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UEFI & EDK II Training

UEFI Driver Wizard Lab - Windows

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LESSON OBJECTIVE

- Setup the UEFI Driver Wizard
- Create a UEFI Driver Template

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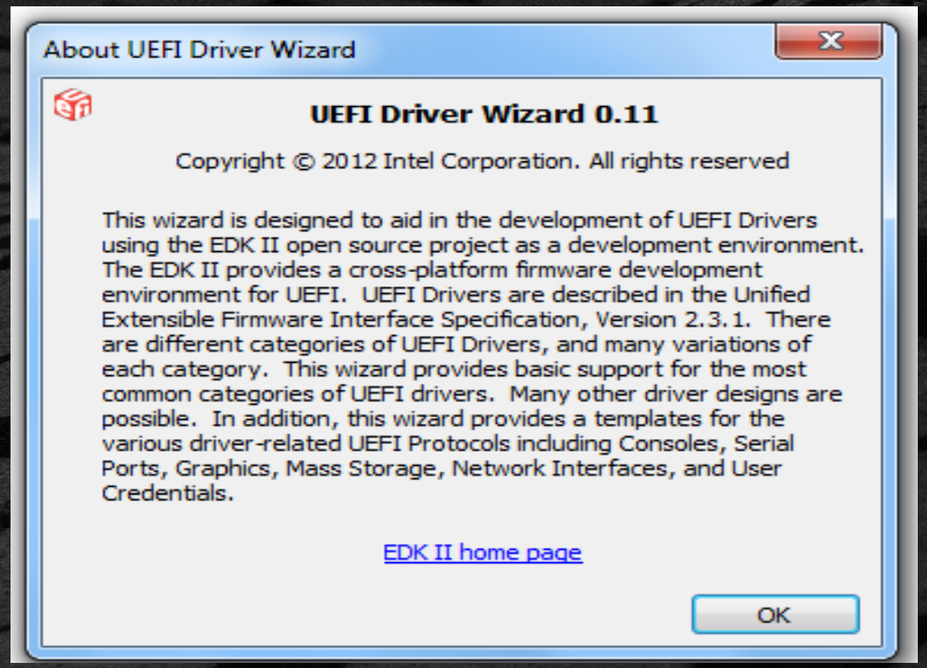
UEFI DRIVER WIZARD

Creating a Template UEFI Driver with the UEFI Driver Wizard

UEFI Driver Wizard Overview

- ✓ Open source tool
- ✓ Based on *Driver Writer's Guide for UEFI 2.3.1* content
- ✓ Intel SSG engineers contributed
- ✓ Located on www.TianoCore.org



Installing UEFI Driver Wizard

Requirements and Options

- Work space must contain BaseTools, MdePkg & MdeModulePkg Packages from UDK2018 for Driver development on Tianocore.org
- Uses previous lab's setup w/ Windows `C:\FW\edk2`
- Python* scripts from Github Link then use instructions from README for Python and wxPython versions to install then run

```
bash$ python launch.py
```

Requirements for Your Driver

Using UEFI Driver Wizard

- UEFI Device Driver
- UEFI Version 2.7 (0x00020046)

```
#define EFI_2_70_SYSTEM_TABLE_REVISION ((2<<16) | (70DEC))
```

- Unloadable driver
- Support IA32 & x64 CPUs
- Returns component name information
- Test console device
- Option to produce strings & forms for setup

Template File Contents

Proper UEFI driver entry point

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Basic driver libraries/headers

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- Proper UEFI driver entry point
- Basic driver libraries/headers
- Skeletons for common driver functions

