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Hp storageworks x1600 g2 manual

HP X1600 G2 Network Storage SystemHP X1600 G2 Network Storage SystemHP X1600 G2 Network Storage SystemHP X1600 G2 Network Storage SystemS deliver high capacity and high performance and drives down your cost per GB. Quad-Coreprocessing, up to 24TB internal storage capacity, and ready external expandability enhance this ultra-dense 2U shared storagesolution for small, medium, or large IT environments. The X1600 G2 is built on a HP ProLiant DL180 G6 server chassis, with acustom motherboard supporting iLO2 remote management. There are two models of the X1600, one model contains 12 X LFFHDDs in front slots and 2 SFF HDD slots in rear and the other model contains 25 x SFF HDDs in front slots only. HP X1600 G2 Network Storage System (12 open LFF HDD front slots and 2 x 146GB SAS SFF HDDs in rear slotswith pre-installed OS) BV859AHP X1600 G2 6TB SATA Network Storage System (6 x 1TB SATA LFF HDDs in front slots for data, 6 open LFFHDD front slots for expansion and 2 x 146GB SAS SFF HDDs in rear slots with pre-installed OS)BV860AHP X1600 G2 12TB SATA LFF HDDs in front slots for data, 2 x 146GBSAS SFF HDDS in rear slots with pre-installed OS)BV860AHP X1600 G2 12TB SATA LFF HDDS in front slots for data, 2 x 146GBSAS SFF HDDS in rear slots with pre-installed OS)BV860AHP X1600 G2 12TB SATA LFF HDDS in front slots for data, 2 x 146GBSAS SFF HDDS in front slots for data, 2 x 146GBSAS SFF HDDS in front slots for data, 2 x 146GBSAS SFF HDDS in front slots for data, 2 x 146GBSAS SFF HDDS in front slots with pre-installed OS)BV861AHP X1600 G2 12TB SATA LFF HDDS in front slots for data, 2 x 146GBSAS SFF HDDS in front slots for d for data, 2 x 146GBSAS SFF in rear slots with pre-installed OS)BV862AHP X1600 G2 6TB SAS Network Storage System (10 x 600GB SAS SFF HDDs in front slots for expansion and 2 x 146GB SAS SFF HDDs in front slots for expansion and 2 x 146GB SAS SFF HDDs in front slots with pre-installed OS)BV864AHP X1600 G2 13.8 TB SAS Network Storage System (23 x 600GB SAS SFF HDDs in front slots for data, 2 x146GB SAS SFF HDDs in front slots with pre-installed OS)BV866AFront View:Front View:Front View:Rear cable socket3.Power Button and Front LED Indicators3.N/A4.USB Ports (2)4.(2 SFF drives- sku BV859A, BV860A, BV SystemsOverviewDA - 13839 North America — Version 7 — July 8, 2011Page 4 Page 1 HP StorageWorks X1000 and X3000 Network Storage System user guide Part number: 5697-0185 First edition: November 2009... Page 2 Legal and notice information © Copyright 1999, 2009 Hewlett-Packard Development Company, L.P. Confidential computer13 Related documentation ADLDS cache file108 8 System recovery109 The





