UEFI & EDK II Training

Build Setup and Download EDK II Lab – Windows

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Copy and Paste see Lab Guide.md

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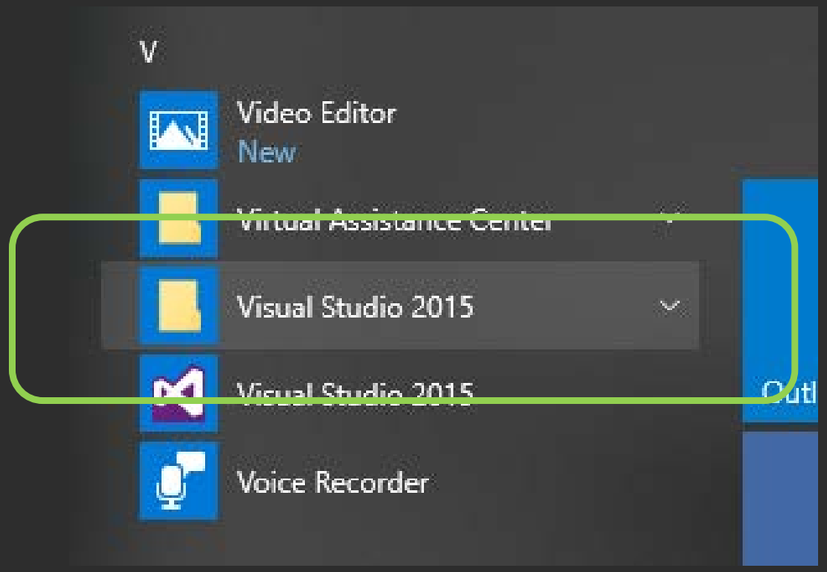
BUILD SETUP LABS

- Pin Visual Studio Command Prompt to Windows Task Bar
- Pre-requisite Setup / Install Build Application Tools
- Download EDK II Source
- Build BaseTools

Pin Virtual Studio Command Prompt

Pin the Visual Studio Command prompt to Windows Task Bar

Pin VS Command Prompt

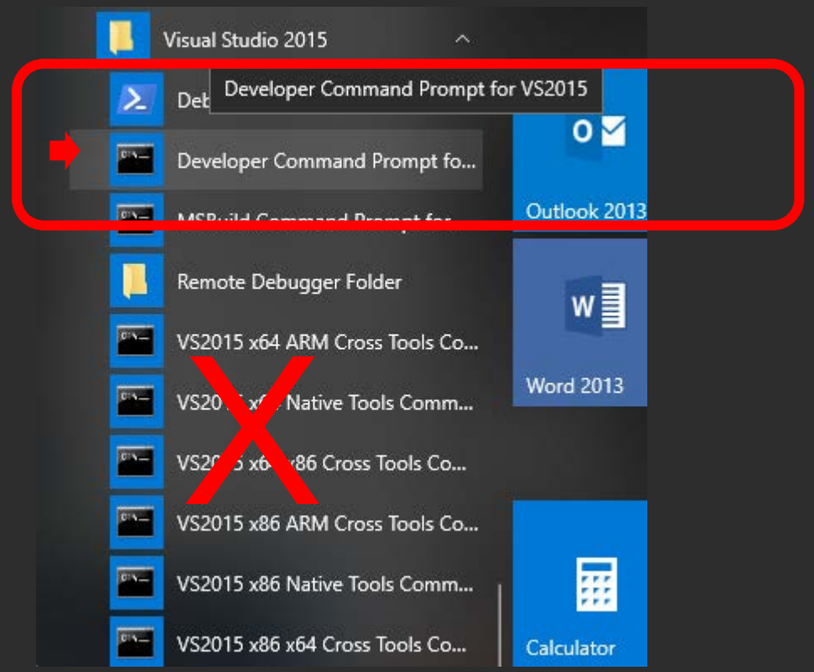


Steps to Pin Visual Studio Command Prompt to task bar for Windows 10

1. Using the Start menu in Windows 10, Left Click on “Windows Key” Lower Left
2. Scroll down from the scroll bar on the right until “**Visual Studio 201*n***”
3. Left Click “**Visual Studio 201*n***”

