



# **Intel<sup>®</sup> Entry Storage System SS4000-E**

## ***Software Release Notes***

**Document Revision 1.5**

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**Storage Systems Technical Marketing Engineering**

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## ***Document Revision History***

<b>Date</b>	<b>Revision Number</b>	<b>Modifications</b>
3 Mar 2006	1.0	Initial Release
31 May 2006	1.1	Updated to reflect information pertinent to the latest 1.1 release.
19 June 2006	1.2	Removed section 2.5
15 Aug 2006	1.2-01	<ol style="list-style-type: none"> <li>1. Added section 5</li> <li>2. Section 1 was updated to include information regarding the Korean language version</li> </ol>
19 Sep. 2006	1.3-00	Updated all sections with information pertinent to 1.2 release
19 Dec 2006	1.4	Combined all previous versions of release notes into this document for ease of tracking and document revision management. Added information specific to 1.3 release about the improved shutdown procedure.
16 Mar 2007	1.5	<p>Added firmware revision 1.4 release information</p> <p>Section numbers 2 through 5 increased to 3 through 6 due to adding section 2 for firmware revision 1.4.</p> <p>Modified Table 1 to include build information for firmware revision 1.4</p>

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# 1. Introduction

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The following Release Notes provide information about changes in each release of the Intel® SS4000-E Entry Storage System Management Software, the Client Backup and Recovery Software, the Storage System Console and the Recovery CD application. The release numbers, builds and package identifier strings are as follows:

Table 1: Release component versioning

Component	Release Version	Build	Package
<b>English</b>			
Intel SS4000-E Entry Storage System Firmware	1.0	207	fs-bc-1.0-20060207
Client Backup and Recovery	3.5	131	v3.5-b131p
Storage System Console	1.0	129	v1.0-b129
Recovery CD Application	3.0	351	DSRECV30b351
<b>English</b>			
Intel SS4000-E Entry Storage System Firmware	1.1	214	BCFv11b214
Client Backup and Recovery	3.5	523	CBRv35b523
Storage System Console	1.0	116	SSCv10b116
Recovery CD Application	3.0	365	RCDv30b365
<b>Korean</b>			
Intel SS4000-E Entry Storage System Firmware	1.1	224	BCFv11b224
Client Backup and Recovery	3.5	528	CBRv35b528
Storage System Console	1.0	118	SSCv10b118
Recovery CD Application	3.0	365	RCDv30b365
<b>English</b>			
Intel SS4000-E Entry Storage System Firmware	1.2	522	BCFv12b522
Client Backup and Recovery	3.5	532	CBRv35b532
Storage System Console	1.0	116	SSCv10b116
Recovery CD Application	3.0	368	RCDv30b368
<b>English</b>			
Intel SS4000-E Entry Storage System Firmware	1.3	524	BCFv13b524
Client Backup and Recovery	3.5	532	CBRv35b532
Storage System Console	1.0	116	SSCv10b116
Recovery CD Application	3.0	368	RCDv30b368
<b>English</b>			
Intel SS4000-E Entry Storage System Firmware	1.4	709	BCFv14b709
Client Backup and Recovery	3.5	535	CBRv35b535
Storage System Console	1.0	121	SSCv10b121
Recovery CD Application	3.0	368	RCDv30b368

**\*\*Note: The 1.2, 1.3 and 1.4 release contains no updates to the Korean language version.**

## 2. Release 1.4

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### 2.1 Upgrading From Previous Versions

Systems running versions 1.0, 1.1, 1.2 or 1.3 will not be able to upgrade to the 1.4 firmware using the Advanced -> Firmware feature in the web management console interface. Upgrading from a previous version of the firmware is a “data destructive” process due to the new structure of the firmware and supporting disk drives greater than 500GB. If you choose to upgrade to version 1.4 it is strongly recommended that you first backup your existing data to another system in your environment. It is also recommended that you understand your current configuration of users, groups and shares to be able to recreate this under the 1.4 firmware.

Once you have backed up your data and can recreate your users, groups and shares, you can proceed with the upgrade process. To upgrade your system to version 1.4 firmware you can follow the procedure described here.

Before you upgrade, be sure to **BACKUP your data to another location**. Then, please follow the steps below.

**Note: This operation will completely erase the shared folders and backup data, i.e., THIS PROCEDURE WILL REMOVE ALL DATA ON THE DRIVES.**

1. Download the 1.4 firmware file from <http://downloadfinder.intel.com> (search for SS4000-E in the search box).
2. Extract the files from the downloaded file and save them to your hard drive on your laptop, desktop, server, etc.
3. Backup the data on the SS4000-E to another system.
4. Shutdown the Intel® Entry Storage System SS4000-E system
5. Unplug all hard disks installed in the Intel® Entry Storage System SS4000-E system.
6. Boot up the Intel® Entry Storage System SS4000-E system
7. Login to the system by browsing the main web page:
  - a. `http://<Intel Entry Storage System SS4000-E system's IP Address>/`
  - b. NOTE: this will display the system initialization screen, not the login screen. DO NOT insert the hard drives.
8. Enter the following url to display the firmware upgrade page:
  - a. `https://<Intel Entry Storage System SS4000-E system's IP Address>/system_init_vendorF.cgi`
9. Select the v1.4 software package file (fs-bc-v1.4-b709.pkg) to update the flash firmware.
10. After the previous step completes, the system should be rebooted **but without the disks inserted**. After the system completes the boot sequence, the disks can be inserted (one at a time while the system is running and wait for the disk LED to illuminate) and scanned for (scan for each disk after the LED illuminates) and the firmware reinstalled. If the firmware package is installed and the disks are reinserted prior to rebooting the system, the system will boot off the drives and not properly

complete a clean install. The drives must be inserted while the system is running for this process to complete properly.

## 2.2 New, Modified or Deleted Features

### 2.2.1 New Features

#### 2.2.1.1 Storage Capacity Greater Than 2 TeraBytes

Firmware revision 1.4 adds support for NAS (Network Attached Storage) storage capacity greater than 2 TeraBytes (TB). Capacity in your storage system is divided into partitions, including one for a shared public folder, one for user home folders and one for backups.