There are two models of the X1600, one model contains 12 X LFFHDDs in front slots and 2 SFF HDD slots in rear and the other model contains 25 x SFF HDDs in front slots only. HP X1600 G2 Network Storage System (12 open LFF HDD front slots and 2 x 146GB SAS SFF HDDs in rear slotswith pre-installed OS)BV859AHP X1600 G2 6TB SATA Network Storage System (6 x 1TB SATA LFF HDDs in front slots for data, 6 open LFFHDD front slots for expansion and 2 x 146GB SAS SFF HDDs in rear slots with pre-installed OS)BV860AHP X1600 G2 12TB SATA Network Storage System (6 x 2TB SATA LFF HDDs in front slots for data, 2 x 146GBSAS SFF HDDS in rear slots with pre-installed OS)BV860AHP X1600 G2 12TB SATA Network Storage System (6 x 2TB SATA LFF HDDs in front slots for data, 2 x 146GBSAS SFF HDDS in rear slots with pre-installed OS)BV860AHP X1600 G2 12TB SATA Network Storage System (6 x 2TB SATA LFF HDDs in front slots for data, 2 x 146GBSAS SFF HDDS in rear slots with pre-installed OS)BV860AHP X1600 G2 12TB SATA Network Storage System (6 x 2TB SATA LFF HDDs in front slots for data, 2 x 146GBSAS SFF HDDS in rear slots with pre-installed OS)BV860AHP X1600 G2 12TB SATA Network Storage System (6 x 2TB SATA LFF HDDs in front slots for data, 2 x 146GBSAS SFF HDDS in rear slots with pre-installed OS)BV860AHP X1600 G2 12TB SATA Network Storage System (6 x 2TB SATA LFF HDDs in front slots for data, 2 x 146GBSAS SFF HDDS in rear slots with pre-installed OS)BV860AHP X1600 G2 12TB SATA Network Storage System (6 x 2TB SATA LFF HDDs in front slots for data, 2 x 146GBSAS SFF HDDS in rear slots with pre-installed OS)BV860AHP X1600 G2 12TB SATA Network Storage System (6 x 2TB SATA LFF HDDs in front slots for data, 2 x 146GBSAS SFF HDDS in rear slots with pre-installed OS)BV860AHP X1600 G2 12TB SATA Network Storage System (6 x 2TB SATA LFF HDDs in front slots for data, 2 x 146GBSAS SFF HDDS in rear slots with pre-installed OS)BV860AHP X1600 G2 12TB SATA Network Storage System (6 x 2TB SATA LFF HDDs in front slots for data, 2 x 146GBSAS SFF HDDS in rear slots with pre-installed OS)BV860AHP X1600 G2 12TB SATA Network Storage System (6 x 2TB SATA LFF HDDs in front slots for data, 2 x 146GBSAS SFF HDDS in rear slots with pre-installed OS)BV860AHP X1600 G2 12TB SATA Network Storage System (6 x 2TB SATA Network Storage System (6 x 2TB SATA Network Storage System (6 x 2TB SATA Networ OS)BV861AHP X1600 G2 24TB SATA Network Storage System (12 x 2TB SATA LFF HDDS in front slots for data, 2 x 146GBSAS SFF HDDs in front slots for data, 2 x 146GBSAS SFF front slots with pre-installed OS)BV864AHP X1600 G2 13.8 TB SAS Network Storage System (23 x 600GB SAS SFF HDDs in front slots for data, 2 x146GB SAS SFF HDDs in front slots with pre-installed OS)BV866AFront View:Front View:Front View:Rear View:R standard, up totwo supported)1.Redundant hot-plug power supplies2.System fans2.Power supply cable socket3.Power Button and Front LED Indicators3.N/A4.USB Ports (2)4.(2 SFF drives- sku BV859A, BV860A, BV861A, BV862Aonly)5.PCIe expansion slot cage5.PCIe slot (occupied by Smart Array controller with externalSAS port for expandability)6.DDR3 Registered (RDIMM) memory - twelve slots6.UID LED Button7.Power supply cage7.Integrated Lights-Out 2 management port8.Access panelNOTE:NOTE: Front drive slots can be either 12 LFF or 25 SFFHDDs8.NIC 1 Port9.NIC 2 Port10.USB Ports (2)QuickSpecsHP X1000 G2 Network Storage SystemsHP X1000 G2 Network Storage SystemsHP X1000 G2 Network Storage SystemsHP X1000 G2 Network Storage SystemsOverviewDA - 13839 North America – Version 7 – July 8, 2011Page 4 Page 1 HP StorageWorks X1000 and X3000 Network Storage System user guide Part number: 5697-0185 First edition: November 2009... Page 2 Legal and notice information © Copyright 1999, 2009 Hewlett-Packard Development Company, L.P. Confidential computer software. Valid license from HP required for possession, use or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Contents About this guide 13 Intended audience15 HP websites ...15 Documentation feedback 44 Print Management .45 4 Storage management overview47 Storage management elements <u>hope</u>





