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HAMMER STORAGE

Personal Storage Manager

1.5

Release Notes

1. Introduction

These release notes for the Personal Storage Manager software contain the following sections:

- *Contact Information*
- *Product Overview*
- *What's New in this Release*
- *System Requirements and Installation*
- *Known Issues*

For full details on using this product, see the *Personal Storage Manager User's Guide*. During product installation, the PDF version of the guide is installed in this product's **\Docs** directory on your computer.

2. Contact Information

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3. Product Overview

Personal Storage Manager (PSM) is a Windows application that you use to manage your Z-SAN™ storage network. The Z-SAN storage network comprises one or more Hammer Storage Z-Series™ enclosures (each containing hard disk drives, fans, temperature sensors, and power cords), as well as

multiple computers that are connected to a Z-Series enclosure across a common Ethernet network. The PSM interface enables you to quickly and easily manage the following components:

- Logical volumes (virtual drives)
- Storage (chassis) and hard drives (physical disks)

4. What's New in this Release

The 1.5 release of Personal Storage Manager provides performance improvements, fixes for known issues, and one new feature (language selection on the System Status window).

5. System Requirements and Installation

This section provides the hardware and software system requirements and describes the installation procedures. Note also that only users who are designated as computer administrators in Windows can run Personal Storage Manager.

5.1. System Requirements

Before installing the Personal Storage Manager software on your computer, ensure that your machine meets the following minimum system requirements:

- Personal computer with Pentium compatible processor.
- One of the following 32-bit Windows operating systems:
  - Windows 2000 (with SP4 or higher)
  - Windows XP Home or Professional edition (with SP1 and SP2)
  - Windows Server 2003 (with SP1)
  - Windows Server 2003 R2
- At least 25 MB disk space and 32 MB RAM required.
- VGA-compatible graphics card and monitor (256 or more colors recommended).
- Java 2 Standard Edition Runtime Environment 5.0 Update 1. (If the PSM installation wizard detects that this software is missing, it will prompt you to install Java before installing PSM software.)
- At least one Z-Series storage enclosure, containing one or more disk drives, attached to the computer and to your network.
- Z-SAN firmware version 1.7.17 or later.
- Web browser (to view Help).
- **Recommended but not required**: *Enabling Personal Storage Manager System Events* (see below) so that Personal Storage Manager can display events, alerts, and notifications from your Z-Series storage enclosure hardware.

See also, *Known Issues: System Configuration Issues*.

5.2. Connecting the Z-Series Storage Enclosure

1. Connect the Z-Series storage enclosure to your local area network (LAN).
2. Connect the Z-Series storage enclosure to a power outlet and power it on.

3 Connect one or more computers to your network.

Note: Your Z-Series storage enclosures and computers that will run Personal Storage Manager must all be on the same subnet. In addition, you must have DHCP enabled either through a server or through a router.

5.3. Installing Personal Storage Manager

Important: If you have an earlier release of Personal Storage Manager already installed on your computer, you must completely remove that release before installing PSM 1.5 (see *Upgrading a Previous Release of PSM*). Note that uninstalling the PSM software does *not* delete any existing logical volumes.

5.3.1. Installing PSM for the First Time

1 Insert the Personal Storage Manager CD into the CD-ROM drive of the computer.

2 The PSM installation wizard begins automatically. Note that the default installation directory is as follows:

C:\Program Files\Hammer\Personal Storage Manager

3 Click **Next** and follow the installation wizard windows to install the PSM software.

Note: Microsoft Windows may display a warning when it detects the new software for your disk drives and new adapters. You may safely ignore these warnings and respond by clicking the **Continue Anyway** button.

4 Click **Finish** to complete the PSM installation.

5 Restart the computer.

6 Repeat the PSM installation for all computers that need to access the Z-SAN storage network.

Personal Storage Manager installs the following icons on your computer:

- It places the Personal Storage Manager icon on the desktop as a shortcut to your new application. Double-click this icon to start PSM.
- It places the Z-SAN Status Notifier icon in the status area of the Windows taskbar. The Z-SAN Status Notifier icon pops up messages informing you when Z-SAN system events occur (may require that you have completed the installation procedures detailed in *Enabling Personal Storage Manager System Events*).

5.3.2. Upgrading a Previous Release of PSM

1 Open the currently-installed release of Personal Storage Manager, dismount all volumes, and then exit PSM.

2 Install the PSM 1.5 software following the steps in *Installing PSM for the First Time* (see above), and then restart the computer.

