



Intel[®] Entry Storage System SS4200-EHW

Windows Home Server* Integration Guide

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EPSD Technical Marketing

Document Revision History

Date	Revision Number	Modifications
Feb 2008	.5	Review copy
April 1, 2008	1.0	Initial release

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1. Introduction

*****ATTENTION*****

This document describes the integration of Microsoft® Windows Home Server® (WHS) for the Intel® Entry Storage System SS4200-EHW. It is intended for qualified computer hardware and software integrators and system builders experienced in installing Microsoft Server operating systems only. It is not intended for installation to more than one system for resale or distribution. If the system is intended to be resold or distributed, the Microsoft OPK documentation should be consulted for further instructions about preparing a system for distribution or resale.

WHS installations are managed in the same manner as other Windows Server installations. However, since there is no header for video controller on the baseboard, it does require a PCI Express (PCIe) x1 riser or extender and an add-in PCIe video adapter to enable video for installation. The adapters used by the Intel® teams are listed on the Intel Entry Storage System SS4200-EHW Tested Hardware and Operating System List (THOL) and may be purchased from the company by calling them and referring to the part number. Any PCI x1 riser, extender or video card may also work but the adapter referenced is a flex cable (see Figure 1.) and allows you to connect a video card and operate the unit with all four hard drives in place.



Figure 1. PCIe x1 to PCIe x16 flex extender

1.1 Required Equipment

The following lists the necessary equipment to enable you to install Microsoft Windows Home Server on the SS4200-EHW. Consult the Intel Entry Storage System SS4200-EHW Tested Hardware and Operating System List (THOL) for tested equipment.

NOTE: Microsoft Windows Home Server images may also be purpose built for the SS4200-EHW. If you are attempting to install an operating system other than Microsoft WHS, you should consult with the independent software vendor (ISV) providing the specific software stack you are installing for instructions and any specific requirements. Please check the Intel Entry Storage System SS4200-EHW solutions web site for more information.

1. Minimum of 512MB DDR2 unbuffered unregistered DIMM installed (included).
2. At least one 80GB SATA hard drive, preferred at least 2 SATA hard drives totaling 300GB.
3. The system should be connected via a local DHCP enabled network.
4. One USB floppy drive for adding specific drivers.
5. One USB 2.0 DVD drive.
6. Once USB keyboard and mouse.
7. One PCI-Express x1 riser or extender
8. One PCI-Express video adapter.
9. One Windows Home Server Installation DVD.
10. Optional: One Windows Home Server Connector Software CD.
11. Optional: At least one client, using a supported OS and has a network connection to the same local DHCP enabled network.

1.2 Supported Client Operating Systems

At the time of this publication, Microsoft has defined the following supported client operating systems for Windows Home Server:

Windows Vista: Home Basic, Home N (European Union only), Home Premium, Business, Business N (European Union only), Enterprise, Ultimate

Windows XP: Home with SP2, Professional with SP2, Media Center Edition 2005 with SP2 and Rollup 2, Media Center Edition 2004 with SP2, Tablet Edition with SP2.

1.3 Preliminary Work

1.3.1 Drivers

- The following drivers are necessary for installation. Drivers are available at <http://support.intel.com/support/motherboards/server/>

Name	Size	Comments	Date
3132_x86_1.0.22.1_logo_SS4200-E.zip	131K	<i>Silicon Image* driver for onboard eSATA controller.</i>	11/1/2007 10:45:42
PRO2KXP.exe	11994 K	<i>Intel driver for onboard gigabit Ethernet controller.</i>	6/26/2007 15:21:54
SS4200-E_SIO_GPIO_Drivers_v1_2.zip	1407K	<i>SIO and GPIO drivers. Required to run Intel Hardware Monitor (install first).</i>	1/18/2008 11:14:49
STOR_ALL32_F6FLPY32_7.5.0.1017_PV_SS4200-E.zip	204K	<i>Intel driver for ICH7R. This driver is used during WHS installation only. After the first installer reboot hit F6 and load this driver from a USB floppy device.</i>	10/23/2007 13:48:22
infinst_autol.exe	701K	<i>Intel® Chipset driver for Microsoft Windows*</i>	6/26/2007 15:20:20

1.3.2 Configuration

1. Remove cover from system.
2. Install the SATA hard drive(s) that you plan to use for the OS installation. See the User Guide or Quick Start Guide for information on hard drive installation.
3. Attach USB mouse, keyboard, DVD drive and floppy drive.
4. Copy the contents of "STOR_ALL32_F6FLPY32_7.5.0_1017_PV_SS4200-E.zip" to a floppy disk.
5. Install PCI-e x1 riser or extender in PCI-e debug slot.
6. Install PCI-e video adapter into PCI-e extender.
7. Attach monitor to video adapter.

NOTE: WHS does not support USB hard drives connected during an OS installation.

2. WHS OS Installation Procedure

Below are the steps required to install WHS on the SS4200-EHW after the prerequisite procedure has completed. The steps for installation are documented in the Microsoft Windows Home Server OPK (OEM Pre-installation Kit) documentation.

WHS OS always installs to disk1 (the first SATA disk).

Step 1: Insert WHS Installation DVD into attached USB 2.0 DVD drive. Insert AHCI driver installation floppy disk to USB floppy drive.

Step 2: Turn on the SS4200-EHW and repeatedly press <F11> during POST (power on self test) until boot device menu appears.

