

UEFI & EDK II Training

Continuous Integration (CI) Unit Test Framework for
Developer Validation Lab

tianocore.org

See also [LabGuide.md](#) for Copy & Paste examples in labs

This lab will show how to build and run a unit test sample code in the host-based environment.

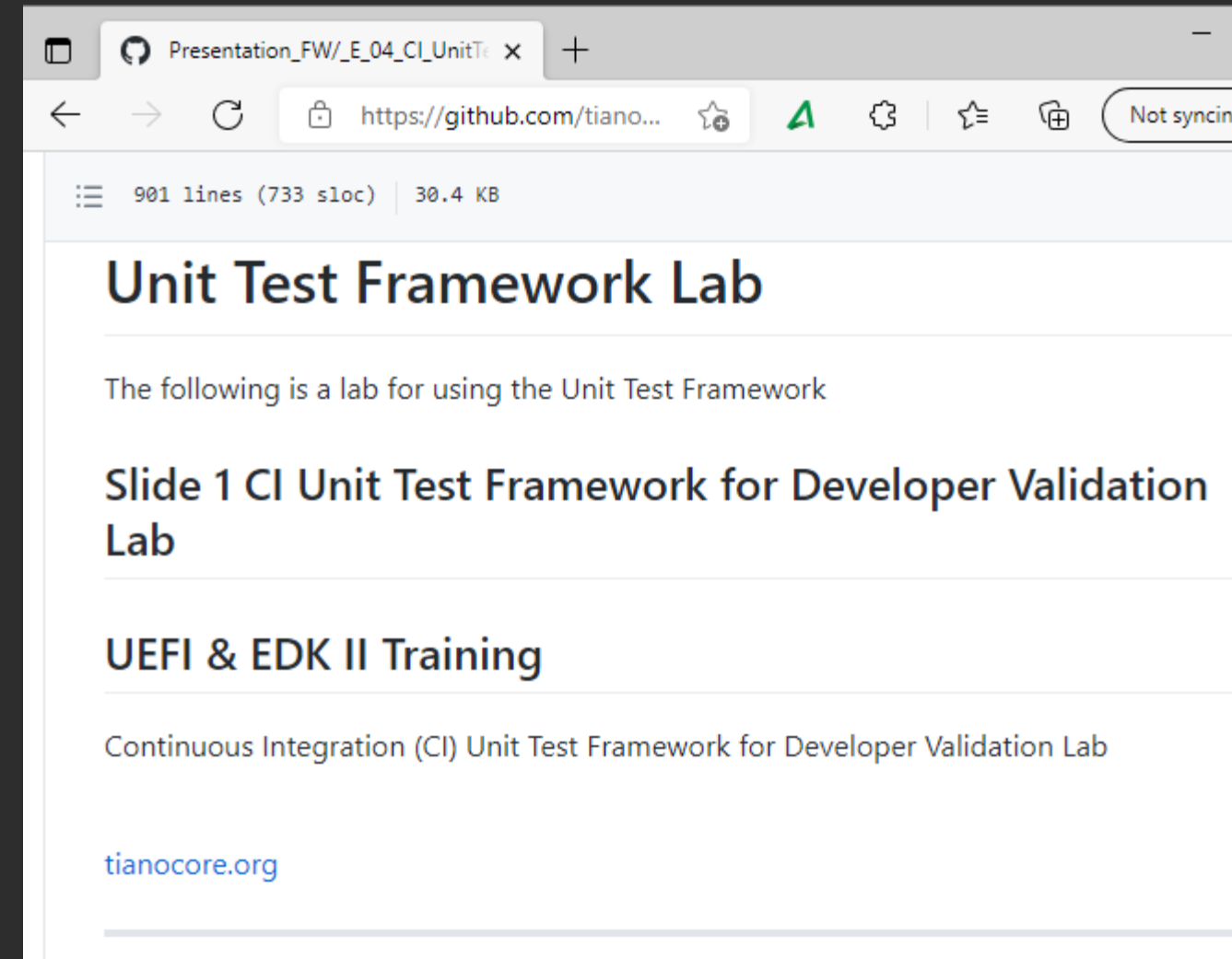
- Step by step guide for the Stuart CI build and run for the Sample Unit Test from `UnitTestFrameworkPkg`
- Steps to build for the Non-Stuart CI build and run
- Create a Host Unit Test Framework for a simple function
- Add a UEFI Shell Unit Test Framework using the `EmulatorPkg`

