ECLIPSE INSTALLATION

AND

ITS USAGE

➢ To install eclipse we need to install some softwares. They are:

- **Java 17 and above** : Download and install Java SE from here

  Link: https://download.oracle.com/java/22/latest/jdk-22_windows-x64_bin.exe

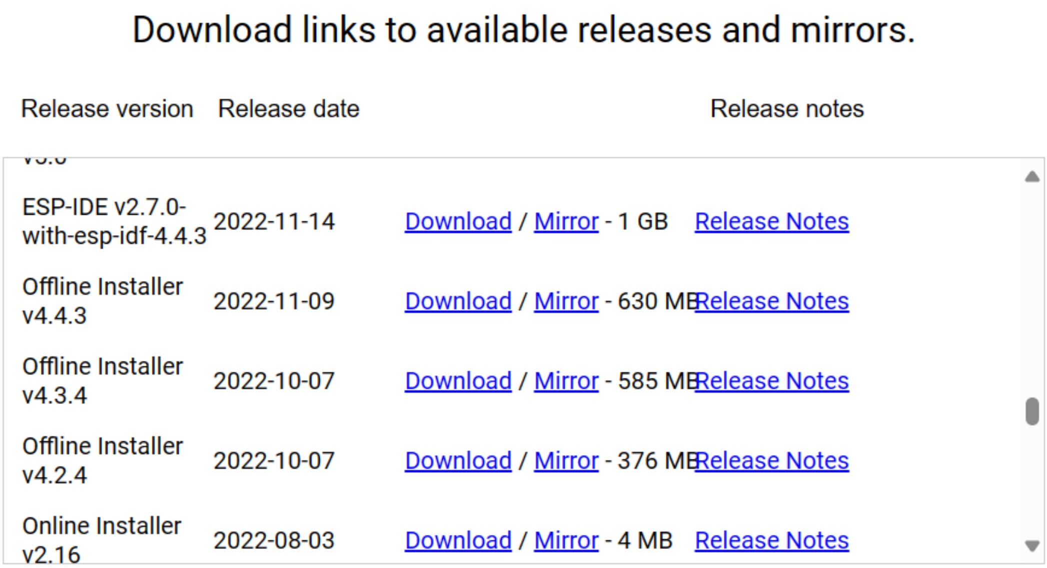
- **Python 3.6 and above** : Download and install Python from here

  Link: https://www.python.org/downloads/release/python-3122/

- **Git** : Get the latest git from here.

  Link: https://git-scm.com/download/win

➢ Now install Espressif IDE:



Download links to available releases and mirrors.

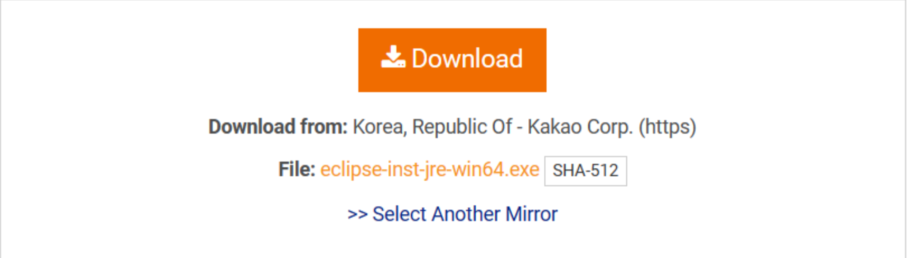
Release version	Release date		Release notes
ESP-IDE v2.7.0-with-esp-idf-4.4.3	2022-11-14	Download / Mirror - 1 GB	Release Notes
Offline Installer v4.4.3	2022-11-09	Download / Mirror - 630 MB	Release Notes
Offline Installer v4.3.4	2022-10-07	Download / Mirror - 585 MB	Release Notes
Offline Installer v4.2.4	2022-10-07	Download / Mirror - 376 MB	Release Notes
Online Installer v2.16	2022-08-03	Download / Mirror - 4 MB	Release Notes

- Install offline installer v4.3.4 :

Link: https://github.com/espressif/idf-installer/releases/download/offline-4.3.4/esp-idf-tools-setup-offline-4.3.4.exe

➢ Install eclipse through this process:

Link: https://www.eclipse.org/downloads/download.php?file=/oomph/epp/2024-03/R/eclipse-inst-jre-win64.exe



Download from: Korea, Republic Of - Kakao Corp. (https)