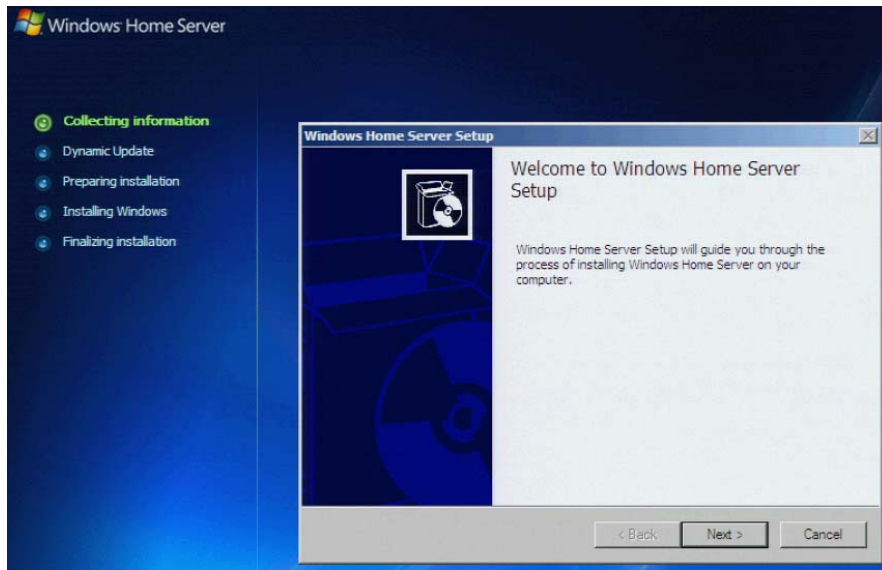
Observation 1: A list of available boot devices should appear.



Step 3: Select the DVD drive in the boot menu. Press <enter> if asked to press a key to boot from CD or DVD. Booting from the CD or DVD is required only for the first instance of this. This message may appear several times during the installation process and the system should be allowed to boot from the disk after the first instance of booting from the CD or DVD.

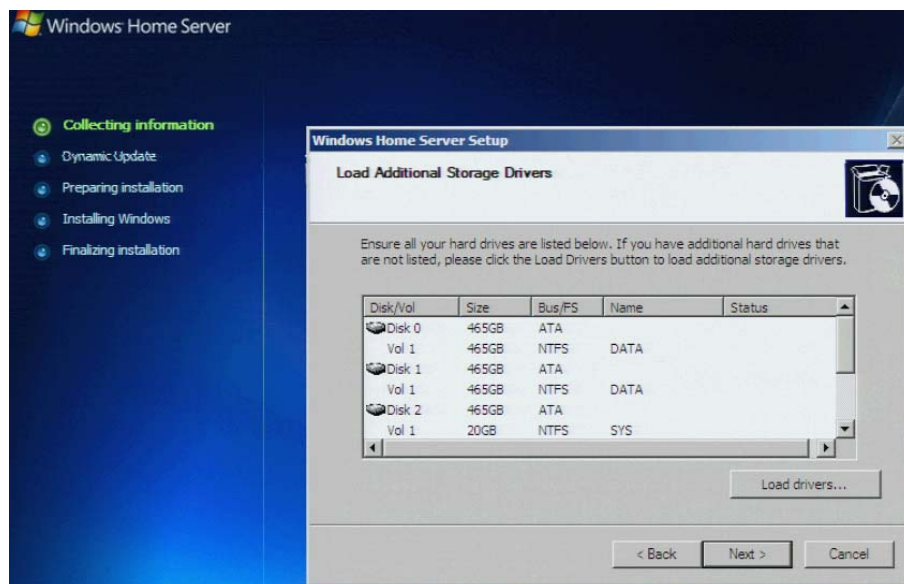
Observation 1: A message stating that Windows is loading files should appear followed by a "setup is initializing" message. This should change to a standard blue Windows installation screen with the list below and Collecting information highlighted.

- Collecting information
- Dynamic update
- Preparation installation
- Installing Windows
- Finalizing installation



Step 4: Select 'Next'

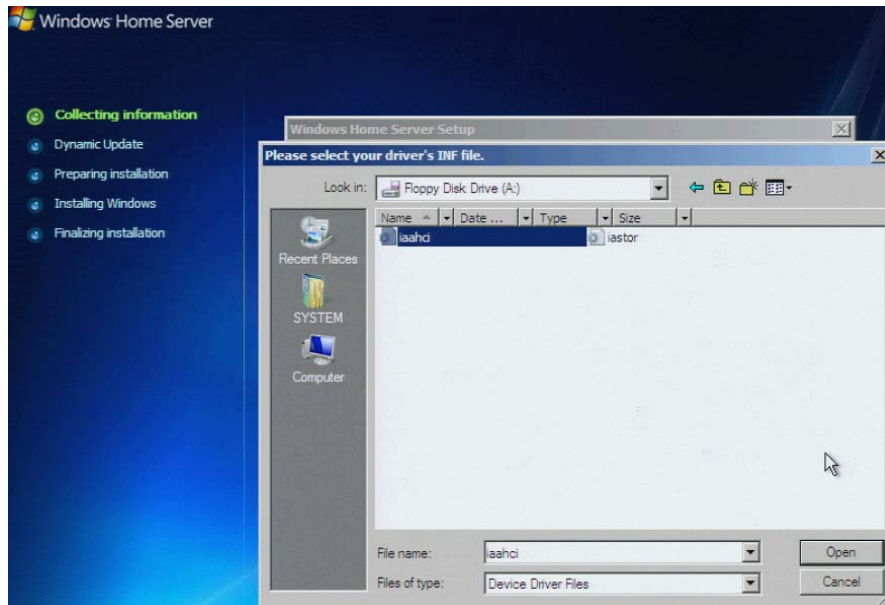
Observation 1: It will take Windows a couple of minutes to inventory the storage devices already connected to your system. These should appear in a list. Some may already have partitions on them from previous usage. The following is an example of the window that should appear.



