

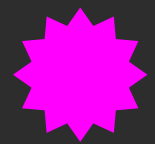



# UEFI & EDK II Training

Build Setup and Download EDK II Lab – Windows

[tianocore.org](https://tianocore.org)

Copy and Paste see [Lab Guide.md](#)

# 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

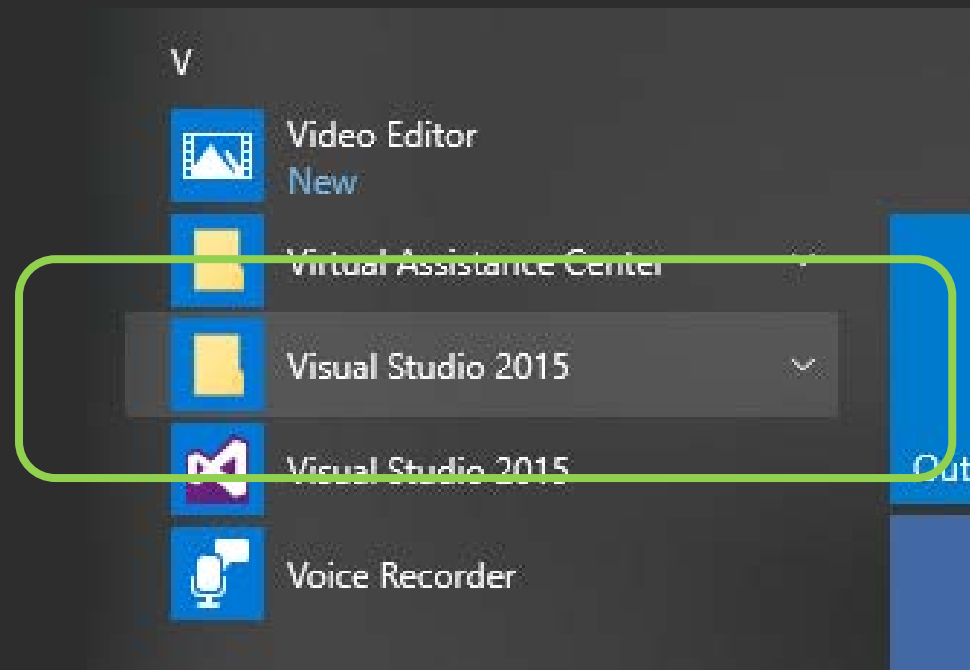
# Pin Virtual Studio Command Prompt

Pin the Visual Studio Command prompt to Windows Task Bar

# Pin VS Command Prompt



Windows 10



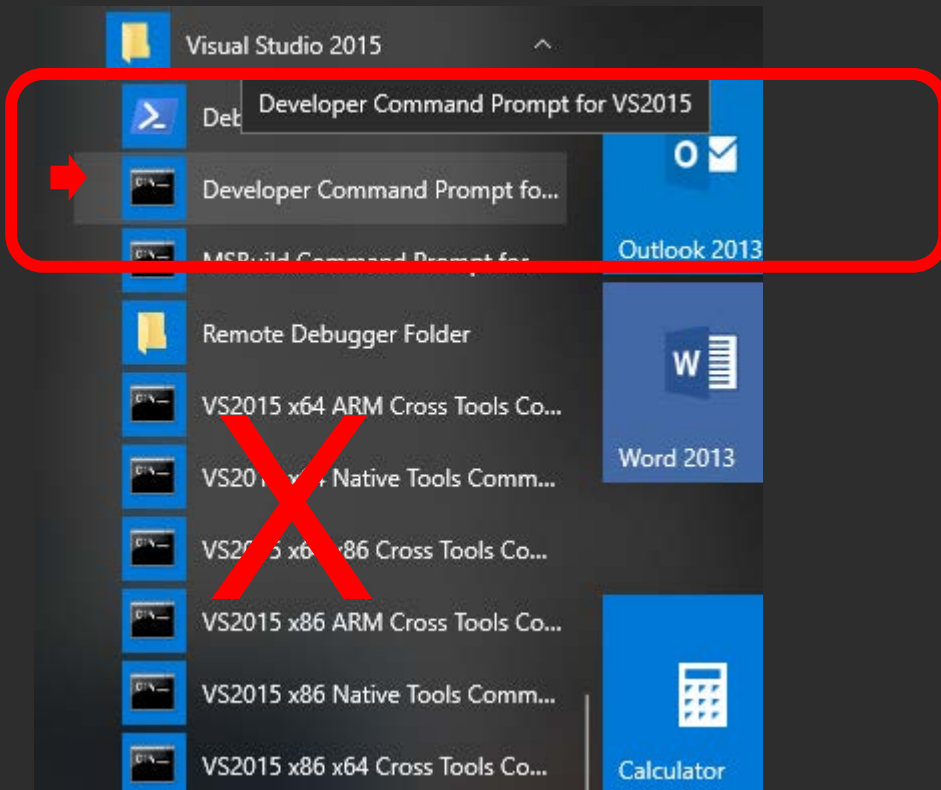
Steps to Pin Visual Studio Command Prompt to task bar for Windows 10

