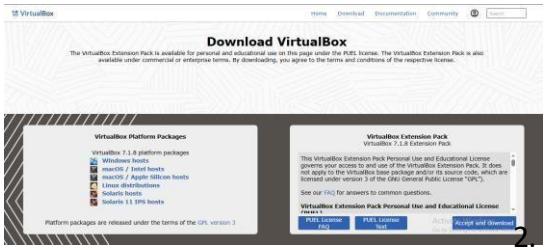
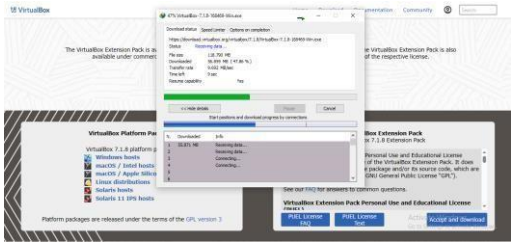
INSTALLATION STEPS:

Step 1: Download the Oracle VirtualBox Installer

The first step is to obtain a verified, official copy of the Oracle VirtualBox installation software.

1. Open a web browser and navigate to the official VirtualBox downloads page: "https://www.virtualbox.org/wiki/Downloads".
2. Locate the section for VirtualBox platform packages. Choose the installer corresponding to the Host Operating System, which in this case is "Windows hosts".
3. Click on the link for "Windows hosts". The download of the VirtualBox installer will begin immediately.

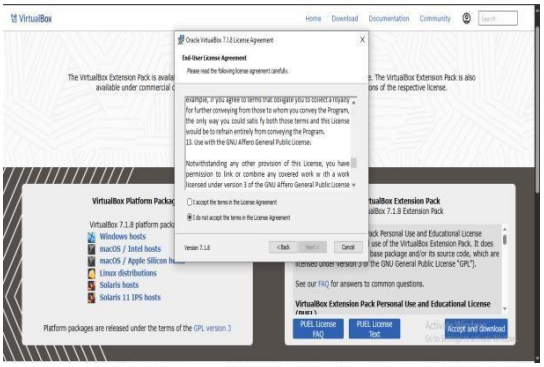
1. 

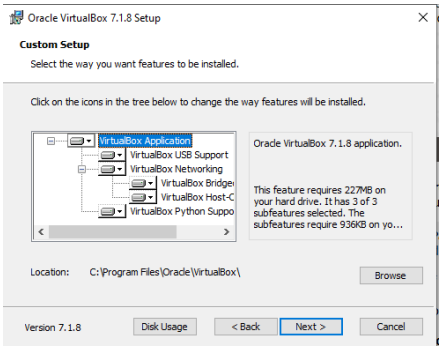
2. 

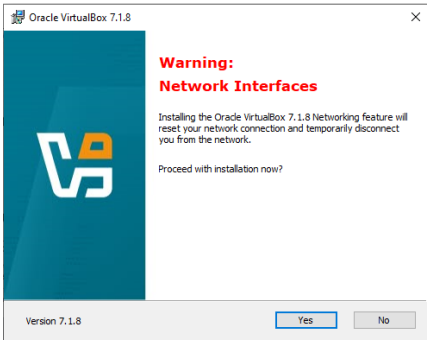
Step 2: Install Oracle VirtualBox

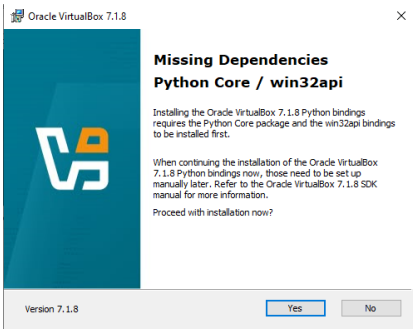
Once the download is complete, proceed with the installation process.

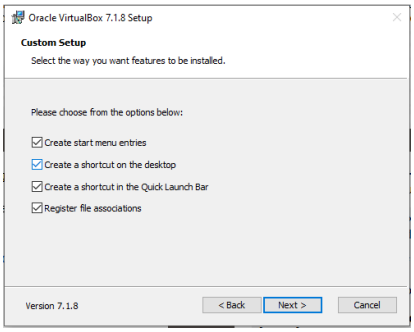
1. Locate the downloaded VirtualBox installer file (it will likely be an .exe file).
2. Double-click the installer file to begin the installation.
3. Follow the on-screen prompts. When presented with installation options and extra questions, it is generally safe to select "Yes" or "Next" to accept the default configurations for a standard installation.
4. Allow the installation process to complete.