Pin VS Command Prompt

VS 2015 VS 2017 is similar

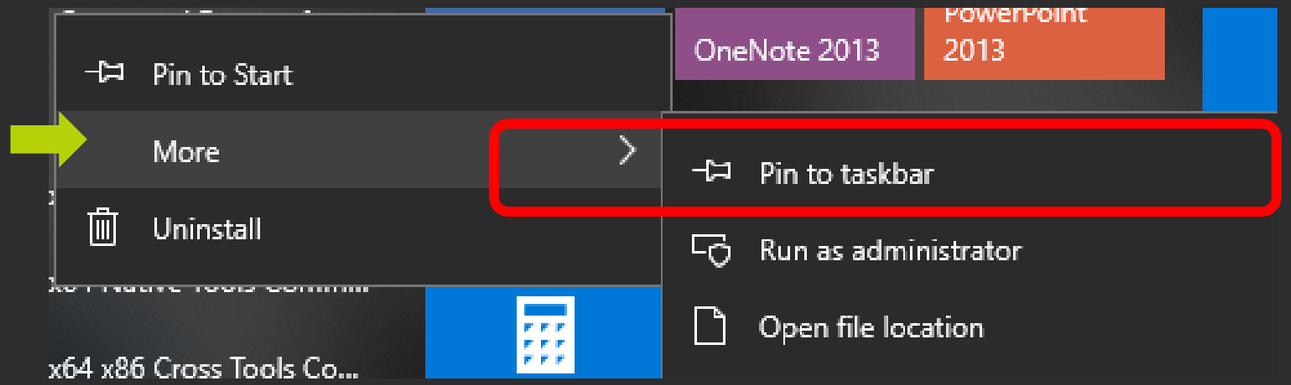


4. Select
“**Developer Command Prompt for VS201n**”

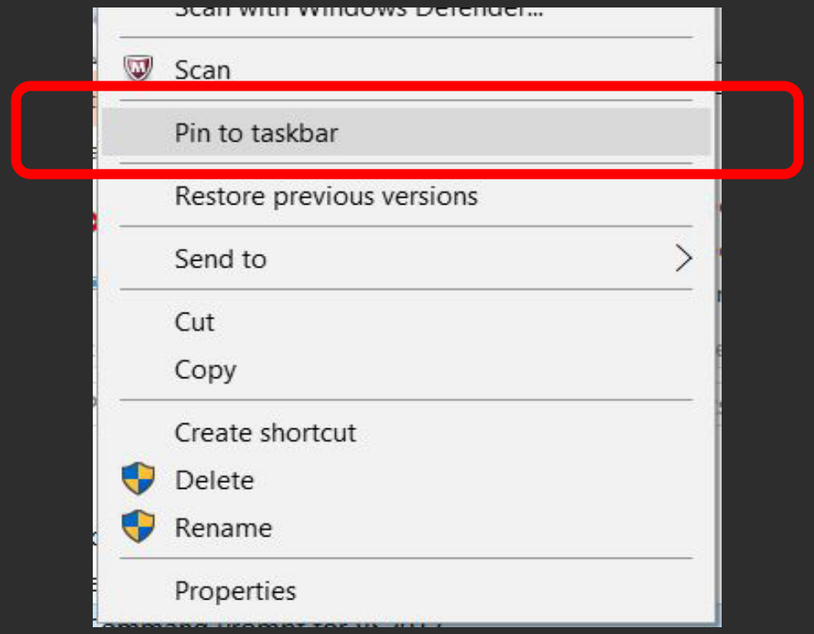
5. Right Click to open Windows dialog box

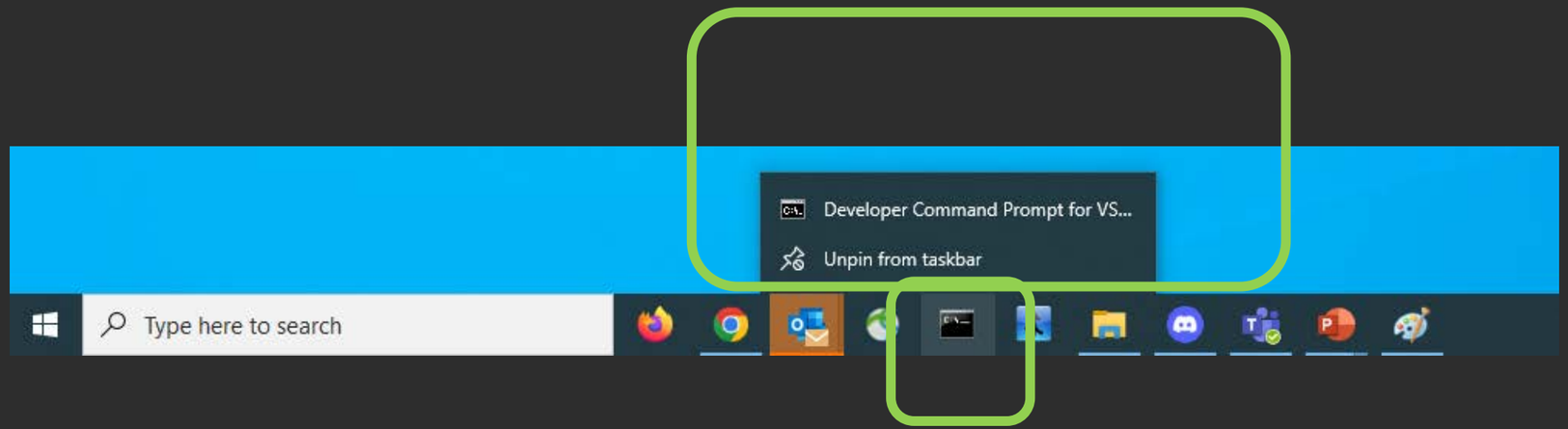
Do not use any of the other
“.. Command Prompts”