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



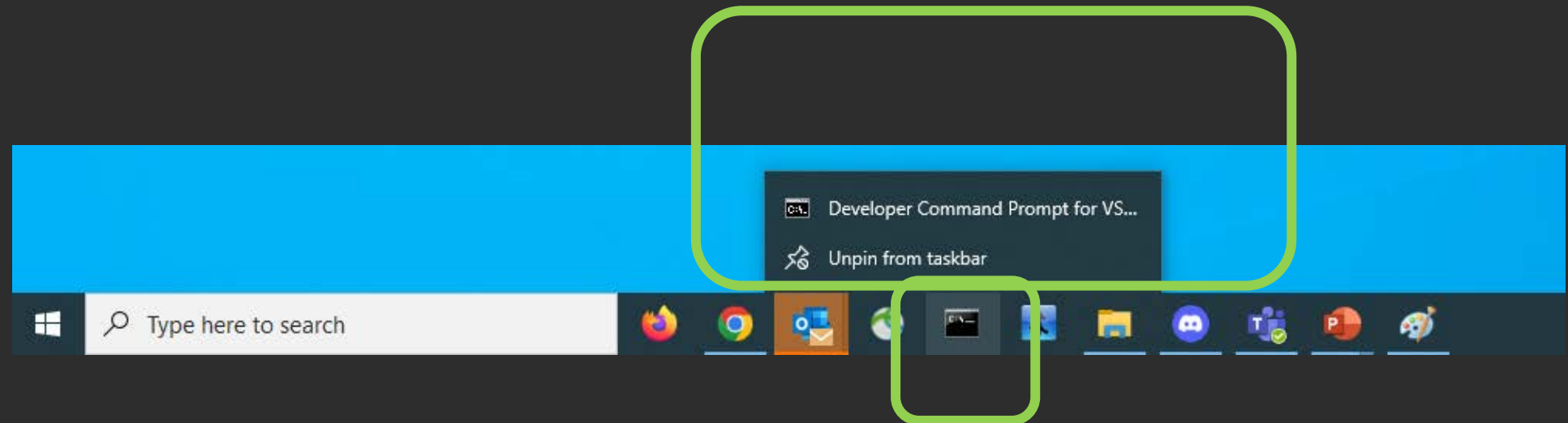
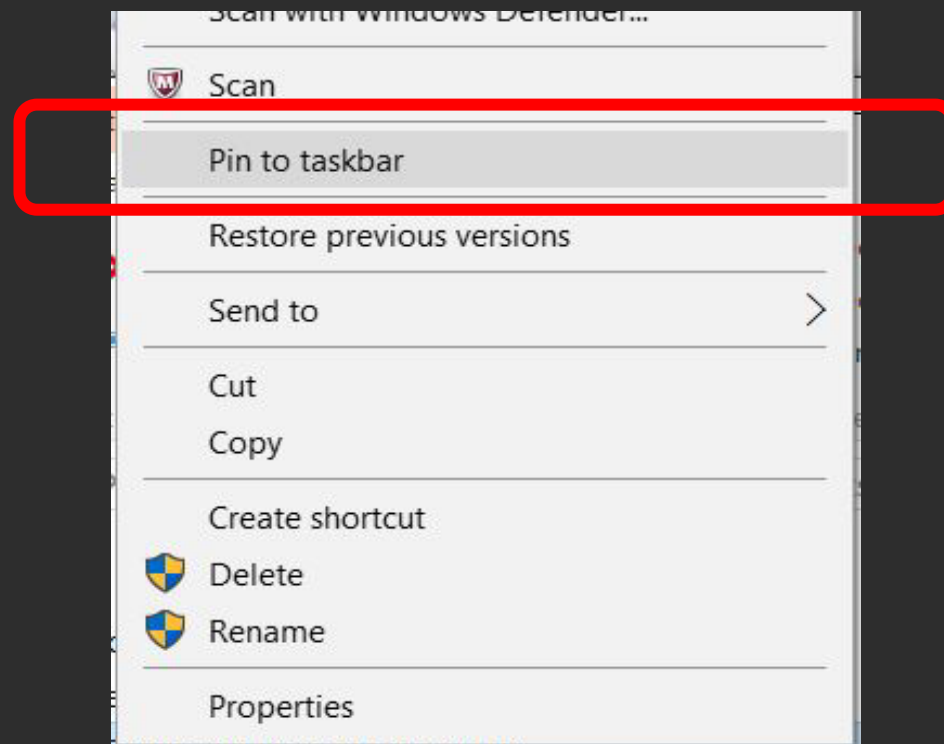
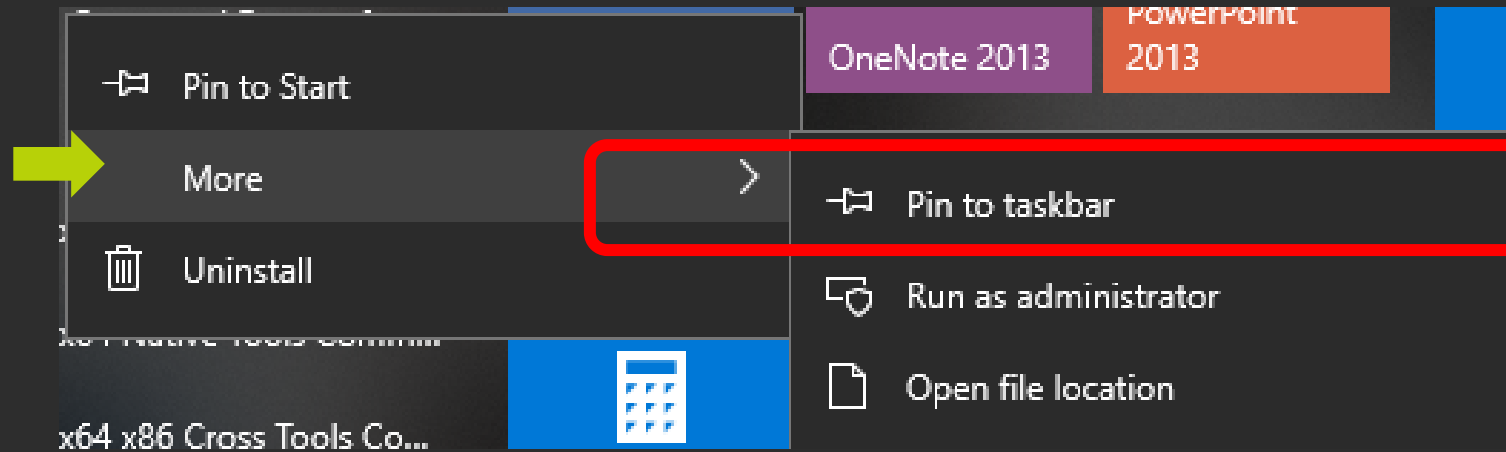
4. Select  
**“Developer Command Prompt for VS201n”**

