

# Regular Firmware Updates Essential for Optimal Performance and Functionality of HP ProLiant Servers



Avoiding downtime and potential security risks is a high priority for ProLiant server customers. Ensuring that each server is running the latest drivers, patches, and operating system updates helps to establish this. However, many customers are unaware that updating the server's System ROM and the firmware of other hardware components in the configuration is also essential for optimal system performance and system stability. [Top](#)

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## Why Should I Update My Firmware?

It is important to update the firmware (also called “flashing the ROM”) as part of regular server maintenance. In addition, checking for specific firmware updates in between regular updates helps to keep the server performing optimally. Firmware updates are created for, but are not limited to, the following reasons:

- To provide critical problem fixes that ensure system stability, such as upgrades that may prevent server unresponsiveness and other issues that could put the system at risk.
- To correct product issues, such as ROM or processor functionality.
- To improve system performance or make the system more serviceable.

**Best Practice:** Many product issues that result in hardware replacement are preventable or correctable with a firmware update. HP recommends checking for a firmware update before sending a part back to HP for replacement. Based on the HP ProLiant product return rates, approximately 30 to 35 percent of all returned hardware products were functioning properly and only needed a firmware update. Although not all products fall into this category, server downtime and time spent removing, returning, and ultimately replacing hardware may have been avoided if an attempt had been made to flash the firmware during the troubleshooting process.

HP has developed several methods for updating the firmware in a ProLiant server and makes it easy to do so. This document emphasizes the importance of regular firmware updates to ensure that a ProLiant server is running optimally, making the system and its data less vulnerable to critical hardware and software events.

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## What is Firmware?

Firmware is a software program that is stored in Read-Only Memory (ROM). Firmware is responsible for the behavior of the system when it is first switched on and for passing control of the server to the operating system. When referring to the firmware on the system board of the server, it is called the System ROM or the BIOS. When referring to the firmware on another piece of hardware configured in the server, it is called the Option ROM. In ProLiant servers, hard drives, Smart Array Controllers, Remote Insight Lights-Out Edition (RiLOE), Remote Insight Lights-Out Edition II (RiLOE II) and Integrated Lights-Out (iLO) options have firmware that can be updated. For the purposes of this paper, it will be referred to collectively as “firmware.”

**Best Practice:** On servers that have options, HP recommends checking for firmware upgrades for each installed option whenever an update to the System ROM or to another option is performed. This ensures that the system, as a whole, is running the latest updates for each component.

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## How Can I Tell If A New Firmware Update Is Available?

HP provides regular firmware upgrades, but is also committed to creating updates as they are needed to fix an existing issue, provide system enhancements, or provide support for newly released hardware. The following paragraphs discuss the various methods by which a customer can tell if a new firmware update is available from HP.

### Subscriber's Choice

Subscriber's Choice is an online service that delivers proactive notifications of driver, patch, security and support alerts. The latest available updates for each server that is selected in a customer's profile are delivered via email as they become available. Sign up to receive notifications via Subscriber's Choice at the following URL:

[www.hp.com/go/myadvisory](http://www.hp.com/go/myadvisory)

### HP System Management Homepage Utility

The System Management Homepage is a utility that contains a feature called Software Version Control. Version Control checks for availability of new firmware and drivers and provides links to the latest updates. The System Management Homepage software is automatically installed with the ProLiant Support Pack and SmartStart Version 5.5 (or later) for Microsoft Windows or SmartStart Version 6.4 (or later) for Linux.