Pin VS Command Prompt

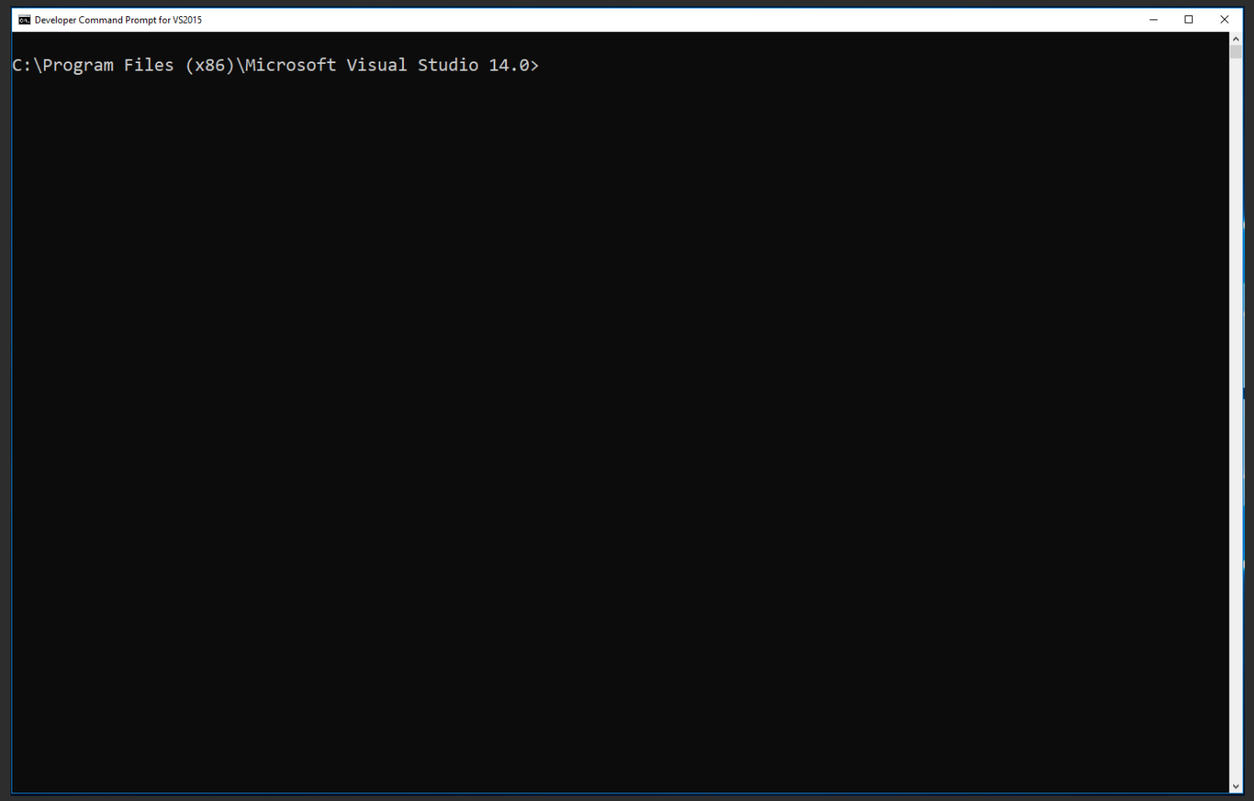


6. Left Click on “Pin to taskbar”





Pin VS Command Prompt



7. Open VS Command Prompt”

All Windows Labs use this short-cut to Build Edk II platforms and projects using Windows Visual Studio : 2015 /2017 or 2019

Prerequisite Download / Install Tools

Prerequisites – Done Before Class

- Windows 10:
  - Continuous Integration (CI) - Stuart CI Build with Visual Studio VS2017 or VS2019
  - Non-Stuart CI - Visual Studio VS2015, VS2017 or VS2019
- Python 3.8.x or greater and `/Scripts` directories on Path: Link to download
- Git for Windows on Path : Link
- NASM 2.15.x or greater for Win64 : Link
- IASL Compiler Install iasl from Link (iasl-win-20220331.zip)

Setup Simics Environment

Download and Install the Simics Simulator (both Package Manager & Simics-6 Packages) Simics® Simulator Public Release