5. Right Click to open Windows dialog box

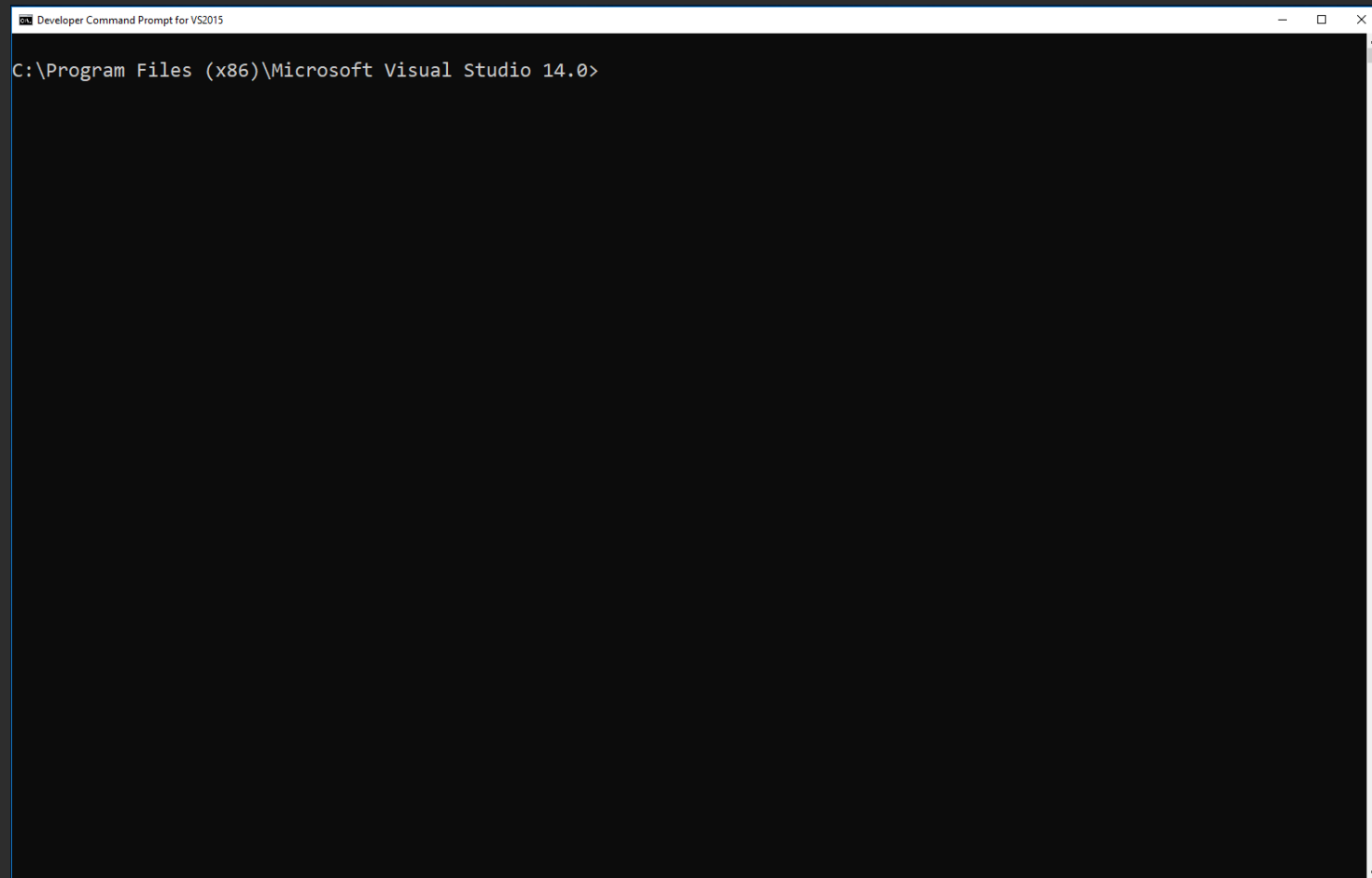
**Do not use any of the other  
“.. Command Prompts”**