- Windows 10:
 - Stuart CI - Visual Studio VS2017 or VS2019
 - Non-Stuart CI - Visual Studio VS2015, VS2017 or VS2019
 - Windows SDK (for rc)
 - Windows WDK (for Capsules)
- Ubuntu 18.04 or Fedora
 - GCC5 or greater
- Python 3.7.x or greater on Path
- Git on Path

Steps for this Lab

1. How to build
2. Build and Run for Stuart CI Locally
3. Or Build and Run for Windows / Linux Non-Stuart CI
4. Run the Host Unit test locally
5. Create and Add a unit test case to test a function
6. Add the Unit test case the UEFI Shell

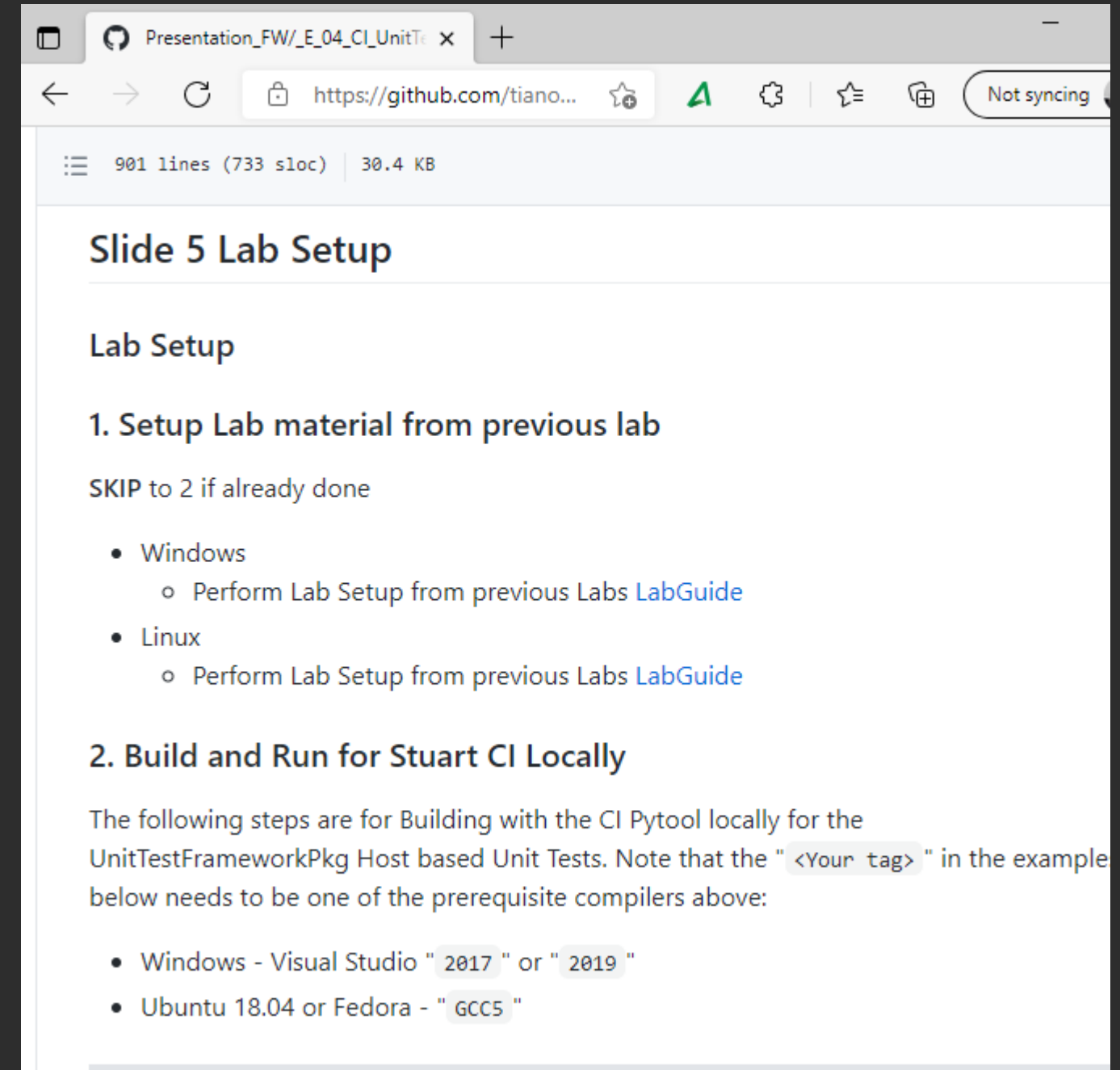
Solutions: See in the LabMaterial_FW/FW/
/LabSampleCode/LessonU_Unit_Test