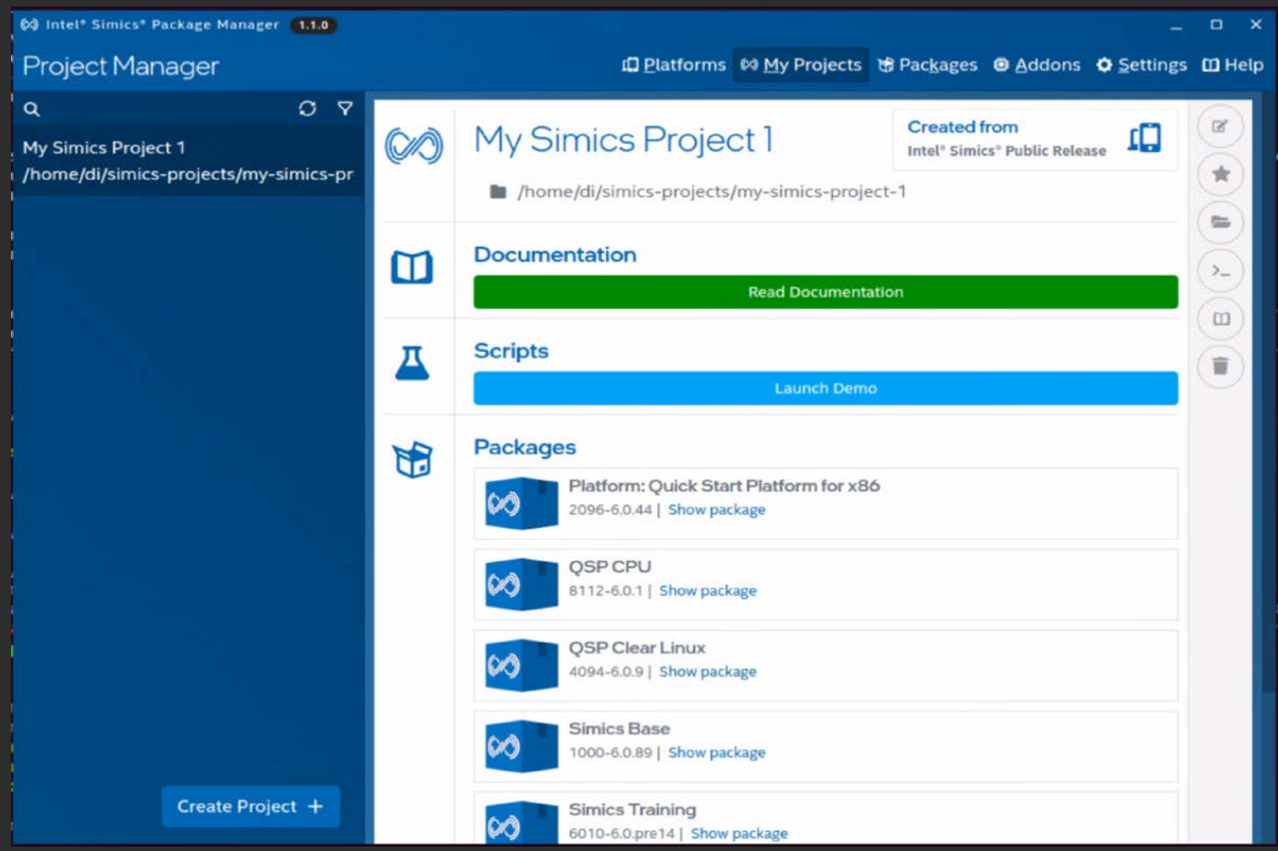
Setup the Simics Simulator

Simics® Simulator Installation and Get Started

Open the “Intel Simics Package Manager”

1. Using the Start menu in Windows , Left Click on “Windows Key” Lower Left
2. Scroll down from the scroll bar on the right until “Intel Simics Package Manager”

Here is a snapshot of Intel Simics Package Manager with “My Simics Project 1” created



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Download EDK II Open Source Repos

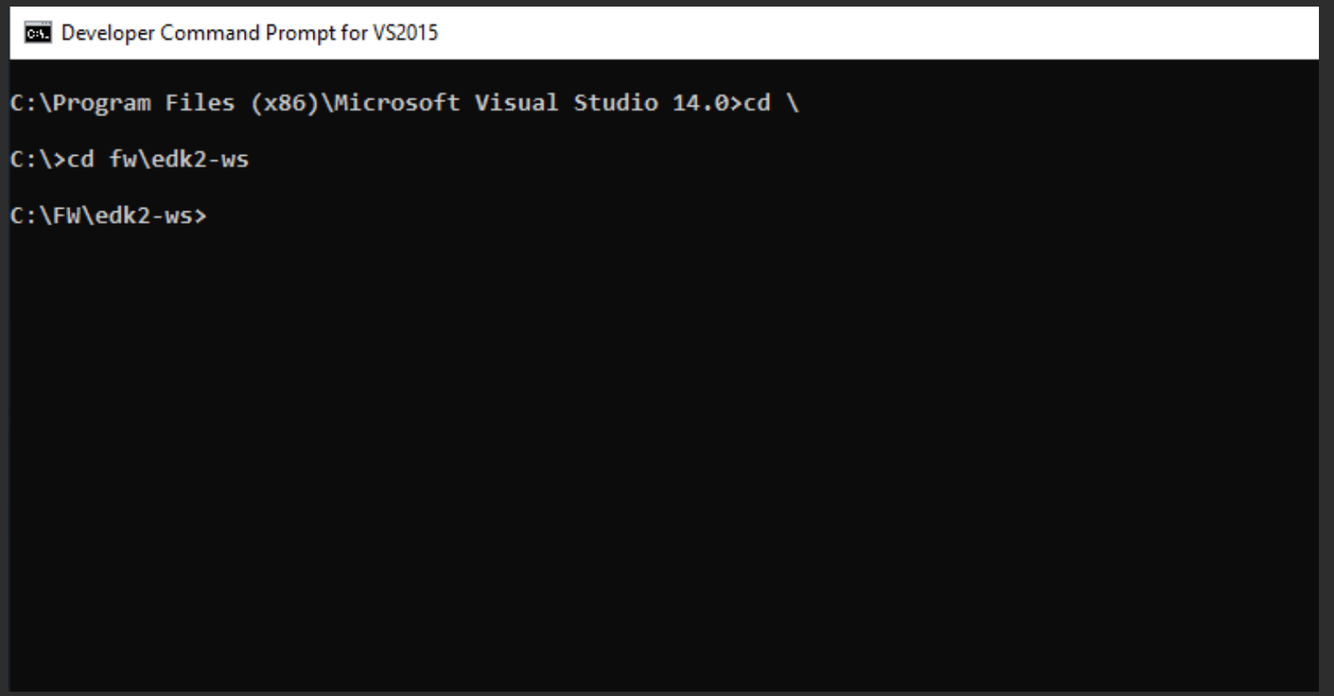
Use Git Bash to download EDK II

Create Workspace Directory

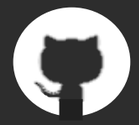
Open Windows Command Prompt for VS

Make new directory for Workspace:

```
$ cd \
$ Mkdir FW
$ cd FW
$ Mkdir edk2-ws
$ cd edk2-ws
```



Download EDK II Open Source

Download the open source EDK II from GitHub 

Note if behind a firewall, set PROXYS FIRST (example shows for Intel Corp. – Maybe different for your Corp. or GEO)

```
$ git config --global https.proxy proxy-dmz.intel.com:912
$ git config --global http.proxy proxy-dmz.intel.com:911
```

From the command prompt use “git clone” to download the following Repos

- Edk2 – main core code

```
$ git clone –b Edk2Lab_22Q3 https://github.com/tianocore-training/edk2.git
```