Template File Contents

Proper UEFI driver entry point

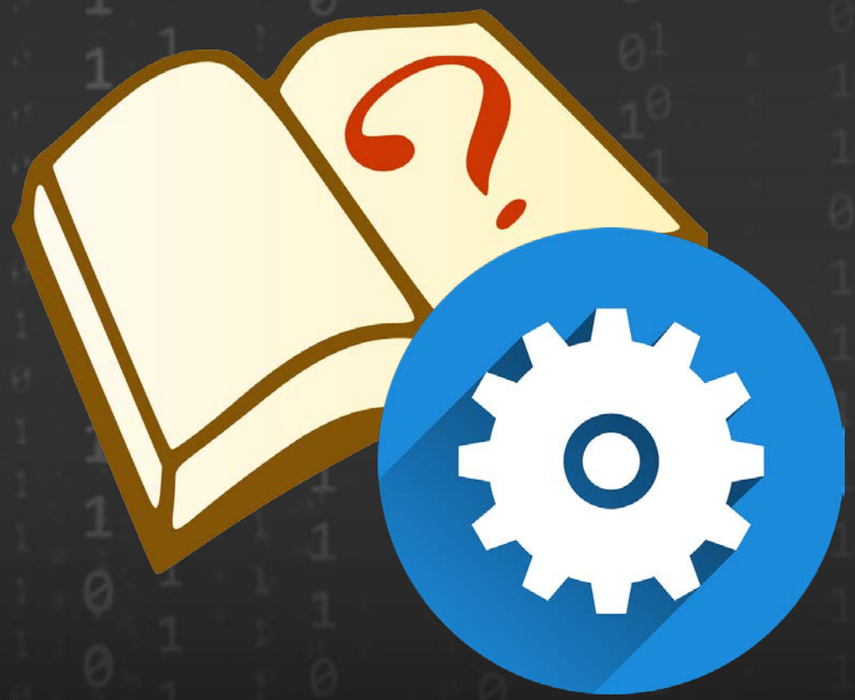
Basic driver libraries/headers

Skeletons for common driver functions

Error values until ported
EFI_UNSUPPORTED, EFI_DEVICE_ERROR

Lab 1: Create a UEFI Driver with the UEFI Driver Wizard

- In this lab, you'll create a new UEFI driver using the UEFI Driver Wizard.
- This will create a set of "c" code files to be used as a template UEFI Driver used in the subsequent driver labs

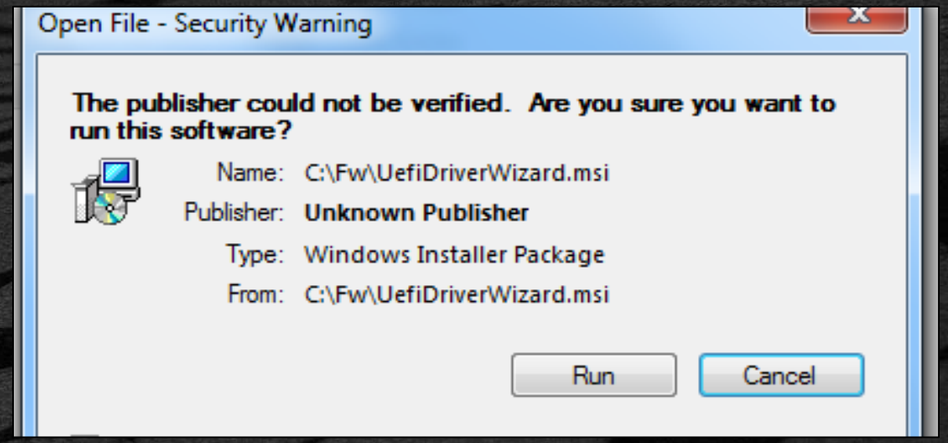


Lab 1: Install UEFI Driver Wizard

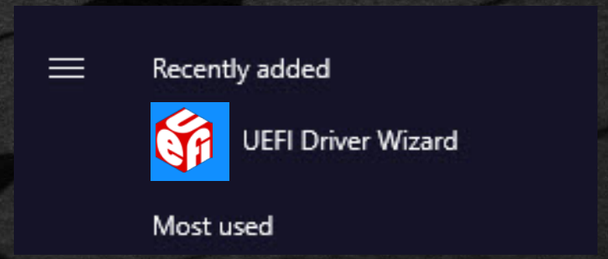
First setup for Building EDK II for Nt32, See Lab Setup

Install UEFI Driver Wizard

1. **Open** and **Run** /FW/DriverWizard/UefiDriverWizard.msi
2. **Click** through “Next” until install finishes