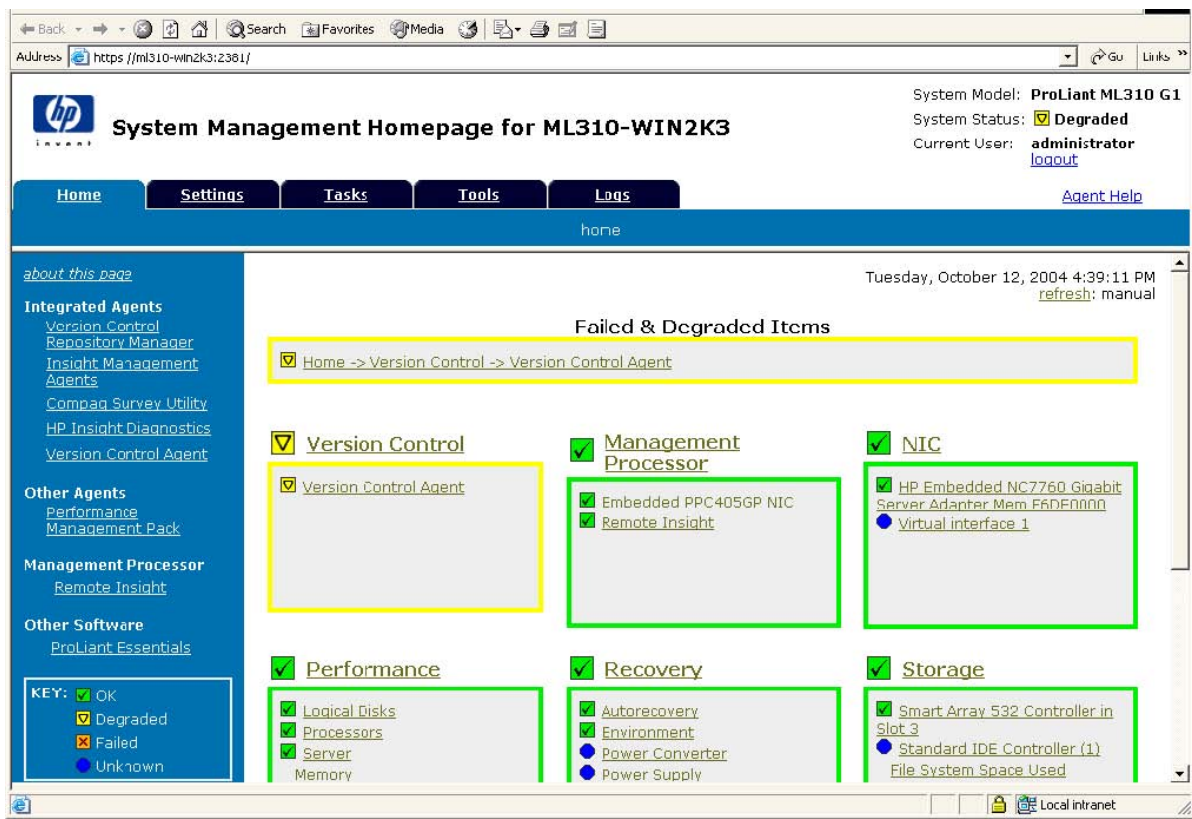
Once the System Management Homepage is installed, the Version Control Agent page displays two columns. One displays the system configuration and all components with the currently installed version of the firmware. The second column shows the status of the latest available firmware version and makes a comparison to the information in the first column. The following results are displayed:

- If the latest version matches the installed version, a green check box is displayed.
- If the latest version is outdated with minor bug fixes or enhancements, a yellow triangle warning icon is displayed. Customers can click on the icon to the right of the yellow triangle icon to obtain the latest version.

- If the latest version contains critical bug fixes, an orange triangle warning icon is displayed and HP requires customers to update to this version at their earliest possible convenience. Customers can click on the icon to the right of the orange triangle to obtain the latest version.
- The ProLiant Support Pack (PSP) Version 7.20 is scheduled to contain a feature called "Critical Component Update." If a checkbox is selected in the Event Notifier, an email is sent to the customer whenever a critical firmware update is available. (Event Notifier is automatically installed with the PSP and can be configured to send notifications on any number of system events.) The Critical Component Update is also logged in the Windows NT Event Log and the HP SIM Console.

The examples below show how easy and convenient it is to check for (and install) updates using the System Management Homepage. The Version Control Agent indicates (by displaying an exclamation point inside a yellow triangle) that an updated version of software is available (but not yet installed) on the system. Clicking on the triangle brings the user to the Version Control Agent page. The currently installed version is displayed in the left column and the available update is displayed in the right column. Clicking on the new version number displays complete information about the update. Clicking on the icon to the right of the yellow triangle causes the Agent to retrieve the update and allows the user to install it and determine when to reboot the server and deploy the update.