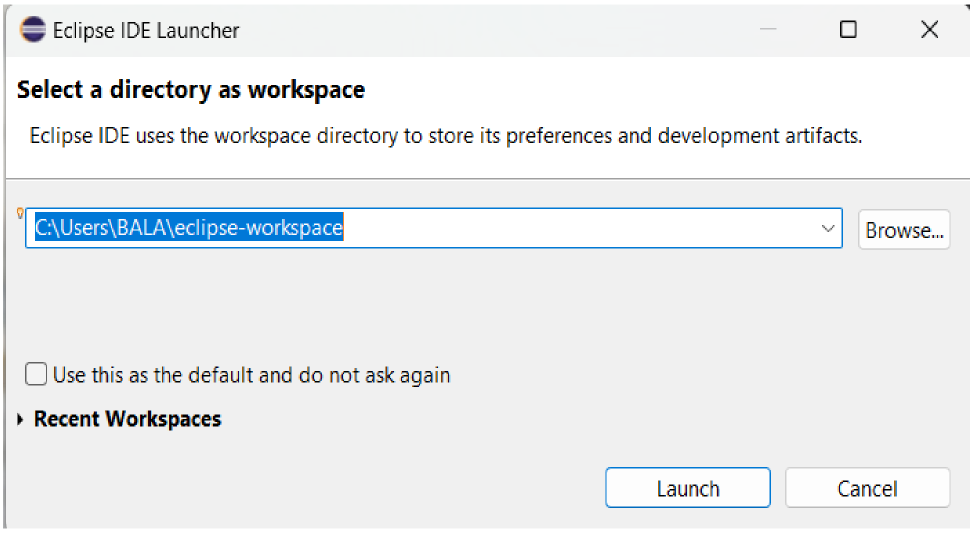
File: eclipse-inst-jre-win64.exe SHA-512

- Now install this packages.
- Now install eclipse using this link:

https://archive.eclipse.org/technology/epp/downloads/release/2022-09/R/eclipse-cpp-2022-09-R-win32-x86_64.zip

- Complete the installation process.

➢ Installing the tools in eclipse:



Eclipse IDE Launcher

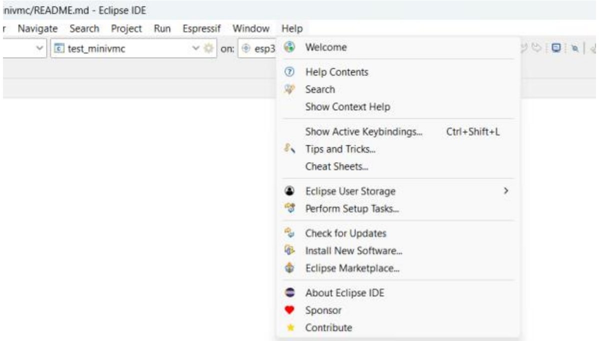
Select a directory as workspace

Eclipse IDE uses the workspace directory to store its preferences and development artifacts.

C:\Users\BALA\eclipse-workspace

□ Use this as the default and do not ask again

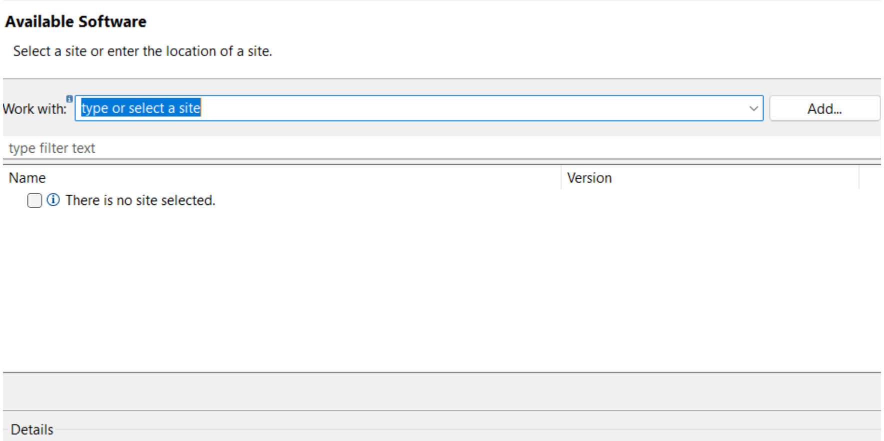
Now click on launch to eclipse.



nivmc/README.md - Eclipse IDE

Click on help

Now click on install new software



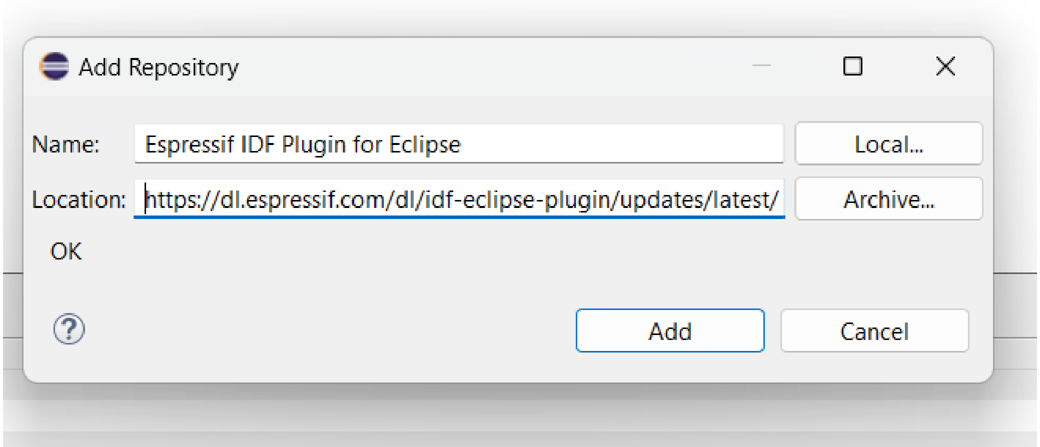
Available Software

Select a site or enter the location of a site.