# 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](#)

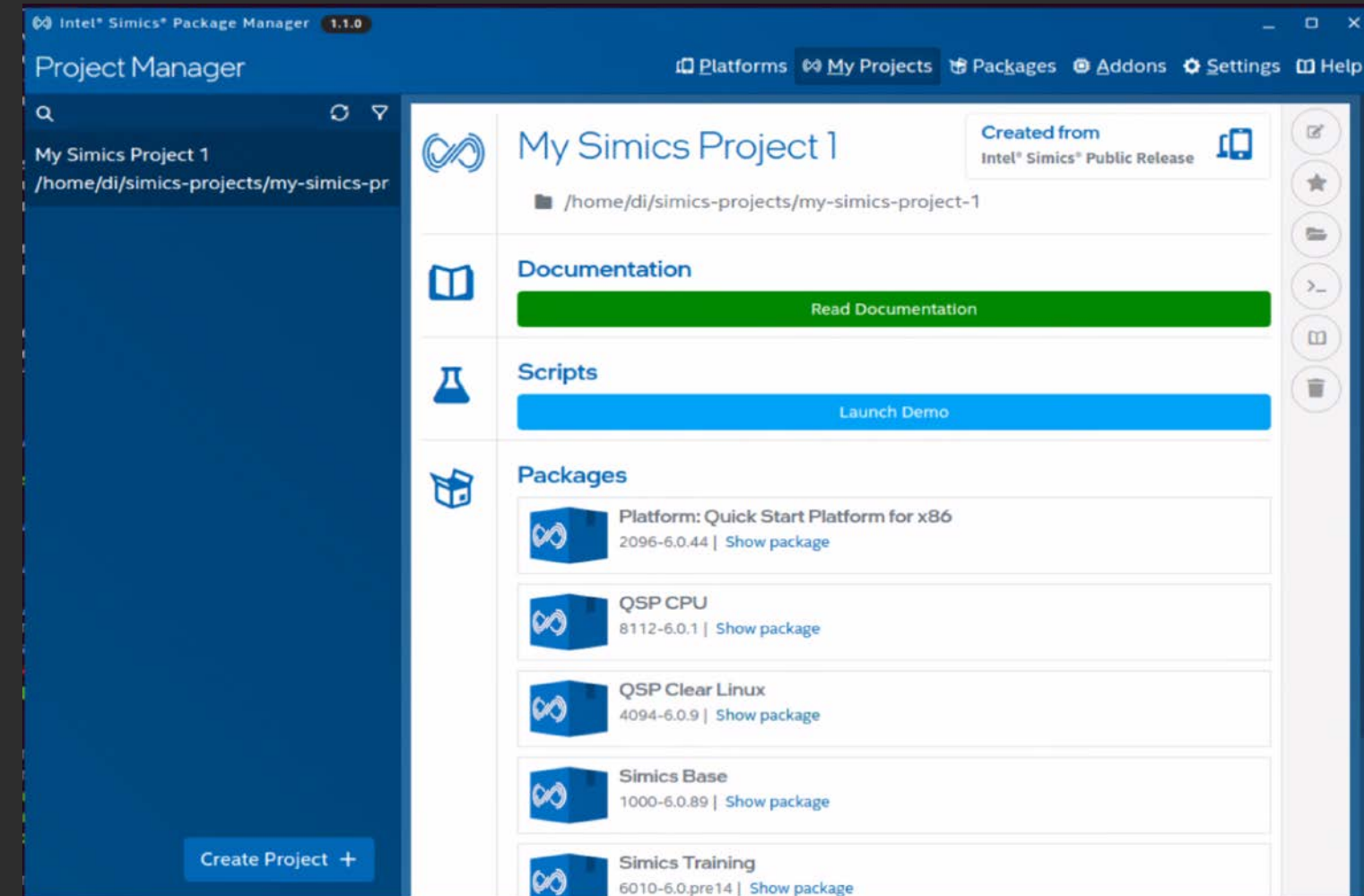
Setup the Simics Simulator

[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



# Download EDK II Open Source Repos

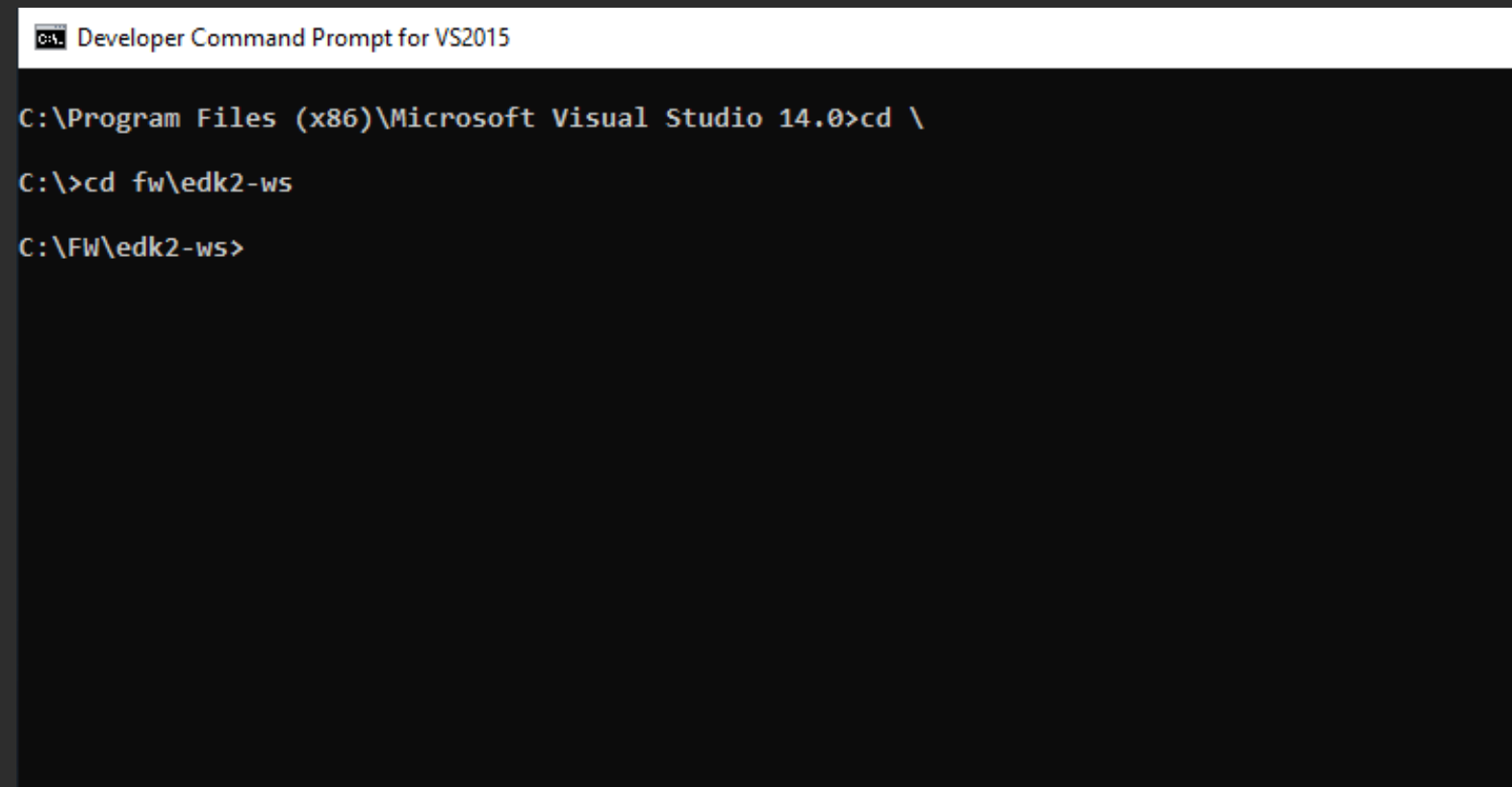
Use Git Bash to download EDK II

# 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
```



```
Developer Command Prompt for VS2015  
C:\Program Files (x86)\Microsoft Visual Studio 14.0>cd \  
C:\>cd fw\edk2-ws  
C:\FW\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-osl.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\\_Material\\_FW.zip](https://github.com/tianocore-training/Lab_Material_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

