Avnet Technical Training Course

Azure Sphere: Development Tools
Lab 0
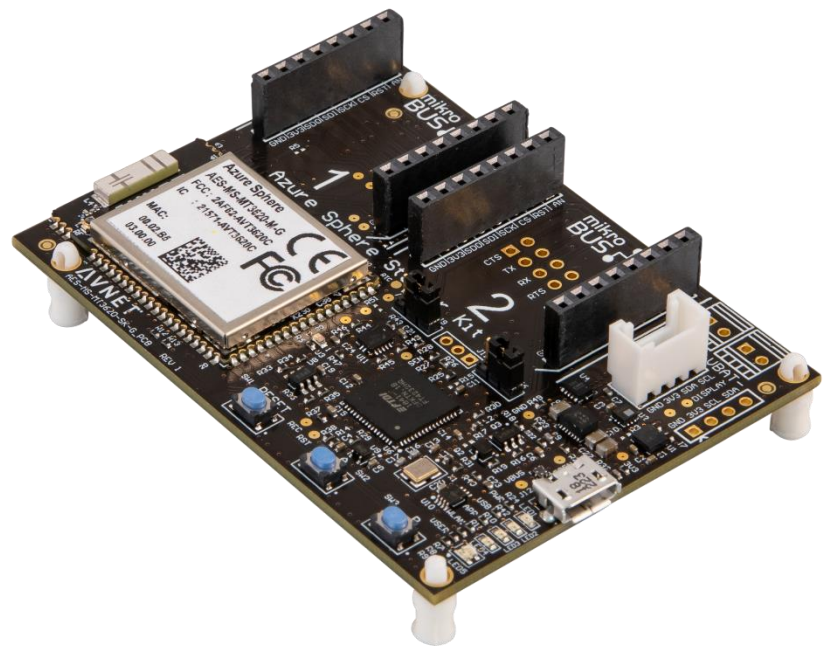
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Azure Sphere SDK:	19.05
Training Version:	v1
Date:	24 June 2019

Introduction

This lab will walk the student through installing all the required Azure Sphere development tools. After completing the lab the student will understand each piece of the Azure Sphere development environment and understand how to update the tools for future releases.

Avnet Azure Sphere Starter Kit Overview

The Avnet Azure Sphere Starter Kit from Avnet Electronics Marketing provides engineers with a complete system for prototyping and evaluating systems based on the MT3620 Azure Sphere device.

The Avnet Azure Sphere MT3620 Starter Kit supports rapid prototyping of highly secure, end-to-end IoT implementations using Microsoft's Azure Sphere. The small form-factor carrier board includes a production-ready MT3620 Sphere module with Wi-Fi connectivity, along with multiple expansion interfaces for easy integration of off-the-shelf sensors, displays, motors, relays, and more.

The Starter Kit includes Avnet's MT3620 Module. Having the module on the Starter Kit means that you can do all your development work for your IoT project on the Starter Kit and then easily migrate your Azure Sphere Application to your custom hardware design using Avnet's MT3620 Module.
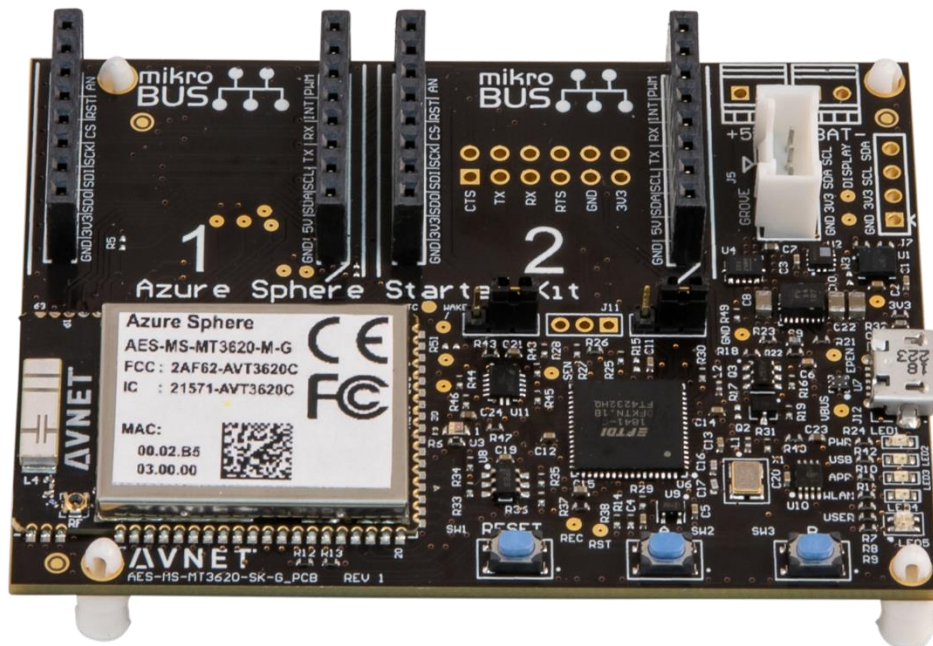
Avnet Azure Sphere Starter Kit