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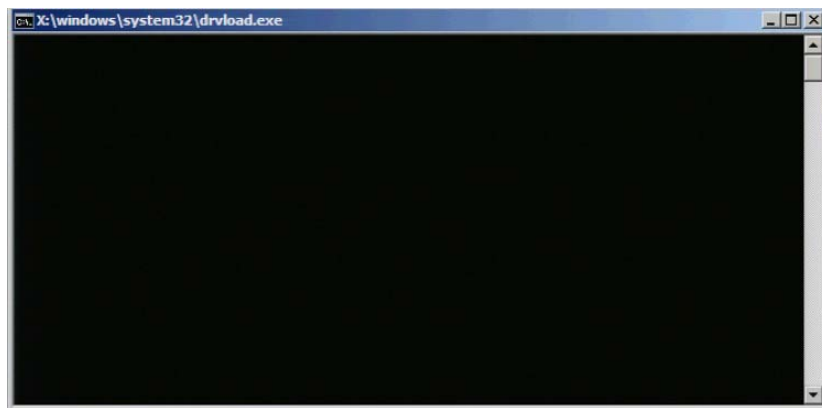
Step 5: Select the 'Load Driver' button and navigate to select the AHCI driver (iaahci.inf) from the USB floppy drive.

Observation 1:



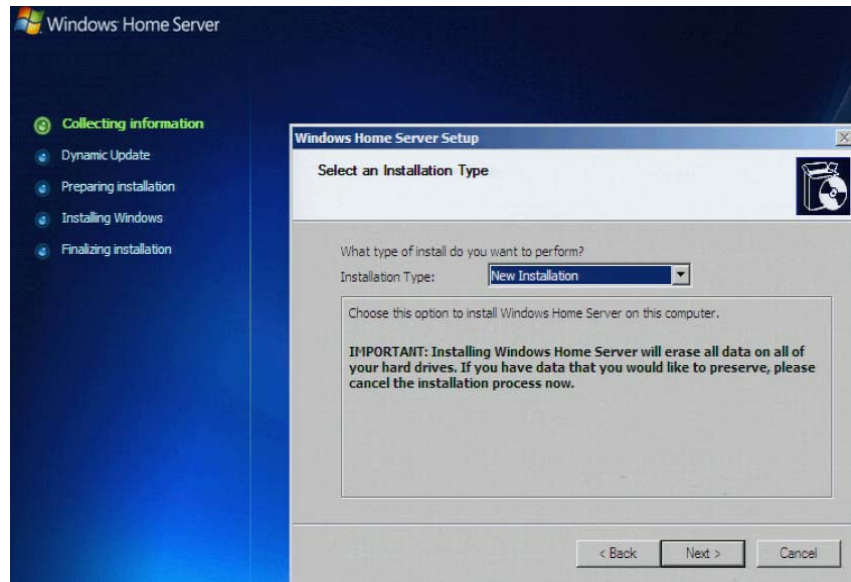
Step 6: Click Open

Observation 1: A command line window for driver load will pop up.

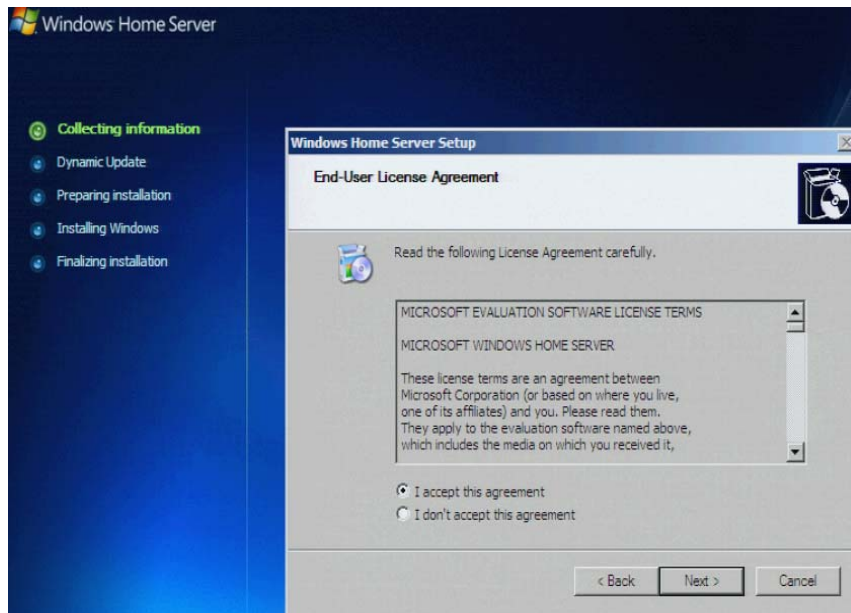


Step 7: When the driver loading has finished, select 'NEXT'.

Step 8: Select an Installation Type. Choose 'New Installation'.



