dialog appears.
- The proxy option is not provided anymore.

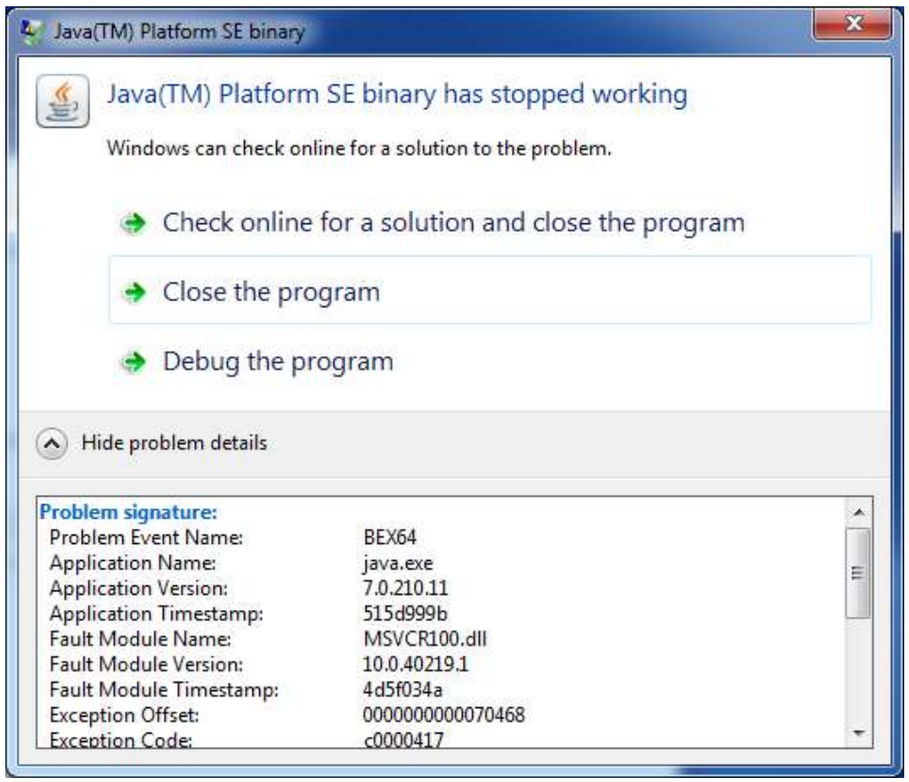
When installing the Tizen SDK using the SDK image, you may see the **Cannot open SDK image file** dialog box.

The box is displayed if you are using the JDK1.6 updates 26 JDK. To avoid this problem, ensure that you are using the latest version of Java.

See **JDK Requirements** (pages 7-9) for the JDK installation guide.

Crashing of Java during SDK Installation

During the Tizen SDK installation, the Java application can crash unexpectedly, and the following window is displayed.



To avoid this problem:

- Ensure that you are using the latest version of the error DLL file, such as `MSVCR100.dll`. If the error file version is not the latest, upgrade it.
- Update your system with all the Windows-related updates using Windows Update.

If the Install Manager does not appear, an error may have occurred in the JDK installation.

You can check your problem by following these directions:

- Run the Install Manager with the –help options.

```
./install-manager.exe -help
```

- If you see the following message, the Java libraries are not suitable to Java executables.

  "Registry key 'Software₩JavaSoft₩Java Runtime Environment₩CurrentVersion' has value 'XXX', but 'XXX' is required."

The cause is that Java files in System32 do not match the Java Runtime Environment in the registry.

To avoid this problem, copy the `java.exe` file to the System32 directory.

If Tizen Emulator does not appear when you launch it, you may face the same trouble log at `<TIZEN-SDK-DATA>/emulator/vms/<Emulator name>/logs/emulator.log` file.

Troubleshooting

If the Emulator does not work properly, there might be an error in the HAXM.

The Intel Hardware Accelerated Execution Manager (Intel HAXM) is a hardware-assisted virtualization engine (hypervisor) that uses Intel Virtualization Technology (VT) to speed up Tizen application emulation on a Windows® or Mac® host machine.

HAXM is supposed to be installed automatically as part of the Tizen SDK installation.