3 Start Personal Storage Manager.

4 Upgrade each enclosure to the Z-SAN 1.7.20 firmware by following the steps in the *Personal Storage Manager User's Guide: Uploading Enclosure Firmware* section. The firmware zip file is located on the installation CD.

See also, *Known Issues: Installation Issues*.

5.4. Enabling Personal Storage Manager System Events

The Personal Storage Manager **System Events** window shows you specific hardware events that may occur in the Z-Series storage enclosure. To view events in PSM, you may need to complete one or more of the following procedures:

- *Installing the Microsoft Management and Monitoring Tools Component*
- *Enabling the Windows SNMP Trap Service*
- *Opening Port 162 Through Your Windows Firewall*

5.4.1. Installing the Microsoft Management and Monitoring Tools Component

If the Personal Storage Manager installation wizard informed you that your computer is missing this Windows component, follow these steps to install the Microsoft Management and Monitoring Tools. You will need your Windows operating system CD to install this component.

1. Click **Start** and then **Help and Support**.
2. Search for the task topic *Install the SNMP Service* and follow the instructions (requires Windows installation CD). If the Windows Welcome window appears, exit it; component installation is automatic.

5.4.2. Enabling the Windows SNMP Trap Service

If the Personal Storage Manager installation wizard informed you that your computer does not have this Windows service enabled, follow these steps to allow PSM to "trap" or capture events from the Z-Series storage enclosure.

1. To enable SNMP Trap Service, right-click **My Computer** and then click **Manage**.
2. In Computer Management, select **Services and Applications** and then double-click **Services**.
3. Scroll down the list of services and then double-click **SNMP Trap Service**.
4. In the SNMP Trap Service Properties, change the **Startup type** to **Automatic** and then click **OK**.
5. Scroll down the list of services again, right-click **Z-SAN SNMP Trap**, and then click **Start**.
6. Close the Computer Management window.

5.4.3. Opening Port 162 Through Your Windows Firewall

If you have completed the *Installing the Microsoft Management and Monitoring Tools Component* and *Enabling the Windows SNMP Trap Service* procedures above and still do not see notifications and alerts in the Personal Storage Manager Z-SAN System Events window, then you may need to also open a port through your firewall. The following instructions are only for opening port 162 through the Microsoft Windows Firewall. If you are using firewall software other than Windows Firewall on your computer, consult the documentation for that software to find out how to enable port 162.

1. Click **Start > Control Panel** and then double-click **Windows Firewall**.
2. In the Windows Firewall dialog box, click the **Exceptions** tab and then click the **Add Port** button.
3. Complete the Add A Port dialog box as follows and then click **OK**:
   - In the **Name** box, type **Z-SAN**.
   - In the **Port Number** box, type **162**.
   - For the protocol type, select **UDP**.
4. Click **OK** to close the Windows Firewall dialog box and save your settings.

Note: If you have performed the preceding procedures and still do not see events or notifications in the Z-SAN System Events window, you may need to temporarily turn off your firewall. After Personal Storage Manager begins receiving events from the Z-Series storage enclosure, be sure to turn back on your firewall.

6. Known Issues

Hammer Storage technical support has identified the following issues with this Personal Storage Manager release. (A tracking identifier is shown in parenthesis following the **Workaround** portion below). The known issues are categorized as follows:

- *Installation Issues*
- *Mounting and Dismounting Volume Issues*
- *Volume Creation Issues*
- *Mirrored Volume Issues*
- *Uploading New Firmware Issues*
- *System Configuration Issues*
- *Additional Known Issues*

6.1. Installation Issues

PSM installation may initially fail, but will succeed when retried.

Cause: The PSM installer requires access to specific Windows system files that may be in use by Windows at the exact same time that the PSM installation needs access. When this occurs, the PSM installer reports an error and then stops if Windows refuses to allow access to those files.

Workaround: Before installing PSM, close all running programs. (RC1b-604)

An error message may appear during PSM installation on Windows Server 2003, but the installation continues.

Cause: The PSM installer requires access to specific Windows system files that may be in use by Windows at the exact same time that the PSM installation needs access. When this occurs, the PSM installer reports an error, but continues with the installation once those Windows files are no longer in use.

Workaround: Before installing PSM, close all running programs. (RC1b-635)

PSM installation may not succeed when using the normal option with some computers.