- EDK II “C” Library Repo

```
$ git clone https://github.com/tianocore/edk2-libc.git
```

- EDK II Platforms Repo

```
$ git clone https://github.com/tianocore/edk2-platforms.git
```

- EDK II Non-OSI (Stand alone Binaries)

```
$ git clone https://github.com/tianocore/edk2-non-osi.git
```

- Intel FSP

```
$ git clone https://github.com/Intel/FSP.git
```

Download the EDK II Submodules

Download the EDK II Submodules from GitHub

Download the Submodules and Checkout the Lab Branch

```
$ C:\fw\edk2-ws> Cd edk2
$ C:\fw\edk2-ws\edk2> git submodule update --init
$ C:\fw\edk2-ws> Cd ..
```

Download Checkout the Sha tag for edk2-platforms repo

```
$ C:\fw\edk2-ws> Cd edk2-platforms
$ C:\fw\edk2-ws\edk2-platforms> git reset --hard c546cc01f1517b42470f3ae44d67efcb8ee257fc
$ C:\fw\edk2-ws\edk2-platforms> cd ..
```

(reset to this commit since this is used with all the labs)

Download Lab Material

Download the Lab_Material_FW.zip from :  GitHub.com Lab_Matrial_FW.zip
OR
Use git clone to download the Lab_Material_FW

```
C:\> cd C:\
C:\> git clone https://github.com/tianocore-training/Lab_Material_FW.git
```

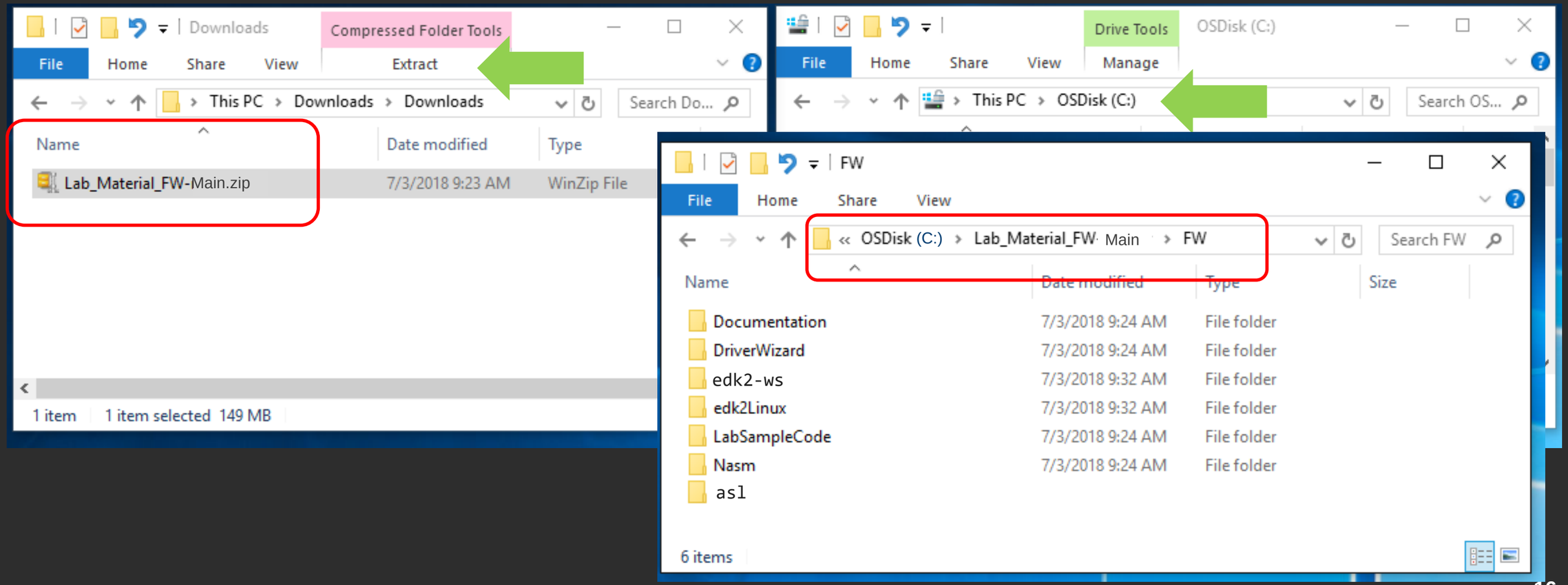
Directory Lab_Material_FW will be created

```
FW
  - Documentation
  - DriverWizard
  - edk2-ws
  - LabSampleCode
  - Nasm
  - asl
```