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To make comments and suggestions about product documentation, please send a message to storagedocsFeedback@hp.com. All submissions become the property of HP. About this guide... 1 Installing and configuring the server Setup overview The HP StorageWorks X1000 Network Storage System comes preinstalled with the Microsoft Windows® Storage System with Microsoft Storage Manager (HP ASM) included. The HP StorageWorks X3000 Network Storage System comes preinstalled with the Microsoft Windows®... • Power cord(s) • Product Documentation and Safety and Disposal Documentation CD • HP StorageWorks Storage System Recovery DVD • End User License Agreement • Certificate of Authenticity Card • Slide rail assembly HP ProLiant Essentials Integrated Lights-Out 2 Advanced Pack •... NOTE: • The keyboard, mouse, and monitor are not provided with the storage system. • The X1600 does not include PS/2 ports for connecting a keyboard and mouse. You must use USB-compatible keyboard and mouse devices with this storage system. <u>lucolireca</u> •... Re-type the Administrator password box. Click the blue arrow next to the Confirm password box. Click of Authenticity press CTRL+ALT+DELETE to log on to the system.

If using iLO 2, on the iLO 2 Integrated Remote Console tab, click the button labeled CAD and then click the Ctrl-Alt-Del menu item. Figure 1 HP StorageWorks Rapid Startup Wizard Welcome screen For detailed information about each of these configuration options, click the corresponding online help link to the right of each section. Complete system configuration After the storage system is physically set up and the basic configuration is established, you must complete additional setup tasks. • Installing third-party software applications—For example, these might include an antivirus applic- ation that you install. • Registering the server — To register the server, refer to the HP Registration website (gister.hp.com). Additional access methods After the storage system installation process is complete and the system's IP address has been assigned, you can then additionally use the remote browser, Remote Desktop, and Telnet Server methods to access the storage system.

Using the Remote Desktop method Remote Desktop method Remote Desktop allows only two concurrent session running takes up one license and can affect other users. The Operating System volume default factory settings can be customized after the operating system is up and running. <u>lumasafa</u> The following settings can be changed to any RAID level can be changed to any RAID level can be changed to 40 GB or higher If the Operating System volume is customized after the operating system is up and running. <u>lumasafa</u> The following settings can be changed to any RAID level can be changed to any RAID level can be changed to 40 GB or higher If the Operating System volume is customized and the System Recovery Drocess will maintain the custom settings as long as the above criteria are met (RAID level can be changed to 40 GB or higher If the operating system has a failure that might result from corrupt system factory size of 40 GB or higher If the operating system is of the System recovery ... Page 26 Installing and configuration information, see . If the operating system has a failure that might result from corrupt system factors in bother and the System recovery ... Page 26 Installing and configuration information are used only for the direct attached method of accessing the server. They are not provided with your storage system hardware components. NOTE: The keyboard, mouse, and monitor are used only fort the direct attached method of fort panel LEDs tatus done front and rear panels of the X1400 and X3400 front panel LEDs tatus Green = System health is normal (when in standby mode). Power cord connector fullo/2100/1000 NIC 1 connector/share connector fullo 200 and X3400 front panel LEDs tatus description Status 1 – 12. Twelve 3.5" (LEF) hot plug SATA "SAS and SATA hard drive test of SAB and SATA hard drive site of SAB and SATA hard drive site so and SATA hard drive site of SAB and drive fullower SATA and Pare SAS and SATA hard drive for the operating system. The salled for the operating system solutions for the set solutin