See Figure 1 through Figure 4 below for screenshots of each related page. The screenshots below show a driver update (rather than a firmware update) as an example; however, firmware and other updates are displayed in the same manner in the System Management Homepage.



**Figure 1:** The System Management Homepage indicates that an update is needed in the Version Control Agent.

Version Control Agent - Microsoft Internet Explorer provided by Hewlett-Packard

File Edit View Favorites Tools Help

Address <https://ml310-wjn2k3:2581/vcagent>

**hp** Version Control Agent ML310-WJN2K3 Homepage [Help](#)

home log

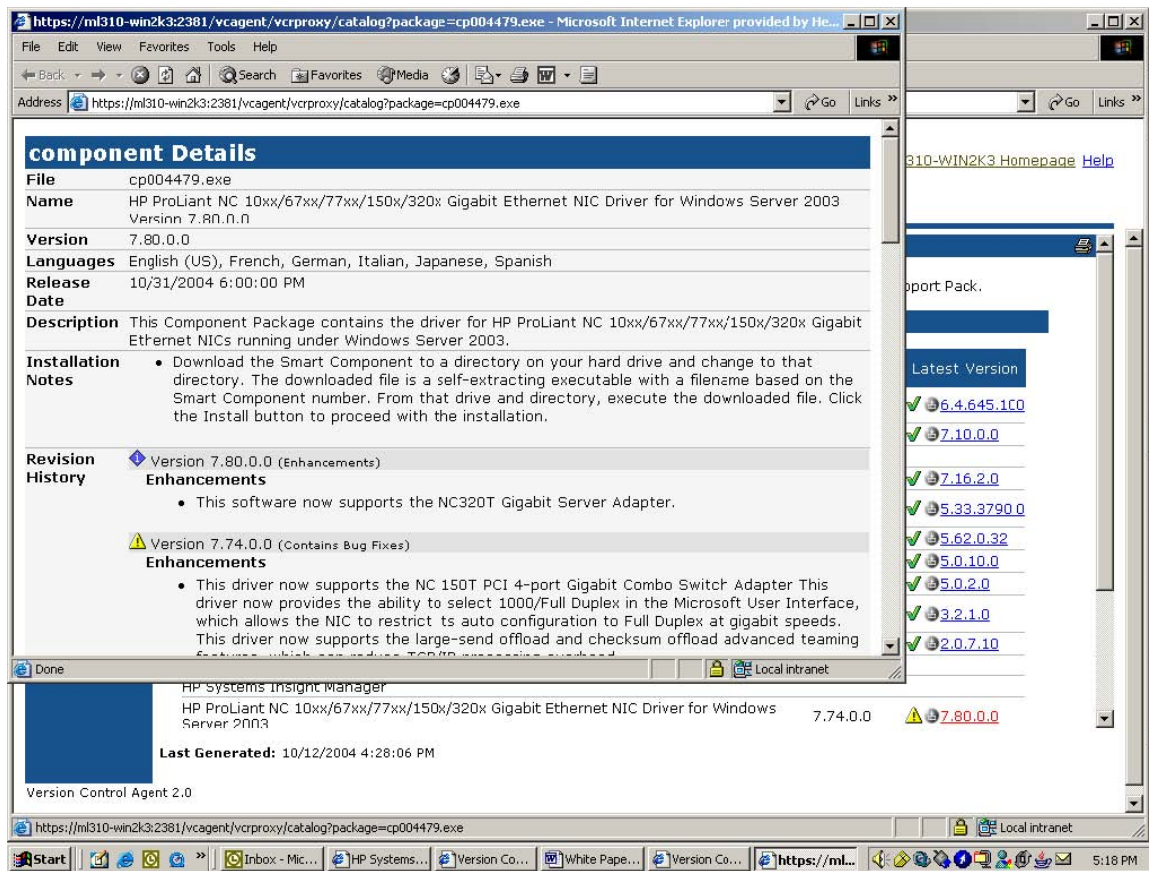
→ refresh the inventory data  
→ change agent settings  
→ show additional items available in the repository