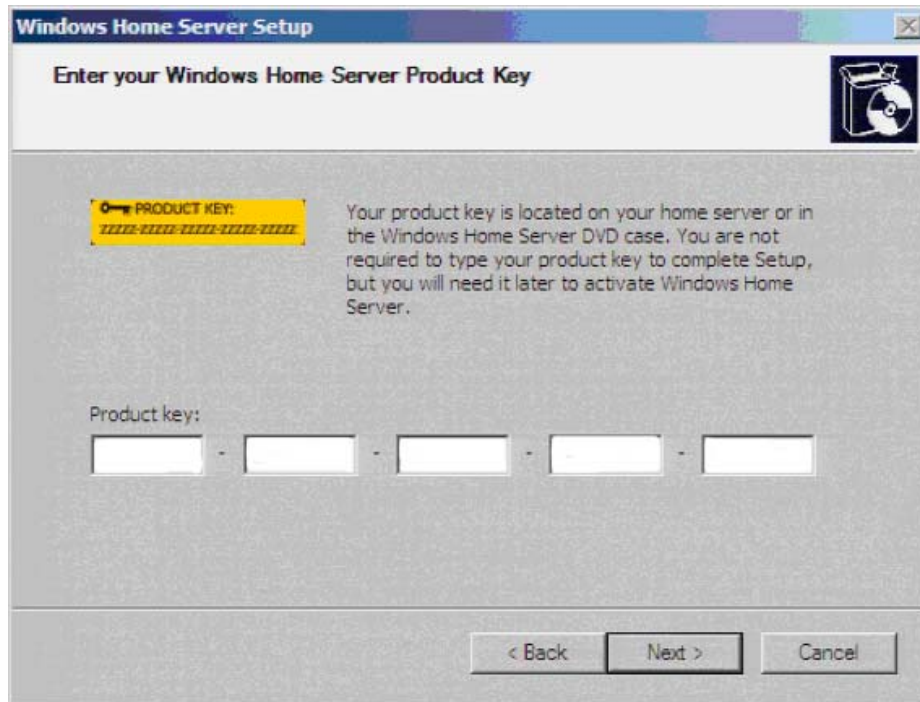
Step 9: The Language and Regional Settings Window will appear. Select the appropriate language and keyboard input method and click 'Next' to proceed to The End-user License Agreement window. Click 'Accept' and 'Next' to accept the license agreement.



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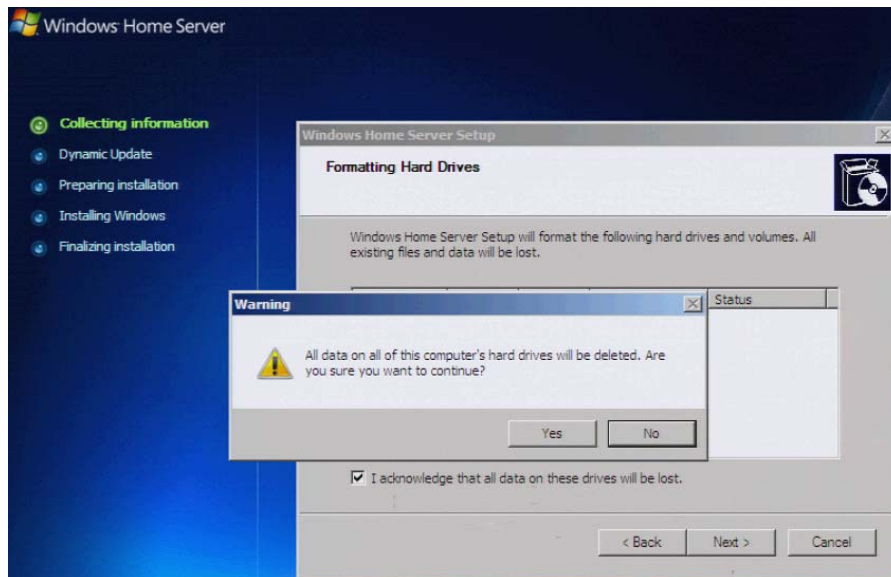
Step 10: Key in your 'Windows Home Server Product Key'.

Note: No license key is necessary for 30 day evaluation.



Step 11: Give your Windows Home Server a name, for example, 'server'. Record this information in a secure location. Click 'Next'.

Step 12: Accept the disclaimer stating that all data on the hard disk drives will be lost. Click 'Next' and then select 'Yes' to format the drives.



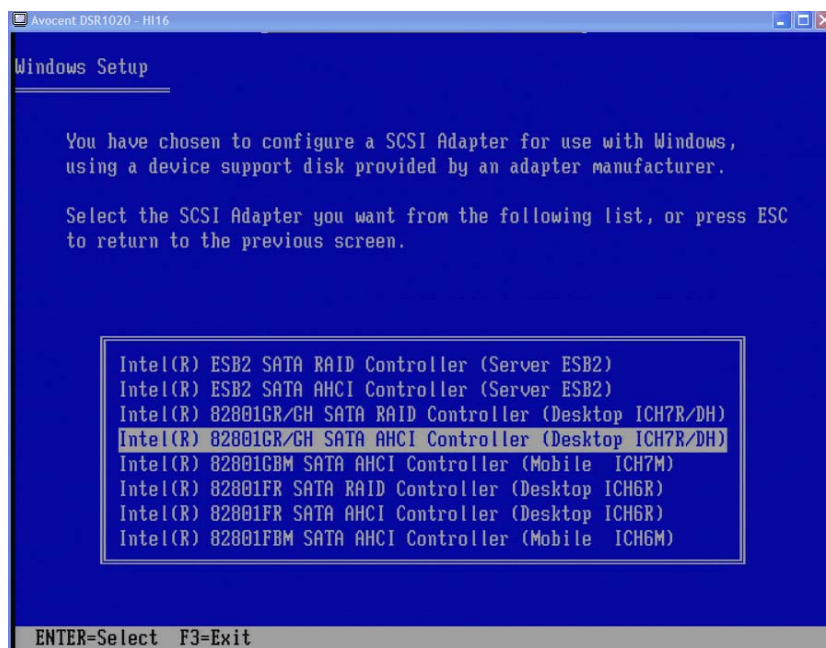
Step 13: A “Ready to install Windows Home Server” screen will appear. Click ‘Start’ to install WHS.