#### 2.2.1.2 Home Folder Now An Isolated NAS Share

The “Home” (User Home Folder) is now an isolated NAS share. In previous versions the “homes” folder was one large NAS share, which included public and other created share folders. The default size of each “Home” folder is 200MB and is expandable up to 2TB. It is recommended to create the “Home” folder allocated space using a conservative approach. The following should help clarify the usage of the “Home” space and allocating storage capacity to it.

During initial configuration the user will be presented with a new version of the Disk Space Distribution screen. The following is an example screen capture of the new window.

**System Setup : Disk Space Distribution**

Your storage system is divided into two partitions, one for shared folders and one for backups. The maximum amount of shared folder space is 2 TB (1 TB=1024 GB). The minimum space requirement is 200 MB. You can allocate more space now or accept the default minimum space allocation. To allocate additional space, select the Specify disk space button and specify 1 GB (1024 MB) or higher. Specify how much space you want to allocate for "public" shared folder and "home" folders.

Once you allocate a certain amount of space for shared folders, you cannot reduce it. If you plan to back up computer disks to your storage system, it is recommended that you use the minimum amount of disk space for shared folders, back up all the computer disks that you plan to protect, and then expand the space allocated for shared folders. This ensures that adequate space is available for backups.

Available disk space : 700.29 GB

**Home**

Use the minimum amount of space for shared folders (200 MB)

Specify disk space :  GB

**Public**

Use the minimum amount of space for shared folders (200 MB)

Specify disk space :  GB

[Back](#) [Finish](#)

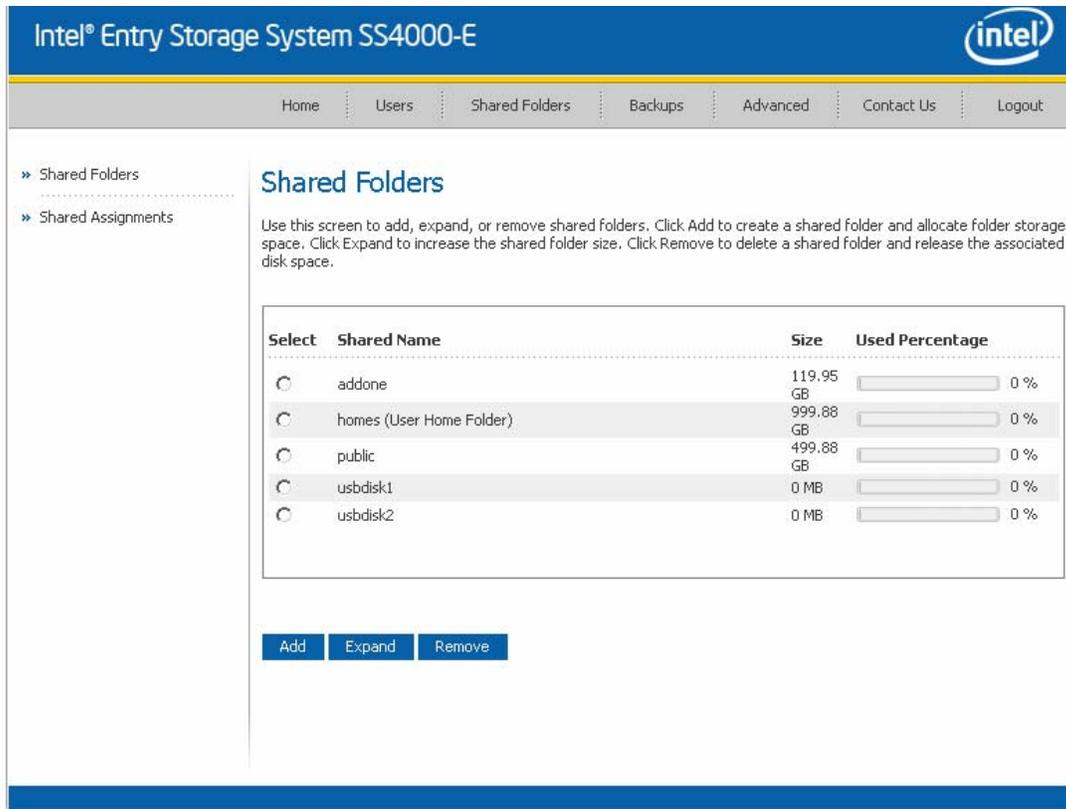
Each user that is created will have a “home” folder created for them. This folder will be created in the “Home” area space that is allocated in the first box shown above. The total space for the “Home” area will be limited to the disk space selected in this window. If the user creates this

area with the minimal space (200MB) or a smaller amount of capacity, it can be “grown” later to a more accommodating size to fit the user needs. However, if the space is created with a large amount of capacity and the user decides later to reclaim some of that space, the system will not allow this space to be reduced to a smaller capacity. It can only be “grown” to a larger capacity. It is strongly advised that you create this “Home” space using a conservative method and consider the number of users to be created and the storage capacity required by each user. This can be viewed as a “quota” mechanism for users. The “Home” area grants users a “quota” for storage space (for the group of users not on an individual basis) and that space can be expanded later. When the “Home” area is expanded, all users will have access to this additional space.