**Reference Support Pack:** None selected. Click on **change agent settings** to specify the Reference Support Pack.

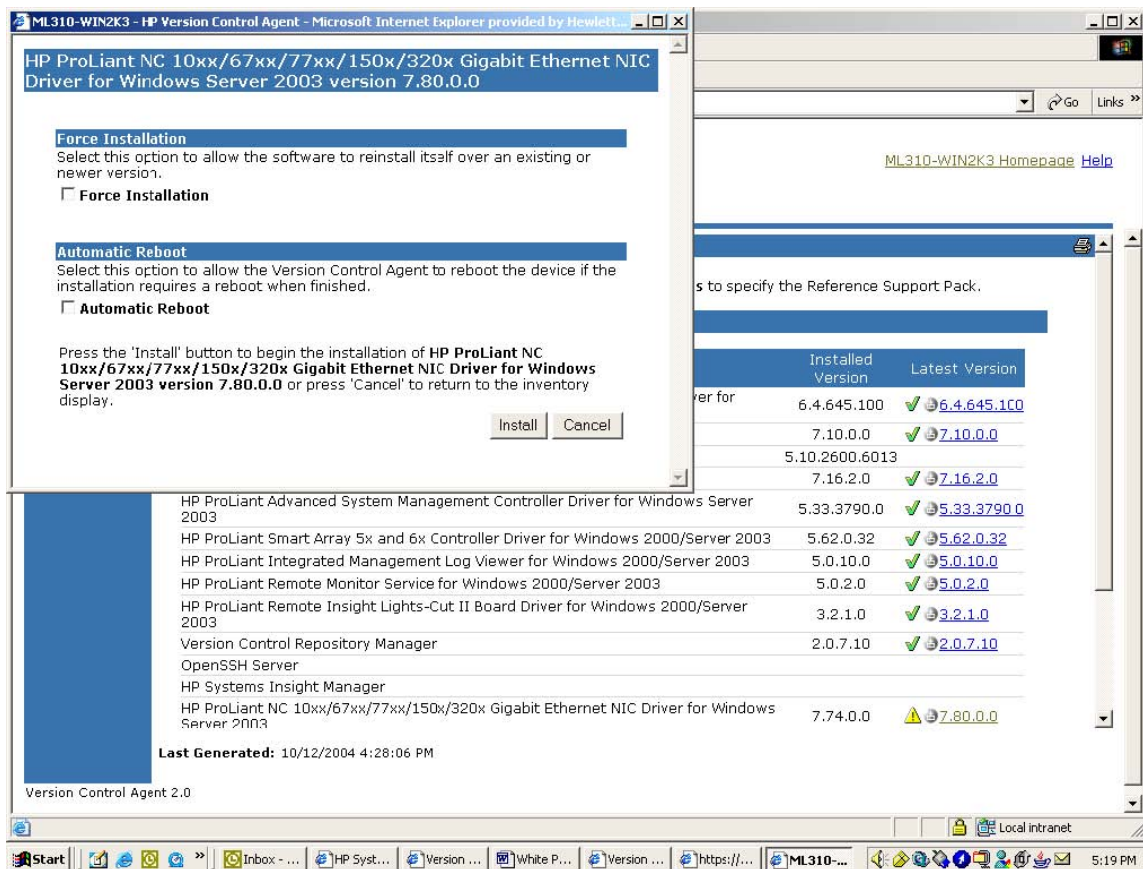
### Installed Software

Name	Installed Version	Latest Version
HP ProLiant 64-Bit/66-Mhz Dual Channel Wide Ultra3 SCSI Controller Driver for Windows Server 2003	6.4.645.100	✓ 6.4.645.100
HP Insight Management Agents for Windows 2000/Server 2003	7.10.0.0	✓ 7.10.0.0
ATI2MPAD Miniport Driver	5.10.2600.6013	
HP ProLiant Array Configuration Utility for Windows	7.16.2.0	✓ 7.16.2.0
HP ProLiant Advanced System Management Controller Driver for Windows Server 2003	5.33.3790.0	✓ 5.33.3790.0
HP ProLiant Smart Array 5x and 6x Controller Driver for Windows 2000/Server 2003	5.62.0.32	✓ 5.62.0.32
HP ProLiant Integrated Management Log Viewer for Windows 2000/Server 2003	5.0.10.0	✓ 5.0.10.0
HP ProLiant Remote Monitor Service for Windows 2000/Server 2003	5.0.2.0	✓ 5.0.2.0
HP ProLiant Remote Insight Lights-Out II Board Driver for Windows 2000/Server 2003	3.2.1.0	✓ 3.2.1.0
Version Control Repository Manager	2.0.7.10	✓ 2.0.7.10
OpenSSH Server		
HP Systems Insight Manager		
HP ProLiant NC 10xx/67xx/77xx/150x/320x Gigabit Ethernet NIC Driver for Windows Server 2003	7.74.0.0	⚠ 7.80.0.0
Survey Utility for Windows	2.56.8.0	✓ 2.56.8.0
Version Control Agent for Windows	0.0.7.10	✓ 0.0.7.10

**Figure 2:** The Version Control Agent page displays the currently installed version of each software component and the latest version. A green checkmark indicates that the columns match, a yellow triangle with an exclamation point indicates that an update is available.



**Figure 3:** Clicking on the latest version number allows the user to view detailed information about the update before installing it.



**Figure 4:** Clicking on the icon to the right of the yellow triangle allows the user to install the update and choose when the server will be rebooted to allow the update to deploy.

**TIP:** There is an option to configure the Version Control Agent to include another column with a customer selected software version baseline. However, once it's selected, the latest version column will no longer be compared to the currently installed versions and therefore customers will not know if there is any new firmware or driver available.

For more information on the System Management Home Page, refer to the following URL:  
<http://h18013.www1.hp.com/products/servers/management/agents/index.html>

### HP Systems Insight Manager

HP Systems Insight Manager leverages the System Management Home Page to provide software update information.

For more information on HP Systems Insight Manager, refer to the following URL:  
<http://h18013.www1.hp.com/products/servers/management/hpsim/index.html>

