



Windows 7 XP Mode for HP Business PCs

Table of Contents:

Introduction	1
Disclaimer	1
Main features and benefits	2
Hardware Requirements	2
Minimum Hardware Requirements	3
Recommended Hardware Configuration	3
System BIOS Requirements	3
Virtualization Varieties	3
HP System BIOS	3
VTx and AMD-V systems	3
VTd systems	5
AMI System BIOS	7
Windows XP Mode Setup	8
HP Recommended Settings	8
Known Limitations	9

Introduction

Windows® XP Mode is a new benefit of Windows 7 Professional, Enterprise, and Ultimate that helps you install and run many Windows XP-compatible business and productivity applications. Windows XP Mode uses Windows Virtual PC, a new feature in Windows 7, to run many Windows XP productivity applications within XP Mode and launch them from the Windows 7 desktop with just a single click.

Disclaimer

This document is intended to assist HP customers in configuring and installing XP Mode on HP models only. For any XP Mode questions or concerns, please refer to the **Windows Virtual PC: Documentation and videos** at <http://www.microsoft.com/windows/virtual-pc/support/default.aspx>.

Main features and benefits

With the release of Windows 7, Windows Virtual PC includes several new features designed to make it easier for you to run your older Windows XP applications in a virtual software environment like Windows XP Mode:

- **Seamless applications**—Publish and launch applications installed on Windows XP Mode directly from the Windows 7 desktop, as if they were installed on the Windows 7 host itself. Seamless applications can be launched from the Windows 7 host taskbar, Start menu, or desktop.
- **Folder integration between operating environments**—Access your Windows 7 folders, such as My Documents, Pictures, Desktop, Music, and Video, from inside the Windows XP Mode environment.
- **Clipboard sharing**—Cut and paste between the Windows 7 host and any virtual machine.
- **USB support**—Access USB devices attached to the host directly from Windows XP Mode. These devices include printers and scanners, flash memory sticks and external hard drives, digital cameras, and more.
- **Printer redirection and sharing**—Print directly to your attached printer from your application or virtual machine. Physical printers can be accessed directly from Windows Virtual PC guests.
- **Drive sharing**—Share drives between the host and guests automatically.

Hardware Requirements

Windows XP Mode is a virtualized version of Windows XP, so it requires Windows Virtual PC to execute. Windows Virtual PC can only execute on processors with hardware virtualization support which assists in the trapping and emulation of instructions within a guest operating system.

Intel and AMD both provide hardware virtual support, but the terminology is different.

- Intel Virtualization Technology (VT)
- AMD Virtualization (AMD-V)

Refer to your system specification to determine if your processor supports hardware virtualization. Additional resources for determining if a processor has hardware virtualization support:

Intel Virtualization Technology List

<http://ark.intel.com/VTList.aspx>

Intel Processor Spec Finder

<http://processorfinder.intel.com/Default.aspx>

AMD Virtualization Technology and Microsoft Hyper-V™ System Compatibility Check Utility

<http://support.amd.com/us/Pages/dynamicDetails.aspx?ListID=c5cd2c08-1432-4756-aafa-4d9dc646342f&ItemID=177>

Minimum Hardware Requirements

Processor: Processor that supports Virtualization

Memory: 2GB RAM

Recommended Hardware Configuration

Processor: Processor that supports Virtualization

Memory: 2GB of RAM or Higher

System BIOS Requirements

The system BIOS must support virtualization technology in addition to the processor having the feature for it to function.

By default, the HP system BIOS disables the virtualization support of processors. Virtualization must be enabled for Windows XP Mode to function.

Virtualization Varieties

There are two kinds of Virtualization Technology:

- Processor-based VT with VMM support
- Chipset-based VT with directed I/O

The processor-based VT is common across both Intel and AMD processors. Intel VTx and AMD-V both deal with virtualization at the processor level and are designed to assist software virtualization.

The chipset-based VT is currently only available with higher-end Intel processors and chipsets. Intel VTd (Directed I/O) is an extension of VTx and provides the capability to control DMA accesses and direct them to specific domains which are regions in physical memory. This will allow better performance for peripheral devices that take advantage of the feature.

Intel VTd is offered in Intel vPro systems. VTd is not required for Microsoft Virtual PC to execute, but it could improve performance.

HP System BIOS

HP business PC systems that use an HP system BIOS can access the virtualization option as follows.

VTx and AMD-V systems

Do the following to enable processor virtualization in VTx and AMD-V systems:

1. Turn on or restart the computer.
2. As soon as the computer is turned on, press **F10** when the monitor light turns green to enter Computer Setup. Press **Enter** to bypass the title screen, if necessary.

NOTE:

If you do not press **F10** at the appropriate time, you must restart the computer and again press **F10** when the monitor light turns green to access the utility.