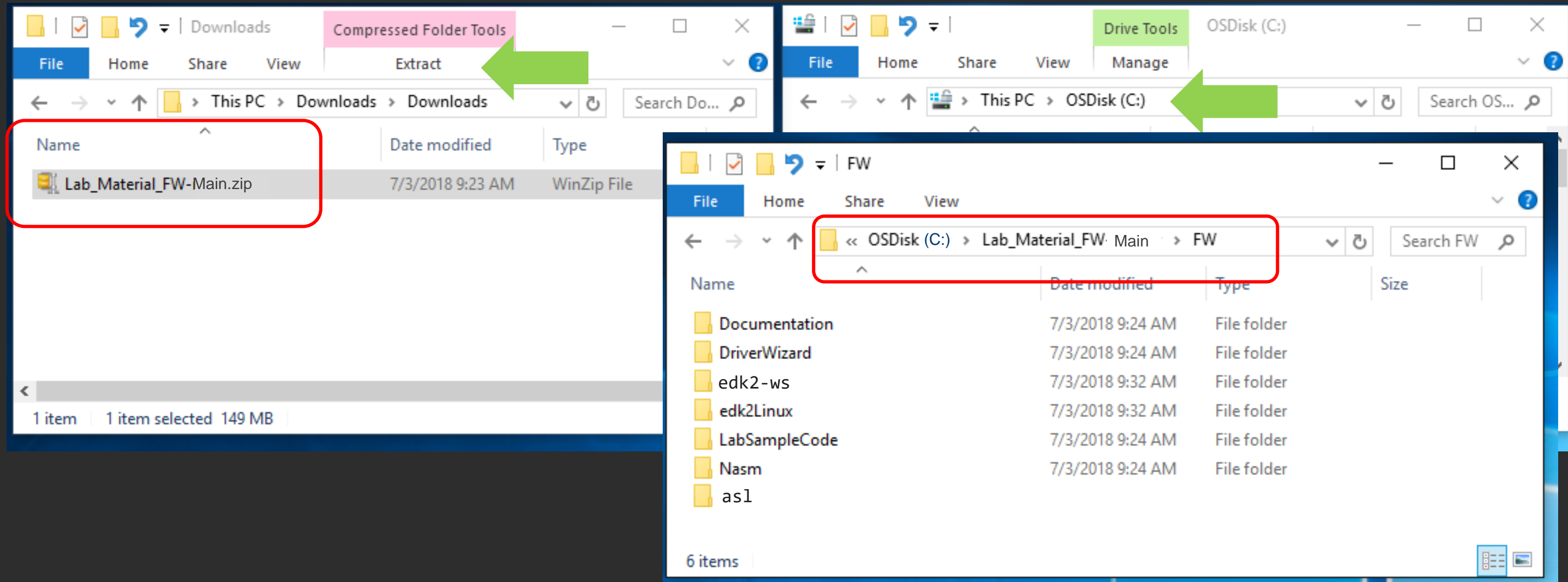


# Build EDK II

## -Extract the Lab Material

Skip if using “git clone” command

Extract the Downloaded Lab\_Material\_FW-main.zip to C:\



The screenshot displays two Windows File Explorer windows. The left window, titled 'Downloads', shows a file named 'Lab\_Material\_FW-Main.zip' (WinZip File, 149 MB) selected. A green arrow points to the 'Extract' button in the 'Compressed Folder Tools' tab. The right window, titled 'OSDisk (C:)', shows the path 'C:\Lab\_Material\_FW-Main\FW' selected. A green arrow points to the 'Manage' button in the 'Drive Tools' tab. Below the path, a list of folders is shown:

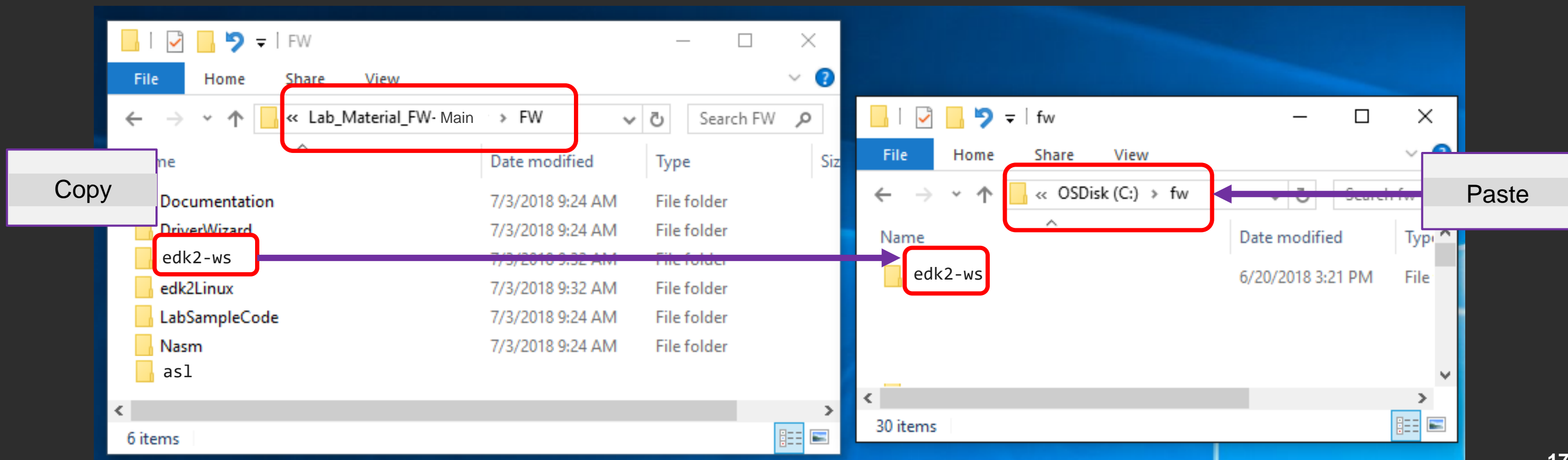
Name	Date modified	Type	Size
Documentation	7/3/2018 9:24 AM	File folder	
DriverWizard	7/3/2018 9:24 AM	File folder	
edk2-ws	7/3/2018 9:32 AM	File folder	
edk2Linux	7/3/2018 9:32 AM	File folder	
LabSampleCode	7/3/2018 9:24 AM	File folder	
Nasm	7/3/2018 9:24 AM	File folder	
asl	7/3/2018 9:24 AM	File folder	