Setup Lab material from previous lab

SKIP if already done

- Windows - Perform Lab Setup from previous Labs [LabGuide](#)
- Linux Perform Lab Setup from previous Labs [LabGuide](#)



The screenshot shows a web browser displaying a GitHub repository page. The browser's address bar shows the URL `https://github.com/tiano...`. The page content is titled "Slide 5 Lab Setup" and includes a section "Lab Setup" with two numbered steps. Step 1 is "Setup Lab material from previous lab" with a sub-note "SKIP to 2 if already done" and a bulleted list for Windows and Linux, both pointing to a "LabGuide" link. Step 2 is "Build and Run for Stuart CI Locally" with a paragraph of instructions and a bulleted list of prerequisites for Windows and Ubuntu/Fedora.

901 lines (733 sloc) | 30.4 KB

Slide 5 Lab Setup

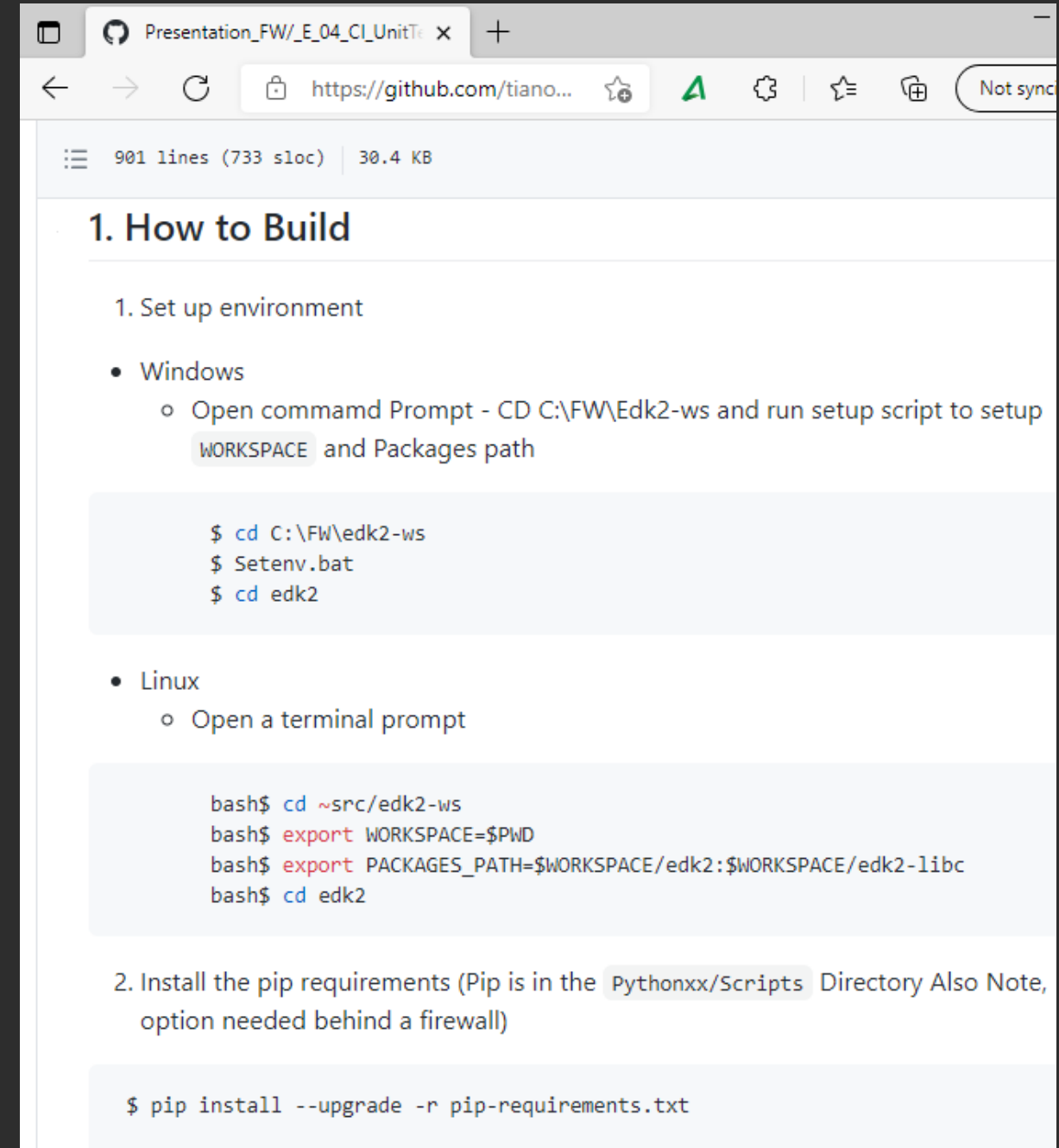
Lab Setup

1. Setup Lab material from previous lab
SKIP to 2 if already done
 - Windows
 - Perform Lab Setup from previous Labs [LabGuide](#)
 - Linux
 - Perform Lab Setup from previous Labs [LabGuide](#)
2. Build and Run for Stuart CI Locally
The following steps are for Building with the CI Pytool locally for the UnitTestFrameworkPkg Host based Unit Tests. Note that the "`<Your tag>`" in the example below needs to be one of the prerequisite compilers above:
 - Windows - Visual Studio "`2017`" or "`2019`"
 - Ubuntu 18.04 or Fedora - "`GCC5`"

How to Build Unit Tests

Continue following the Lab Guide Starting at [How to Build](#)

Build either Stuart CI or Non-Stuart CI