### ProLiant Firmware Maintenance CD

This CD contains the most up-to-date versions of firmware. However, HP recommends that whenever possible, customers use the System Management Home Page or HP Support website to obtain latest versions of firmware and drivers because of features such as automatic notification of out of date devices, and ease of mass deployment vs. deploying a single CD-ROM to individual servers. To obtain all the latest versions of firmware, refer to the HP support and drivers page at the following URL:

<http://h18023.www1.hp.com/support/files/server/us/romflash.html>

For information on obtaining the Firmware Maintenance CD, refer to the following URL:

[www.hp.com/servers/smartstart](http://www.hp.com/servers/smartstart)

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## How Do I Update My Firmware?

Once a firmware update is available, the next step is to install the update onto the system. HP has many methods for updating firmware, making the process easy. The following paragraphs discuss each method and provide information on how to perform the updates.

Currently, there are two different methods for updating firmware on HP servers and options: the traditional Offline ROM Flash, and the innovative Online ROM Flash. Note that the Online ROM Flash is not currently available for all products. If an Online ROM Flash is unavailable for a particular server or option, an Offline upgrade will need to be performed.

**TIP:** If a server is deployed more than three months after purchase, upgrade the firmware on the system and on any options that are installed using the HP Support and Drivers page on HP.COM, rather than the Firmware Maintenance CD that shipped with the server. In addition, it is beneficial to check for firmware updates for any options that may have been in customer stock but are not deployed until later. This ensures that all server components are running the latest firmware versions.

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## Updating Firmware Using the Online ROM Flash Method

The Online ROM Flash is an innovative technology developed by HP that allows the firmware to be upgraded either locally or remotely via a downloadable file called a Smart Component. These Smart Components enable the update to be performed while the server is operational, thereby avoiding costly server downtime.

Benefits of the Online ROM Flash include:

- The server does not have to be taken offline to perform the upgrade.
- The upgrade process takes less than a minute to complete.
- The server can be scheduled for a reboot at a later time to deploy the new firmware after the upgrade process.
- The server administrator can remotely perform the upgrade to multiple servers at one time using the ProLiant Remote Deployment Utility, the ProLiant Remote Deployment Console Utility, and other HP server management technologies, such as HP Systems Insight Manager (HP SIM).