the use of up to twelve hard drives on the front of the unit to be configured for storage. Figure 9 HP X1800 and X3800 front panel components Quick release levers (2) Systems Insight Display LEDs on page 37 and "Systems Insight Display LEDs" on page 39 for LED status information. Eight (8) 2.5" SFF SAS / SATA hot plug hard drive bays NOTE: "SAS and SATA hard drive LED combinations"... Figure 10 HP X1800 and X3800 front panel LEDs and buttons Table 7 HP X1800 and X3800 front panel LEDs and buttons Table 7 HP X1800 and X3800 front panel LEDs and buttons of PCIe slot 3 PCIe slot



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....121 Portuguese notice121 Romanian notice121 Slovak notice 122 Swedish notice 122 Turkish notice29 HP X1600 front panel components and LEDs Page 10 Storage system cluster diagram 13 descriptions lofumere About this guide This guide provides information about installing, configuring, managing, and troubleshooting the following HP StorageWorks X1400 Network Storage Systems • HP StorageWorks X1600 Network Storage System • HP StorageWorks X1600 Network Storage System • HP StorageWorks X1600 Network Storage Systems • HP StorageWorks X1600 Network Storage Systems • HP StorageWorks X1600 Network Storage System • HP StorageWorks X1600 Network Storage Systems • HP StorageWorks X1600 Network Storage System •... Convention Element • File and directory names • System output Monospace text • Code • Commands, their arguments, and argument values • Code variables text Emphasized monospace, italic • Commands, their arguments, and argument values • Code variables text Emphasized monospace text • Code • Commands, their arguments, and argument values • Code variables text Emphasized monospace, italic • Commands, their arguments, and argument values • Code variables text Emphasized monospace text • Code • Commands, their arguments, and argument values • Code variables text Emphasized monospace text • Code variables text = Code variables text = Code va death. CAUTION: Indicates that failure to follow directions could result in damage to equipment or data.

WARNING! To reduce the risk of personal injury or damage to equipment: • Extend leveling jacks to the floor. • Ensure that the full weight of the rack rests on the leveling jacks. • Install stabilizing feet on the rack. •...

•••• Documentation feedback HP welcomes your feedback. To make comments and suggestions about product documentation, please send a message to storagedocsFeedback@hp.com. All submissions become the property of HP. About this guide... 1 Installing and configuring the server Setup overview The HP StorageWorks X1000 Network Storage Server[™] 2008 Standard x64 Edition operating system with Microsoft Windows®. Storage Server[™] 2008 Standard x64 Edition operating system with Microsoft Windows®. • Power cord(s) • Product Documentation and Safety and Disposal Documentation CD • HP StorageWorks Storage System Recovery DVD • End User License Agreement • Certificate of Authenticity Card • Slide rail assembly HP ProLiant Essentials Integrated Lights-Out 2 Advanced Pack •... NOTE: • The keyboard, mouse, and monitor are not provided with the storage system. • The X1600 does not include PS/2 ports for connecting a keyboard and mouse. You must use USB-compatible keyboard and mouse devices with this storage system. •... Re-type the Administrator password box. Click the blue arrow next to the Confirm password box. Click OK. After the Administrator password box. Click the blue arrow next to the Confirm password box. Click of the system. If using iLO 2, on the iLO 2 Integrated Remote Console tab, click the button labeled CAD and then click the Ctrl-Alt-Del menu item. Figure 1 HP StorageWorks Rapid Startup Wizard Welcome screen For detailed information about each of these configuration options, click the corresponding online help link to the right of each section.

Complete system configuration After the storage system is physically set up and the basic configuration is established, you must complete additional setup tasks. • Installing third-party software applications—For example, these might include an antivirus applic- ation that you install. • Registering the server — To register the server, refer to the HP Registration website (gister.hp.com). Additional access methods After the storage system installation process is complete and the system's IP address has been assigned, you can then additionally use the remote browser, Remote Desktop, and Telnet Server methods to access the storage system. Using the Remote Desktop method Remote Desktop provides the ability for you to log onto and remotely administer your server, giving you a method of managing it from any client. Installed for remote Desktop allows only two concurrent sessions. Leaving a session running takes up one license and can affect other users.