Open the UEFI Driver Wizard

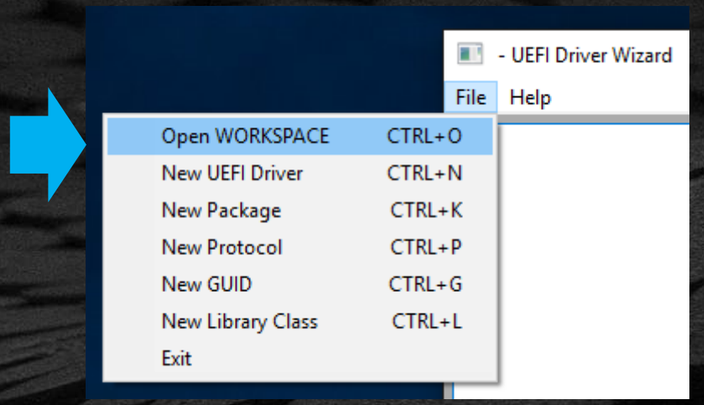


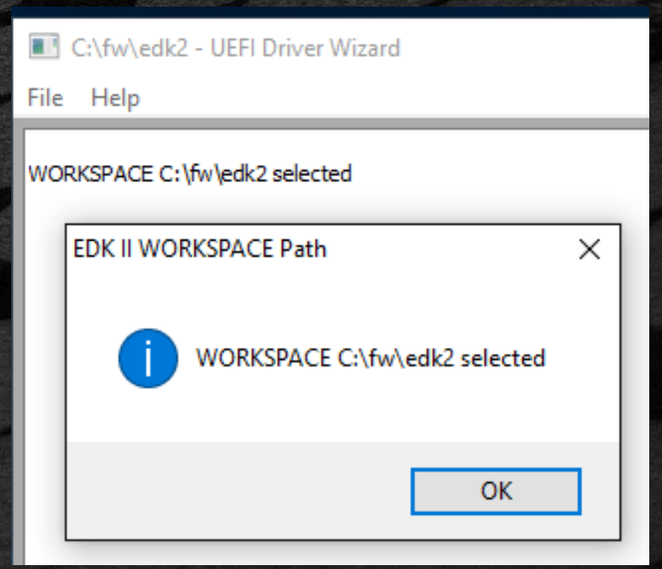
Lab 1: UefiDriverWizard -Select Work Space

Click on File and Select
“Open WORKSPACE”
Or
Control+O

Browse to C:/FW/edk2
Select “OK”
Should say “WORKSPACE C:\FW\edk2 selected

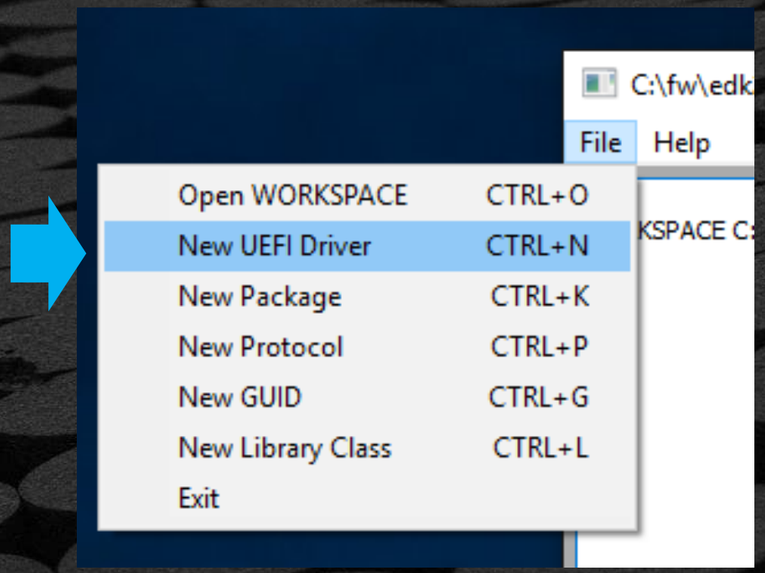
Note: the environment for EDK II must be setup with edksetup.bat