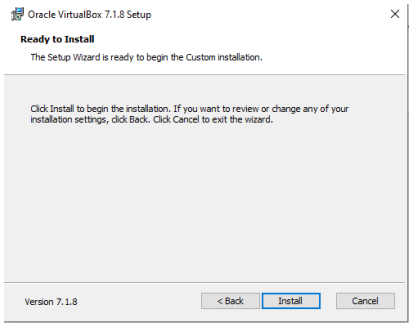

VirtualBox
Home
Download
Documentation
Community
Oracle VirtualBox 7.1.8 License Agreement
End-User License Agreement
Please read the following license agreement carefully.
I accept the terms in the License Agreement
I do not accept the terms in the License Agreement
Version 7.1.8
< Back
Next >
Cancel
VirtualBox Platform Packages
VirtualBox 7.1.8 platform packages
Windows hosts
macOS / Intel hosts
macOS / Apple Silicon hosts
Linux distributions
Solaris hosts
Solaris 11 IPS hosts
Platform packages are released under the terms of the GPL version 3
VirtualBox Extension Pack
VirtualBox 7.1.8 Extension Pack
Personal Use and Educational License
See our FAQ for answers to common questions.
VirtualBox Extension Pack Personal Use and Educational License
PUEL License FAQ
PUEL License Text
Accept and download

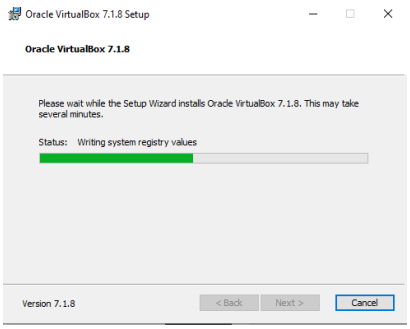

Oracle VirtualBox 7.1.8 Setup
Custom Setup
Select the way you want features to be installed.
Click on the icons in the tree below to change the way features will be installed.
VirtualBox Application
VirtualBox USB Support
VirtualBox Networking
VirtualBox Bridge
VirtualBox Host-C
VirtualBox Python Suppo
Oracle VirtualBox 7.1.8 application.
This feature requires 227MB on your hard drive. It has 3 of 3 subfeatures selected. The subfeatures require 936KB on yo...
Location: C:\Program Files\Oracle\VirtualBox\
Browse
Version 7.1.8
Disk Usage
< Back
Next >
Cancel


Oracle VirtualBox 7.1.8
Warning:
Network Interfaces
Installing the Oracle VirtualBox 7.1.8 Networking feature will reset your network connection and temporarily disconnect you from the network.
Proceed with installation now?
Version 7.1.8
Yes
No


Oracle VirtualBox 7.1.8
Missing Dependencies
Python Core / win32api
Installing the Oracle VirtualBox 7.1.8 Python bindings requires the Python Core package and the win32api bindings to be installed first.
When continuing the installation of the Oracle VirtualBox 7.1.8 Python bindings now, those need to be set up manually later. Refer to the Oracle VirtualBox 7.1.8 SDK manual for more information.
Proceed with installation now?
Version 7.1.8
Yes
No

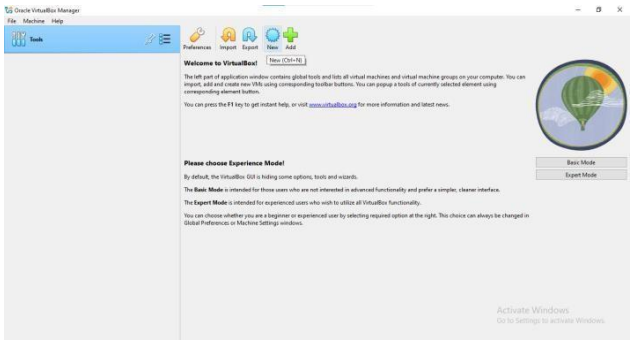

Oracle VirtualBox 7.1.8 Setup
Custom Setup
Select the way you want features to be installed.
Please choose from the options below:
Create start menu entries
Create a shortcut on the desktop
Create a shortcut in the Quick Launch Bar
Register file associations
Version 7.1.8
< Back
Next >
Cancel