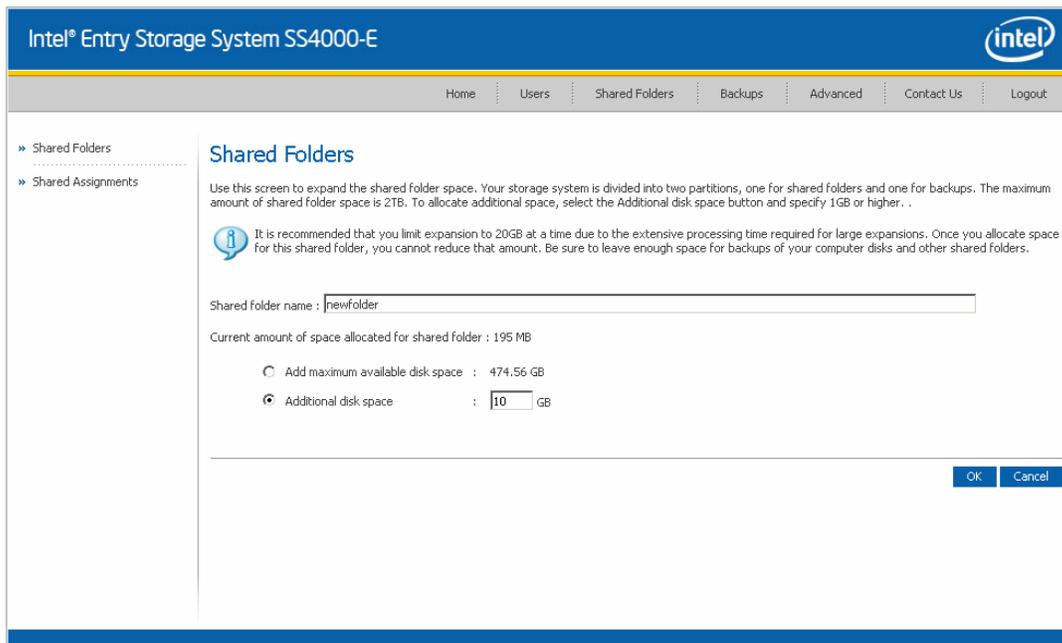
### 2.2.1.3 Flexible storage capacity

The storage system supports expansion on a per folder basis. When a shared folder is created it is created with the ability to expand to a maximum of the available space up to 2TB (if available). The aggregate capacity cannot exceed the maximum available physical capacity of the storage system. The following screenshot shows the screen for creating a new share & the option to size the storage space for the share. It is recommended that you use a conservative approach to allocating space for each share that is created and use the ability to expand the space as needed.

The following screenshot shows the screen which lists all shares that have been created on the storage system. It shows the current size of the share and the percentage of the space used of the allocated space. To expand a share you would click on the “Expand” button to open the window shown in the subsequent screenshot.



The following screenshot shows the screen for expanding a share after it has been created. It is recommended that you expand the share space using a conservative method by adding smaller amounts of space rather than all available space.



#### **2.2.1.4 Shared folder capacity reallocation**

The storage system supports reuse of shared folder storage upon deletion of the shared folder. Storage capacity allocated for the deleted folder is released to a “free” pool and can be reallocated to other shares.

### **2.3 Updates and Clarifications**

#### **2.3.1 Active Directory**

##### **2.3.1.1 Active Directory Server**

Active Directory built-in group accounts that are part of the Active Directory server’s “Built-In” groups cannot access assigned shared folders even though they are imported into the Intel Entry Storage System SS4000-E and are granted the proper access rights.

##### **2.3.1.2 Active Directory Authentication Mode**

Active Directory authentication mode does not automatically include a guest account. If your storage system is configured to use Active Directory Authentication Mode without a guest account created in the Active Directory server, the Storage System Console may not be able to list shared folders. Windows will attempt to use the user’s Windows login account, stored user accounts, and/or other known user accounts that have been used to log in to the Intel Entry Storage System SS4000-E. If successful, the Storage System Console will be able to see shared folders on the Intel Entry Storage System SS4000-E even if there is no guest account created in the Active Directory. If unsuccessful, you will need to have the Active Directory administrator create a guest account (with password of guest) on the Active Directory server to enable the Storage System Console to be able to list the shared folders.

##### **2.3.1.3 Web User Interface Displaying Users / Groups**

The web user interface (UI) displays all users / groups synchronized from the Active Directory Server, regardless if the user account is hidden, disabled, a built-in account, etc.

##### **2.3.1.4 Mapping NAS Windows Shares – Reboot or Power Cycle**

If the Intel Entry Storage System SS4000-E and Windows domain controller are both rebooted, and the Intel Entry Storage System SS4000-E is started before the domain controller comes up, you will need to shutdown and restart the Intel Entry Storage System SS4000-E in order to map the NAS Windows shares.

##### **2.3.1.5 Account Password Synchronization After Password Change**

If the Intel Entry Storage System SS4000-E has joined an Active Directory domain and the account password used to synchronize has been changed in the Active Directory, attempts to synchronize will fail. Perform the following steps to update the password:

1. Login to the Intel Entry Storage System SS4000-E
2. Go to Users -> Active Directory Properties

3. Manually update the password for the synchronization account

### 2.3.1.6 Active Directory Mode and “Homes” Folder

By design, the “homes” folder space will be deleted when the Intel Entry Storage System SS4000-E is changed to Active Directory mode.

## 2.3.2 Client Backup and Recovery

### 2.3.2.1 Intelligent Management Agent

Client Backup and Recovery requires the Intelligent Management Agent (IMA), which is automatically installed. IMA requires that a C: partition exists on the client system where Client Backup and Recovery will be installed.

### 2.3.2.2 Disks Larger Than 2TB

Currently, the IMA module of the Client Backup and Recovery application cannot display disks larger than 2199029255949 bytes (slightly less than 2TB). The system cannot protect a disk, or its partitions, if the disk capacity is greater than 2199029255949 bytes.

### 2.3.2.3 Upgrading To Client Backup and Recovery revision 1.1

If you are currently running revision 1.0 of the Client Backup and Recovery application and have protected disks / partitions using the 1.0 revision, you must do the following after upgrading to revision 1.1. After the upgrade you must repair the connection to the backups using “**Repair Connection**” in the menu options. This should enable you to restore files, etc. in the event it is necessary.

### 2.3.2.4 Partitions and Drive Letters

If a partition has been created but no drive letter has been assigned to it, the name of the partition will not display correctly when viewing the available disk list. For example, if the third partition on a disk (Disk 0, Partition 3) has the volume label "Production" but does not have a drive letter associated with it, the Client Backup Recovery user interface will only display the partition's location on the disk (Disk 0, Partition 3).

## 2.3.3 Remote Boot and DHCP

If the DHCP server option is enabled on your storage system, you can only boot remotely from the first port. If the DHCP option is disabled and you're using a separate DHCP server, you can remotely boot from either port. If you plan to remotely boot from a backup on the storage system, it is recommended that you select the IP address of the first port.

## 2.3.4 Root File System Size

The size of the root file system has been increased from 128MB to 256 MB to accommodate the additional requirements to support disk drives with capacities greater than 500GB.