Build EDK II
-Extract the Lab Material

Skip if using “git clone” command

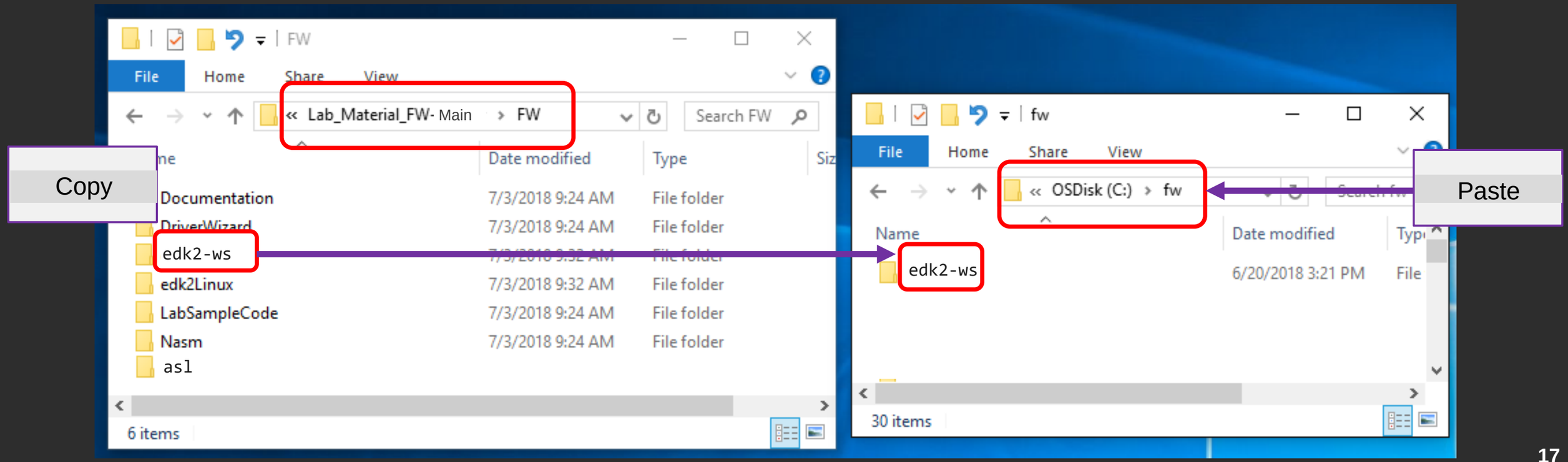
Extract the Downloaded `Lab_Material_FW-main.zip` to `C:\`



Build EDK II
- Copy edk2-ws

From the downloaded Lab_Material_FW folder, **copy** and **paste** folder "..\edk2-ws" to C:\FW

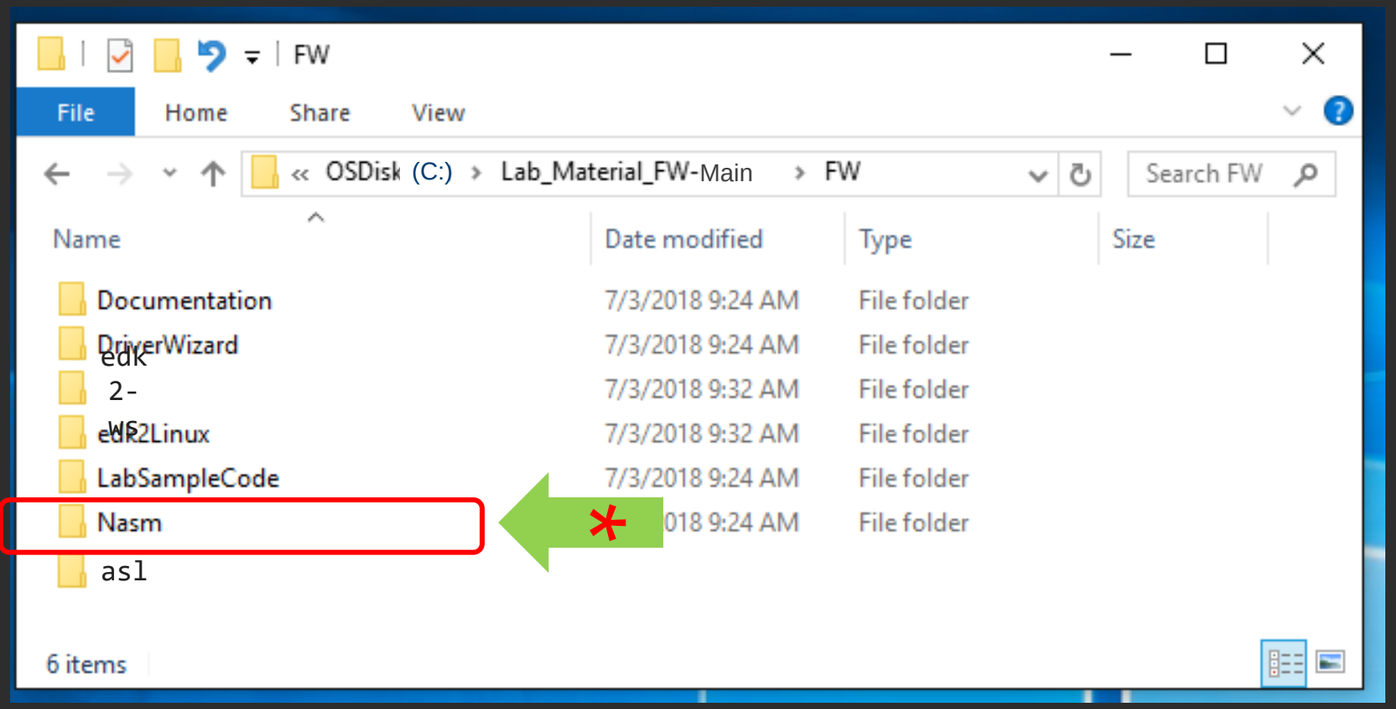
Note: Overwrite existing files and directories