Oracle VirtualBox 7.1.8 Setup
Ready to Install
The Setup Wizard is ready to begin the Custom installation.
Click Install to begin the installation. If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
Version 7.1.8
< Back
Install
Cancel


Oracle VirtualBox 7.1.8 Setup
Oracle VirtualBox 7.1.8
Please wait while the Setup Wizard installs Oracle VirtualBox 7.1.8. This may take several minutes.
Status: Writing system registry values
Version 7.1.8
< Back
Next >
Cancel

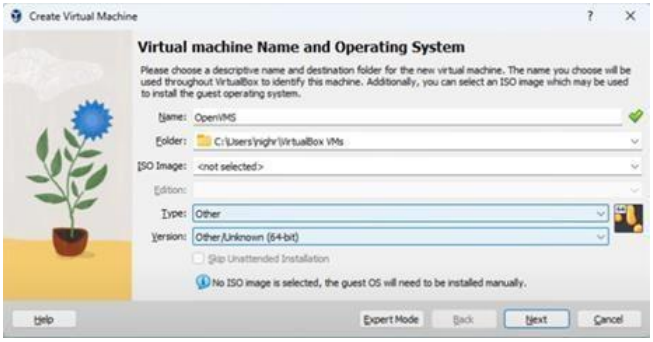
Step 3: Create a New Virtual Machine for the OS

1. Open the Oracle VirtualBox application.
2. Click on the "New" icon located on the left side of the toolbar (it's usually the first icon). This will open the "Create Virtual Machine" wizard.



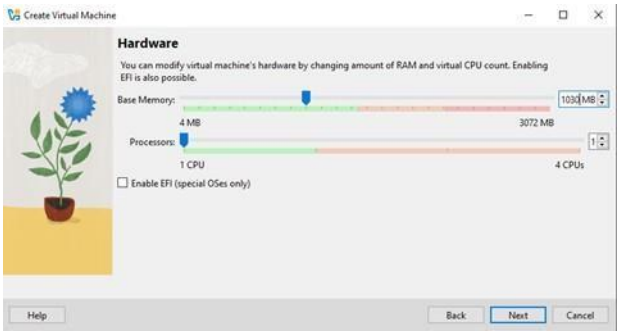
Step 4: Configure Basic Virtual Machine Settings

1. **Name:** In the "Name" field, enter any name. I picked "OpenVMS" to identify the virtual machine.
2. **ISO Image:** Leave the "ISO Image" field as "Not selected" for now. It will be specified in the installation media later.
3. **Type:** In the "Type" dropdown menu, select "Other".
4. **Version:** In the "Version" dropdown menu, select "Other/Unknown".
5. Click "Next" to proceed.



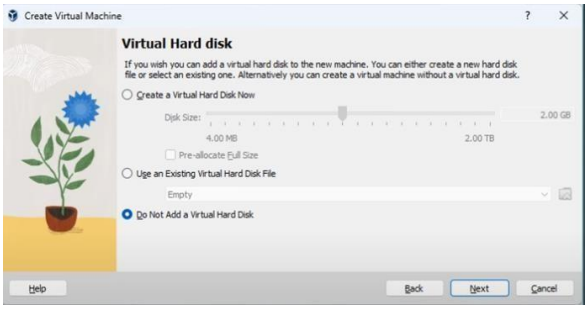
Step 5: Configure Memory and CPU

1. **Memory Size:** Set the "Memory size" to "1030 MB". You can either type this value or use the slider.
2. **Processors:** Set the "Processors" to "1".
3. **Enable EFI:** Ensure the "Enable EFI (special OSes only)" checkbox is **unchecked**. This is because the target operating system requires a traditional BIOS environment, and enabling EFI might prevent it from booting correctly.
4. Click "Next" to continue with further virtual machine setup.