Cause: The PSM installer provides two options: normal and custom. During normal installation, the installer suppresses customary operating system notifications. The mechanism used for this is timing-dependent and may not work as intended with some computers, which would prevent the installation from completing.

Workaround: If the normal option does not complete PSM installation, use the custom option. (1A40)

Volumes created using PSM 1.5 may not be accessible by earlier versions of PSM.

Cause: Each Personal Storage Manager release introduces new features and enhancements, so it is not always possible for previous releases of PSM to support volumes created by newer PSM releases. For example, this PSM release contains beneficial enhancements for volume management operations not recognized by older PSM releases.

Workaround: Ensure that all computers in your storage network are running the latest PSM release, and update all computers at once when upgrading. (RC1b-619)

PSM installation fails if it finds incompatible drivers present.

Cause: The Z-SAN SCSI driver used by Personal Storage Manager is incompatible with a Promise Technology driver installed on some newer computers (for example, some Compaq and HP machines). If the FastTrak (ftsata2) driver is detected, PSM installation is terminated and cannot proceed until you disable and delete the incompatible driver.

Workaround: To disable and delete the incompatible Promise Technology driver so that you can install PSM, follow the steps below.

Warning: Do not perform this procedure if your computer uses RAID disk configuration. **Data loss may occur.** If you are unsure whether your computer uses RAID, consult your system administrator or your computer's hardware specifications before you continue.

1. Click **Start**, and then click **Run**.
2. In the Run dialog box, type **CMD** and then click **OK** to open a command console.
3. At the MS-DOS prompt, enter `sc`.
4. Still in the command console, enter the following:

   `sc config ftsata2 start= disabled` (note the space after the = sign)
5. To confirm that the driver is disabled, enter the following:

   ```
   sc qc ftsata2
   ```
6. Once fully disabled (you may have to reboot to verify), return to the command console and enter the following to delete the driver:

   ```
   sc delete ftsata2
   sc delete bb-run
   ```
7. Reboot your computer and then install Personal Storage Manager.

6.2. Mounting and Dismounting Volume Issues

Windows does not mount all available logical volumes.

Cause: If the computer has a small amount of installed system memory, Windows may not be able to allocate enough memory to mount all available logical volumes. Some volumes may not mount, and PSM may interpret other volumes as **Bad Volumes**.

Workaround: Reduce the total number of logical volumes, or increase the total amount of installed system memory in the computer. (RC1b-544)

If you close PSM while it is attempting to dismount a volume, it may not be able to dismount volumes.

Cause: When you start PSM, it must determine the status and attributes of its volumes. However, closing PSM while it is performing an operation, such as dismounting a volume, could damage this information.

Workaround: Do not close PSM while the status bar is refreshing and until it has completed any operations in process. (RC1b-652)

After resetting an enclosure, PSM allows mounting of NTFS volumes to multiple computers.

Cause: Hammer Z-Series enclosures provide a reset button that clears attributes such as passwords and sharing status (for details, see the *Z-Series Hardware Guide*). Resetting an enclosure while its volumes are mounted clears the volume's sharing status, and this makes it possible to mount NTFS volumes to multiple computers. Mounting NTFS volumes to multiple computers at once is unsupported by Windows.

Workaround: Before resetting an enclosure, be sure that you dismount all NTFS volumes. (RC1b-655)

PSM may not dismount a volume when all Windows drive letters are in use.

Cause: Because Windows supports a limited number of drive letters (A through Z), you may need to dismount and then re-mount logical volumes when a very large number of volumes are in use at once. However, Windows often maintains open files on volumes, which may interfere with PSM dismounts.

Workaround: Before you try to dismount a volume in PSM, close all applications and windows that are using the volume. If the first dismount attempt does not succeed, retry it or use the "force" option (NTFS only). For volumes created as NTFS file system volumes, in the Edit Volume dialog box, select the **Force dismount even if volume is currently in use** check box if you want to dismount this logical volume even if data transfer is in progress by this computer. (RC1b-666)

PSM may hang or appear to hang when attempting to dismount a mirrored volume with a missing disk.

Cause: PSM manages volume status information automatically, and it requires volume status information to be current before it allows a dismount. However, PSM cannot determine the status of the mirrored volume if a disk is missing, and so it may continue trying to determine the status indefinitely.

Workaround: Do not remove a disk in use by a mirrored volume and then attempt to dismount the volume. (1A19)

6.3. Volume Creation Issues

PSM may close unexpectedly when you click the Close button in the Create Logical Volume window.