After formatting the system volume, preparing installation, copying files, copying installation files, etc., the system will reboot. During the reboot, press <F6> at the ‘Windows Setup’ page when it appears, then press <S> specifies additional devices.

NOTE: If the <F6> key is not selected in time during this reboot, the system will “blue screen”. Reboot the system and attempt the operation again.

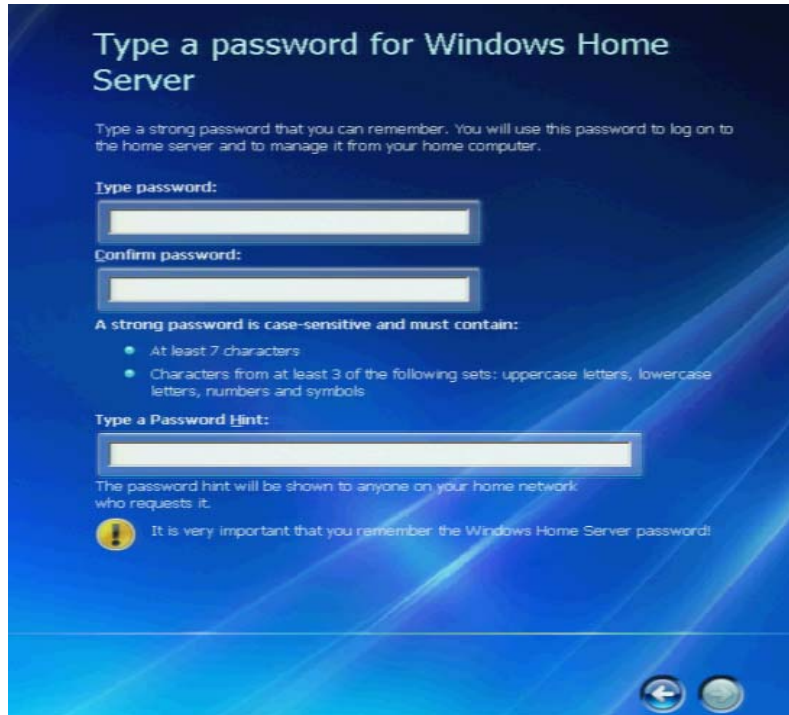


Step 14: Choose 'Intel(R) 82801GR/GH SATA AHCI Controller (Desktop ICH7R/DH)' and allow the installation to complete.



The installation will continue with “Installing Windows” and “Finalizing Installation” processes and reboot three times or more before continuing. CHKDSK may also run to check the system volume during one of the boot processes.

Step 15: At the Windows Home Server Welcome Screen, click the 'Welcome' button and set up the password (a strong password is required) and password hint.

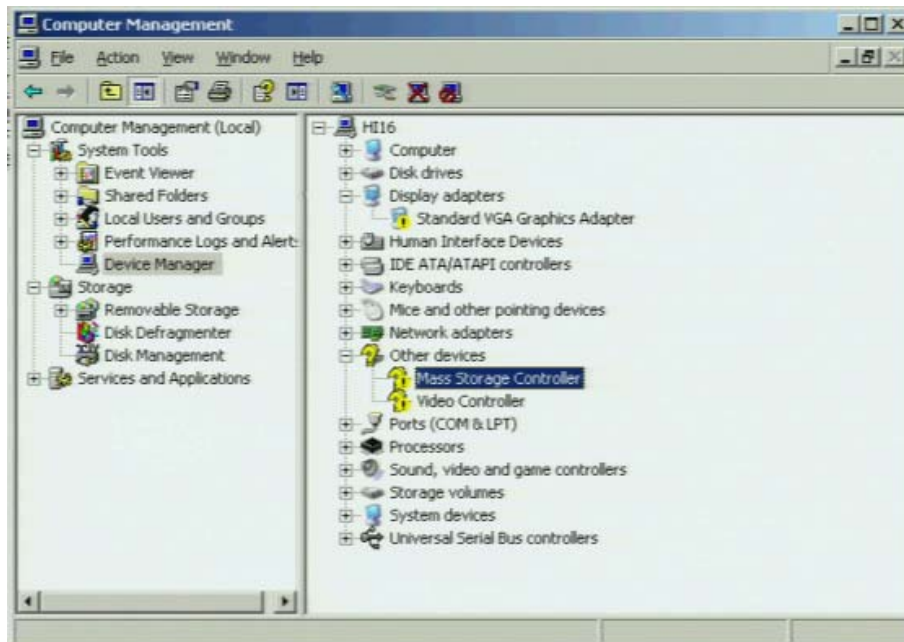


3. WHS Drivers Installation

Insure all the following drivers are installed before the 'Hardware Monitor' add-in. Follow directions contained in the Readme files included with each file.

Name	Size	Comments	Date
3132_x86_1.0.22.1_logo_SS4200-E.zip	131K	<i>Silicon Image* driver for onboard eSATA controller.</i>	11/1/2007 10:45:42
PRO2KXP.exe	11994 K	<i>Intel driver for onboard gigabit Ethernet controller.</i>	6/26/2007 15:21:54
SS4200-E_SIO_GPIO_Drivers_v1_2.zip	1407K	<i>SIO and GPIO drivers. Required to run Intel Hardware Monitor (install first).</i>	1/18/2008 11:14:49
infinst_autol.exe	701K	<i>Intel® Chipset driver for Microsoft Windows*</i>	6/26/2007 15:20:20

Use 'Device Manager' of the 'Computer Management' for installation of the '*Silicon Image driver for onboard eSATA controller*'. Right click the 'Mass Storage Controller' (with yellow question mark) and select 'Update the driver'.



Once the driver is updated, Device Manager will show the following window:



The mark on the onboard graphics adapter will be removed when the add-in video adapter is no longer present. The generic VGA driver is acceptable to use with the onboard video controller.