Step 6: Configure Hard Disk Allocation

1. In the "Virtual Hard Disk" window, select the option "Do not add a virtual hard disk" for now.
2. Click "Next".



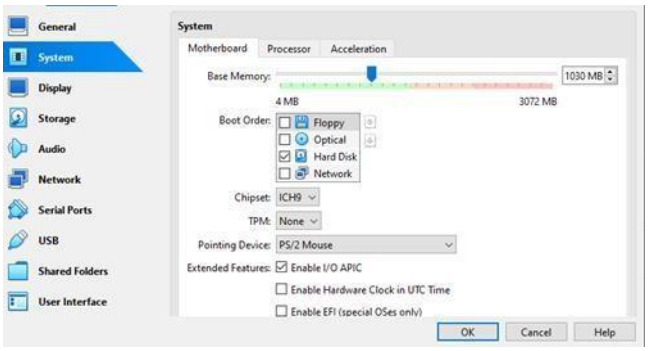
Step 7: Review Virtual Machine Summary

1. The wizard will now display a summary of the configuration settings you have chosen for the "OpenVMS" virtual machine.
2. Review these settings to ensure they are as intended.

3. Click "Finish". VirtualBox will now create the virtual machine based on these specifications.

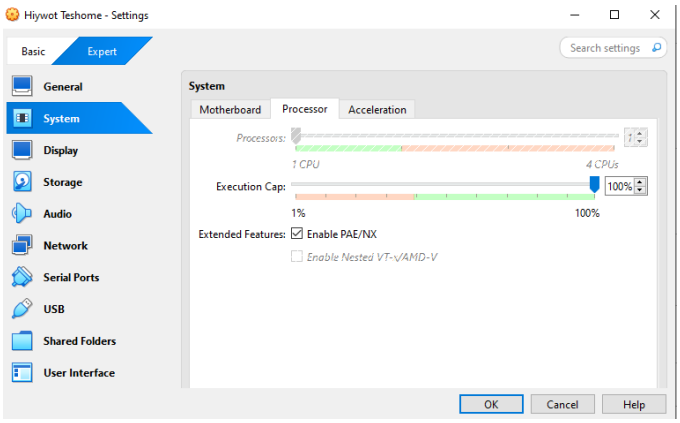
Step 8: Adjust Virtual Machine System Settings

1. In the VirtualBox Manager, select the newly created "OpenVMS" virtual machine.
2. Click on the "Settings" icon in the toolbar.
3. In the "Settings" window, navigate to the "System" tab.
4. In the "Boot Order" section, uncheck the boxes for "Floppy", "Optical", and "Network". Ensure that the boot order prioritizes the hard disk (which will be configured later with the ISO).
5. Set the "Chipset" to "ICH9".
6. Set "TPM" to "None".
7. Navigate to the "Pointing Device" dropdown and select "PS/2 Mouse".
8. Ensure the "Enable I/O APIC" checkbox is checked.
9. Click "OK" to save these system settings.



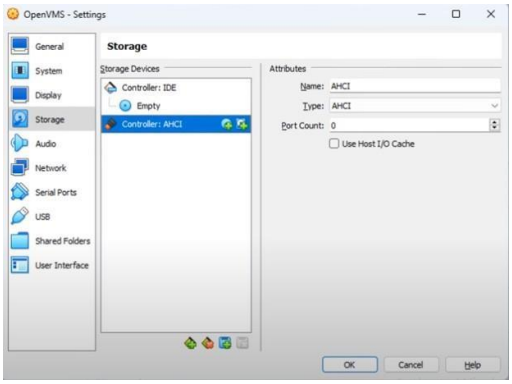
Step 9: Verify Processor Settings

1. While still in the "Settings" window for the "OpenVMS" virtual machine, navigate to the "Processor" tab.
2. Confirm that the "Processor(s)" are set to "1", as configured earlier.
3. Click "OK" if you made any changes, otherwise, you can proceed.



Step 10: Add an AHCI Storage Controller

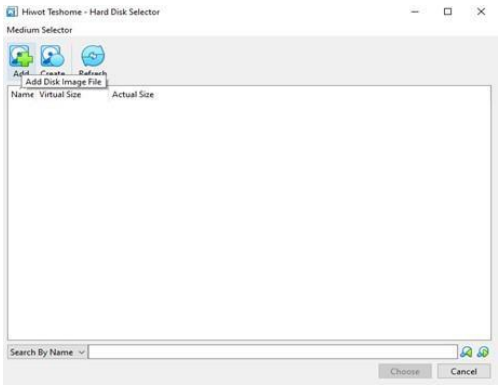
1. In the "Settings" window, navigate to the "Storage" tab.
2. Click on the "+" icon with the tooltip "Adds new storage controller" located below the list of "Devices".
3. Select "Add AHCI Controller". A new controller will appear in the storage tree.