The Operating System volume default factory settings can be customized after the operating system is up and running. The following settings can be changed to any RAID level except RAID 0 • OS logical drive size can be changed to 40 GB or higher If the Operating System volume is customized and the System Recovery DVD is run at a later time, the System Recovery process will maintain the custom settings as long as the above criteria are met (RAID level other than RAID 0 and OS logical drive size of 40 GB or higher) and the OS volume is... NOTE: In the HP Array Configuration Utility (ACU), logical disks are labeled 1 and 2. In Microsoft Disk Manager, logical disks are displayed as 0 and 1. For HP Smart Array configuration information, see . If the operating system has a failure that might result from corrupt system files, a corrupt registry, or the system hangs during boot, see "System recovery"... Page 26 Installing and configuring the server...

2 Storage system component identification This chapter provides illustrations of the storage system hardware components. NOTE: The keyboard, mouse, and monitor are used only for the direct attached method of accessing the server. They are not provided with your storage system. HP X1400 Network Storage System and X3400 front panel LEDs Table 4 HP X1400 and X3400 front panel LEDs Table 4 HP X1400 and X3400 front panel LED descriptions Item / Description Status Green = System health is normal. Amber = System health is degraded. 1. Internal health LED Red = System health is critical. Off = System health is normal (when in standby mode). Power cord connector 10/100/1000 NIC 2 connector Serial connector Low profile PCIe slot cover (x16 slot open) Full-sized PCIe slot (ciccupied by Smart Array P212 controller) Dedicated iLO 2 management port (lis port is optional and must be purchased separately) Video connector ... Figure 6 HP X1600 front panel components and LEDs from panel components and LEDs and panel components and LEDs from panel components and LEDs from

status information. Eight (8) 2.5" SFF SAS / SATA hot plug hard drive bays NOTE: "SAS and SATA hard drive LED combinations"... Figure 10 HP X1800 and X3800 front panel LEDs and buttons Table 7 HP X1800 and X3800 front panel LEDs and buttons Table 7 HP X1800 and X3800 front panel LED and button descriptions Item / Description Status Blue = Activated Flashing blue = System being remotely managed 1. UID LED and button Off = Deactivated Green = Normal Amber = System degraded... PCIe slot 6 PCIe slot 5 PCIe slot 6 PCIe slot 5 PCIe slot 7 PCIe slot 6 PCIe slot 7 PCIe slot 6 PCIe slot 7 PCIe sl

Item / Description Status Green = Network activity Flashing green = Network activity 3. NIC/iLO 2 activity LED Off = No network link 4. NIC/iLO 2 ink LED Off = No network link 4. NIC/iLO 2 ink LED Off = No network link SAS and SATA hard drive LEDs. 1. Fault/UID LED (am- 2. Online/activity LED Off = No network link 4. NIC/iLO 2 ink LED Off = No network link 5. The drive is part of an array that is undergoing ca- Amber, flashing regularly (1 Flashing regularly

• Groveler service - The Groveler service scans the hard-disk volumes on a server for duplicate copies of files. If the service locates duplicate copies of files, the information about the duplicates is sent to the Single Instance Storage Filter. The Groveler service runs as a user-level service. •... Page 46 Administration tools... 4 Storage management overview This chapter provides an overview of some of the components that make up the storage structure of the storage system. Storage elements • Logical storage elements • Logical storage elements • Logical storage elements overview at the physical drive level. Minimally, choosing the best disk carving strategy includes the following policies: • Analyze the current file server structure and environment.