4. Windows Home Server Connector Installation

Windows Home Server Connector is intended to be installed on a client system attached to the Windows Home Server via a DHCP enabled network connection and is installed via standard Microsoft installation procedures. It is distributed on CD and should autoplay when the CD is inserted into the appropriate drive. If it does not you can start the process by navigating to the CD / DVD player in Windows Explorer and selecting the Setup.exe file.

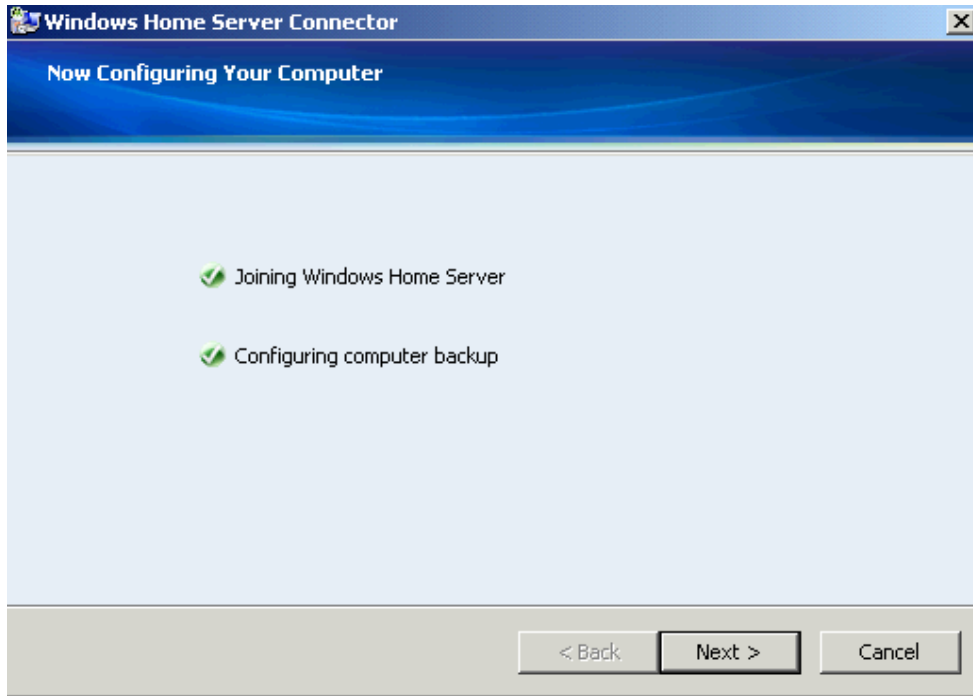
The following window should appear once setup.exe starts.



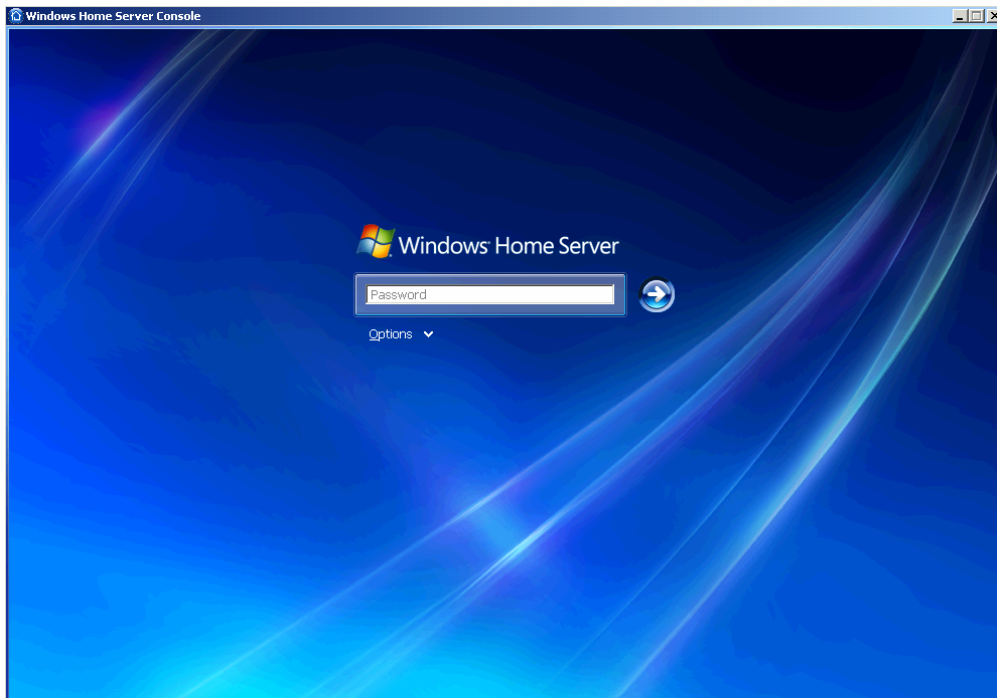
Once WHS connector detected your WHS, use the password, to log on to your Windows Home Server.



Once the WHS system is detected and you have logged in the following window should appear and the software will go through “Joining WHS and Configuring computer backup” steps.