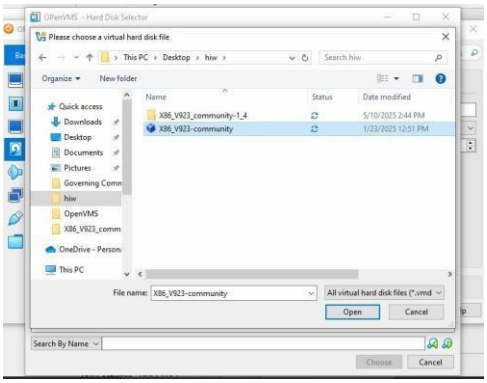


Step 11: Add the OpenVMS ISO Image

1. Click on the second "+" icon (with a CD/DVD symbol and the tooltip "Adds optical drive") under the newly added AHCI Controller.
2. In the "Choose Virtual Optical Disk File" window, click on the "Add" button (usually a "+" icon).
3. Navigate to the location where you saved the OpenVMS ISO image obtained from VMS Software, Inc. (VSI).
4. Select the ISO file and click "Open".
5. Back in the "Choose Virtual Optical Disk File" window, select the added ISO image.

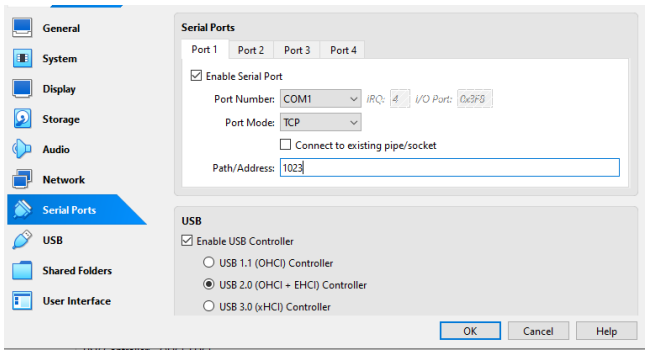
6. Click "Choose". The OpenVMS ISO image is now associated with the virtual optical drive.





Step 12: Enable and Configure Serial Port

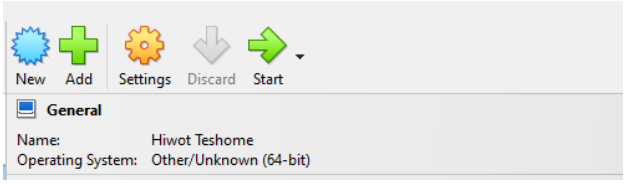
1. In the "Settings" window, navigate to the "Serial Ports" tab.
2. Ensure the "Enable Serial Port" checkbox is checked.
3. **Port Number:** Set the "Port Number" to "COM1".
4. **Port Mode:** Set the "Port Mode" to "TCP".
5. Ensure the "Connect to existing pipe/socket" checkbox is **unchecked**.
6. **Path/Address:** Set the "Path/Address" to "1023".
7. Click "OK" to save the serial port configuration.



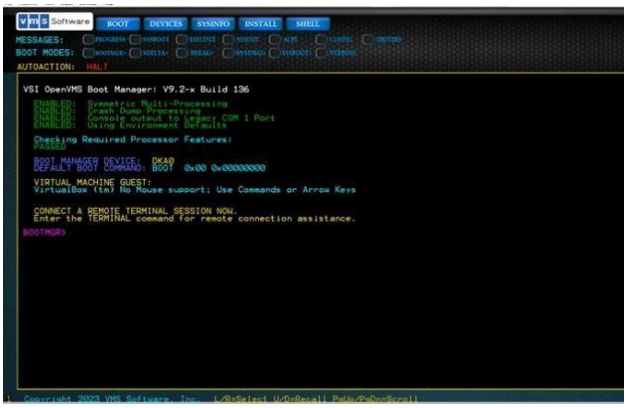
Step 13: Start the Virtual Machine Installation

1. In the VirtualBox Manager, ensure the "OpenVMS" virtual machine is selected.

2. Click the "Start" button (usually a green arrow) in the toolbar. This will power on the virtual machine and begin the installation process using the OpenVMS ISO image you attached.



