Windows Platform Installation Guide

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IIP-Ecosphere Platform Documentation
The slides are divided into:

1. Platform install using pre-defined Docker image
   a) Install Docker.
   b) Running the container.
   c) Using the pre-defined development environment.

2. Full manual Installation of the platform
   a) Install the required setup (Prerequisites).
   b) Install the IIP-Ecosphere platform.
   c) Start the IIP-Ecosphere platform.
   d) Stop the IIP-Ecosphere platform.
• In the Platform Handbook (in the link below), you can find more detailed information about each of the steps in this guide.

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Docker Engine Installation - step (1)

- If Docker Engine v20.10.7 is not installed, then Install Docker Desktop 3.4.0 which uses Docker Engine v20.10.7 and all the prerequisites it may needs. Please enter the following commands into your console:

  - curl

  - rename "Docker%20Desktop%20Installer.exe" DockerDesktopInstaller.exe

  - start /w "" "DockerDesktopInstaller.exe" install
You should install **Windows Sub system for Linux (WSL)**, which is required for Docker in Windows, please see the Instructions to install **WSL** in Windows:

https://ubuntu.com/tutorials/install-ubuntu-on-wsl2-on-windows-10#1-overview
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Running the Container

- Use the following command to pull the image and run it on your machine
  - `docker run -p 6080:80 -v /dev/shm:/dev/shm
    iipecosphere/dev-container:0.1`

  - Your screen should look like: (See next slide)
Running the Container using pre-defined Docker image
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Development Environment

• To access the pre-defined working environment use any browser with the URL: `localhost:6080` OR replace the `localhost` with the **IP address** of the machine that runs the container.

• You have the IDE Eclipse environment installed and ready to use with a workspace (**eclipse-workspace**) that has Impl.model project.

• You have the platform installed and running (the logs are in `/root/platform/logs`)

• You your screen looks like: (See next slide)
Platform install using pre-defined Docker image

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Full manual Installation of the platform

Required Setup

Notes:

• Please ensure that you use the exact version numbers given for every software in this guide.

• Please do not use "the latest" version of a given software, as these later versions may be incompatible with the current IIP-Ecosphere platform build.
Required Setup - step (1)

- For the installation we will use the command line interface (CLI) or console.
- To open the console search for “Console” in the Start menu.
- Please ensure that you run the console with Administrator rights (right-click and select ”Run as administrator”)
Full manual Installation of the platform

Required Setup - step (2)

• Please note that the current IIP-Ecosphere platform requires Java JDK 11 or 13, no other. In this guide we are installing JDK 13.

• If Java JDK 13 is not yet installed, then install Java JDK 13, using the following CLI commands (enter the following lines in the console and after each press return):

```bash
- curl https://download.java.net/openjdk/jdk13/ri/openjdk-13+33_windows-x64_bin.zip -O openjdk-13+33_windows-x64_bin.zip
- tar xzpvf openjdk-13+33_windows-x64_bin.zip
- setx /M JAVA_HOME "%cd%/jdk-13"
- SET JAVA_HOME=%cd%/jdk-13
- setx /M Path "%Path%;%JAVA_HOME%\bin"
- SET Path=%Path%;%JAVA_HOME%\bin
```
Full manual Installation of the platform

Required Setup - step (3)

• If **Maven 3.6.3** is not installed, then install Maven **3.6.3** by entering the following commands in your console:
  
  ```
  
  - tar xzpvf apache-maven-3.6.3-bin.zip
  - setx /M MAVEN_HOME "%cd%\apache-maven-3.6.3"
  - SET MAVEN_HOME=%cd%\apache-maven-3.6.3
  - setx /M Path "%Path%;%MAVEN_HOME%\bin"
  - SET Path=%Path%;%MAVEN_HOME%\bin
  ```
Full manual Installation of the platform

Required Setup - step (4)

• If **Python v3.9** is not installed, then Install **Python v3.9** by entering the following commands in your console:
  - curl https://www.python.org/ftp/python/3.9.6/python-3.9.6-amd64.exe -0 python-3.9.6-amd64.exe
  - start /w "" "python-3.9.6-amd64.exe" install

• If you want to use a UI (User Interface), there are several applications you may need such as Angular, JavaScript... etc. Please check the platform handbook for more information.
Full manual Installation of the platform

Required Setup - step (5)

- If **Python v3.9** is installed add the requirements by running:
  - python -m pip install scikit-learn==0.23.2
  - python -m pip install numpy==1.20.1
  - python -m pip install pickle==4.0
  - python -m pip install pyflakes
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Platform Installation - step (1)

- Create an empty folder and name it (for example) “Install”, as usual via entering the following commands into your console:
  - mkdir Install
  - cd Install
- Download the Install-Package and unpack it (again, via Console)
  - curl https://jenkins-2.sse.uni-hildesheim.de/view/IIP-Ecosphere/job/IIP_Install/lastSuccessfulBuild/artifact/install.tar.gz -O install.tar.gz
  - tar xzpvf install.tar.gz
Full manual Installation of the platform

Platform Installation - step (1)
Full manual Installation of the platform

Platform Installation - step (2)

- Modify the IP address for the platform in the configuration file (src/main/easy/TechnicalSetup.ivml) to the IP address of your PC (where you have installed the Platform)
- You can type “ipconfig” in the console to see your PC’s IP address
Full manual Installation of the platform

Platform Installation - step (3)

1. Instantiate the platform: Execute the following command in the “Install” folder (the folder you installed the platform in)
   - `mvn install`

2. This will take a while, once finished it looks like this:

   ![BUILD SUCCESS]

   ```
   BUILD SUCCESS
   ...
   Executed 200 actions in 24.955s
   ...
   ```

3. Now the platform is installed, the script files are created and ready to start.
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Full manual Installation of the platform

Start the Platform

• There are two possible always to run the platform:

  • Local: One machine working as platform and device at the same time.

  • Distributed: One machine working as platform, another machine(s) working as device(s)
Full manual Installation of the platform

Platform in Big Picture

- White components are required to start the platform on a machine.
- In the case of Local: light blue components are required on a machine to work as a platform and device.
- In the case of Distributed: grey components are required for each new PC/Device that should be added as a resource in the platform.
Start the Platform local - step (1)

• The broker scripts and files are in “Install/gen/broker” folder, run the following script to start it in separate console:
  - broker.bat

• The platform scripts and files are in the “Install/gen/” folder, run the following script to start it in separate console:
  - platform.bat
Full manual Installation of the platform

Start the Platform local - step (2)

• To make the platform machine working as resource run the following scripts, each one in separate console:
  - broker.bat (“broker” folder)
  - ecs.bat
  - serviceMgr.bat

• The above scripts are exists in “Install/gen” folder.
Full manual Installation of the platform

Start the Platform distributed - step (1)

- Copy the following files and folders from the platform server (the PC you installed the platform on) to the PC/Device that is to be added to the platform as a resource:
  - `gen\ecsJars` (folder)
  - `gen\broker` (folder)
  - `gen\svcJars` (folder)
  - `gen\ecs.bat` (file)
  - `gen\serviceMgr.bat` (file)
Full manual Installation of the platform

Start the Platform distributed - step (2)

- To add the new PC/Device as resource in the platform run the following scripts on the new PC/Device, each one in separate console
  - broker.bat ("broker" folder)
  - ecs.bat
  - serviceMgr.bat

- If everything worked fine your newly added PC/Device should be listed as a platform resource.
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Stop the Platform

• Stopping the platform:

• Type Crtl-C on all the open console to stop them and clean the resources in the reverse order we opened (started) them.

• If asked to quit (Y/N), type Y
Contact

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