• Include the appropriate number of physical drives in the arrays to create logical storage elements of desired sizes. Arrays Figure 16. With an array controller installed in the system, the capacity of several physical drives (P1-P3) can be logically combined into one or more logical units (L1) called arrays. When this is done, the read/write heads of all the constituent physical drives are active simultaneously, dramatically reducing the overall time required for data transfer. Fault tolerance Drive failure, although rare, is potentially catastrophic. For example, using simple striping as shown Figure 17, failure of any hard drive leads to failure, although rare, is potentially catastrophic. For example, using simple striping as shown Figure 17, failure of any five logical drives in the same array, and five logical drives in the same array, and five logical drives (L1 through L5) spread over five physical drives NOTE: This type of configuration may not apply to all storage systems and serves only as an example. dynamic disks, and can be expanded on the fly to extend over multiple dynamic disks, if they are spanned volumes. However, after a type of volume is selected, it cannot be altered. Shadow copies cannet protect against data loss due to media failures; however, recovering data from shadow copies can reduce the number of times needed to restore data form tape. For additional information, refer to the Management D in the HP SIM software, and thirdparty SNMP management platforms. 5 File server management The capacity of the eserver through HP SIM software, and thirdparty SNMP management platforms. 5 File services in Windows Storage Server 2008 Storage Manager for SANs The Storage Manager for SANs (also called Simple SAN) snap-in enables you to create and manage the LUNs that are used to allocate space on storage arrays. File services for RAID arrays and LUNs are created and managed using the arrays and LUNs are created and managed using the arrays are configured ony for the operating system. Array managemen

For HP Smart Arrays use the ACU. NOTE: The ACU is used to configure and manage array-based storage.

Software RAID-based storage systems use Microsoft Disk Management tool is a system utility for managing hard disks and the volumes, or partitions, that they contain. Scheduling defragmentation Defragmentation is the process of analyzing local volumes and folders, it also consolidates the free space on a volume. Per-user basis. It is also possible to specify whether or not to log an event when users exceed either their quota warning level or their quota a single.

When enabling disk quotas for a volume, volume usege is automatically tracked from that point forward, but existing volume users have no disk quotas applied to them. Extending storage using Windows Storage Utilities Volume extension grows the storage space of a logical drive. During this process, the administrator and anisistrator and an existing volume users have no disk quotas applied to them. Extending storage using Windows Storage Utilities Volume extension grows the storage space of a logical drive. During this process, the administrator and an array or by deleting another logical drive on the same array. The unused space is obtained either by expanding an array or by deleting another logical drive on the same array. The unused space is obtained either by expanding an array or by deleting another logical drive on the same array. The unused space is obtained either by expanding an array or by deleting another logical drive on the same array. The unused space is obtained either by expanding an array or by deleting another logical drive on the same array. The unused space is obtained either by expanding an array or by deleting another logical drive on the same array. The unused space is obtained either by expanding an array or by deleting another logical drive on the same array. The unused space is obtained either by expanding an array or by deleting another logical drive on the same array. The unused space is obtained either by expanding an array or by deleting another logical drive on the same array. The unused space is obtained either by expanding an array or by deleting another logical drive on the same array. The unused space is a data wore pare to a complete volume, but of or a specific directory. Shadow copies work best when the server stores user files, such as documents, spreadsheets, presentations, graphics, or database files. NOTE: Regardless of the volume bade copies of the solard copies for shadow copies or the same array. The unused space is a dation wore is a maximum of 4 shadow copies and take

view a network folder hosted on the storage system for which shadow copies are enabled, old versions (prior to the snapshot) of a file or directory are available. Viewing the properties of the file or folder contents that users can then open and explore like any other file or folder. .@GMT-2003.04.29-04:00:00 Access to NFS shadow copy pseudo-subdirectories is governed by normal access-control mechanisms using the permissions stored in the file system. Users can access only those shadow copies, all pseudo-subdirectories are marked read-only, regardless of the user's ownership or access rights, or the permissions set on the original files.