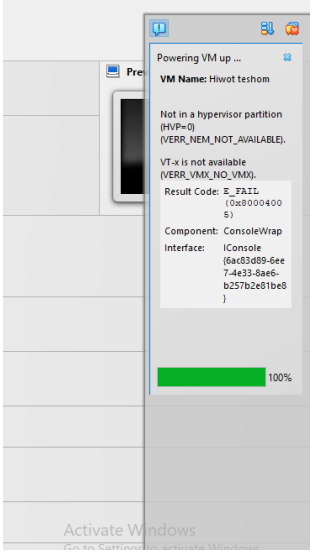
This is what the OpenVMS was supposed to like when it is installed:



When I tried to start the virtual machine set up for OpenVMS in VirtualBox, I ran into a serious error that stopped it from running. The VirtualBox displayed the following error messages:

1. Not in a hypervisor partition (HVP=0) (VERR_NEM_NOT_AVAILABLE): This error strongly suggests that the necessary hypervisor environment for running the virtual machine is not available or properly configured on my host system. A hypervisor is the underlying software layer that manages virtual machines. This error often arises when hardware virtualization features are not enabled or are being interfered with.

2. VT-x is not available (VERR_VMX_NO_VMX): This is a more specific indicator that Intel Virtualization Technology (VT-x) or AMD-V (the equivalent for AMD processors) is either not supported by my CPU, not enabled in the system's BIOS/UEFI settings, or is being used exclusively by another hypervisor. These CPU virtualization extensions are essential for the efficient operation of most modern virtualization software like VirtualBox. This was the reply that I was receiving:



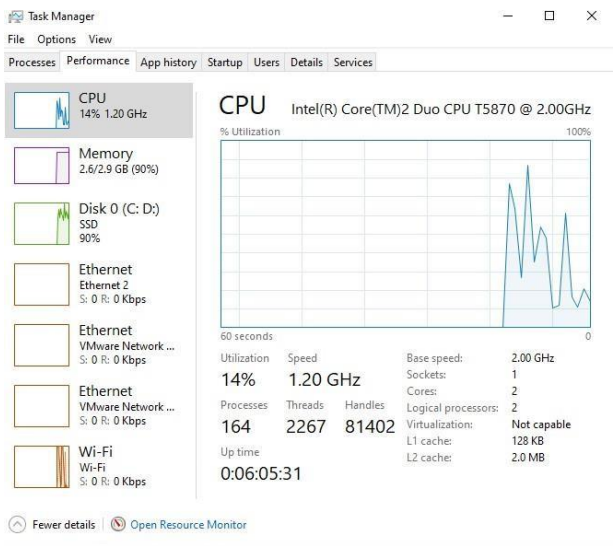
Troubleshooting Steps and Analysis:

To address these errors, I undertook the following troubleshooting steps:

Verification of CPU Virtualization Support: I checked the specifications of my computer's CPU to confirm if it supports Intel VT-x or AMD-V. I checked the 'Virtualization' status in the Performance tab of the Task Manager. Instead of 'Enabled' or 'Disabled', the status showed 'Not applicable'.

The primary reason why the virtualization says "Not applicable" in the Task Manager is that my PC's processor is an Intel(R) Core(TM)2 Duo CPU T5870 @ 2.00GHz. While many Core 2 Duo processors did support Intel Virtualization Technology (VT-x), not all models did. Specifically, based on Intel's official specifications and third-party sources, the Intel Core 2 Duo T5870 does NOT support Intel VT-x.

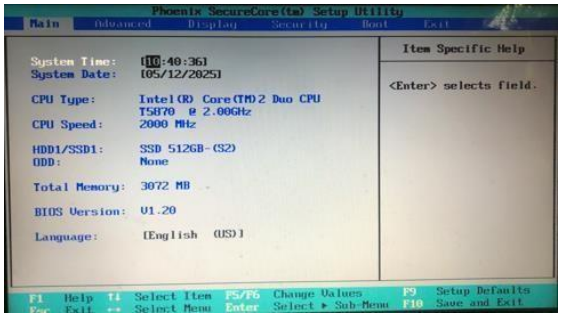
The second reason is that the BIOS version is TOSHIBA V1.20, dated 10/28/2009. This is also quite old BIOS. Even if the CPU did support virtualization, older BIOS might not have the necessary settings or support for enabling it correctly.