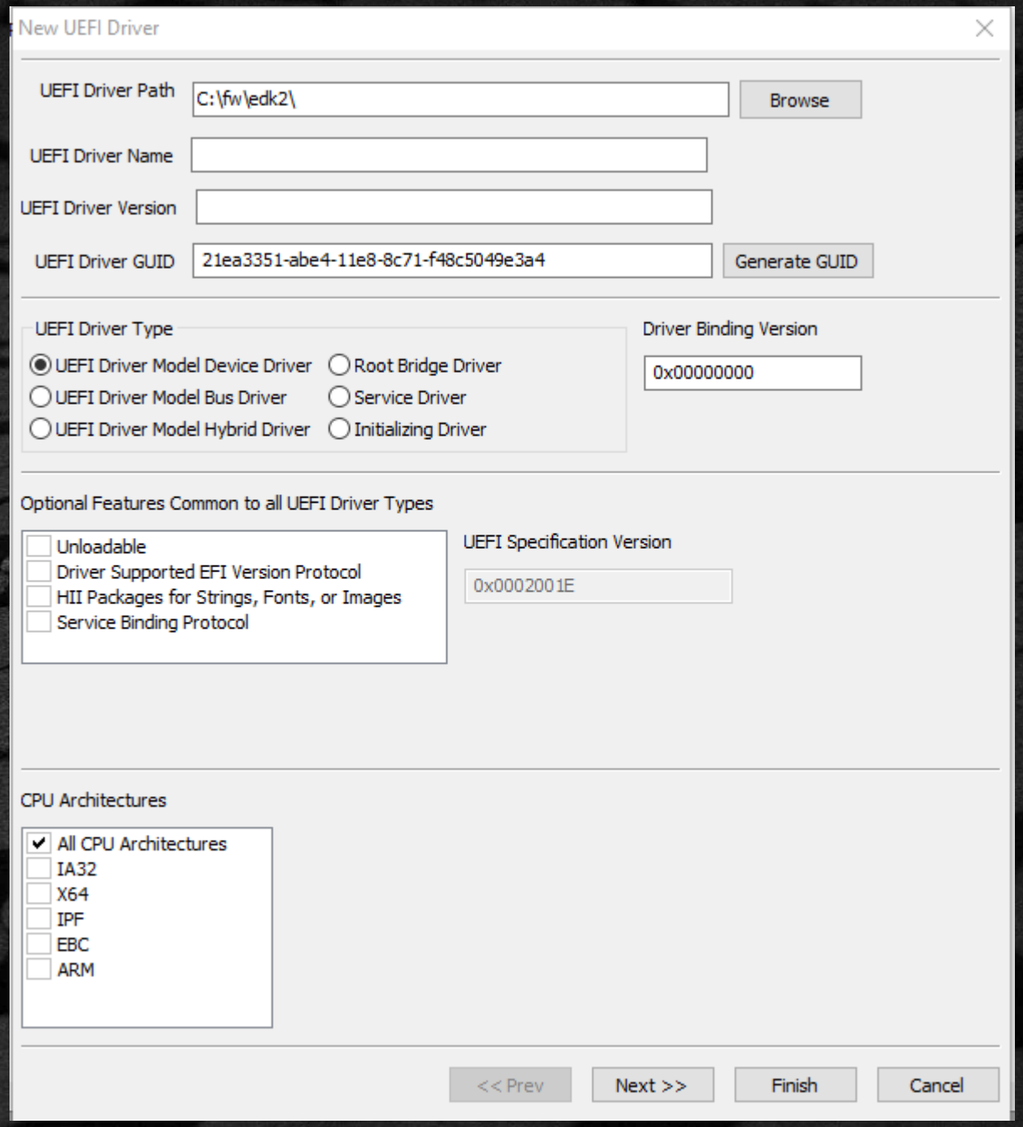




Lab 1: Create a New UEFI Driver

Control+N – to Open Menu





Lab 1:
New UEFI Driver Menu

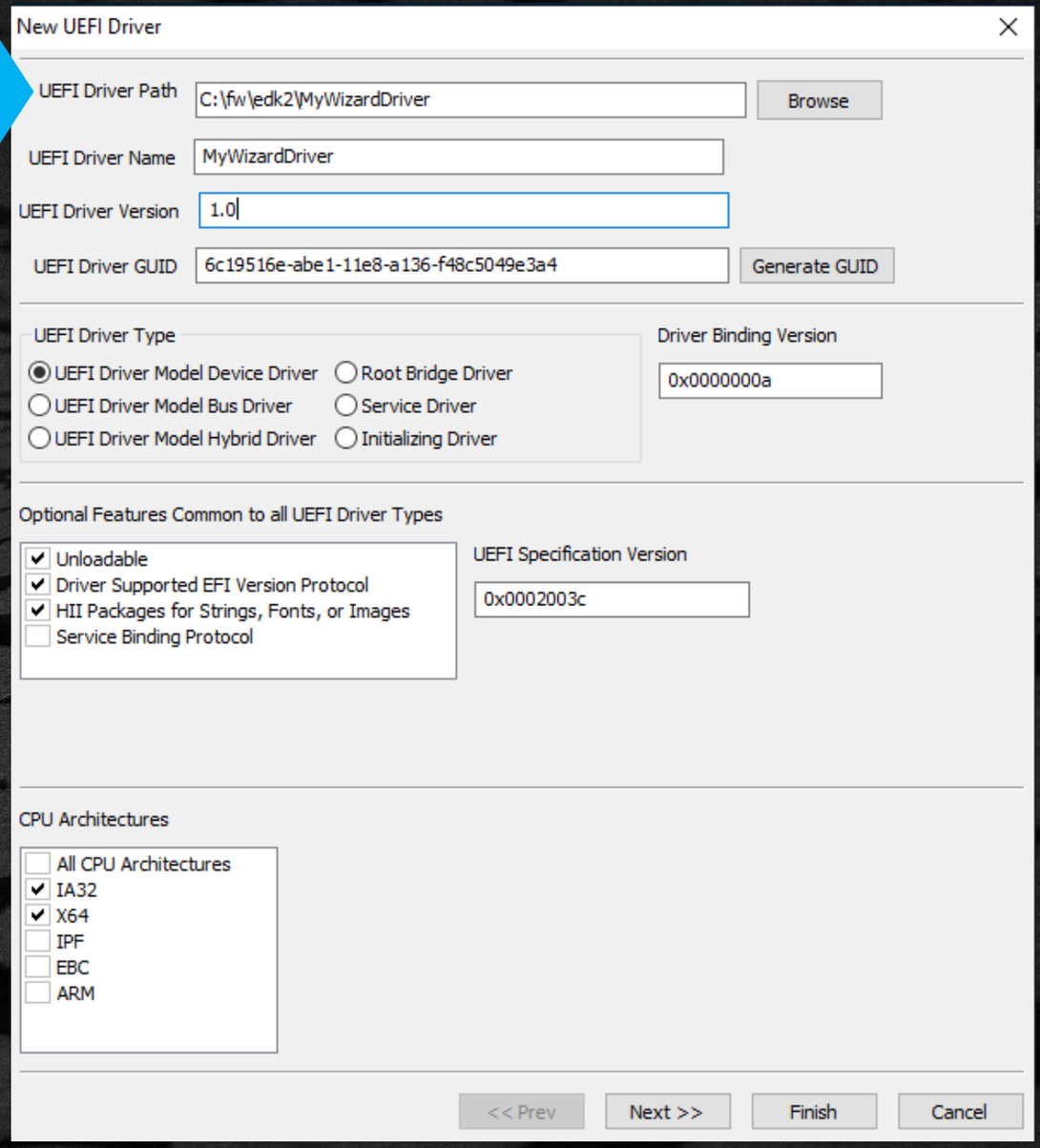
- UEFI Driver Path" – Type: "**MyWizardDriver**"

  Note: "UEFI Driver Name" is filled in.

- **Ensure** all the forms, radio buttons, and boxes are filled in and **selected *exactly*** like the image to the right.

- ***Note:*** A new, specific driver GUID will populate, so it will be different than this image