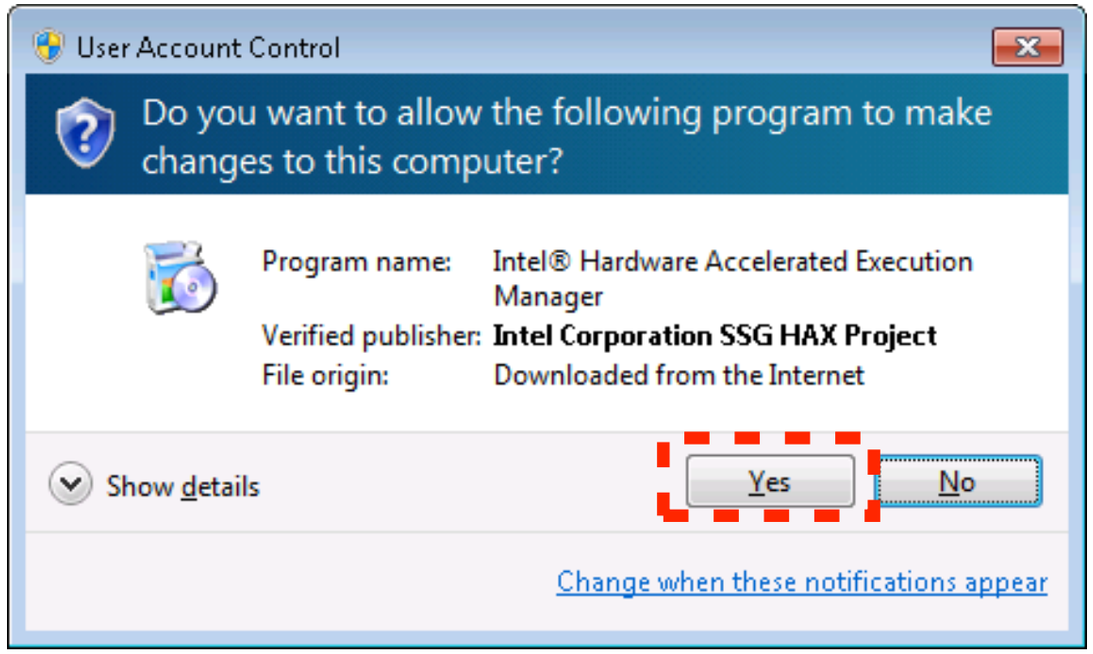
However, to install HAXM separately, you can download the Windows installer package using the link below:
http://download.tizen.org/sdk/haxm/1.1.9/win/intelhaxm-tizen.exe

Troubleshooting

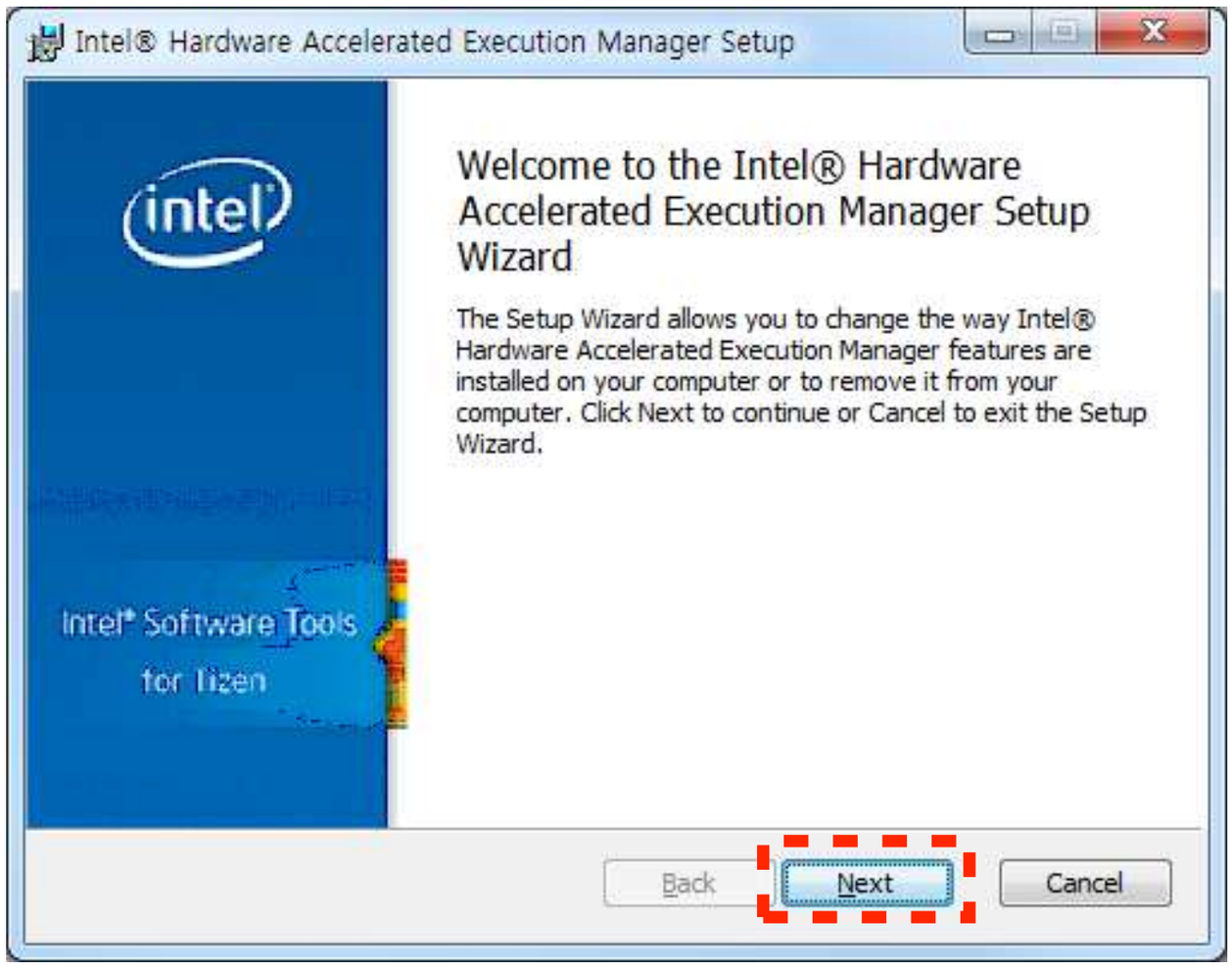
HAXM supports the following Windows® versions:

