# Microsoft Windows Installation Guide For CS271 Mac Users

### Introduction

The software development tool for this course, Microsoft Visual Studio, requires an Intel or AMD Windows 10 PC. If you have a Mac, you must make some key decisions to get this tool running:

- 1. If your Mac has an Intel CPU, you must either:
  - a. Set up your machine in a dual boot configuration to boot into Windows 10 natively, OR
  - b. Use a virtual machine (VM) to run a Windows 10 environment within your MacOS.

For option 1a to work, your Mac needs at least 64 GB free hard drive space and 4 GB of RAM to properly run <u>Boot Camp</u>. The installation process repartitions your hard drive and there is a slight risk of error inducing data loss. However, Boot Camp does not slow down your system like a virtual machine because only one OS is running at a time.

For option 1b to work, the College of Engineering (COE) recommends that your Mac have at least 60 GB hard drive space and 4 GB RAM (note that with these specs, the VM will run slowly). If your Mac does not have at least these specifications, alternatives include using an external hard drive to run your VM, logging onto Citrix (a slow alternative, especially during debugging sessions), borrowing a Windows PC, or upgrading your Mac.

2. If you have a Mac that uses the Apple CPU (M1 or newer), your only options are logging onto Citrix or borrowing a Windows PC. As of the date of this guide, the COE has been investigating site-wide availability of the cloud-based Microsoft Windows Desktop, a tool that may provide access to a virtual Windows 10 PC through the Mac Windows Desktop client. You should reach out to <u>COE IT support</u> before you commit to using Citrix or borrowing a Windows PC for this class.

The remainder of this guide explains option 1b for setting up Windows 10 in a VMware virtual machine on a Mac with an Intel CPU and sufficient specifications to support that environment.



## Installing VMware on a Mac

- 1. Click the VMware Academic Site link in the Tools tab of the syllabus on Canvas.
- 2. Sign in using your OSU credentials and select the most recent edition of VMware.

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5. Open the downloaded application and double-click the icon to begin the installation process.



6. Go to System Preferences à Security & Privacy to Allow VMware software to load.





7. Paste your copied License Key into the form and click Continue.

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8. Your VMware screen should look like this. If you have already downloaded Windows 10, skip to step 15.

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9. If you do not have Windows 10 yet, navigate to Canvas and click the Microsoft Azure Interface link in the Tools tab of the syllabus.



### Installing Windows 10 in the VMware Environment

### 10. Sign into Microsoft Azure using your ONID credentials.

Note: You should be able to log in with your OSU email address

(username@oregonstate.edu) which will forward you to the OSU central login page. Sometimes Microsoft requires that you log in with a non-OSU email (if you have an existing account you can use it) and then verify your OSU email to obtain access.

11. Once you reach the Microsoft Azure Portal, click Download Software.

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13. Click the Windows 10 Education edition you would like to download and then click View Key.



14. Copy your unique Product Key (save for later), then click Download.

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Note: Check the downloaded file and ensure you have ONE .iso file that is approximately 5 GB. If you have a .iso file that says zero bytes and a .iso.part file, you will need to re-download. This is an indication of a failed download, and these files will not work in VMware.

Note: Save your .iso file until you're absolutely sure VMware is properly installed. The Azure site has a glitch that will sometimes lock you out of the system for 2-3 days.

15. Return to your VMware installation and double click Install from disc or image

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16. Drag your downloaded copy of Windows 10 into VMware

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18. Paste in your saved Windows Product Key.

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19. Select Windows 10 Education and click Continue.

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20. If want to minimize RAM and hard drive space usage, select More Isolated and click Continue.

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### 22. Click Finish.





23. While Windows installs, click the wrench icon to view the hardware settings for your VM.



24. Click Processors & Memory.





25. Click Advanced Options and ensure that "Enable code profiling applications in this virtual machine" is unchecked. This disables VMware performance counters, which are not supported in the MacOS Big Sur release. Then click the red circle to exit settings.



26. Installation is complete. You may have to restart to enable hardware settings changes. Navigate to the Tools tab of the CS271 Syllabus page in Canvas for Visual Studio installation instructions.