Work with: type or select a site

There is no site selected.

Now click on add and add the below data in the fields



Add Repository

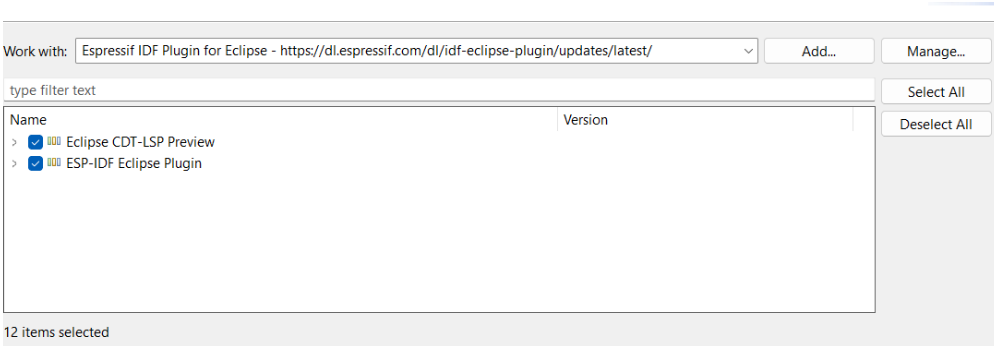
Name: Espressif IDF Plugin for Eclipse

Location: https://dl.espressif.com/dl/idf-eclipse-plugin/updates/latest/

OK

- Name: `Espressif IDF Plugin for Eclipse`
- Location: https://dl.espressif.com/dl/idf-eclipse-plugin/updates/latest/

Now click on add and continue to install espressif

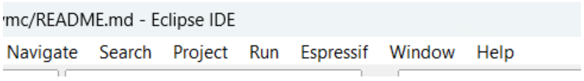


Work with: Espressif IDF Plugin for Eclipse - https://dl.espressif.com/dl/idf-eclipse-plugin/updates/latest/

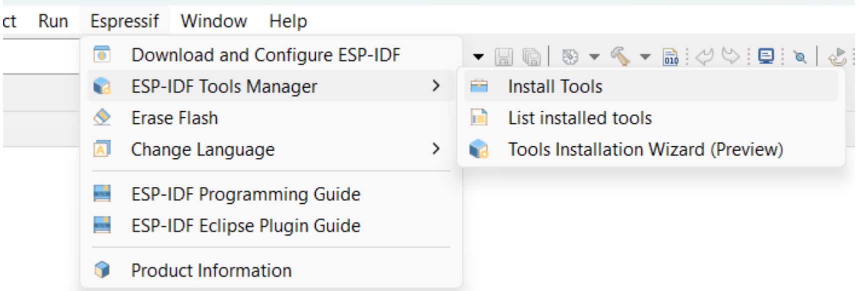
Name	Version
☑ Eclipse CDT-LSP Preview	
☑ ESP-IDF Eclipse Plugin	