Figure 24 Recovering a deleted file or folder Recovering an overwritten or corrupted file Recovering an overwritten or corrupted file is easier than recovering a deleted file because the file itself can be right-clicked instead of the folder. To recover an overwritten or corrupted file: Right-click the overwritten or corrupted file, and then click Properties. Backup and shadow copies are only available on the network via the client application, and only at a file or folder level as opposed to the entire volume. Hence, the standard backup associated with a volume backup will not work to back up the previous versions of the file system. To answer this particular issue, shadow copies are available for backup in two situations. NOTE: Select servers can be deployed in a clustered or non-clustered configuration. This section discusses share setup for a non-clustered deployment. Folder management Volumes and folders on any system are used to organize data. Regardless of system size, systematic structuring and naming conventions of volumes and folders eases the administrative burden. Moving from volumes to folders to shares increases the level of granularity of the types of data stored in the unit and the level of security tab. Figure 25 Properties dialog box, Security tab Several options are available on the Security tab: • To add users and groups to the permissions list, click Add.

Follow the dialog box instructions. •... To modify ownership of files, or to modify individual file access level permissions, click Advanced. illustrates the properties available on the Advanced Security Settings dialog box. Figure 26 Advanced Security settings dialog box, Permissions tab Other functionality available in the Advanced Security Settings dialog box. Figure 26 Advanced Security settings dialog box. Figure 26 Advanced Security settings dialog box. Figure 27 illustrates the Edit screen and some of the permissions. Figure 27 User or group Permission Entry dialog box Another area of the Advanced Security Settings is the Auditing tab. Figure 28 Advanced Security Settings dialog box. Figure 29 Select User or Group dialog box. Figure 29 Select User Other Security Settings is the Advanced Security Settings User Security Settings User Security Settings User Security Se

Click OK. The Auditing Entry dialog box is displayed. Figure 30 Auditing Entry dialog box for folder name NTFS Test Select the desired Successful and Failed audits for the user or group. Click OK. NOTE: Auditing must be enabled to configure this information. Use the local Computer Policy Editor to configure the audit policy on the storage system. Figure 31 Advanced Security Settings dialog box, Owner tab The current owner of the file or folder is listed at the top of the screen. To take ownership: Click the appropriate user or group in the Change owner to list. If it is also necessary to take ownership of subfolders and files, enable the Replace owner on subcontainers and objects box. The content of shares should be carefully chosen to avoid two common pitfalls: either having too many shares of a generic nature, or of having very few shares of a generic nature. For example, shares for general use are easier to set up in the beginning, but can cause problems later. Frequently, a better approach is to create separate shares with a specific purpose or group of users in mind. • Standard shares are shares that do not end in a \$ character.

Standard shares are listed whenever a CIFS client browses for available shares on a CIFS server. The storage system supports both administrative and standard CIFS shares. To create an administrative share, end the share name with the \$ character when setting up the share. File screening management On the File Screening Management node of the File Server Resource Manager snap-in, you can perform the following tasks: • Create file screens to control the types of files that users can save and to send notifications when users attempt to save blocked files. For more information, and to download the utility, see the StorageWorks L&TT web site at http://

h18006.www1.hp.com/products/storageworks/ltt. Antivirus The server should be secured by installing the appropriate antivirus software.anything File server management... 6 Cluster administration HP StorageWorks X3000 Network Storage Systems do not. One important feature of HP StorageWorks X3000 Network Storage System models is that they can operate as a single node or as a cluster. This chapter discusses cluster installation and cluster management issues. Figure 32 Storage system cluster diagram Cluster terms and components Nodes The most basic parts of a cluster are the servers, referred to as nodes. A server node is any individual server in a cluster, or a member of the cluster. Resources + NFS file share resources • Storing the most current version of the cluster database • Guaranteeing that only one set of active communicating nodes is allowed to operate as a cluster configuration with the group in which they are configuration with the group is stallated on a progress for the file shares, showing the relationship between both the cluster elements and tolders are created for each basic disk inside Cluster Administrator. Directories and folders are created on assigned divers. Cluster components (virtual servers, file share) are created, organized in groups, and placed within the folders using Cluster Administrator of clus