Cause: PSM may unexpectedly exit if you click  (**Close** window button) in a Create Logical Volume window. The cause is under investigation.

Workaround: If you need to close the Create Logical Volume window, click the **Cancel** button instead of the  button. If PSM exits unexpectedly, reopen it. (RC1b-633)

The PSM Volumes window may not update correctly during volume creation operations.

Cause: PSM may not update its windows correctly during volume creation. This occurs very infrequently, and results in a display that can be difficult to use. The cause is under investigation.

Workaround: Close PSM and then reopen it to reset its display. (RC1b-631)

PSM cannot complete volume creation if a Windows drive letter is not available.

Cause: PSM is highly automated, so it requests that Microsoft Windows assign a unique drive letter while it creates a new volume. Windows supports a limited number of drive letters (A through Z), so PSM cannot create a new volume if Windows cannot issue it a unique drive letter.

Workaround: Reduce the number of volumes that appear in Windows My Computer by manually dismounting some volumes using the PSM **Dismount** action, and then retry PSM volume creation. (RC1b-642)

6.4. Mirrored Volume Issues

"Bad Mirror" results from powering on enclosures at different times.

Cause: A mirrored volume that was created by mirroring on two disks contained in different enclosures becomes a "broken" mirror (**Bad Mirror** volume type) if the two enclosure are powered up more than a few seconds apart.

Workaround: For the **Bad Mirror** half of the volume, click the **Resynchronize** button in the Volume Summary pane. Resynchronizing a mirrored volume may take a long time if the volume is very large. To prevent this problem, be sure to power up at the same time any enclosures that contain mirrored volumes.

"Bad Volume" may become unavailable after deleting its associated mirrored volume.

Cause: The option used to repair a "failed" mirrored volume generally depends on whether all disks remain available—the **Resynchronize** option uses the original disks, while the **Mirror** option replaces a disk. If you use the **Mirror** option, any remaining **Bad Mirror** volumes will become unavailable if you subsequently delete the resulting mirrored volume. This happens because PSM can no longer determine the volume with which the **Bad Mirror** is associated if the mirrored volume is no longer available.

Workaround: Delete **Bad Mirror** volumes before deleting their associated mirrored volume. (RC1b-547)

Deleting a mirrored volume after it has been resynchronized may result in a partial deletion and a remaining standard volume.

Cause: PSM may not correctly delete all partitions for a mirrored volume. When this occurs, the remaining partitions appear as standard volumes with the same volume name as the deleted mirrored volume.

Workaround: If this occurs, delete any standard volumes that were inadvertently created after deleting a mirrored volume. (RC1b-625)

PSM cannot remove a "Bad Mirror" volume after changing the password of the corresponding "good" volume.

Cause: PSM manages and stores volume passwords automatically, and volumes consisting of multiple disks maintain consistent passwords. However, when a mirrored volume fails, PSM separates mirrored volumes into separate "bad" and "good" halves. Therefore, changing the password of the "good" volume updates only half of the mirror volume and results in inconsistent passwords.

Workaround: Do not change the passwords of the two volumes resulting from a broken mirror until you have completed a successful resynchronization or a mirror operation, and **Bad Mirror** volume deletion. (1A)

PSM might not allow the deletion of the volumes resulting from a failed mirrored until a write is attempted.

Cause: PSM manages volume status information automatically for its volumes, and it requires volume status information to be current before it allows a deletion. However, the status information for the volumes resulting from a mirror failure may not update until a write is attempted.

Workaround: Write a file to a volume resulting from a failed mirror before attempting to delete it. (1A22)

6.5. Uploading New Firmware Issues

PSM may hang during firmware uploads if the network connection is lost before the process completes.

Cause: Because PSM must maintain a constant connection to the enclosure during a firmware upload, the loss of a network connection interrupts the process. PSM may hang, or appear to hang, for several minutes while PSM attempts to recover from the network connection interruption.

Workaround: Before attempting to upload newer firmware, ensure that the computer running PSM has a reliable network connection to the enclosure. (RC1b-704)

Some mounted volumes may change into "Bad Volumes" after a firmware upload.

Cause: PSM must dismount all volumes before a firmware upload begins. However, a computer with many logical volumes may take longer to dismount all of the volumes than PSM expects. This issue may occur more frequently when volumes reside on disks contained in multiple enclosures.

Workaround: Use the PSM **Dismount** action to manually dismount all logical volumes before uploading new firmware to the enclosure. (RC1b-670)

In shared environments, PSM may inadvertently allow volume modifications during firmware upload.