The Smart Component updates the firmware and configures the system so that the new settings will take effect on the next reboot. This feature allows the update to be performed but gives the administrator control of when the new settings are deployed.

For detailed information on the Online ROM Flash process, refer to the Online ROM Flash User Guide at the following URL:

<http://www.compaq.com/support/files/server/us/webdoc/rom/OnlineROMFlashUserGuide.pdf>

Smart Components for HP ProLiant servers and storage can be obtained from the following links:

**Microsoft Windows Operating Systems:** <http://h18023.www1.hp.com/support/files/server/us/winroms.html>

**Linux Operating Systems:** <http://h18023.www1.hp.com/support/files/server/us/linuxrom.html>

For more information on how to deploy firmware updates remotely, refer to the following URL:

<http://h18004.www1.hp.com/products/servers/management/im/index.html>

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### **Updating Firmware Using The Offline ROM Flash Method**

The Offline ROM Flash, as its name implies, is performed when the server is taken down for regular maintenance. Although the results will be the same, the Offline ROM Flash does not provide the same benefits of the new Online ROM Flash method. In addition, when upgrading remotely, the server administrator can only update one server at a time.

There are two methods of performing an Offline ROM Flash. The firmware can be updated using a ROMPaq Diskette or using either the ROM Update Utility or the HP Smart Update Manager.

**IMPORTANT:** Beginning with the Firmware Maintenance CD Version 7.50, the HP Smart Update Manager Utility has replaced the HP ROM Update Utility. All other firmware update methods, including Offline Systems ROMPaq and Online ROM Flash are unaffected and continue to be supported methods of flashing the System ROM.

The Customer Notice, *HP Smart Update Manager Utility Replaces HP ROM Update Utility on the Firmware Maintenance CD and Provides Enhancements for Upgrading Firmware on ProLiant Servers*, provides information on the differences between the HP Smart Update Manager Utility and the HP ROM Update Utility and the upgrades and enhancements available in HP Smart Update Manager. Refer to the following URL to view this Customer Notice:

[http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?locale=en\\_US&objectID=c01039146](http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?locale=en_US&objectID=c01039146)

A ROMPaq is a floppy-disk based method of upgrade. The firmware is downloaded onto a floppy diskette and then the system is booted to the floppy drive.

The ROM Update Utility is located on the Firmware Maintenance CD, or can be downloaded to a USB Drive Key using the HP Drive Key Boot Utility.

Note: Hard Drive components can only be updated using the Offline method.

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### **The HP Drive Key Boot Utility**

The HP Drive Key Boot Utility can format an HP Drive Key so that it can be used as a bootable device. The utility also provides the ability to load the ROM Update Utility on an HP Drive Key. After the ROM Update Utility has been installed, the Offline ROM Flash Smart Components can be downloaded to the drive key from the following URL and deployed using the ROM Update Utility:

<http://h18023.www1.hp.com/support/files/server/us/smartstartGP.html>

System ROM support is required for the HP Drive Key Utility. To determine server support, refer to the following URL:

<http://h18004.www1.hp.com/products/servers/platforms/usb-support.html>

For additional information on the HP Drive Key Boot Utility, refer to the following URL:

<http://h20000.www2.hp.com/bc/docs/support/SupportManual/c00218060/c00218060.pdf>



The HP Drive Key Utility can be downloaded from the following URL:

<http://www.compaq.com/support/files/server/us/locate/8641.html>

### **Worldwide Limited Warranty and Technical Support**

<http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>

HP may, at its sole discretion, determine that onsite warranty service is not necessary on a case-by-case basis. HP will provide telephone support for any required BIOS and Firmware upgrades; such upgrades will not be covered by HP's onsite warranty service.

Regardless of the method used to update ProLiant firmware, HP recommends performing regularly scheduled firmware updates to correct product issues, improve system performance and serviceability, and apply critical fixes.

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383138-003, 5/2007