Lab 0: Objectives

The objectives of lab 0 are to install the tools required to carry out Azure Sphere Development tasks.

- Install Visual Studio 2019

- Install the Azure Sphere SDK

Requirements

Hardware

- A PC running Windows 10 Anniversary Update or later (Version 1607 or greater)

- An unused USB port on the PC

- An Avnet Azure Sphere Starter Kit

- A micro USB cable to connect the Starter Kit to your PC

Software

- Visual Studio 2019 Enterprise, Professional, or Community version 16.04 or later; or Visual Studio 2017 version 15.9 or later.

- Azure Sphere SDK 19.05 or the current SDK release

Other

- You will need Administrator rights on your PC to install the tools

Install Visual Studio 2019

Download the Visual Studio installer from Microsoft here. Download the distribution that matches your situation, Community, Professional, or Enterprise. All three will work for Azure Sphere Development.
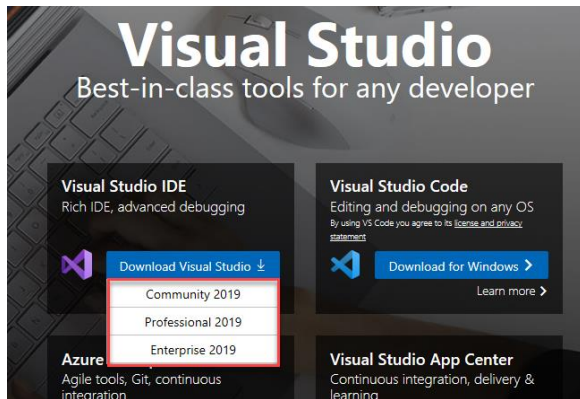

After downloading the installer, go ahead and run the executable. The installer will download more files then present a window asking you which workloads you want to install.

You need to install the "Linux development with C++" workload. You may have to scroll down in the window to find the workload. **Note that Azure specific workloads are NOT required.**

Feel free to install any additional workloads if you wish**, however no additional workloads are required for Azure Sphere development.**

Once you select any additional workloads that you want to install, click on the "Install" button in the bottom right corner of the window.
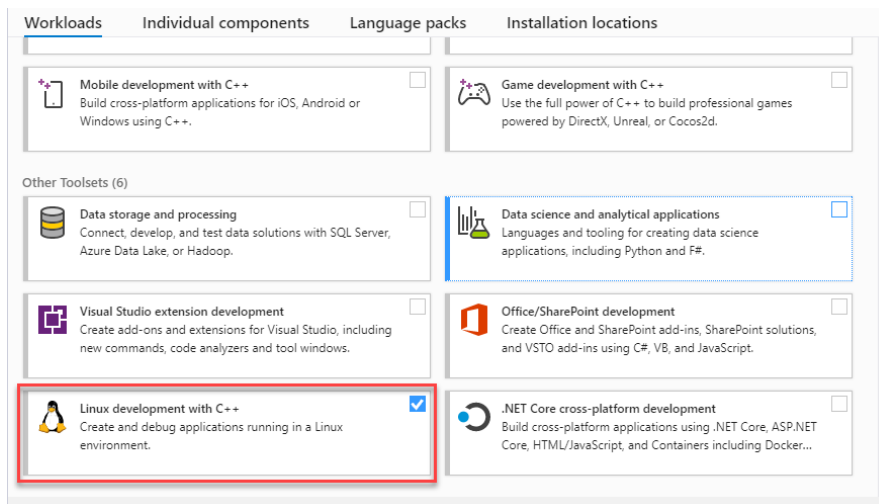

After the installation finishes, Visual Studio will launch and you'll be prompted to "Sign in." I log in with my Azure credentials, but any Microsoft account should work.