- Windows® 7 (32/64-bit)
- Windows® Vista (32/64-bit)
- Windows® XP SP2 or later (32-bit only)

Run the installer and accept the UAC prompt, if you are running the stand-alone installer.



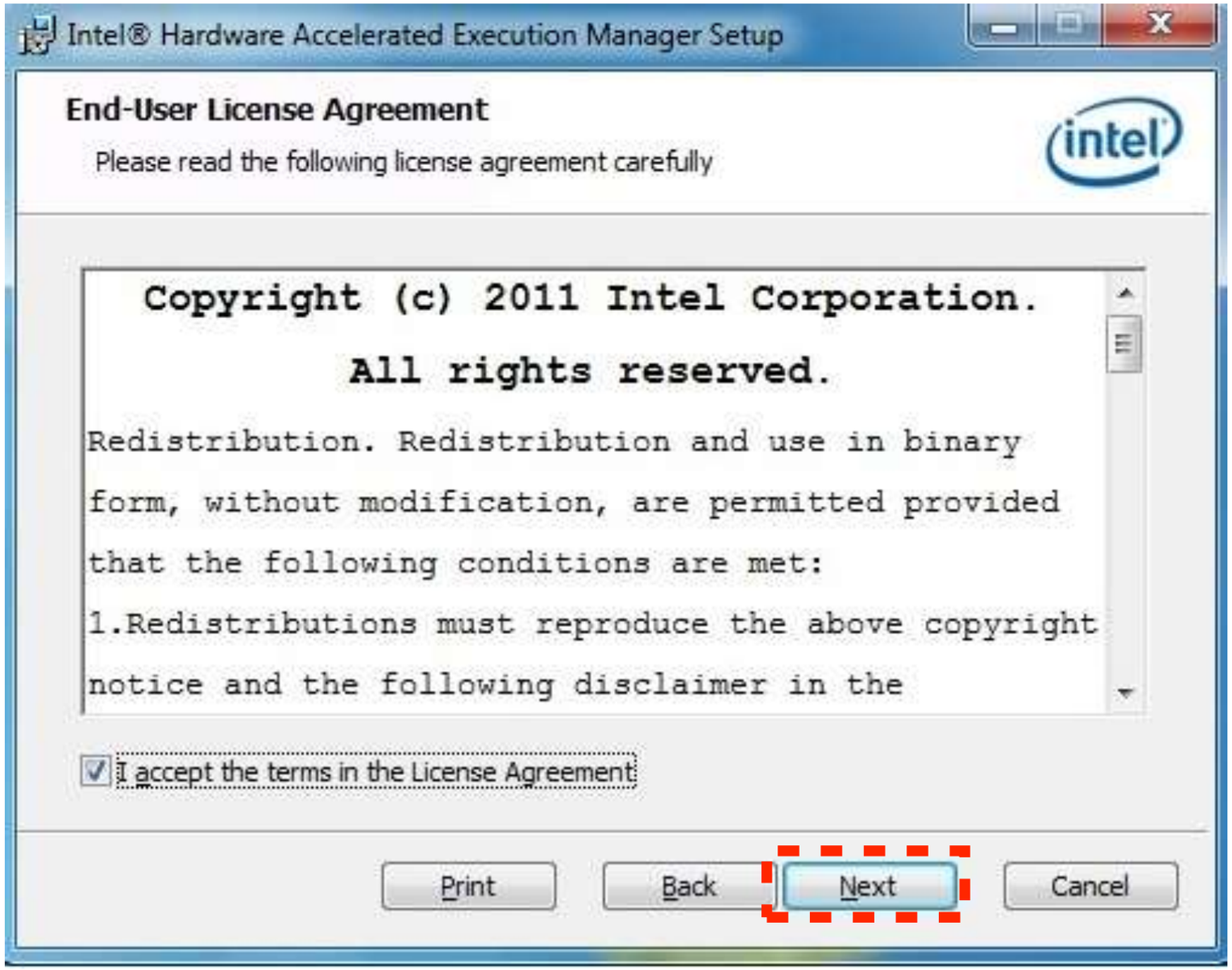
When the first HAXM install screen is displayed, click **Next**.