# Build EDK II

## - Copy edk2-ws

From the downloaded Lab\_Material\_FW folder, **copy** and **paste** folder “..\edk2-ws” to C:\FW

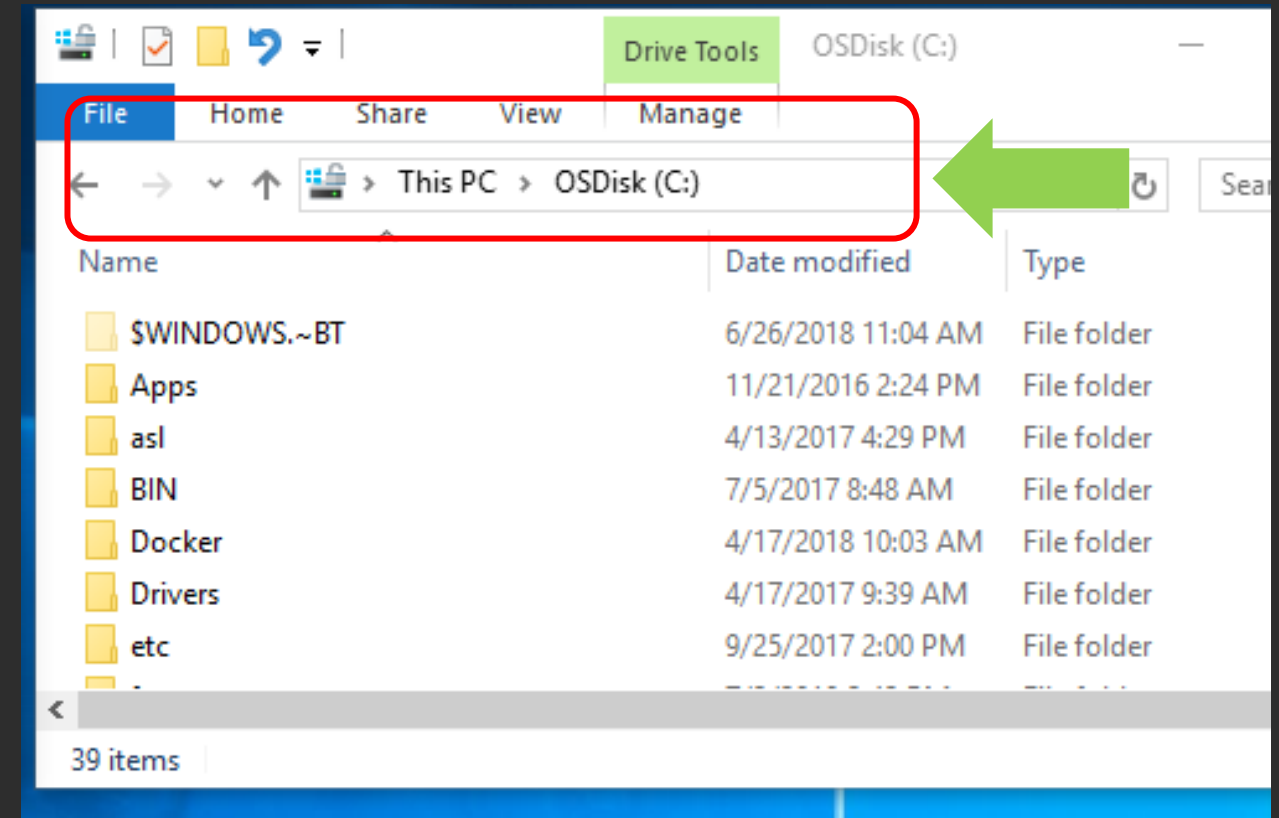
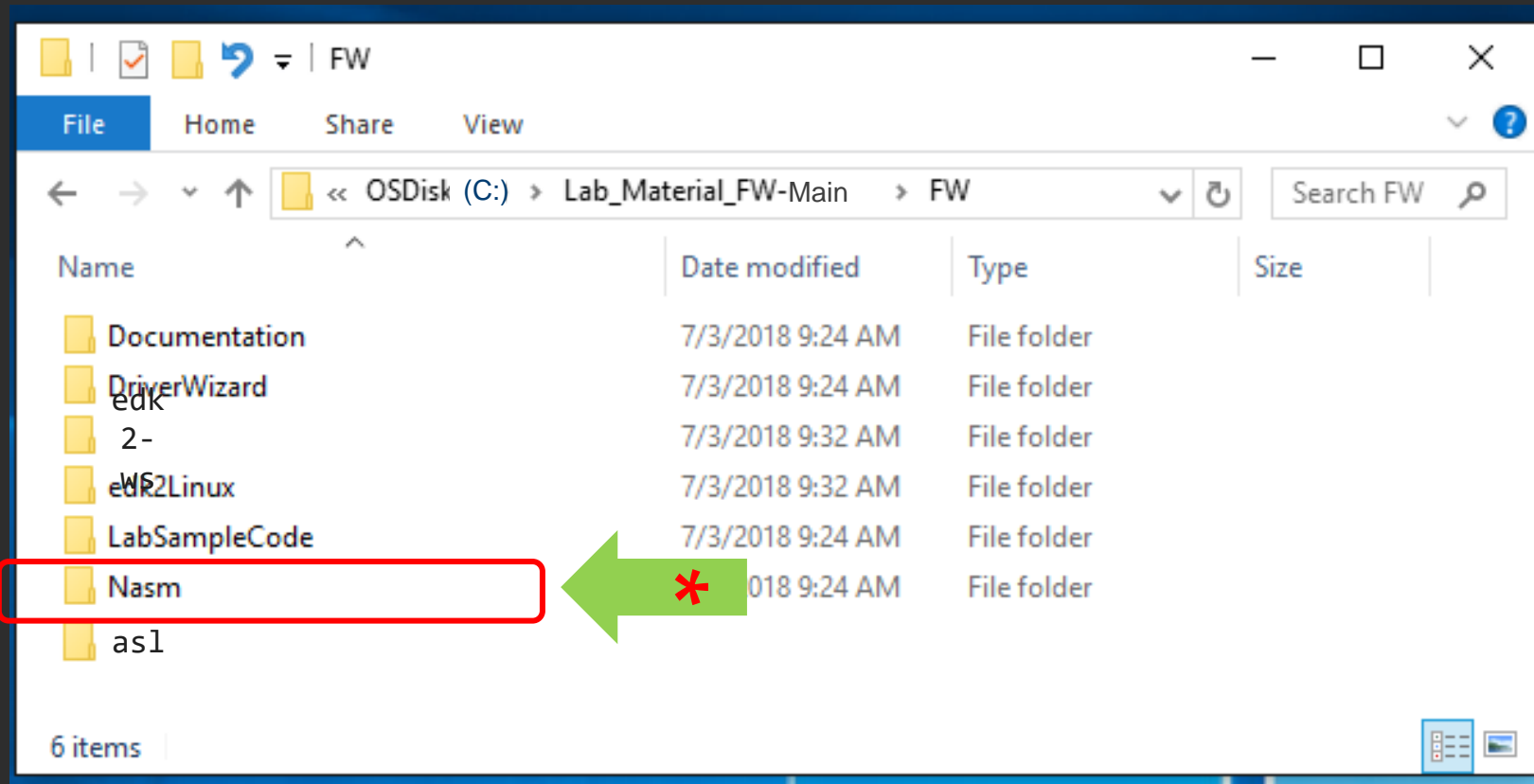
*Note: Overwrite existing files and directories*



