

Set Up A Dual-Boot System with Windows Vista

By Ed Bott, Carl Siechert, and Craig Stinson

If your computer already has a 32-bit version of Windows installed *and* you have at least two disk partitions defined, you can install a clean copy of Windows Vista without disturbing your existing Windows installation. At boot time, you choose your Windows version from a startup menu. Although this is typically called a dual-boot system, it's more accurate to call it a multiboot configuration, because you can install multiple copies of Windows.

Having the capability to choose your operating system at startup is handy if you have a program or device that simply won't work under Windows Vista. When you need to use the legacy program or device, you can boot into your other Windows version without too much fuss. This capability is also useful for software developers, who need to be able to test how their programs work under different operating systems.

For experienced Windows users, installing a second copy of Windows Vista in its own partition can also be helpful as a way to experiment with a potentially problematic program or device driver without compromising a working system. After you finish setting up the second, clean version of Windows Vista, you'll see an additional entry on the startup menu that corresponds to your new installation. (The newly installed version is the default menu choice; it runs automatically if 30 seconds pass and you don't make a choice.) Experiment with the program or driver and see how well it works. If, after testing thoroughly, you're satisfied that the program is safe to use, you can add it to the Windows Vista installation you use every day.

Choose a partition

To add Windows Vista to a system where an existing version of Windows is already installed, first make sure that you have an available partition (or unformatted disk space) separate from the partition that contains the system files for your current Windows version.

The target partition can be a separate partition on the same physical disk, or it can be on a different hard disk. If your system contains a single disk with a single partition used as drive C, you cannot create a multiboot system unless you add a new disk or use software tools to shrink the existing partition and create a new partition from the free space. (The Windows Vista Disk Management console, `Diskmgmt.msc`, includes this capability; to shrink partitions on a system running an older Windows version, you'll need third-party software.) The new partition does not need to be empty; however, it should not contain system files for another Windows installation. Run Setup, choose the Custom (Advanced) option, and select the disk and partition you want to use for the new installation.

The Setup program automatically handles details of adding the newly installed operating system to the Boot Configuration Data store.

And how do you edit and configure the Boot Configuration Data store? Surprisingly, the only official tool is a command-line utility called `Bcdedit`. `Bcdedit` isn't an interactive program; instead, you perform tasks by appending switches and parameters to the `Bcdedit` command line. To display the complete syntax for this tool, open an elevated Command Prompt window (using the Run as Administrator option) and enter the command **`Bcdedit -?`**

Rename entries in the boot menu

For everyday use, most `Bcdedit` options are esoteric and unnecessary. In fact, the only option that we remember using more than once during the entire development cycle for Windows Vista was the command to change the text for each entry in the boot menu. By default, Setup adds the generic entry "Microsoft Windows Vista" for each installation. If you set up a dual-boot system using Windows Vista Home Premium and Windows Vista Business, you'll be unable to tell which is which, because the menu text will be the same for each. To make the menu more informative, follow these steps:

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1. Start your computer and choose either entry from the boot menu. After startup completes, make a note of which installation is running.
2. Click the Start button , type cmd in the Search box, and press CTRL+SHIFT+ENTER. Click Continue in the User Account Control box to open an elevated Command Prompt window.
3. Type the following command: bcdedit /set description "Menu description goes here" (substitute your own description for the placeholder text, and be sure to include the quotation marks). Press ENTER.
4. Restart your computer and note that the menu description you just entered now appears on the menu. Select the other menu option.
5. Repeat steps 2 and 3, again adding a menu description to replace the generic text and distinguish this installation from the other one.

Choose the default operating system

You can choose which installation is the default operating system by opening the Startup and Recovery dialog box. To open this dialog box:

1. Open System by clicking the Start button, clicking Control Panel, clicking System and Maintenance, and then clicking System.
2. Click Advanced System Settings. If you are prompted for an administrator password or confirmation, type the password or provide confirmation.
3. Click the Advanced tab, and then, under Startup and Recovery, click Settings.

To change the default operating system, select an option from the Default operating system list (this is where descriptive menu choices come in handy). You can also choose how long you want to display the list of operating systems. The default is 30 seconds; we typically set this value to no more than 10 seconds (you can choose any number between 1 and 99). To set the boot menu so that the default operating system starts automatically, clear the Time to display list of operating systems check box, or enter 0. These options write data directly to the Boot Configuration Data store.

The syntax of the Bcdedit command is daunting, to say the least. It's also something you're unlikely to use often enough to memorize. Those facts are enough to strongly recommend using a graphical editor for the BCD store instead. VistaBootPRO, available as a free download at vistabootpro.org, gets consistently high marks and includes the capability to repair the Windows Vista boot loader or uninstall it and return to booting from the Legacy OS Boot Loader (Ntldr.exe).

Use the Startup and Recovery dialog box to set the default operating system

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Control which drive letter your boot volume uses

Which drive letter will your clean installation of Windows Vista use? That depends on how you install it. If you currently have a working copy of any Windows version on drive C and you install a clean copy of Windows, drive letters are assigned using the following logic:

- If you begin the installation process by booting from the Windows Vista media and choose a partition other than the one containing your current copy of Windows, the new installation uses the drive letter C when you start up. The volume that contains the other Windows installation uses the next available drive letter. When you choose the previous Windows installation from the startup menu, it uses the drive letter C, and your new Windows Vista installation is assigned the next available drive letter. In this configuration, you can be certain that your current operating system is always on the C drive, but drive letters assigned to volumes you use for data may shift in unexpected ways.
- If you begin the installation process by running Setup from within your current version of Windows and use the Custom (Advanced) option to perform a clean install on a partition other than the one currently in use, the new installation uses the next available drive letter. The volumes containing each installation have the same drive letters regardless of which Windows version you select at startup.

There's no inherent reason to prefer either of these options over the other. If you prefer the consistency of knowing that all system files and program files are on the C drive, you'll probably want to choose the first option. If you would rather use drive letters to keep track of which Windows version is running at any given time, you'll prefer the second option. But either configuration should work reliably with any combination of software, hardware, and settings.

Troubleshooting

I installed a different Windows version and Windows Vista is no longer on the boot menu.

Each time you install a version of Windows, it rewrites the master boot record (MBR) to call its own boot loader. If you install Windows Vista as a second operating system on a PC where Windows XP is already installed, the Windows Vista boot menu incorporates the options from the older boot menu. But if you install a fresh copy of Windows XP on a system that is already running Windows Vista, you'll overwrite the MBR with one that doesn't recognize the Windows Vista Boot Loader. To repair the damage:

1. Open a Command Prompt window in the older operating system.
2. Run the following command from the Windows Vista DVD, substituting the letter of your drive for **<d>**:

```
<d>:\Boot\ Bootsect.exe –NT60 All
```

When you restart, you should see the Windows Vista menu.

3. To restore the menu entry for your earlier version of Windows, open an elevated Command Prompt window and enter this command:

```
Bcdedit –create {ntldr} –d "Menu description goes here"
```

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Substitute your own description for the placeholder text. The next time you start your computer, the menus should appear as you intended.

How do I remove Windows Vista from a dual-boot installation and restore the Windows XP boot loader?

Enter the following command at a command prompt , substituting the letter of your drive for <d>:

```
<d>:\Boot\Bootsect.exe -NT52 All
```

You can now delete all system files from the volume containing the Windows Vista installation you no longer plan to use. For even more effective removal, use the Disk Management console in Windows XP to reformat the drive and start fresh.