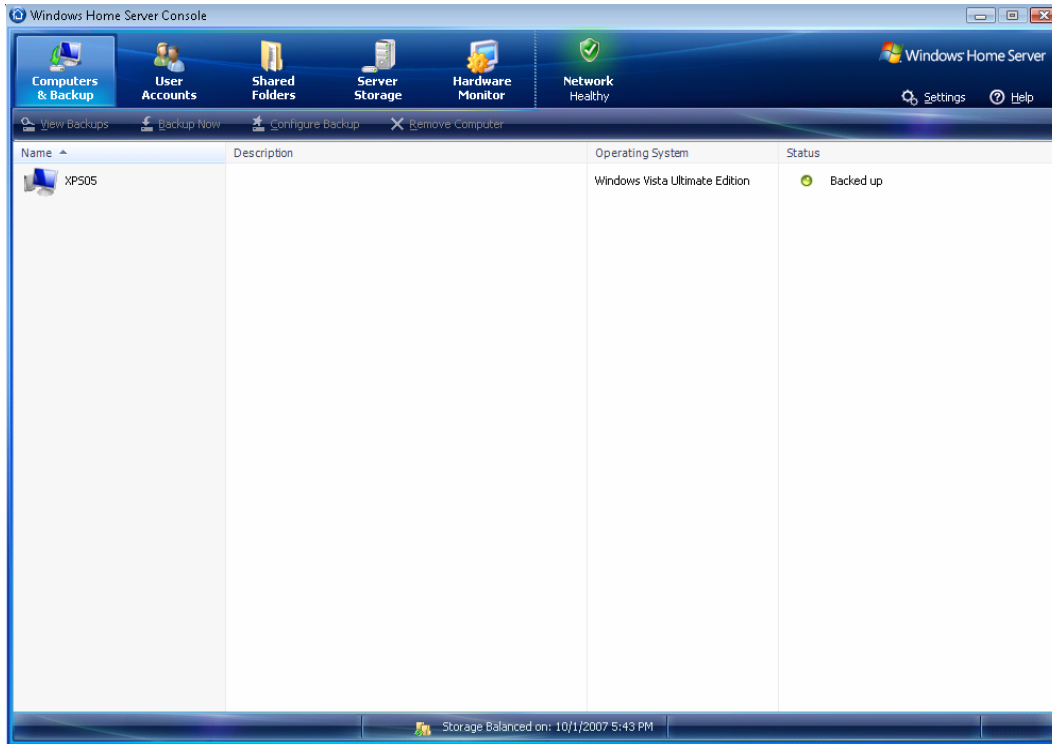


After the installation is completed, the WHS console should automatically launch. The password you created needs to be entered here to connect via the console.