### **2.3.5 Performance During Backup and / or Restore and Web UI**

Performance issues might occur for backup and / or restore jobs if the Web user interface is accessed while backup and / or restore jobs are running.

### **2.3.6 Shares Greater Than 1 TB and Boot Time**

If the storage system contains several NAS shares or large NAS shares (over 1 TB), the system can take a long time to boot up. This occurs since every NAS disk file system must be checked and mounted. The larger the file system or the greater the number of NAS shares, the longer the check time. The system status LED blinks green until the system boots up completely and successfully. The system status LED then turns solid green indicating the system has successfully started.

## 3. Release 1.3

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### 3.1 New, Modified, or Deleted Features

#### 3.1.1 Modified Features

##### 3.1.1.1 Improved Shutdown Procedure

Running an Intel® Entry Storage System SS4000-E with firmware earlier than version 1.3, build 524, there is a possibility that the configuration files may become damaged when the system is shut down. This can result in improper operation of the system.

If configuration files are damaged, you may encounter one of the following symptoms:

- At startup, the unit is reset to the System Initialization screen, the initial screen you would see when the system is new, prior to being configured. The IP address may also be changed to the default IP address (192.168.0.101). It is important that you **DO NOT** proceed with the configuration and initialization since that will erase your backup data.
- After a firmware upgrade, the same behavior is true as above, except that the Intel® Entry Storage System SS4000-E reports the previous firmware version.
- After startup, the system is inaccessible.

Firmware version v1.3 resolves these problems.

There are two paths to upgrade your system. The normal path for upgrades is the preferred path. The alternate path erases all data from the hard disk drives and is recommended only if a customer wants to return the system to a “clean system” state.

#### **To upgrade via the normal process (preferred) do the following:**

1. Download the 1.3 firmware file from <http://downloadfinder.intel.com> (search for SS4000-E in the search box).
2. Extract the files from the downloaded file and save them to your hard drive on your laptop, desktop, server, etc.
3. Login to the SS4000-E management console.
4. Select the Advanced tab at the top of the webpage.
5. In the Advanced section click to select Firmware in the left border of the webpage.
6. Click the gray Browse button to the left of the small window labeled “Firmware file”.
7. Browse to the location you extracted the firmware file to.
8. Click on the .pkg file containing the new 1.3 firmware.
9. Enter the admin password in the “Administrator password” window.
10. Click the blue upgrade button in the lower right of the window.

The process will take some time to complete and the system should not be shutdown while it is upgrading. Once the upgrade is complete (**please allow 30 minutes or more**) you can verify the firmware version is correct by navigating to the Advanced: Firmware webpage. The current installed firmware revision is shown toward the top of the page.

The alternative upgrade option is described here, for those customers who have adequate capacity in another storage system to backup the data on the SS4000-E system.

**To upgrade via this process do the following:**

Before you upgrade, be sure to **BACKUP your data to another location**. Then, please follow the steps below.

**Note: This operation will completely erase the shared folders and backup data, i.e., THIS PROCEDURE WILL REMOVE ALL DATA ON THE DRIVES.**

11. Download the 1.3 firmware file from <http://downloadfinder.intel.com> (search for SS4000-E in the search box).
12. Extract the files from the downloaded file and save them to your hard drive on your laptop, desktop, server, etc.
13. Backup the data on the SS4000-E to another system.
14. Shutdown the Intel® Entry Storage System SS4000-E system
15. Unplug all hard disks installed in the Intel® Entry Storage System SS4000-E system.
16. Boot up the Intel® Entry Storage System SS4000-E system
17. Login to the system by browsing the main web page:
  - a. `http://<Intel Entry Storage System SS4000-E system's IP Address>/`
  - b. NOTE: this will display the system initialization screen, not the login screen. DO NOT insert the hard drives.
18. Enter the following url to display the firmware upgrade page:
  - a. `https://<Intel Entry Storage System SS4000-E system's IP Address>/system_init_vendorF.cgi`
19. Select the v1.3 software package file (fs-bc-v1.3-b524.pkg) to update the flash firmware.
20. After the previous step completes, the system should be rebooted but without the disks inserted. After the system completes the boot sequence, the disks can be inserted and scanned for and the firmware reinstalled. If the firmware package is installed and the disks are reinserted prior to rebooting the system, the system will boot off the drives and not properly complete a clean install.

## 3.2 SPECIFICATION UPDATES/CLARIFICATIONS

### 3.2.1 Clarifications

#### 3.2.1.1 Unassigned NAS shares

If a NAS share is unassigned to a client while a client is currently connected, the client will still be able to access the share. However, if the client disconnects and tries to reconnect to the share, they will be denied access to the share.

### 3.2.1.2 Active Directory

#### 3.2.1.2.1 *“Built-in” groups cannot access assigned shared folders imported into SS4000-E*

Active Directory built-in group accounts that are part of the Active Directory server's "Built-in" groups cannot access assigned shared folders even they are imported into the Intel Entry Storage System SS4000-E and are granted the proper access rights.

## 4. Release 1.2

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### 4.1 New, Modified, or Deleted Features

#### 4.1.1 New features

The following items are new features that are additional to those in releases v1.0 and v1.1.

##### 4.1.1.1 Microsoft® Active Directory™ authentication mode

In addition to its “Local” authentication mode, the SS4000-E now supports authentication via Microsoft® Active Directory™ (AD) domain controllers. When placed in AD authentication mode, the SS4000-E is able to recognize existing users and passwords located and administered on the AD domain controller. System administrators can apply changes to security policies and user privileges that are synchronized automatically with the SS4000-E. When in AD authentication mode, the SS4000-E does not maintain its own copy of the user/password database thus avoiding data inconsistency between the SS4000-E and the AD domain controllers on the network. Active Directory™ support will also allow a domain user seamless access to data on the SS4000-E. Once SS4000-E users have logged into and authenticated with the domain, the users will not have to enter their credentials again when they access data on the SS4000-E that they have the proper access rights to.

**Important!** Please refer to [section 3.1](#) and [section 3.2](#) of this document for more detailed information regarding possible issues when changing from “Local” to “Active Directory” authentication mode.

#### 4.1.2 Modified features

The following items have been modified since the previous 1.1 release.