Click Next >>



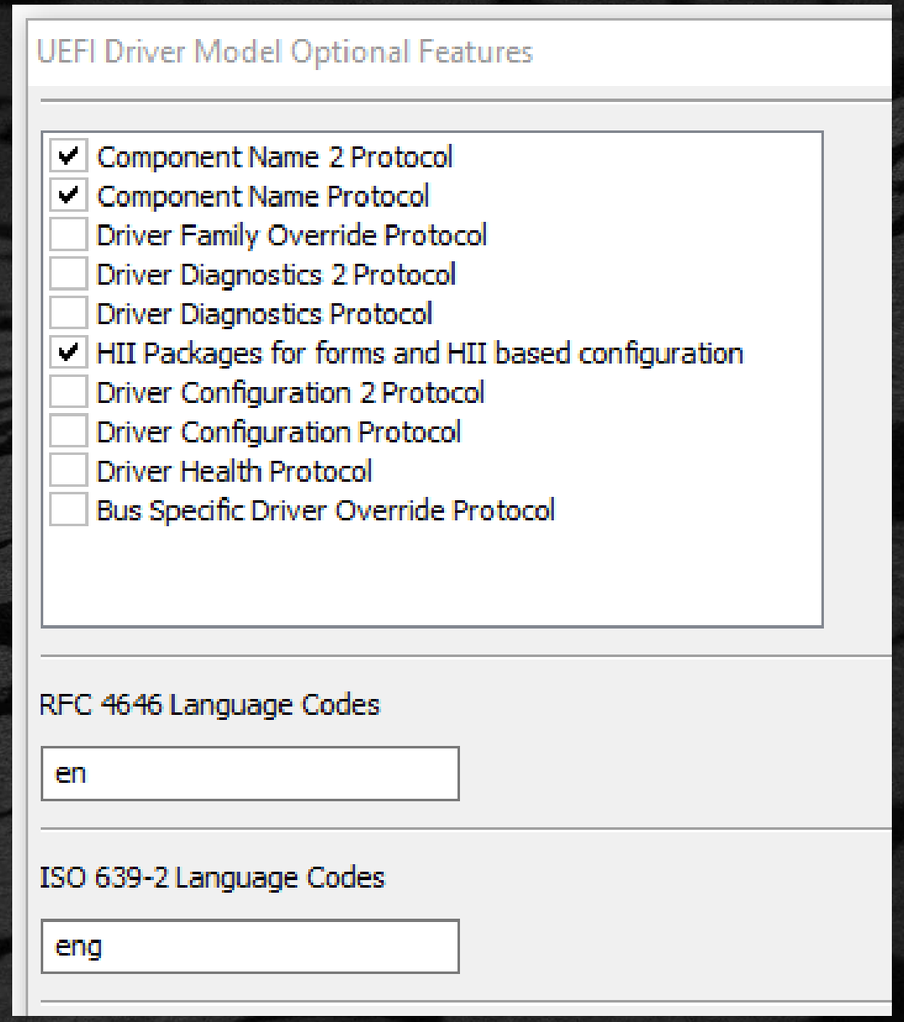
Lab 1: UEFI Driver Model Optional Features

Ensure all the forms, radio buttons, and boxes are filled in and **selected** ***exactly*** like the image to the right.

✓ "Componnt Name 2 Prorocol”
✓ "Componnt Name Prorocol”
✓ "HII Packages for Forms . . .”

Click

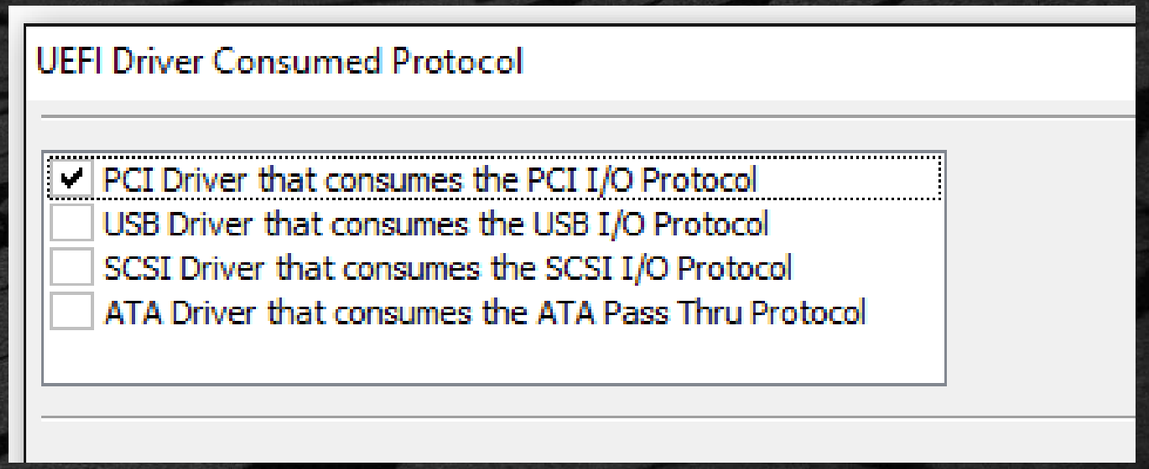
Next >>



Lab 1: UEFI Driver Consumed Protocol

Select

✓ “PCI Driver that consumes the PCI I/O Protocol”