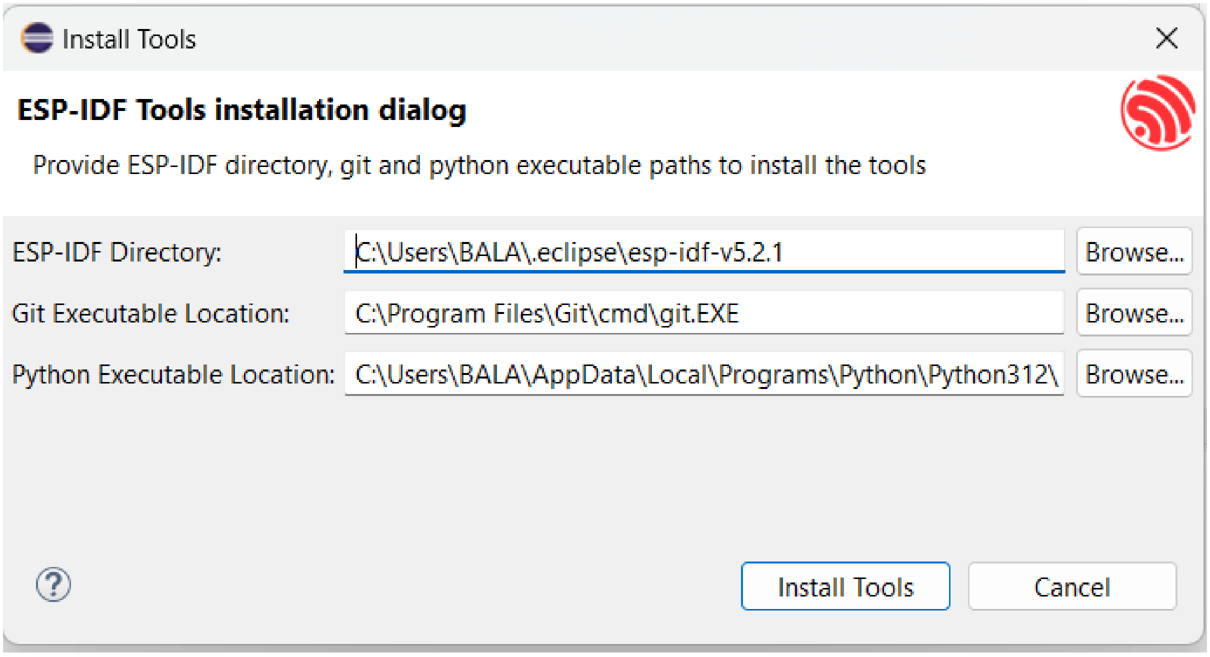
12 items selected

After the above process now espressif is available on the eclipse page



Now click on espressif to install the tools




Install Tools

ESP-IDF Tools installation dialog

Provide ESP-IDF directory, git and python executable paths to install the tools

ESP-IDF Directory: C:\Users\BALA\.eclipse\esp-idf-v5.2.1

Git Executable Location: C:\Program Files\Git\cmd\git.EXE

Python Executable Location: C:\Users\BALA\AppData\Local\Programs\Python\Python312\

click on install tools

Now everything is set to use eclipse.

➢ Install powershell:

Previously installed ESP IDF v4.4.3 is used as powershell

Commands use to run the code

- idf.py set-target esp32 =to set the target

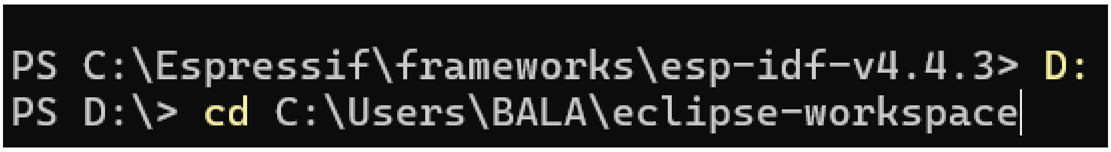
- idf.py fullclean = to clean the project
- idf.py build= to build the project
- idf.py exit =to exit from powershell
- ls = open the folder
- cd=to confirm
- git clone -b "<name_of_the_release_branch>" --recursive https://github.com/espressif/esp-aws-iot= clone the project

PROCESS FOLLOWED TO RUN THE PROJECT IN POWERSHELL

First to run the project we have to provide the path of the file as shown in below steps

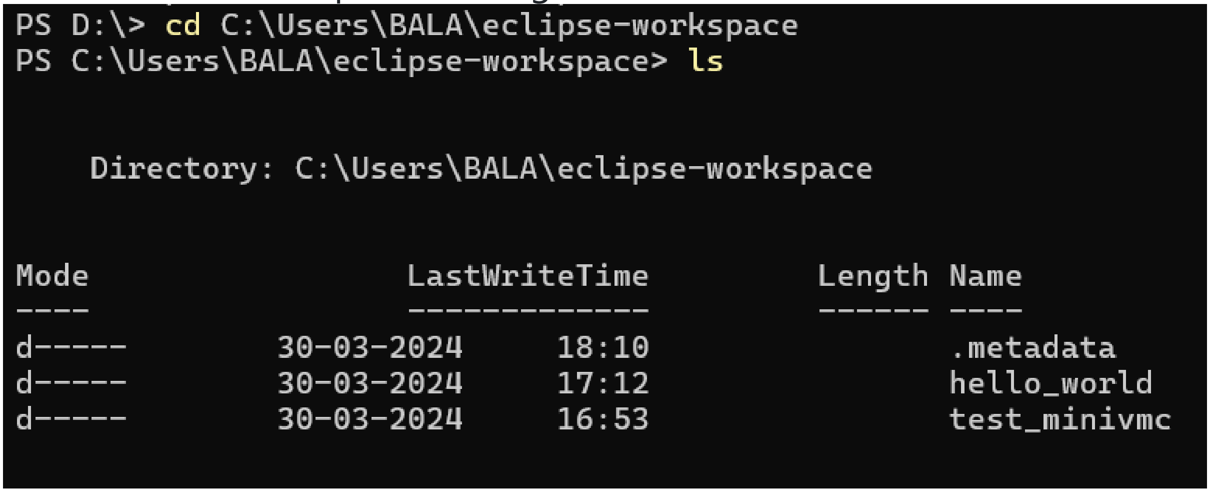
- According to the project file path,select the drive where it is stored
  Ex:
  PS C:\Espressif\frameworks\esp-idf-v4.4.3> D:

- For each step, click on enter after the command
  Ex:



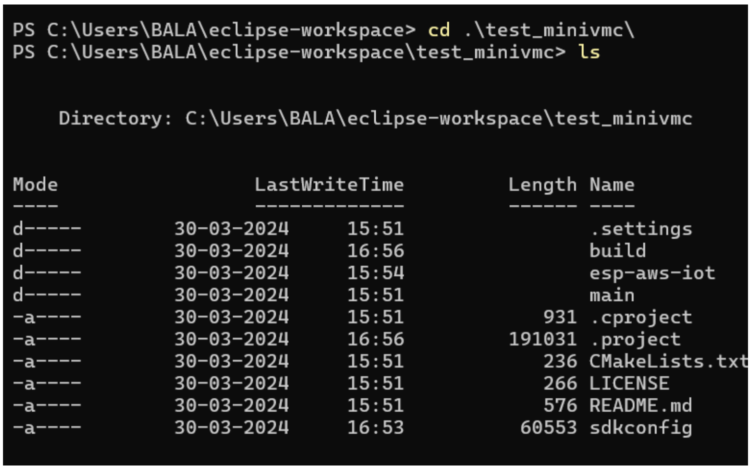
```
PS C:\Espressif\frameworks\esp-idf-v4.4.3> D:
PS D:\> cd C:\Users\BALA\eclipse-workspace
```

- Click on enter and open the file give the command and enter



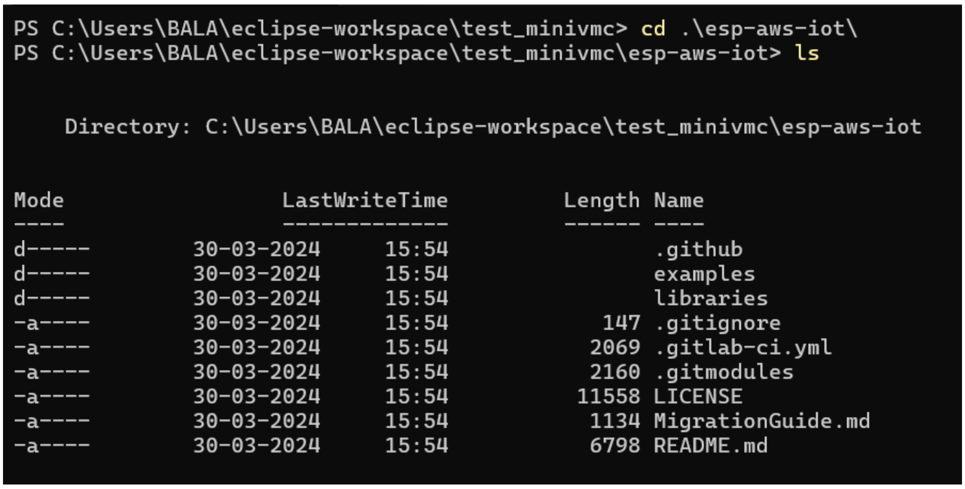
```
PS D:\> cd C:\Users\BALA\eclipse-workspace
PS C:\Users\BALA\eclipse-workspace> ls


    Directory: C:\Users\BALA\eclipse-workspace


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
d-----        30-03-2024     18:10                .metadata
d-----        30-03-2024     17:12                hello_world
d-----        30-03-2024     16:53                test_minivmc
```