3. Select your language from the list and press **Enter**.
4. A choice of five headings appears in the Computer Setup Utilities menu: **File**, **Storage**, **Security**, **Power**, and **Advanced**.
5. Use the arrow (left and right) keys to select the appropriate heading. Use the arrow (up and down) keys to select the option you want, then press **Enter**. To return to the Computer Setup Utilities menu, press **Esc**.
6. Go to **Security > System Security**.
7. Set **Virtualization Technology** to **Enable**.

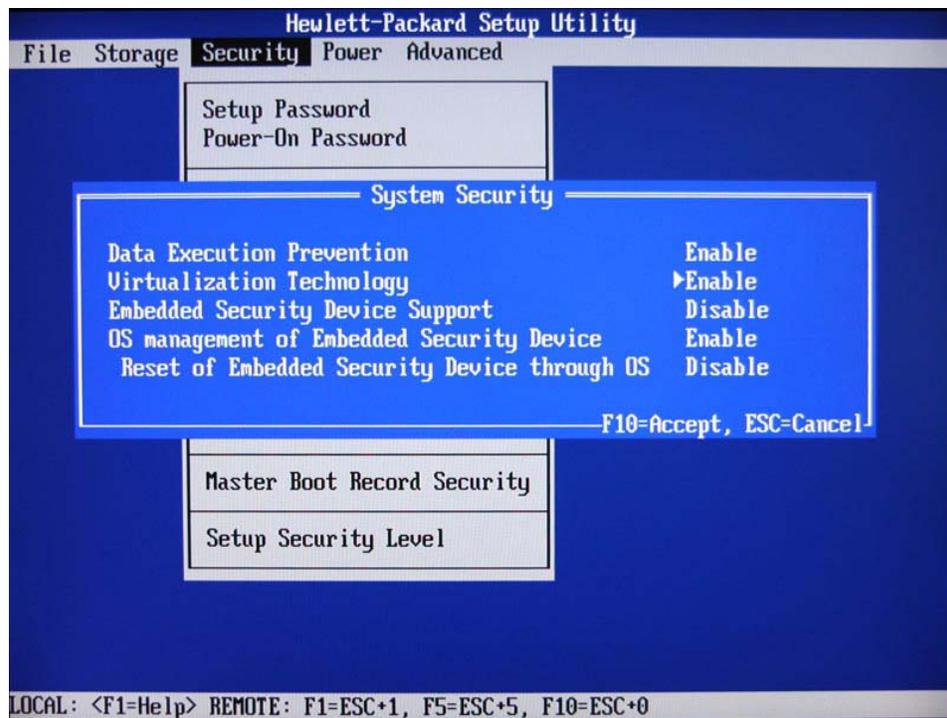


Figure 1: HP BIOS Virtualization Technology Option

8. To apply and save changes, select **File > Save Changes and Exit**.
 - If you have made changes that you do not want applied, select **Ignore Changes and Exit**.
 - To reset to factory settings or previously saved default settings (some models), select **Apply Defaults and Exit**. This option will restore the original factory system defaults.

CAUTION:

Do NOT turn the computer power OFF while the BIOS is saving the Computer Setup (F10) changes because the CMOS could become corrupted. It is safe to turn off the computer only after exiting the F10 Setup screen.

VTd systems

Do the following to enable processor virtualization in VTd systems:

1. Turn on or restart the computer.
2. As soon as the computer is turned on, press **F10** when the monitor light turns green to enter Computer Setup. Press **Enter** to bypass the title screen, if necessary.

NOTE:

If you do not press **F10** at the appropriate time, you must restart the computer and again press **F10** when the monitor light turns green to access the utility.

3. Select your language from the list and press **Enter**.
4. A choice of five headings appears in the Computer Setup Utilities menu: **File**, **Storage**, **Security**, **Power**, and **Advanced**.
5. Use the arrow (left and right) keys to select the appropriate heading. Use the arrow (up and down) keys to select the option you want, then press **Enter**. To return to the Computer Setup Utilities menu, press **Esc**.
6. Go to **Security > System Security**.
7. Set **Virtualization Technology (VTx)** to **Enable**
8. Set **Virtualization Technology Directed I/O (VTd)** to **Enable**



Figure 2: HP BIOS VTx and VTd Options

NOTE:

The Virtualization Technology option in Step 3 (and 4) will only appear when the system BIOS detects the processor supporting the feature. If the processor does not support the feature, then the option will not appear.

An exception to the rule above is with the older AMD Sempron processors in the HP Compaq dc5750 and dc5850 Business PCs. These systems use 786E3 and 786F6 system BIOS that do not check whether the CPU supported HW virtualization before displaying the option in Computer Setup. Therefore, even though the AMD Sempron processor does not support HW virtualization, the option will appear but will have no effect on the unit and XP Mode will not install.