##### 4.1.2.1 Folder types

Previously, separate folders were required for CIFS sharing and NFS sharing. This update will move all folders to a single folder type accessible to both CIFS and NFS clients simultaneously.

##### 4.1.2.2 Object instances allowed by the firmware increased

The following increases were made to the total object instances allowed by the SS4000-E firmware for a single system:

**Table 2: Object instances allowed by firmware user interface**

	Release 1.0	Release 1.1	Release 1.2
<b>Users</b>	128 (64 CIFS + 64 NFS)	128 (64 CIFS + 64 NFS)	256 (128 CIFS + 128 NFS)
<b>Folders</b>	32	32	128
<b>Groups</b>	16	16	128
<b>Backup Clients</b>	16	16	16
<b>Backup Disks</b>	32	32	64
<b>Backup Disks per Backup Client**</b>	16	16	16
<b>FTP</b>	8	8	8

**\*\*Note:** Although the Backup software will not prevent the creation of more than 16 backup disks for any client, the supported limit is a maximum of 16 backup disks per backup client.

***Exceeding the supported limit can result in unexpected behavior such as, but not limited to, data not being backed up as expected! It is also recommended that client backups be scheduled to occur at different times to minimize the impact on performance.***

### 4.1.2.3 Client Backup and Recovery utility

#### 4.1.2.3.1 Client Backup and Recovery utility and SS4000-E firmware interoperability

The Client Backup Recovery (CBR) v3.5 does not support SS4000-E firmware v1.0. Firmware versions 1.1 and 1.2 require CBR v3.5 or later. Please refer to the latest Tested Hardware and OS List (THOL) for the latest versions of software and hardware located at:

<http://support.intel.com/support/motherboards/server/ss4000-e/index.htm>

#### 4.1.2.3.2 Previous backups may not be detected after updating to release v1.2

After upgrading the SS4000-E firmware and the client software, you may not see the backups previously done under the earlier versions when selecting “Protect A Disk”. To correct this you must repair the connection, using **Repair Connection**, from disks/partitions that were protected using earlier versions.

### 4.1.2.4 Recovery CD

#### 4.1.2.4.1 Reordered how backups/snapshots are displayed in the UI

The latest backup/snapshot is now placed at the top of the list of backups in descending order based on time and date that the backup was completed.

#### 4.1.2.4.2 Driver support for additional devices

The Recovery CD has added drivers for more devices and platforms (please see the latest THOL for the complete supported list of devices at

<http://support.intel.com/support/motherboards/server/ss4000-e/index.htm> )

## 4.2 SPECIFICATION UPDATES/CLARIFICATIONS

### 4.2.1 Updates

#### 4.2.1.1 Modifying a user’s access rights to a share while the user is connected to the share does not take effect immediately

**Description:** If an administrator changes the access rights (e.g. remove access totally or change access level) of a user to a shared folder on the SS4000-E while the user is connected to the shared folder, the user will continue to have the same access rights that were present when he originally connected to the share. The access rights are persistent until the connection and the session are terminated. Once the session is terminated the new access rights will take effect.

**Affected SW Releases:** All software release versions.

**Workaround:** None. The new access rights will take effect once the current session is terminated by the user.

#### 4.2.1.2 Active Directory built-in 'Administrators' and 'Users' group members cannot access shares when given group-level access rights

*Description:* If a share is created and access is assigned to the built-in 'Administrators' or 'Users' group, when trying to access the share by a member of the Administrator group, that user will be denied access.

*Affected SW Releases:* Version 1.2.

*Workaround:* To assign share access to members of the Active Directory built-in 'Administrators' and 'Users' group, assign the access to individual members of the groups instead of by group access.

#### 4.2.1.3 The Web UI formatting has been changed from a fixed width

*Description:* The Web UI is no longer a fixed width. It stretches to fit the browser screen when the browser window is maximized. This effect gives the Web UI a different look than previous firmware releases when viewing at different video resolutions.

*Affected SW Releases:* Version 1.2.

*Workaround:* None. This change was done to better accommodate different video resolutions and character sets. You can resize the browser window for your desired Web UI width.

#### 4.2.1.4 Clients occasionally lose FTP connection during heavy I/O transfers

*Description:* When transferring files via FTP with the SS4000-E, your session may terminate unexpectedly. This behavior is most likely but not limited to instances when multiple clients are connected to the SS4000-E via FTP and performing high I/O transfers. As a result file transfers can be incomplete.

*Affected SW Releases:* All software release versions.

*Workaround:* After each transfer session the user should check the FTP client to confirm that the transfer was completed successfully.

#### 4.2.1.5 Possible system failure if power cord removed improperly

*Description:* When powering off the SS-4000-E, the system may fail if the power cord is removed from the unit or wall outlet before it completely powers down.

*Affected SW Releases:* All software release versions.

*Workaround:* Ensure that the unit powers down completely before removing the power chord. All front panel and HDD carrier LEDs should be unlit and no cooling fan activity.

## 4.2.2 Clarifications

### 4.2.2.1 Active Directory Implementation

The following list clarifies how the software release v1.2 for the SS4000-E implements certain components of the Active Directory authentication process.

#### 4.2.2.1.1 *Shared folders not detected after changing authentication mode*

When the user changes the authentication mode of the SS4000-E, shared folders are no longer detectable by the Storage System Console. Once the authentication mode has completed the change over process, the user will need to go to the Shared Folders tab and reassign access rights to the shares. If authentication changes from “local” to “Active Directory”, there will be a list of users detected from the Active Directory domain tree. Use existing user accounts or create new ones to be assigned to the SS4000-E shared folders. If authentication changes from “Active Directory” to “local”, the user will have to create user accounts locally on the SS4000-E to be assigned access to the shared folders.

#### 4.2.2.1.2 *User account name limitations*

“FTP” and “Anonymous” are names reserved for internal use by the SS4000-E. Do not use these names when creating user accounts in Active Directory. Doing so could cause unpredictable behavior.

#### 4.2.2.1.3 *Unexpected user accounts seen after changing to “Active Directory” authentication mode*

The Web UI displays all users/groups synchronized from the Active Directory server, regardless if the user account is hidden, disabled, built-in, etc.