- Select the file we needed. (test_minivmc) and open the file with ls command



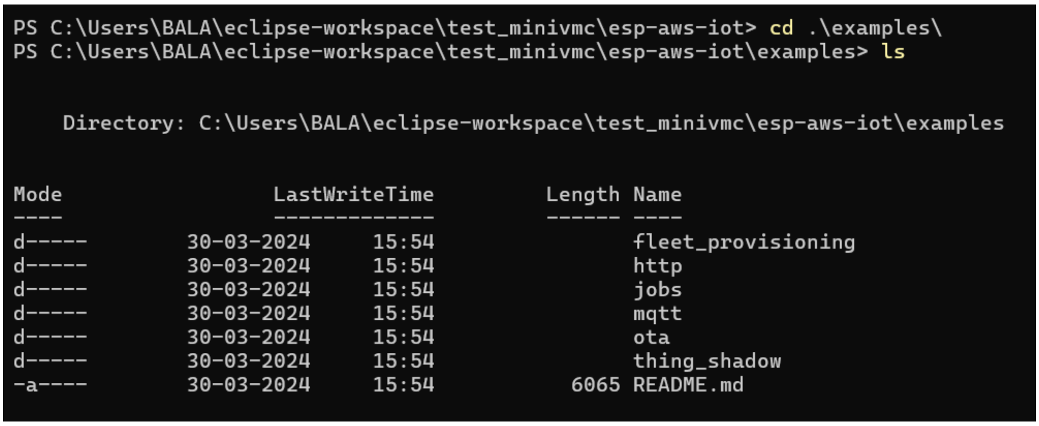
```
PS C:\Users\BALA\eclipse-workspace> cd .\test_minivmc\
PS C:\Users\BALA\eclipse-workspace\test_minivmc> ls


    Directory: C:\Users\BALA\eclipse-workspace\test_minivmc


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
d-----        30-03-2024     15:51                .settings
d-----        30-03-2024     16:56                build
d-----        30-03-2024     15:54                esp-aws-iot
d-----        30-03-2024     15:51                main
-a----        30-03-2024     15:51            931 .cproject
-a----        30-03-2024     16:56         191031 .project
-a----        30-03-2024     15:51            236 CMakeLists.txt
-a----        30-03-2024     15:51            266 LICENSE
-a----        30-03-2024     15:51            576 README.md
-a----        30-03-2024     16:53          60553 sdkconfig
```

- Now select esp-aws-iot file and open them.



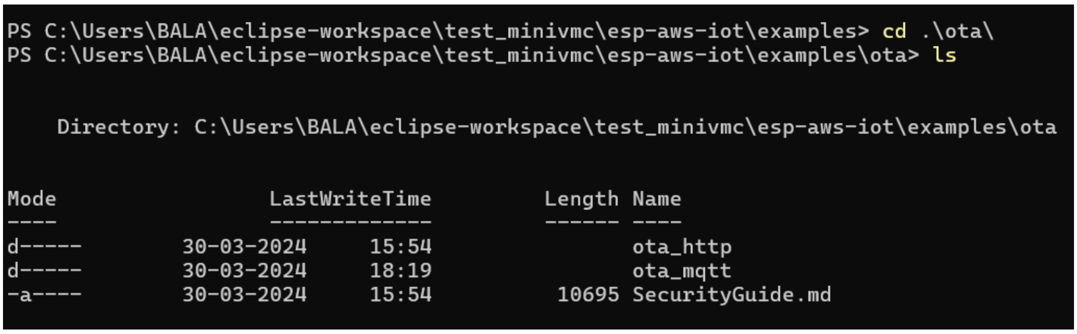
```
PS C:\Users\BALA\eclipse-workspace\test_minivmc> cd .\esp-aws-iot\
PS C:\Users\BALA\eclipse-workspace\test_minivmc\esp-aws-iot> ls


    Directory: C:\Users\BALA\eclipse-workspace\test_minivmc\esp-aws-iot


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
d-----        30-03-2024     15:54                .github
d-----        30-03-2024     15:54                examples
d-----        30-03-2024     15:54                libraries
-a----        30-03-2024     15:54            147 .gitignore
-a----        30-03-2024     15:54           2069 .gitlab-ci.yml
-a----        30-03-2024     15:54           2160 .gitmodules
-a----        30-03-2024     15:54          11558 LICENSE
-a----        30-03-2024     15:54           1134 MigrationGuide.md
-a----        30-03-2024     15:54           6798 README.md
```