Click

Next >>

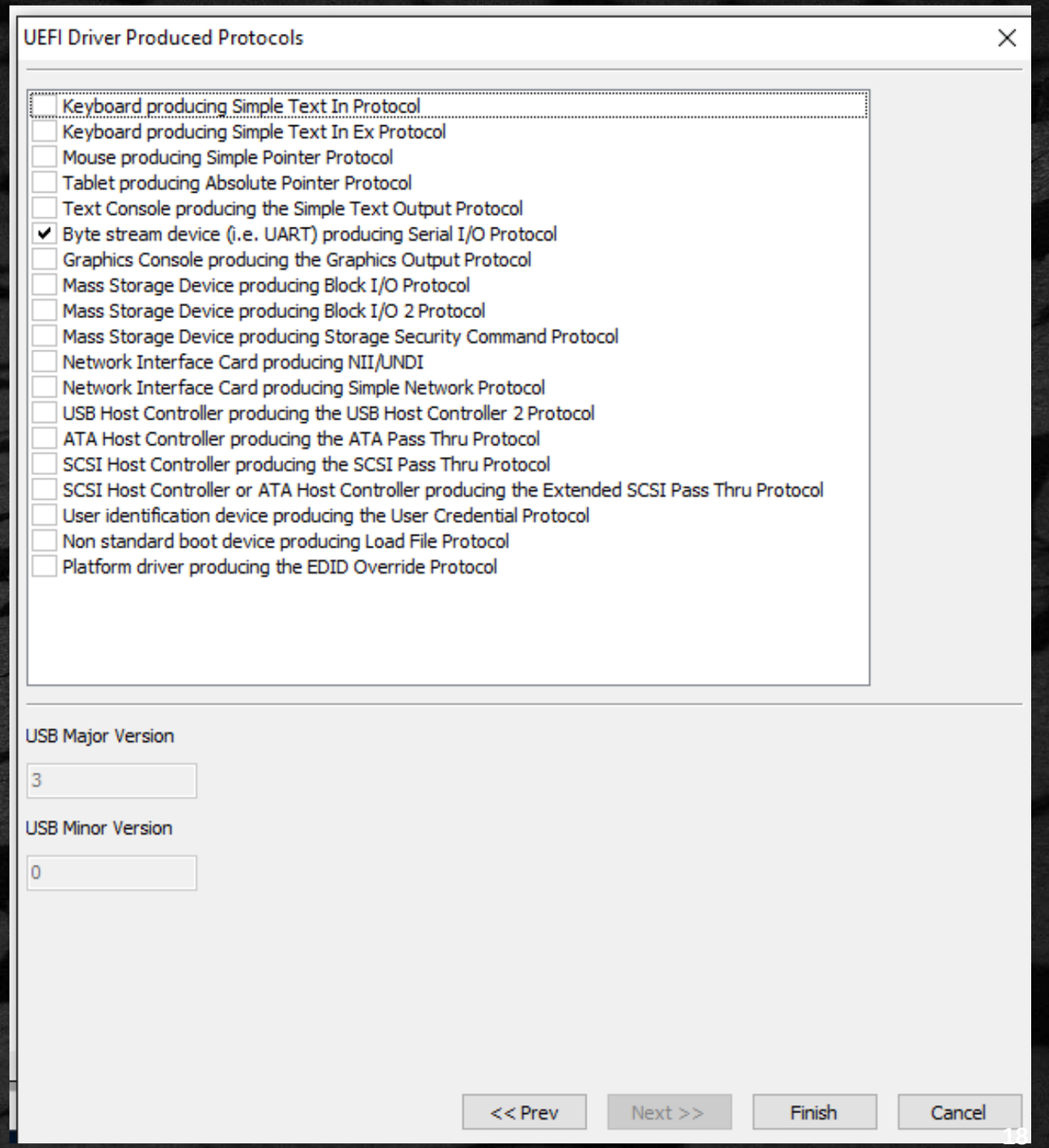
Lab1: UEFI Driver Produced Protocols

Select

✓ "Byte stream device (i.e.UART) producing Serial I/O Protocol"