#### 4.2.2.1.4 *Active Directory authentication mode does not automatically include a “guest” account*

If an SS4000-E is configured to use “Active Directory” authentication mode and there is no “guest” account created on the Active Directory server, the Storage System Console may not be able to list the shared folders of the discovered SS4000-E. The system will scan through available user accounts to determine if any have the proper security rights to access the shared folders on the SS4000-E. If successful, the Storage System Console will be able to detect and display the shared folders of the SS4000-E even if there is no “guest” account on the Active Directory server. However, if unsuccessful, it is recommended that the Active Directory administrator create a ‘guest’ account (use **guest** as the password) on the Active Directory server in order for the Storage System Console to be able to detect and list the shared folders of the SS4000-E.

#### 4.2.2.1.5 *The SS4000-E is unable to synchronize with the domain if the ‘Admin’ account password is changed*

The SS4000-E requires an account on the Active Directory domain controller when it initially joins the domain. It uses this account to browse the OU (Organizational Unit) tree to retrieve accounts and security information. It also uses this same account on all subsequent synchronizations with the domain controller to update any changes to the accounts and security information. If the password for this account is changed on the domain controller, the

SS4000-E will be denied access whenever it attempts any future synchronization with the domain. The following steps provide a workaround to this issue:

- a. Login to the SS4000-E
- b. Go to Users -> Active Directory Properties
- c. Manually update the password for the synchronization account

A good practice is to create an account for synchronization and give it “Read” access only to the OU that the SS4000-E is assigned to in the Active Directory tree. If the password is set to expire, always immediately update the password on the SS4000-E, using the above steps, whenever the password is changed on the domain controller.

#### **4.2.2.1.6 *Changing to a different Active Directory OU (Organizational Unit) requires rejoining the domain***

Once the OU selection is made when joining an Active Directory domain, it is not that easy to change. Therefore, plan and make your OU selection carefully. However, if you need to change the OU, you must switch to “local” authentication mode then back to “Active Directory” authentication mode and rejoin the domain. However, once you rejoin the domain, the user rights to the shares will need to be setup again.

#### **4.2.2.1.7 *Startup and synchronization between the domain controller and SS4000-E***

If the SS4000-E and the Active Directory domain controller are both rebooted and restarted, and the SS4000-E completes its startup before the domain controller completely starts all of its services, you will need to shutdown and restart the SS4000-E. This is required in order to properly synchronize with the domain controller and be able to map to Windows-accessible shares.

#### **4.2.2.1.8 *Time synchronization between the domain controller and SS4000-E***

The time on the Active Directory domain controller and the SS4000-E need to be within 5 minutes of each other. In the case where they are greater than 5 minutes difference of each other, they may not synchronize. In this case, reset the SS4000-E to the same time as the domain controller and retry the synchronization.

#### **4.2.2.2 *Limitations when upgrading from firmware v1.1K (Korean language) to firmware v1.2***

The SS4000-E firmware v1.1 supports web pages in both English and Korean. Upgrading from firmware v1.1K to firmware v1.2 is supported, although v1.2 only supports English web pages. Please note the following additional information and limitations of proceeding with this upgrade:

- Since v1.2 only supports English web pages, all v1.1 Korean web pages will be deleted once the upgrade is completed.
- Existing v1.1 Korean input fields (shared folder name, CIFS user name, CIFS group name, NFS computer description) will remain intact allowing all NAS functions to be performed (i.e. assign the Korean shared folder to a user/group, delete a Korean shared folder/user/group, etc.).

- Version 1.2 will allow the creation of new shared folders, users/group or computer descriptions in English only; not in Korean.

## **4.2.3 Client Backup and Recovery**

### **4.2.3.1 Intelligent Management Agent installation**

Client Backup and Recovery requires the Intelligent Management Agent (IMA) to be installed, and it is installed automatically during the installation of the Client Backup and Recovery utility. IMA requires that a C: partition exists on the machine where Client Backup and Recovery will be installed.

### **4.2.3.2 Partitions without drive letters**

If you create a partition without assigning a drive letter to it, the name of the partition will not display correctly when viewing the available disk list. For example, if the third partition on a disk (Disk 0, Partition 3) has the volume label "Production" but does not have a drive letter associated with it, the Client Backup Recovery user interface will only display the partition's location on the disk (Disk 0, Partition 3).

## 5. Release 1.1

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### 5.1 New Features, Enhancements and Changes

#### 5.1.1 Fan/thermal monitoring, CPU, other system status

The fan and thermal monitoring of the CPU and the disk drives has been improved. The web management interface has been modified to show system status which will show information such as the fan speed, the temperature of the three sensors in the system, one for the CPU temperature and two for the disk drives temperature. Other information is available in this window as well.

#### 5.1.2 Improved thermal shutdown and fan/thermal alerting

The system will now send an email alert to notify an administrator if this condition has occurred and logs the event in the system log. The software now sends an email alert if the fan speed is not within the normal operating range as documented in the Intel SS4000-E Entry Storage System Technical Product Specification, revision 1.2.

#### 5.1.3 PXE remote booting and PXE imaging

If the Client Backup and Recovery application is used to create a backup of a disk image, this image can be recovered by booting the client system using PXE (Pre-boot Execution Environment) and restoring the image. This capability is not supported in older systems. If your system does not support this capability, an error will be displayed.

#### 5.1.4 HDD write-cache disabled

Hard Disk Drives (HDD) have a cache in the disk drive to temporarily store data prior to writing it to the disk platters. This can lead to data loss if a power loss is experienced while the write is occurring because there may have been data in the write cache of the HDD. This write-caching option has been turned off due to the potential for loss of data if a power loss is experienced. This causes no loss in performance.

#### 5.1.5 Web UI forces secure communication

In the previous version of the web management user interface, the ability to login via a secure connection (https) was enabled but not the default. In this release accessing the storage system via the web management user interface is now done using a secure connection (https) to create a secure link for secure transmission of data over the network.

#### 5.1.6 Jumbo frames

Ethernet packets are typically 1500 bytes in size. Jumbo frames support enables the packet size to be much larger (on the order of 9000 bytes) for improved network performance and some reduction in the amount of CPU cycles required to process the TCP/IP requests. You can enable jumbo frame support via the web management user interface.