Updating your Visual Studio Installation

Over time Microsoft will update the Visual Studio application. To update Visual Studio find the Visual Studio installer on the Start Menu.

Once the Visual Studio Installer if your installation is out of date, you'll see the option to "update."

Visual Studio Community 2019
16.1.3

🛈 Update available
16.1.6

View details

Update
Launch
More ▾
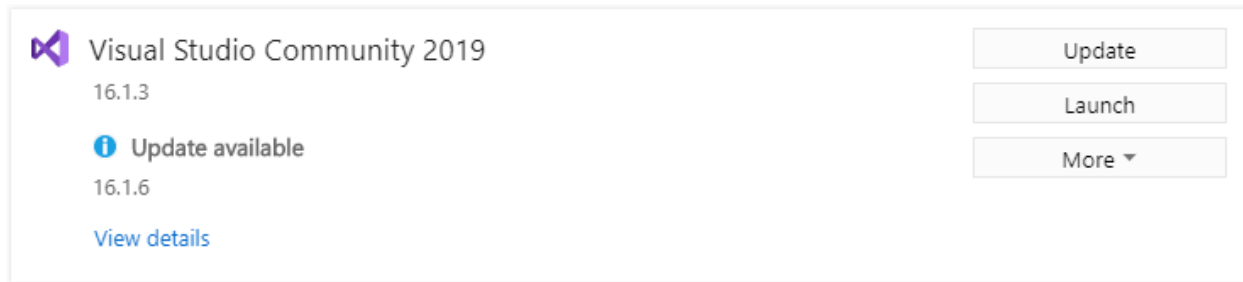
Azure Sphere SDK

The next thing we need to install is the Azure Sphere SDK. The SDK installer can be found here.

The SDK includes:

- The Azure Sphere Developer Command Prompt, which can be found on the Start Menu inside the Azure folder

- The azsphere.exe command-line utility for managing devices, images, and deployments.

- Libraries for application development

- Visual Studio extensions needed for Azure Sphere development

In the future, the Visual Studio installer will have an Azure Sphere Workload to install, but this has not been released yet.
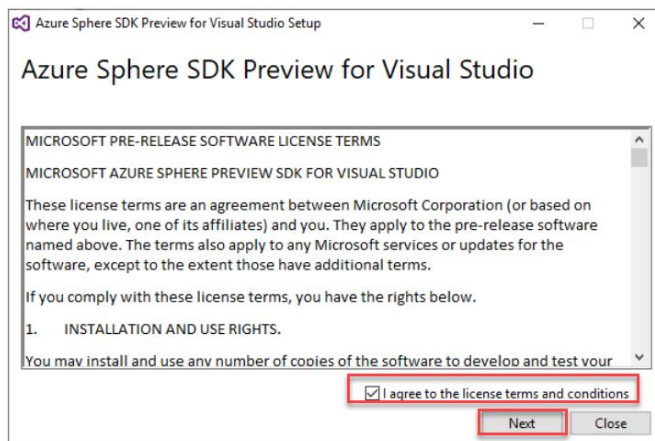
Run the Azure Sphere SDK installer, agree to the license terms and select "Next."

Click "Install" to begin the installation. Note the message on the dialog box about the TAP driver. The TAP driver enables an Ethernet connection over the USB serial port and is used to communicate to the Azure Sphere Starter Kit to/from the PC.

Updating the Azure Sphere SDK
The Azure Sphere team is on a quarterly cadence with releases. You should expect a new SDK every quarter. To update your SDK just download the new SDK installer and run it.

Potential Issues
Potential issues you may run into.

- "No product to install SDK on"

    o If you see this during the SDK install, verify that you have the correct version of Visual Studio installed and try again.

- Installer Hangs

    o If the installer hangs, try to reinstall the SDK. If it continues to fail try to uninstall the SDK. If the uninstall fails, remove all registry entries for the "AzureSphereDeviceCommunicationService" key and try to uninstall again.

Wrap Up
If you've completed installing Visual Studio and the Azure Sphere SDK, then you're ready to move on to the next lecture and lab in the series.

Revision History

Date	Version	Revision
25 June 19	00	Preliminary release
9 July 19	01	Minor changes based on document reviews