9. To apply and save changes, select **File > Save Changes and Exit**.
 - If you have made changes that you do not want applied, select **Ignore Changes and Exit**.
 - To reset to factory settings or previously saved default settings (some models), select **Apply Defaults and Exit**. This option will restore the original factory system defaults.

CAUTION:

Do NOT turn the computer power OFF while the BIOS is saving the Computer Setup (F10) changes because the CMOS could become corrupted. It is safe to turn off the computer only after exiting the F10 Setup screen.

AMI System BIOS

HP All-in-One (AiO) systems that use an AMI BIOS can access the Virtualization option as follows.

Do the following to enable processor virtualization:

1. Turn on or restart the computer.
2. As soon as the computer is turned on, press **F10** when the monitor light turns green to enter Computer Setup. Press **Enter** to bypass the title screen, if necessary.

NOTE:

If you do not press **F10** at the appropriate time, you must restart the computer and again press **F10** when the monitor light turns green to access the utility.

3. Select your language from the list and press **Enter**.
4. A choice of five headings appears in the Computer Setup Utilities menu: **Main**, **Advanced**, **Power**, **Boot**, and **Exit**.
5. Use the arrow (left and right) keys to select the appropriate heading. Use the arrow (up and down) keys to select the option you want, then press **Enter**. To return to the Computer Setup Utilities menu, press **Esc**.
6. Select **Power**.
7. Set **Virtualization Technology** to **Enable**.

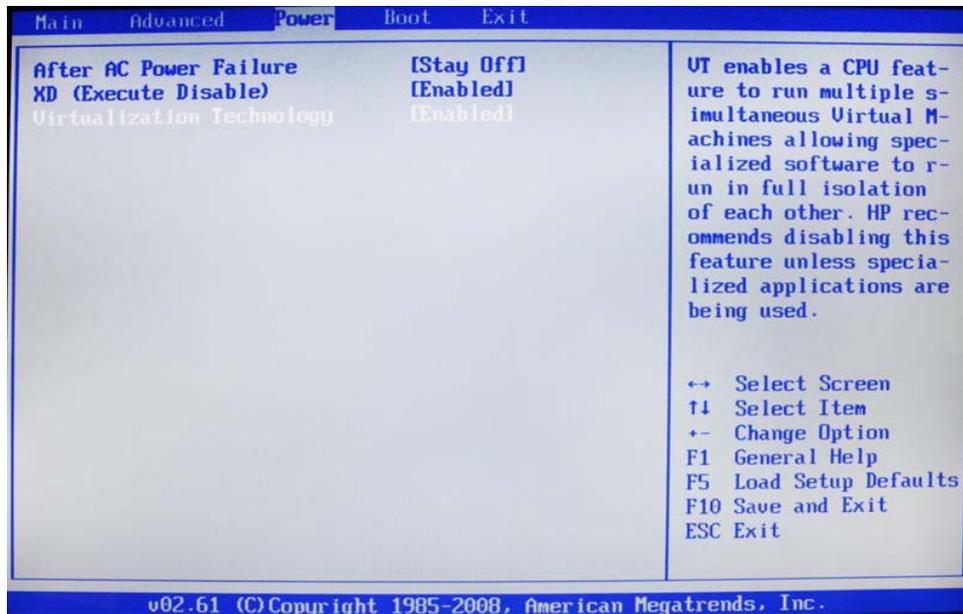


Figure 3: AMI BIOS Virtualization Technology Option

8. To apply and save changes, select **Main > Save Changes and Exit**.

CAUTION:

Do NOT turn the computer power OFF while the BIOS is saving the Computer Setup (F10) changes because the CMOS could become corrupted. It is safe to turn off the computer only after exiting the F10 Setup screen.

Windows XP Mode Setup

Refer to the **Windows Virtual PC: Documentation and videos** at <http://www.microsoft.com/windows/virtual-pc/support/default.aspx> for directions on how to do the following:

- How to install Windows XP Mode in Windows 7
- How to install Windows Virtual PC in Windows 7
- How to migrate applications to Windows XP Mode
- How to use Windows XP applications in the Virtual Environment
- How to migrate user data to Windows XP Mode

HP Recommended Settings

2GB or more of physical system RAM installed

Change the default memory allocation from 512 to 768 or 1GB

Known Limitations

Antivirus licensing does not cover both Windows 7 and XP Mode. You will need to provide for two licenses, one for the host operating system (Windows 7) and one for XP Mode.

Serial devices from a Point of Sale (POS) unit will not redirect correctly through the virtualized client.



© 2011 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein. Intel is a trademark of Intel Corporation in the U.S. and other countries. Microsoft and Windows are U.S. registered trademarks of Microsoft Corporation. Microsoft and Windows are U.S. registered trademarks of Microsoft Corporation.

652384-001, March 2011