- Then select examples and open that file



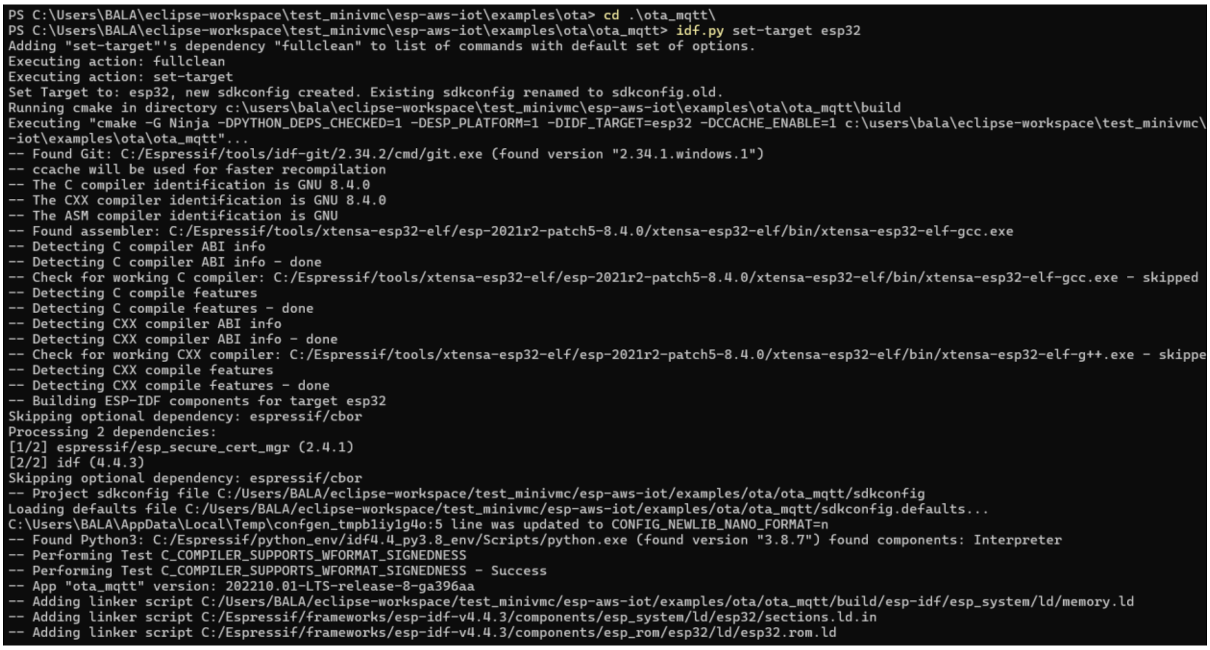
```
PS C:\Users\BALA\eclipse-workspace\test_minivmc\esp-aws-iot> cd .\examples\
PS C:\Users\BALA\eclipse-workspace\test_minivmc\esp-aws-iot\examples> ls


    Directory: C:\Users\BALA\eclipse-workspace\test_minivmc\esp-aws-iot\examples


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
d-----        30-03-2024     15:54                fleet_provisioning
d-----        30-03-2024     15:54                http
d-----        30-03-2024     15:54                jobs
d-----        30-03-2024     15:54                mqtt
d-----        30-03-2024     15:54                ota
d-----        30-03-2024     15:54                thing_shadow
-a----        30-03-2024     15:54           6065 README.md
```

- Now select ota and open that file, select ota-mqtt in it.



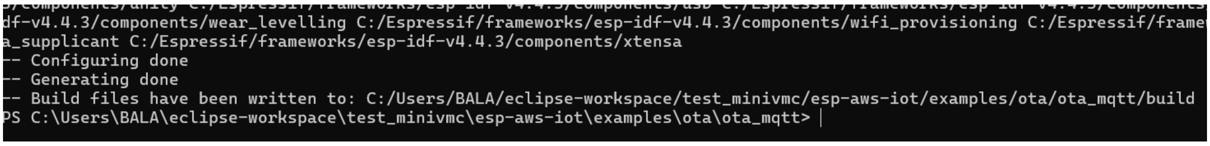
```
PS C:\Users\BALA\eclipse-workspace\test_minivmc\esp-aws-iot\examples> cd .\ota\
PS C:\Users\BALA\eclipse-workspace\test_minivmc\esp-aws-iot\examples\ota> ls


    Directory: C:\Users\BALA\eclipse-workspace\test_minivmc\esp-aws-iot\examples\ota


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
d-----        30-03-2024     15:54                ota_http
d-----        30-03-2024     18:19                ota_mqtt
-a----        30-03-2024     15:54          10695 SecurityGuide.md
```