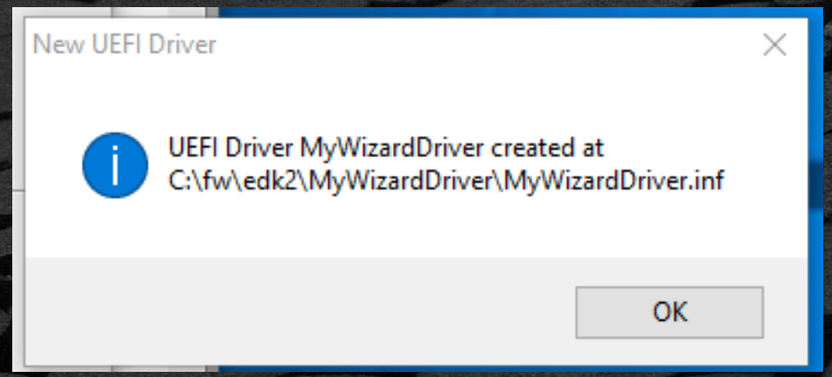
Click

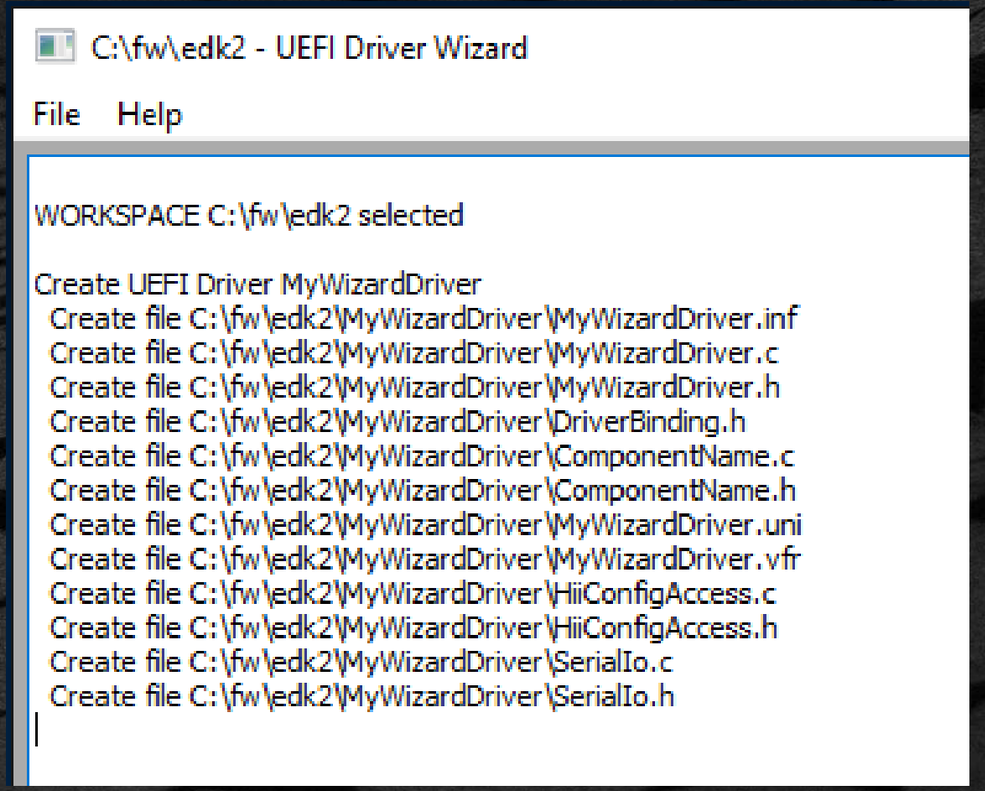
Finish



Lab 1: UEFI Driver Created

UEFI Driver template created





SUMMARY

- Setup the UEFI Driver Wizard
- Create a UEFI Driver Template


Questions?

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