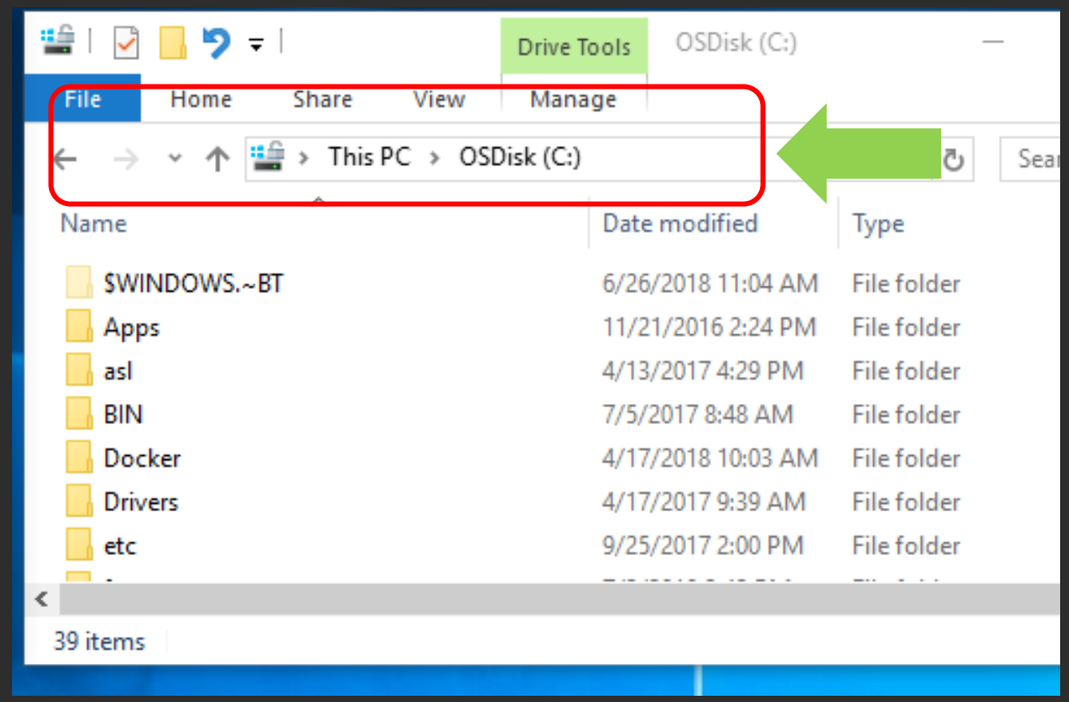


Build EDK II
-Get Nasm

Copy `Nasm` directory to `C:\`

(creating `C:\Nasm` directory)