- Now set the target using the command idf.py set-target esp32



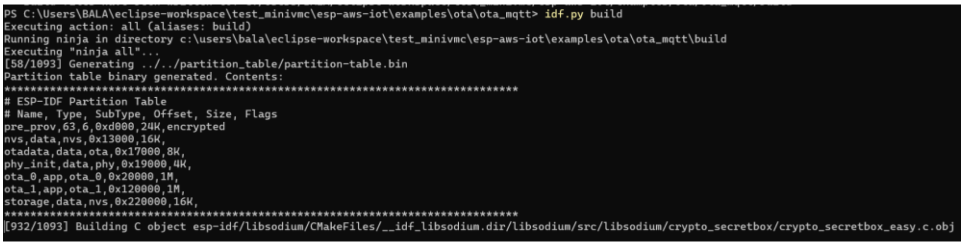
```
PS C:\Users\BALA\eclipse-workspace\test_minivmc\esp-aws-iot\examples\ota> cd .\ota_mqtt\
PS C:\Users\BALA\eclipse-workspace\test_minivmc\esp-aws-iot\examples\ota\ota_mqtt> idf.py set-target esp32
Adding "set-target"'s dependency "fullclean" to list of commands with default set of options.
Executing action: fullclean
Executing action: set-target
Set Target to: esp32, new sdkconfig created. Existing sdkconfig renamed to sdkconfig.old.
Running cmake in directory c:\users\bala\eclipse-workspace\test_minivmc\esp-aws-iot\examples\ota\ota_mqtt\build
Executing "cmake -G Ninja -DPYTHON_DEPS_CHECKED=1 -DESP_PLATFORM=1 -DIDF_TARGET=esp32 -DCCACHE_ENABLE=1 c:\users\bala\eclipse-workspace\test_minivmc\
-iot\examples\ota\ota_mqtt"...
-- Found Git: C:/Espressif/tools/idf-git/2.34.2/cmd/git.exe (found version "2.34.1.windows.1")
-- ccache will be used for faster recompilation
-- The C compiler identification is GNU 8.4.0
-- The CXX compiler identification is GNU 8.4.0
-- The ASM compiler identification is GNU
-- Found assembler: C:/Espressif/tools/xtensa-esp32-elf/esp-2021r2-patch5-8.4.0/xtensa-esp32-elf/bin/xtensa-esp32-elf-gcc.exe
-- Detecting C compiler ABI info
-- Detecting C compiler ABI info - done
-- Check for working C compiler: C:/Espressif/tools/xtensa-esp32-elf/esp-2021r2-patch5-8.4.0/xtensa-esp32-elf/bin/xtensa-esp32-elf-gcc.exe - skipped
-- Detecting C compile features
-- Detecting C compile features - done
-- Detecting CXX compiler ABI info
-- Detecting CXX compiler ABI info - done
-- Check for working CXX compiler: C:/Espressif/tools/xtensa-esp32-elf/esp-2021r2-patch5-8.4.0/xtensa-esp32-elf/bin/xtensa-esp32-elf-g++.exe - skippe
-- Detecting CXX compile features
-- Detecting CXX compile features - done
-- Building ESP-IDF components for target esp32
Skipping optional dependency: espressif/cbor
Processing 2 dependencies:
[1/2] espressif/esp_secure_cert_mgr (2.4.1)
[2/2] idf (4.4.3)
Skipping optional dependency: espressif/cbor
-- Project sdkconfig file C:/Users/BALA/eclipse-workspace/test_minivmc/esp-aws-iot/examples/ota/ota_mqtt/sdkconfig
Loading defaults file C:/Users/BALA/eclipse-workspace/test_minivmc/esp-aws-iot/examples/ota/ota_mqtt/sdkconfig.defaults...
C:\Users\BALA\AppData\Local\Temp\confgen_tmpb1iy1g4o:5 line was updated to CONFIG_NEWLIB_NANO_FORMAT=n
-- Found Python3: C:/Espressif/python_env/idf4.4_py3.8_env/Scripts/python.exe (found version "3.8.7") found components: Interpreter
-- Performing Test C_COMPILER_SUPPORTS_WFORMAT_SIGNEDNESS
-- Performing Test C_COMPILER_SUPPORTS_WFORMAT_SIGNEDNESS - Success
-- App "ota_mqtt" version: 202210.01-LTS-release-8-ga396aa
-- Adding linker script C:/Users/BALA/eclipse-workspace/test_minivmc/esp-aws-iot/examples/ota/ota_mqtt/build/esp-idf/esp_system/ld/memory.ld
-- Adding linker script C:/Espressif/frameworks/esp-idf-v4.4.3/components/esp_system/ld/esp32/sections.ld.in
-- Adding linker script C:/Espressif/frameworks/esp-idf-v4.4.3/components/esp_rom/esp32/ld/esp32.rom.ld
```

- After set target completed we can able to see below message.



```
df-v4.4.3/components/wear_levelling C:/Espressif/frameworks/esp-idf-v4.4.3/components/wifi_provisioning C:/Espressif/frame
a_supplicant C:/Espressif/frameworks/esp-idf-v4.4.3/components/xtensa
-- Configuring done
-- Generating done
-- Build files have been written to: C:/Users/BALA/eclipse-workspace/test_minivmc/esp-aws-iot/examples/ota/ota_mqtt/build
PS C:\Users\BALA\eclipse-workspace\test_minivmc\esp-aws-iot\examples\ota\ota_mqtt>
```

- Now build the project using the command idf.py build



```
PS C:\Users\BALA\eclipse-workspace\test_minivmc\esp-aws-iot\examples\ota\ota_mqtt> idf.py build
Executing action: all (aliases: build)
Running ninja in directory c:\users\bala\eclipse-workspace\test_minivmc\esp-aws-iot\examples\ota\ota_mqtt\build
Executing "ninja all"...
[58/1093] Generating ../../partition_table/partition-table.bin
Partition table binary generated. Contents:
*******************************************************************************
# ESP-IDF Partition Table
# Name, Type, SubType, Offset, Size, Flags
pre_prov,63,6,0xd000,24K,encrypted
nvs,data,nvs,0x13000,16K,
otadata,data,ota,0x17000,8K,
phy_init,data,phy,0x19000,4K,
ota_0,app,ota_0,0x20000,1M,
ota_1,app,ota_1,0x120000,1M,
storage,data,nvs,0x220000,16K,
*******************************************************************************
[932/1093] Building C object esp-idf/libsodium/CMakeFiles/__idf_libsodium.dir/libsodium/src/libsodium/crypto_secretbox/crypto_secretbox_easy.c.obj
```

- After the build complete you able to see a message like this.