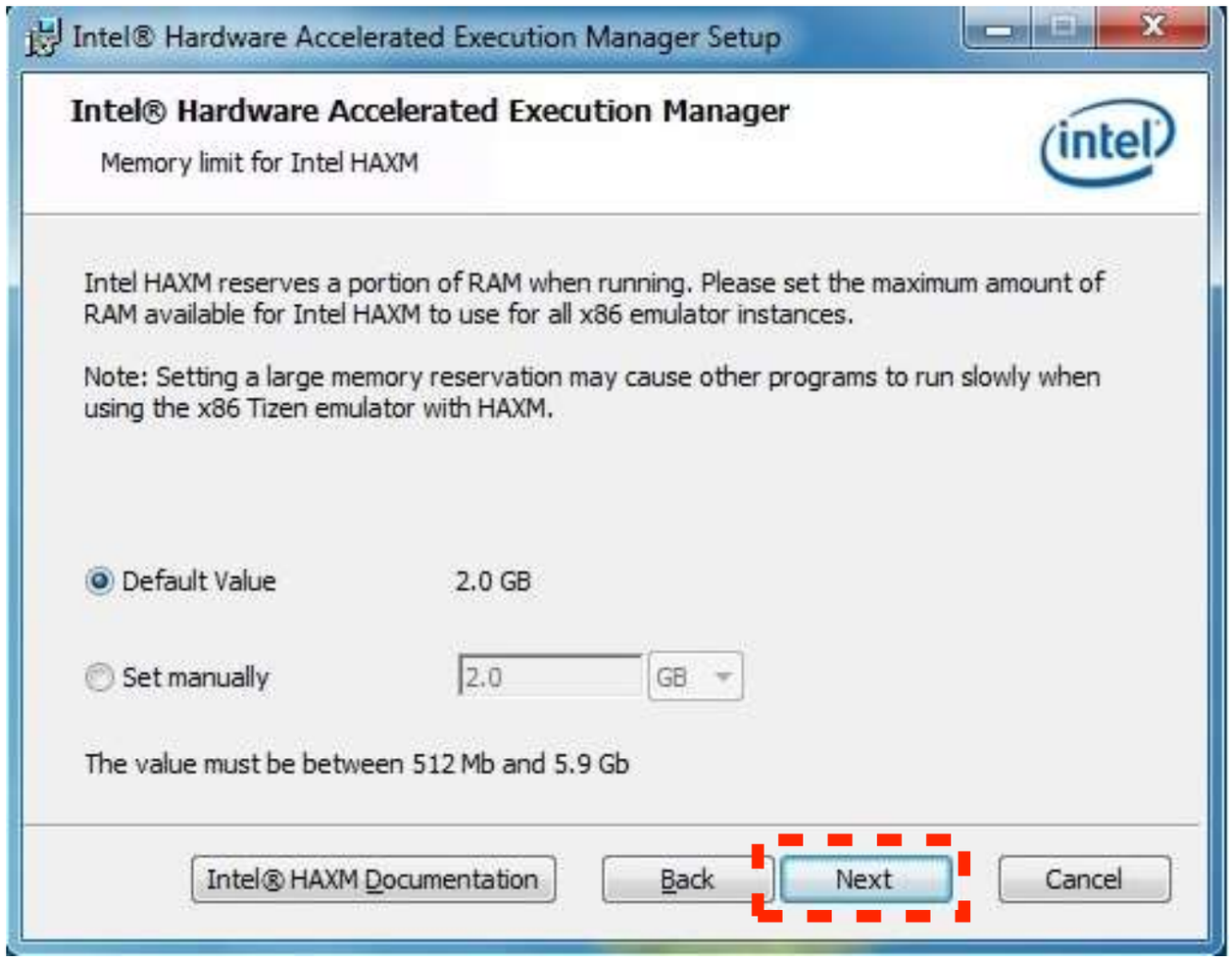
You can access the documentation at any time by clicking **Intel HAXM Documentation**.