# Build EDK II

## -Get Nasm

Copy Nasm directory to C:\  
(creating C:\Nasm directory)

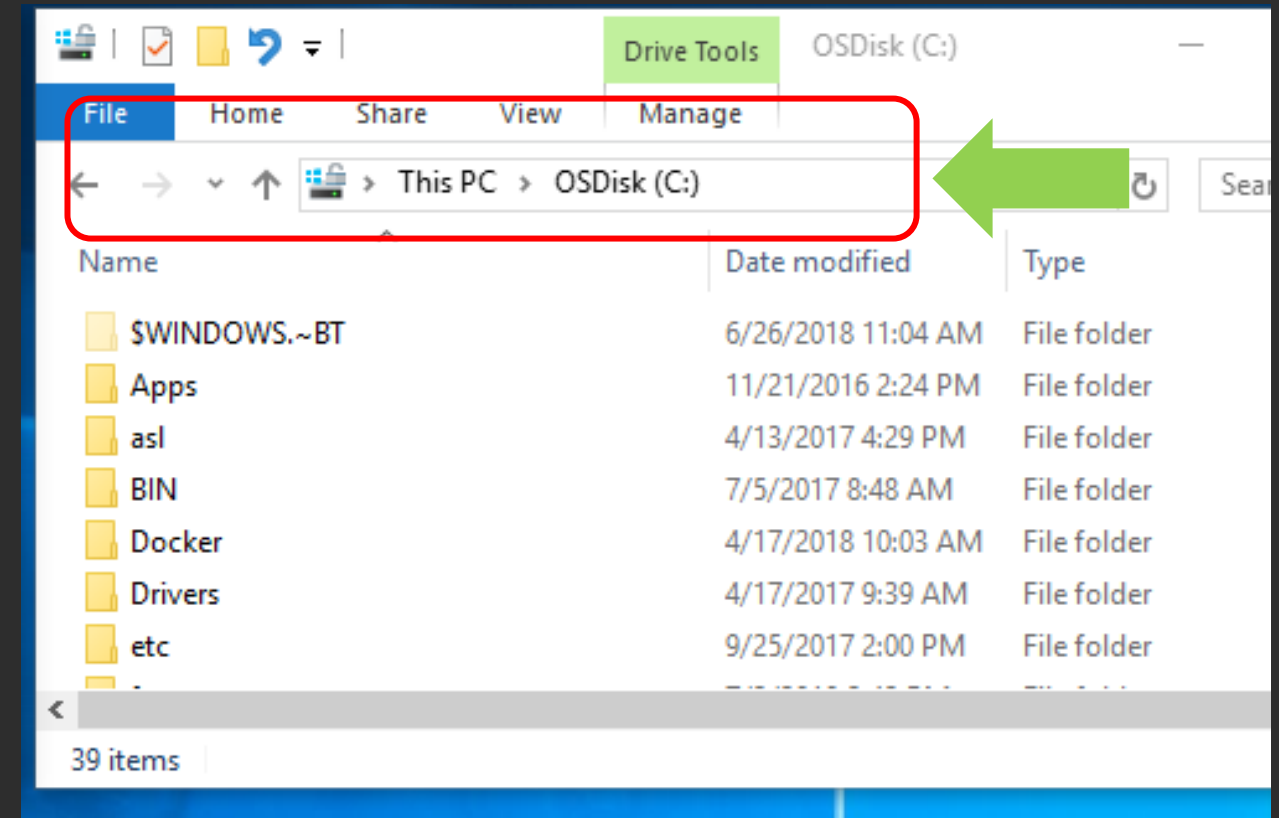
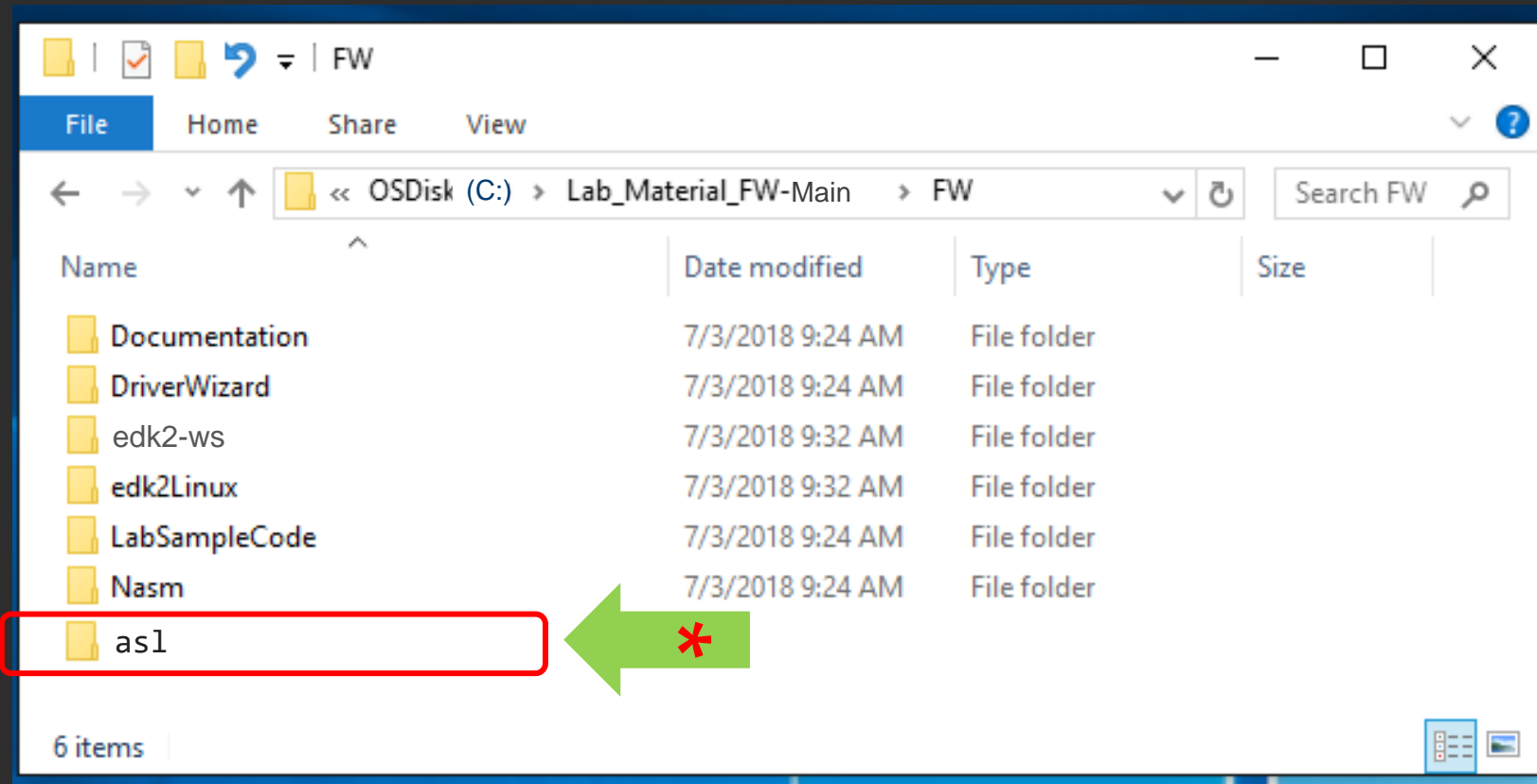