The screenshot shows a web browser displaying a GitHub repository page. The browser's address bar shows the URL `https://github.com/tiano...`. The repository page header indicates 901 lines (733 sloc) and 30.4 KB. The main content is titled "1. How to Build" and includes a sub-section "1. Set up environment". Under this, there are two bullet points: "Windows" and "Linux". The "Windows" section includes a sub-bullet "Open commamd Prompt - CD C:\FW\Edk2-ws and run setup script to setup WORKSPACE and Packages path" followed by a code block with the following commands:

```
$ cd C:\FW\edk2-ws
$ Setenv.bat
$ cd edk2
```

The "Linux" section includes a sub-bullet "Open a terminal prompt" followed by a code block with the following commands:

```
bash$ cd ~src/edk2-ws
bash$ export WORKSPACE=$PWD
bash$ export PACKAGES_PATH=$WORKSPACE/edk2:$WORKSPACE/edk2-libc
bash$ cd edk2
```

Below the "Linux" section, there is a sub-section "2. Install the pip requirements (Pip is in the Pythonxx/Scripts Directory Also Note, option needed behind a firewall)" followed by a code block with the following command:

```
$ pip install --upgrade -r pip-requirements.txt
```

Unit Test Framework Package Overview

– [Link](#)

Continuous Integration (CI) Configuring
for Unit Tests – [Link](#)

Code Examples of Unit Test Cases

- [Sample Unit Test](#)
- [BaseSafeIntLib Unit Test](#)
- [BaseLib Unit Test](#)
- [DxeResetSystemLib Unit Test](#)
- [MtrrLibUnitTest](#)
- Cmocka Edk II Unit Test ChefCook
example: [link](#)

Questions?



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ACKNOWLEDGEMENTS

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