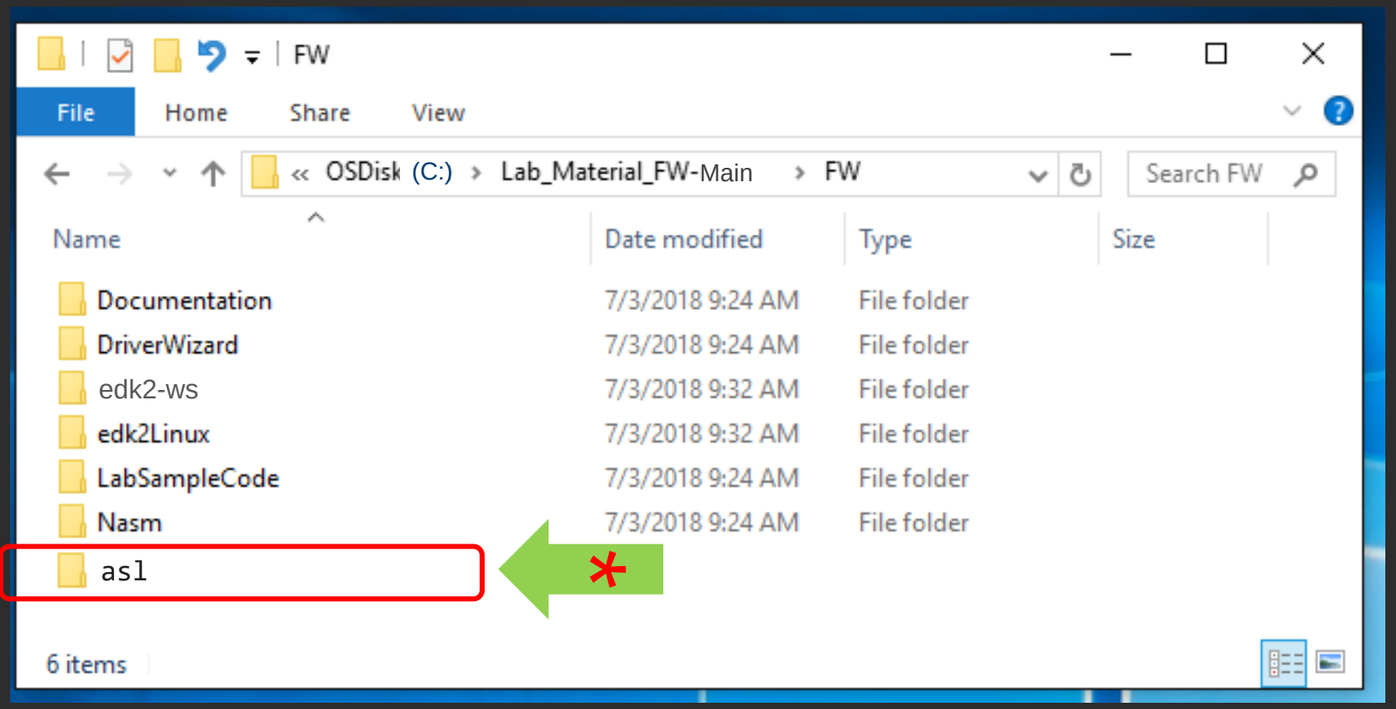


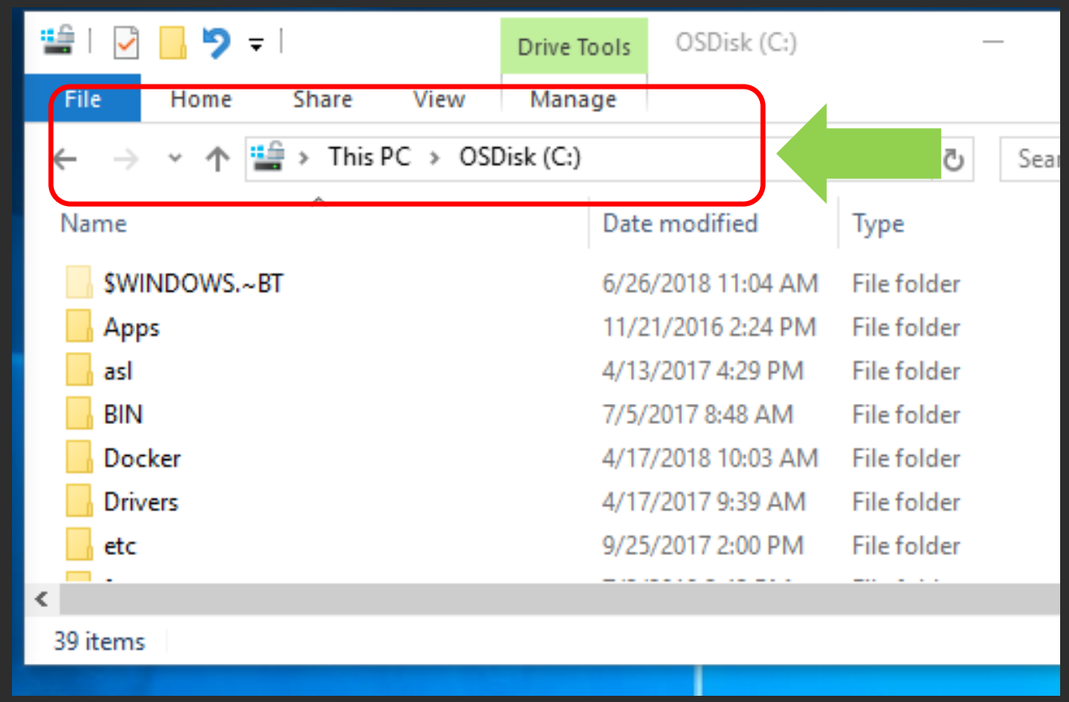
*Note: If only Readme.txt exist then follow Readme.txt instructions to download the Nasm Executable.

Build EDK II
-Get IASL ACPI Compiler

Copy `asl` directory to `C:\`

(creating `C:\asl` directory)





*Note: If only Readme.txt exist then follow Readme.txt instructions to download the Iasl Executable.

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Build BaseTools

Note: will need to update conf/target.txt for other labs

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Build EDK II
- build BaseTools

Open VS Command prompt & Cd to workspace directory

```
$> cd C:\fw\edk2-ws
```

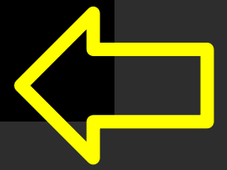
Setup the local environment: (see batch file setenv.bat)

Sets WORKSPACE and PACKAGES_PATH env variables

```
$> setenv.bat
```

Invoke `Edksetup.bat` from directory `C:/fw/edk2-ws/edk2` to Build `BaseTools`

```
$> cd edk2
$> edksetup.bat Rebuild
```



Important NOTE: – only use "`Rebuild`" on the first time – there after just use "`edksetup.bat`"

Building `BaseTools` only needs to be done once but setting up local environment and edksetup.bat needs to be done each new VS prompt session

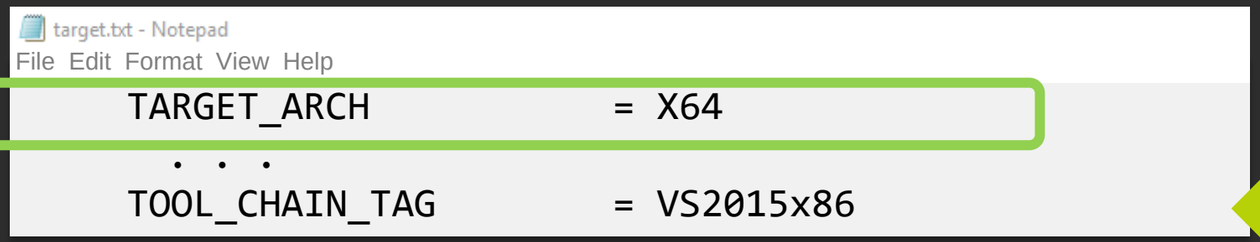
Update Conf/Target.txt

Invoke Edksetup.bat

```
$> cd C:\fw\edk2-ws\edk2
$> edksetup.bat
```

Edit the file Conf/target.txt ***(change*** TOOL_CHAIN_TAG***)***

notepad Conf/target.txt



VS version	TOOL_CHAIN_TAG
2015	**VS2015x86**
2017	**VS2017**
2019	**VS2019**

Save and Exit

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SUMMARY

- Pin Visual Studio Command Prompt to Windows Task Bar
- Pre-requisite Setup / Install Build Application Tools
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- Build BaseTools

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Questions?

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ACKNOWLEDGEMENTS