### **5.1.7 Recovery CD test mode to check for hardware support/compatibility**

If you need to use the Recovery CD to recover an image that has been backed up to the Intel SS4000-E Entry Storage Server using the Client Backup and Recovery application, the recovery CD now incorporates a test mode to check the various components in the client system being restored. It will run this test to validate your system can be restored using the drivers on the Recovery CD. If your system contains components that are not supported a report will be displayed to assist customer support in resolving the issue. This report can be saved to the client system to send to customer support for assistance in issue resolution.

### **5.1.8 Expandable NAS partition, more flexible space allocation**

In the previous version of the product, during the initialization process the software gave the administrator the opportunity to adjust the capacity for shared folders and for image backups. Once the partitioning had completed this could not be changed without reconfiguring the system which would destroy any data on the system. The web management user interface has added a new capability to expand these partitions after the initialization process has completed. If share folder storage needs to be increased and the backup partition has available capacity, the administrator can increase the shared space which will reduce the capacity of the backup space.

## **5.2 Storage System and Client Operating Systems**

### **5.2.1 Remotely booting from a backup on the storage system**

If you need to remotely boot from a backup on the storage system, it is recommended that you select the IP address of the first Ethernet port. If the DHCP server option is enabled on your storage system, you can remotely boot only from the first port. If this option is disabled and you're using a separate DHCP server in your network, you can remotely boot from either port.

### **5.2.2 Accessing shared folders using CIFS, NFS or FTP**

If you are currently accessing shared folders via CIFS, NFS or FTP and attempt to expand the NAS volume at the same time, the NAS expansion will not complete. The following message will be displayed: "The storage system is currently busy. When the system is ready, you will be automatically redirected to the appropriate page." Therefore, it is recommended that you stop access to the NAS shared folder and expand the NAS volume. Once the NAS volume has been expanded, you can proceed to access the NAS shared folder.

### **5.2.3 Using the web management interface during backup or restore**

Performance issues could occur for backup and/or restore jobs if the Web management interface for the Intel SS4000-E Entry Storage System is accessed while backup and/or restore jobs are running.

### **5.2.4 Downgrading to previous version of software**

If the Intel Entry Storage System SS4000-E is running firmware version 1.1, you cannot downgrade the system to run firmware version 1.0.

## 5.3 Client Backup and Recovery

### 5.3.1 Previous version of software and current version of Client Backup and Recovery utility

The Intel Entry Storage System SS4000-E firmware v1.0 does not support Client Backup Recovery v1.1.

### 5.3.2 Intelligent Management Agent installation

Client Backup and Recovery requires the Intelligent Management Agent (IMA) to be installed, and it is installed automatically during the installation of the Client Backup and Recovery utility. IMA requires that a C: partition exists on the machine where Client Backup and Recovery will be installed.

### 5.3.3 After installing Client Backup and Recovery version 1.1

After you upgrade to Client Backup and Recovery version 1.1 from version 1.0, you may not see the backups previously done under the earlier version by selecting "Protect A Disk". To correct this you must repair the connection, using **Repair Connection**, from disks/partitions that were protected using Client Backup and Recovery v1.0.

### 5.3.4 Partitions without drive letters

If you create a partition without assigning a drive letter to it, the name of the partition will not display correctly when viewing the available disk list. For example, if the third partition on a disk (Disk 0, Partition 3) has the volume label "Production" but does not have a drive letter associated with it, the Client Backup Recovery user interface will only display the partition's location on the disk (Disk 0, Partition 3).

## 6. Release 1.0

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### 6.1 Storage System and Client Operating Systems

#### 6.1.1 Cannot use the same name for User, Group and Share

##### *Issue*

If the administrator creates a user, group and share that have the same name the Intel Entry Storage System SS4000-E will generate a user conflict error.

##### *Workaround*

Do not use the same name for the user, group or share.

#### 6.1.2 FTP allows a user to copy files to a folder that appears to not exist

##### *Issue*

A user can FTP files to the Intel Entry Storage System SS4000-E that does not appear in the web console interface. A FTP user can copy files to the storage system and list the files while connected to the storage system. The administrator will not be able to see the folder(s) in the web console interface and hence cannot manage the storage used by these folders.

##### *Workaround*

This is working as designed and is documented as information for system administration purposes.

To reclaim the space the administrator can delete the user's account which will delete the user's home folder. This deletes the folder used for ftp files as well. Prior to deleting the account the administrator should confirm the user has backed up files and other data on the storage system.

#### 6.1.3 System status LED continues to blink green after RAID sync complete

##### *Issue*

In some instances when the system is powered on and completes the boot process, the system status LED may continue to blink green rather than solid green. If the web interface console shows "normal" for RAID status the system can be shutdown and rebooted.

##### *Workaround*

Check the web interface console for "normal" RAID status, if RAID status is "normal" shutdown the system. After shutdown, the system can be restarted (powered on).

*Fixed in subsequent release*

#### **6.1.4 Unsigned SSL Certificate required**

##### *Issue*

During the process of connecting to the Intel Entry Storage System SS4000-E using the web interface console a warning message may appear related to a SSL certificate. This results from the certificate being from a non-public Certificate Authority such as Verisign and not being a “signed” certificate.

##### *Workaround*

This is working as designed. It is safe to accept the certificate since it is for a secure communication channel to be established and not for authentication.

#### **6.1.5 DHCP does not negotiate after power on**

##### *Issue*

There are two Gigabit Ethernet ports on the Intel Entry Storage System SS4000-E. DHCP is enabled on the first Ethernet port and will only negotiate an IP address for the second Ethernet port at boot time. If the system has already booted and the second port is not connected to a network at boot time, it will not be assigned an IP address from a DHCP server in the network. If an Ethernet cable is plugged into the port it will not negotiate a new address.

##### *Workaround*

Plug a cable into the second port at boot time to ensure an IP address is properly assigned via the DHCP negotiation process. If the port is not used it will not impact the network.

##### *Fixed in subsequent release*

#### **6.1.6 DHCP does not capture DNS on negotiation**

##### *Issue*

When configuring the second NIC for DHCP the BC unit does not capture the DNS (Domain Name Server) address from the DHCP server. This forces the user to enter the DNS server manually.