Cause: PSM prevents the computer performing a firmware upload from modifying volumes during the upload. However, the PSM peer-to-peer architecture for storage management may allow one computer running PSM to modify volumes while another computer is uploading firmware, causing unpredictable results.

Workaround: When updating firmware in shared environments, ensure that PSM is open on one computer only. (1A10)

6.6. System Configuration Issues

Switching Java versions from English to another language prevents PSM from running.

Problem: If your computer is running the United States version of Java 2 Standard Edition Runtime Environment 5.0 Update 1 (see *System Requirements*) and you choose to install an internationalized (Chinese, for example) version of Personal Storage Manager, PSM fails to run without indicating the reason for the error.

Workaround: To run an internationalized (localized/translated) version of Personal Storage Manager, you must also install and run the international version of Java 2 Standard Edition Runtime Environment 5.0 Update 1.

IP address changes may interrupt PSM operations.

Cause: Local area networks with DHCP (Dynamic Host Configuration Protocol) periodically refresh IP addresses for connected devices such as computers. This refresh typically occurs when an IP address "lease"—the length of time, determined by the DHCP server, that the IP address is available—expires, but it can also occur for other reasons. Changes to the IP address of a computer running PSM causes a temporary loss of network connection that may result in interruptions to PSM operations in progress.

Workaround: Do not change IP addresses while PSM is open. Consider setting the DHCP server lease time to a week to minimize the possibility of unexpected IP address changes while using PSM. (RC1b-501)

Using a network adapter setting other than Auto Negotiation may cause PSM to hang.

Cause: Gigabit Ethernet network adapters support multiple network connection speeds and methods, so their software provides options for managing these selections. The default option is commonly "auto negotiation", which allows the network itself to determine and select the fastest speed and method without user intervention. Using an option other than **Auto Negotiation** may cause unpredictable network behavior or cause PSM to hang due to configuration problems with the network adapters.

Workaround: Confirm that all network adapters used by PSM are set to "auto negotiation" mode. (RC1b-600, 1A18)

PSM windows may display incorrect text characters if standard fonts are missing.

Cause: PSM relies on standard Windows fonts to display text. Therefore, a missing font may result in illegible text displays within PSM windows.

Workaround: Ensure that the operating system has all standard fonts installed. (1A41)

Microsoft Windows may damage files when copying to a Windows shared folder using a Z-FS™ file system by DataPlow® volume. (1A15)

Cause: The cause of this Windows issue is unknown, but testing indicates that using Windows `chkdsk` command to check and fix the startup disk of the computer providing the Windows shared folder may prevent this issue.

Workaround: Run the Microsoft Windows `chkdsk` command (`chkdsk c: /f`) on the startup disk of the computer providing the Windows share until it reports no errors were found, and then periodically use `chkdsk` to check the startup disk. (1A19)

6.7. Additional Known Issues

The following Personal Storage Manager issues currently have no known workarounds:

- PSM allows volume password changes without entering the correct previous password. (RC1b-715)
- Multiple computers can mount NTFS or unshared Z-FS™ file system by DataPlow® volumes after an enclosure reset. (RC1b-714)
- Windows may temporarily display different icons or names for the same volume from different computers. (RC1b-711)
- Windows may not correctly reflect volume size changes after very small volume enlargements. (RC1b-707)
- PSM reports an error when enlarging a standard volume that was previously part of a mirrored volume. (RC1b-702)
- PSM fails to enlarge a standard volume that was previously part of a mirrored volume after a failed resynchronization attempt. (RC1b-700)
- Windows may incorrectly report zero available space for a logical volume that is not full. (RC1b-690)
- The Microsoft Management Console may incorrectly report a Z-FS™ file system by DataPlow® volume as "Not Initialized." (1A20)

- The Microsoft Management Console may incorrectly report a Z-FS™ file system by DataPlow® volume is empty. (1A21)
- Windows may share a new volume that uses the same drive letter as a previously shared volume. (RC1b-687)
- PSM may fail an enlarge operation but will succeed if retried. (RC1b-694)
- You may not be able to create or mount volumes after a logical volume dismount fails until the computer restarts. (1A14)
- Windows may occasionally report a "Drive not ready" message when opening PSM, but will not reoccur if retried. (1A16)
- Windows shared folders that use logical volumes may not automatically appear on the network after a computer restarts. (1A23)
- PSM only supports volumes up to 2TB in size. (1A4).