Troubleshooting

Read and accept the Intel HAXM End-User License Agreement (EULA).



You are prompted to adjust the amount of RAM to be allocated to Intel HAXM.



Note

The installer also functions as a configuration tool for Intel HAXM. To change the memory settings, run the installer again.

The next screen confirms your Intel HAXM memory allocation settings. Click **Install** to proceed.

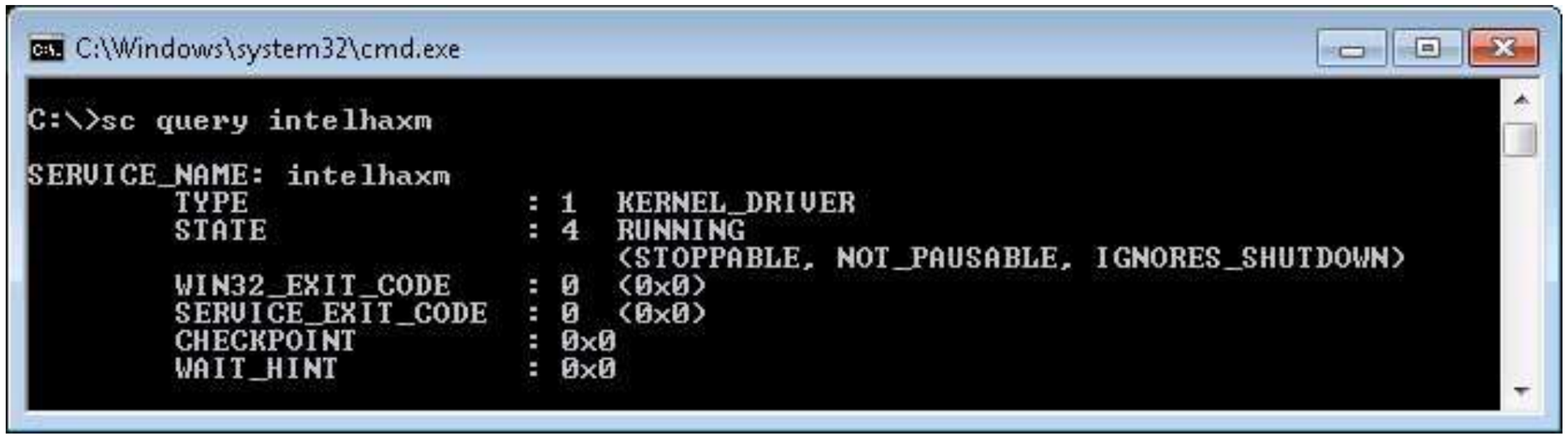
Troubleshooting

When the Intel HAXM installation is finished, click **Finish** to exit the installer.

Troubleshooting

To verify that Intel HAXM is running, open a Command Prompt window and execute the command: `sc query intelhaxm`

If Intel HAXM is working, the command will show a status message indicating that the state is `4  RUNNING`.



Starting and Stopping HAXM

To stop or start Intel HAXM, open a Command Prompt window with administrator privileges and execute one of the following commands:

- Stop HAXM: `sc stop intelhaxm`
- Start HAXM: `sc start intelhaxm`

Adjusting Intel HAXM Memory Allocation

To change the amount of memory allocated to Intel HAXM, run the installer again.

> **Note**
>
> Changes to Intel HAXM memory settings take effect when Intel HAXM is restarted. The currently running emulators continue to use the previous memory setting.

Removing HAXM

Warning

Close all instances of the Tizen emulator before removing Intel HAXM.

To uninstall Intel HAXM, run the installer again or use the Control Panel.

Important

Removing Intel HAXM disables the acceleration of all Tizen emulators, but the Tizen emulator still functions. Installing Intel HAXM again re-enables the emulator acceleration.

Troubleshooting HAXM (BIOS/OS Setting)

Hardware feature required by HAXM may be disabled by BIOS or OS. If your installation fails because of a hardware requirement, please check BIOS/OS as followed suggestion:

- Make sure VT is enabled in BIOS.
- Make sure Execute Disable Bit is enabled in BIOS.
- Make sure Data Execution Prevention is enabled in Windows. On the Windows platform, click **Control Panel > System > Advanced system settings > Advanced tab > Performance** section, **Options** (or **Settings**) button **> Data Execution Prevention**. Make sure that DEP is enabled.