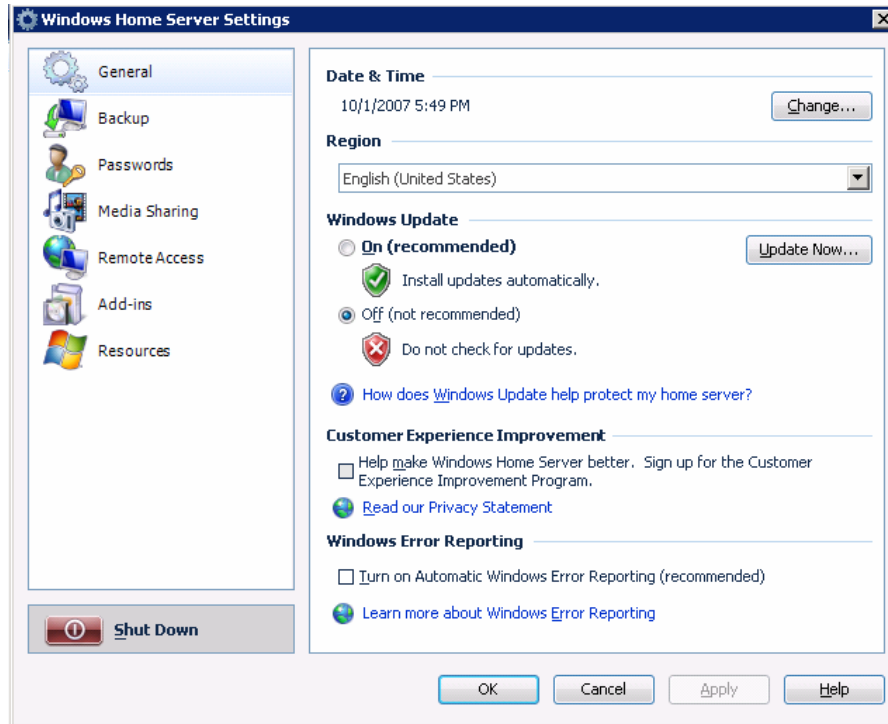


5. Hardware Monitor Installation (Optional)

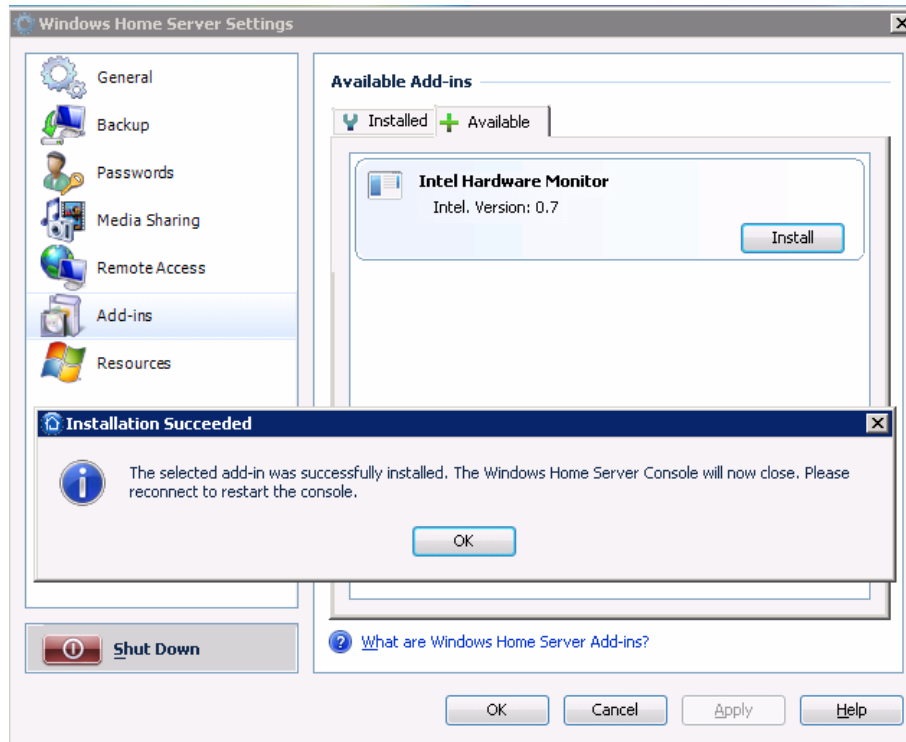
Intel has developed an optional add-in application that will enable the SS4200-EHW system running Microsoft Windows Home Server to monitor various hardware features such as fans and temperature. The Hardware Monitor can be installed from the connector on the WHS desktop or from the client interface after the 'Windows Home Server Connector' software has been installed on the client. To install the Hardware Monitor copy the installer (iWHMinstaller.msi) to the SS4200-EHW WHS shared folder called 'software->Add-ins'. Open the 'Windows Home Server Console' from the WHS desktop. Click on 'Settings' in the upper right of the console window.



After clicking on 'Settings' in the upper right the following window should appear.



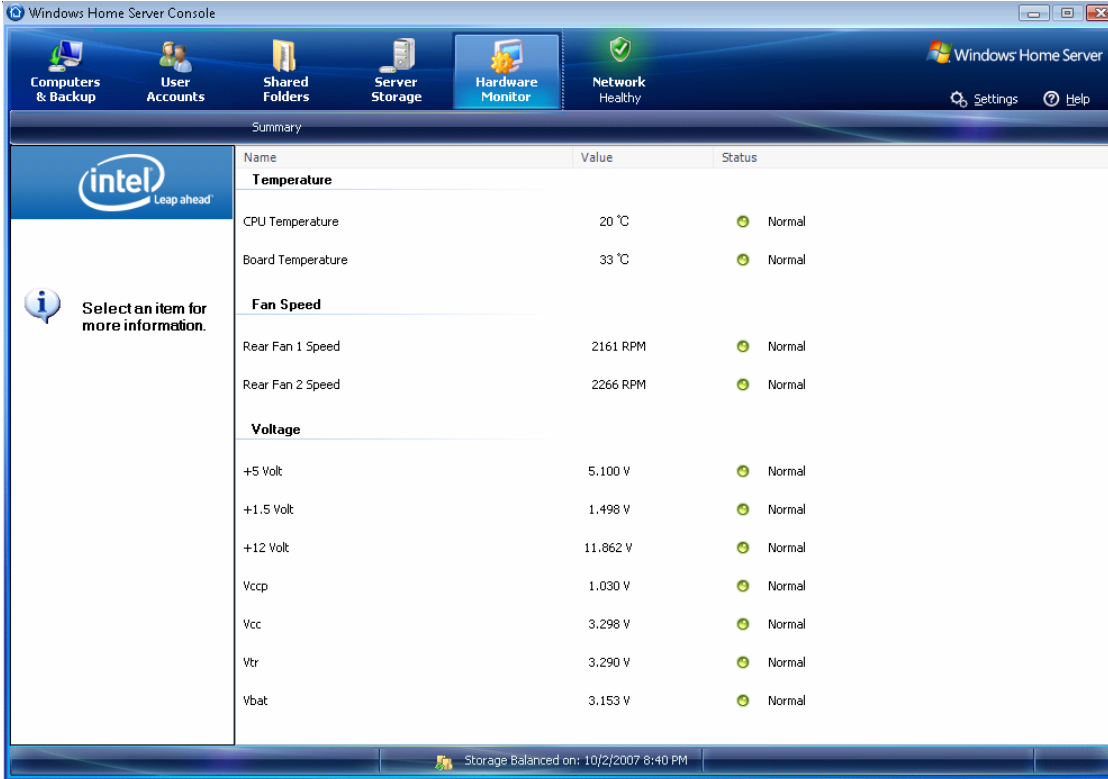
Select <Add-ins> in the left pane of the window.



From <Available Add-ins>, 'Intel hardware Monitor' will show, select 'Install'. An 'Installation Succeeded' message will pop up after installation has completed.

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Open 'Windows Home Server Console' from the WHS desktop, Key in your password, our example 'Pa88word', and select the Hardware Monitor tab that should now be visible across the top of the window. You will be able to see all system status and the window should be similar to what is shown here.



The screenshot displays the 'Windows Home Server Console' interface. The top navigation bar includes 'Computers & Backup', 'User Accounts', 'Shared Folders', 'Server Storage', 'Hardware Monitor' (selected), and 'Network Healthy'. The 'Hardware Monitor' section shows a summary table of system metrics.

Name	Value	Status
Temperature		
CPU Temperature	20 °C	Normal
Board Temperature	33 °C	Normal
Fan Speed		
Rear Fan 1 Speed	2161 RPM	Normal
Rear Fan 2 Speed	2266 RPM	Normal
Voltage		
+5 Volt	5.100 V	Normal
+1.5 Volt	1.498 V	Normal
+12 Volt	11.862 V	Normal
Vccp	1.030 V	Normal
Vcc	3.298 V	Normal
Vtr	3.290 V	Normal
Vbat	3.153 V	Normal

At the bottom of the console, a status bar indicates 'Storage Balanced on: 10/2/2007 8:40 PM'.