\*Note: If only Readme.txt exist then follow Readme.txt instructions to download the Nasm Executable.

# 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 last Executable.

# Build BaseTools

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

# 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** )

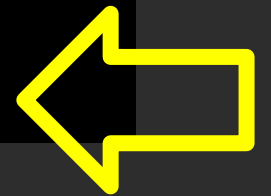
Sets WORKSPACE and PACKAGES\_PATH env variables

```
$> 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”

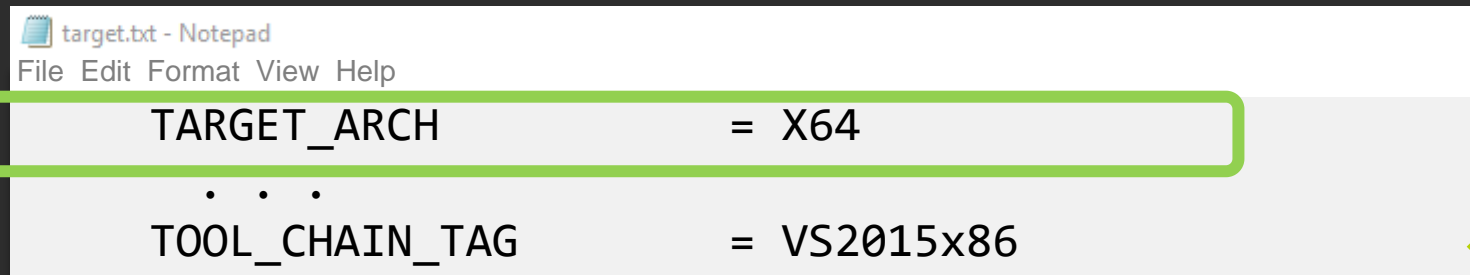
Building BaseTools only needs to be done once but setting up local environment and edksetup.bat needs to be done each new VS prompt session

# Update Conf/Target.txt

## Invoke Edksetup.bat

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

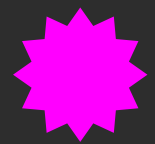



Edit the file Conf/target.txt (*change* TOOL\_CHAIN\_TAG)  
`notepad Conf/target.txt`



VS version	TOOL_CHAIN_TAG
2015	VS2015x86
2017	VS2017
2019	VS2019

Save and Exit



-  Pin Visual Studio Command Prompt to Windows Task Bar
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-  Build BaseTools

# Questions?



# Return to Main Training Page



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# ACKNOWLEDGEMENTS

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