##### *Workaround*

This is working as designed and is documented as information for system administration purposes.

Enter the DNS address manually.

#### **6.1.7 NFS Clients do not appear in the “Current Connections” display**

##### *Issue*

After establishing to connections to the BC unit (one CIFS and one NFS) the current connections page only shows the CIFS client as connected.

*Workaround*

None

This is working as designed and is documented as information for system administration purposes.

**6.1.8 FTP connection times out***Issue*

Connecting to the Intel Entry Storage System SS4000-E via FTP will timeout under Windows if there are 8 FTP clients already connected. Under Linux the connections will not timeout but will take a very long time to complete.

*Workaround*

If another client needs to connect to the system to transfer files via FTP first disconnect 1 or more clients that are connected. Currently the limit is 8 clients in Windows.

**6.1.9 Event log reports incorrect events after changing DNS setting***Issue*

After changing the Domain Name Server (DNS) address the event may be incorrectly logged in the system log. It may show the old address after the first address.

*Workaround*

None

**6.1.10 System LED continues to blink after firmware update***Issue*

After updating to fs-bc-1.0-20060207 the system LED may continue to blink green.

*Workaround*

After sufficient time for the system to complete the boot process after the upgrade, the system can be rebooted. This will clear the LED to solid green.

*Fixed in subsequent release*

**6.1.11 Changing hostname results in USB device deadlock***Issue*

If the hostname is changed any USB device attached to the storage system may go into a deadlock situation. Web pages may fail to display as a result.

*Workaround*

Disconnect the USB device either prior to changing the hostname. If the USB device is attached and a deadlock condition occurs disconnect the USB device to clear the deadlock condition.

## 6.2 Chassis

### 6.2.1 Reset button only resets the IP address

#### *Issue*

Pressing the reset button on the rear of the Intel® Entry Storage System SS4000-E does not reset the system to factory defaults.

#### *Workaround*

This is the intended behavior. The reset process only resets the IP setting of NIC 1, administrator name, and password to default value. The web console can then be used to complete configuration, such as hostname or other values not affected by a reset.

## 6.3 RAID

### 6.3.1 Adding disk(s) when RAID type is “Expandable” adds capacity to backup partition only

#### *Issue*

If the system is not fully populated with disk drives and the RAID type is set to “Expandable”, adding 1 or more disks will add their capacity to the backup space only. No additional capacity will be added to the space reserved for share folders.

#### *Workaround*

Populate all disk drive spaces prior to configuring the RAID type. Alternatively, data can be backed up if the system has data on it. Once the data is backed up the disks can be added and reconfigured. The data that was backed up can be restored to the storage system after reconfiguration.

#### *Fixed in subsequent release*

### 6.3.2 Reconfiguring RAID setting turns off email alerts

#### *Issue*

If RAID is reconfigured after it has been established and configured, this will disable email alerts if email alerts have been enabled.

#### *Workaround*

1. Don't reconfigure RAID
2. If RAID must be reconfigured, reset and reconfigure email alerts.

*Fix*

Fixed in next release.

## **6.4 Client Backup and Recovery**

### **6.4.1 The partition name can't display correct without drive letter**

*Issue*

If a disk partition is not labeled with a drive letter the partition name will not display properly.

*Workaround*

Ensure all hard disk drive partitions are assigned a drive letter.

*Fix*

Fixed in next release.

### **6.4.2 Windows Firewall exception list shows a blank line for Client Backup and Recovery**

*Issue*

In the Exemption tab in the Windows Firewall service the Client Backup and Recovery application should be listed but is missing.

*Workaround*

None

*Fix*

To be fixed in next release.

### **6.4.3 The Intelligent Management Agent (IMA) is not removed when the Client Backup and Recovery application is uninstalled**

*Issue*

During installation of the Client Backup and Recovery application the Intelligent Management Agent (IMA) is automatically installed if it is not already installed. If the Client Backup and Recovery application is later uninstalled the IMA is not uninstalled.

*Workaround*

The Intelligent Management Agent may be used by some other application. If it is to be uninstalled it can be done using the standard operating system tools for adding and removing applications.

*Fix*

To be fixed in next release.

#### **6.4.4 After installing the Client Backup and Recovery application and rebooting the client system, the license screen appears but does not indicate what application is making the request**

##### *Issue*

The Client Backup and Recovery application requires a license key to be entered to license the application. After installing the CBR the client system will require a reboot to run correctly. After rebooting the client system and starting the CBR, the license window appears but does not indicate what application or tool is requesting the license or key to be entered. It may not be apparent that it's the CBR.

##### *Workaround*

None. Continue by entering the requested information.

##### *Fix*

To be fixed in next release.

#### **6.4.5 Client Backup and Recovery application does not install**

##### *Issue*

When installing the Client Backup and Recovery application it may fail to install. This may be due to the drive letter for the CD being the letter "I" or higher. The application will install if the drive letter assigned is lower than or equal to "I".

##### *Workaround*

Temporarily reassign the drive letter to "I" or lower.

#### **6.4.6 Recovery CD ejects incorrect CDrom drive**

##### *Issue*

In a system with 2 or more CDrom drives, if the Recovery CD is in a drive other than the first one, it will still eject the first drive when ejected via the operating system.

##### *Workaround*

Eject the Recovery CD using the eject button on the CDrom drive.

#### **6.4.7 Microsoft iSCSI initiator download filename does not match the web link**

##### *Issue*

Installing the Microsoft iSCSI Initiator -> file name to download does not match what is on web link. The Microsoft website may show the new filename and may change in the future. (old)

iSCSI-2.0-x86fre.exe -> file name has been changed to (new) Initiator-2.01-QFE-908935-x86fre.exe

#### *Workaround*

There is a direct link referenced in the user guide for downloading the correct Microsoft iSCSI initiator.

### **6.4.8 USB keyboard in KVM is non-functional**

#### *Issue*

When booting from the Recovery CD a USB keyboard connected through a KVM may not function. This is due to the driver for this setup not being resident on the Recovery CD.

#### *Workaround*

Use a keyboard that can directly connect to the system booting from the Recovery CD.

#### *Fix*

To be fixed in next release.