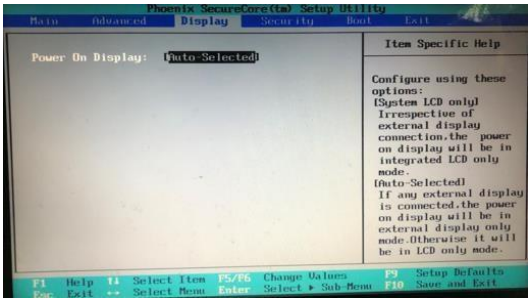


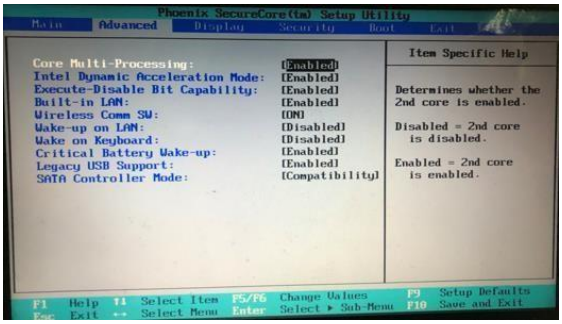
BIOS/UEFI Settings Check: I accessed the system's BIOS/UEFI settings during startup to ensure that the virtualization technology (VT-x/AMD-V) was enabled.

To ensure that hardware virtualization was enabled at the firmware level, I restarted my computer and pressed the F2 key repeatedly during startup to enter the BIOS/UEFI setup utility.

Once in the BIOS/UEFI, I navigated through the menus using the arrow keys to find the settings related to CPU configuration or advanced features. But I could not find any options related to virtualization.

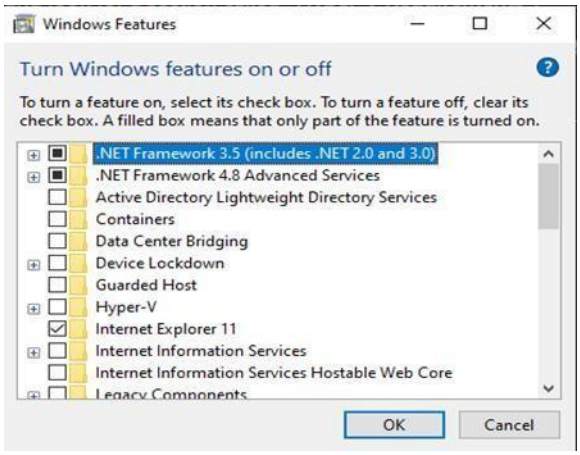






This is caused due to the fact that my PC's CPU itself doesn't have the hardware virtualization capabilities, the BIOS settings won't offer an option to enable it.

Investigating Hyper-V (if you are on Windows): I checked if Hyper-V was enabled on my system. If Hyper-V, Microsoft's native hypervisor, is enabled, it can sometimes exclusively grab the virtualization extensions. In this scenario, VirtualBox might not be able to use them, and the Task Manager might report "Not applicable" because the features are in use by another hypervisor. But I made sure to disable the Hyper-V, and it still did not work.



VirtualBox reinstallation: I considered the possibility of a corrupted VirtualBox installation and attempted a reinstallation of the software. This did not resolve the issue.

On my first attempt, the operating system installation failed, primarily due to issues with my PC. I then tried using a different device to install it, but the problem continued. Each time I started the installation, the same error kept appearing:

This is a **VirtualBox security-related error** that happens because VirtualBox's "hardening" process (which checks for security and integrity of the environment) fails to verify or access virtual memory correctly on the system.

The Common Causes for this error are:

1. Third-party antivirus or security software interfering with VirtualBox.
2. Windows Defender or firewall blocking parts of VirtualBox.
3. Missing or corrupted VirtualBox installation files.

I tried to reinstall VirtualBox, disable antivirus and firewall temporarily, enable virtualization in BIOS, I made sure windows defender or windows firewall isn't blocking VirtualBox. Unfortunately, even after doing that, the error persisted and I couldn’t get the OS to install.

In summary, despite all the ways I tried to install the operating system I kept getting errors about a missing hypervisor and VT-x not being available, indicating a fundamental issue preventing the successful setup of the OpenVMS virtual machine on my current system.