Additional basic disks are presented to each cluster node for data storage as physical disk resources. The physical disk resources are required for the basic disks to successfully work in a cluster environment, protecting it from simultaneous access from each node. • The private cluster interconnect or "heartbeat" crossover cable connects to one of the network ports on each cluster node. In more than two node deployments, a private VLAN on a switch or hub is required for the cluster interconnect. •... NOTE: AppleTalk requires local memory for volume indexing. On failover events, the memory map is lost and data corruption can occur. Preparing for cluster installation This section provides the steps necessary to cluster HP StorageWorks X3000 Network Storage Systems. Before beginning installation Confirm that the following specifications have been met before proceeding: •... Shared disk requirements NOTE: Do not allow more than one node access the shared storage devices at the same time until Cluster service is installed on at least one node and that node is online. This can be accomplished through selective storage presentation, SAN zoning, or having only one node online at all times. Setting up networks Verify that all network connected to other private network adapter The following procedures are best provided by Microsoft and should be configured on the private network adapter. • Dedicate a separate disk resource for a Quorum disk. Because the disk resource to a partition with a minimum of 50 megabytes (MB) to be used as a Quorum disk be 500 MB. • Use of DHCP addresses for network connections. All Network adapters must be configured with static IP addresses in a cluster configuration.

• File Services for Macintosh and Service for NetWare are not supported in a cluster configuration. •... When creating groups, the administrator's first priority is to gain an understanding of how to manage the groups and their resources. Administrators may choose to create a resource group and a virtual server for each node that will contain all resources owned by that node, or the administrator may choose to create a resource. For NFS environments, configure the NFS server. NFS specific procedures include entering audit and file lock information as well as setting up client groups and user name mappings. These procedures are not unique to a clustered deployment and are detailed in the Microsoft Services for NFS section within the "Other network file and print services"... Example: If the password and group files are located at c:\maps on node 1, then they must also be at c:\maps on node 2. The contents of the password and group files must be the same on both nodes as well. These password and group files on each server node must be updated periodically to maintain consistency and prevent users or groups from being inadvertently squashed. NOTE: • A file share resource must reside in the same cluster group as the physical disk resource it will reside on. • The physical disk resource specified in the same cluster group as sp

• Configuring User Name Mapping on a server cluster For further details, see the online help for Microsoft Services for Network File System. Best practices for running Server for NFS in a server cluster • Stop Server for NFS before stopping the server cluster. •...

To add a printer to the virtual server: Double-click the printers and faxes icon. Right-click the new screen, and then click add printer. A wizard starts.

Click create a new port, and then click Next. Enter the IP address of the network printer. Update the Port Name if desired, click Next, and then click Finish. Restarting a cluster node should be done only after confirming that the other node(s) in the cluster are functioning normally. Adequate warning should be

given to users connected to resources of the node being restarted. Attached connections can be viewed through Server Manager on the storage system Desktop using Terminal Services.

Powering up the cluster The power up procedures can cause corruption and loss of data. 7 Troubleshooting, servicing, and maintenance Troubleshooting the storage system The "Support and troubleshooting" task at the HP Support & Drivers web site (go/support) can be used to troubleshoot problems with the storage system. After entering the storage system name and designation (for example, ML110 G5 storage system) or component information (for example, Array Configuration Utility), use the following links for troubleshooting information: •... • CCAT (Computer Crash Analysis Tool) • SEA (System Event Analyzer) If you have a warranty or service contract with HP you are entitled to these tools free of charge. You must, however, upgrade the tools at least once a year because the software expires after one year. For more information about WEBES, see .

8 System recovery This chapter describes how to use the System Recovery DVD that is provided with your storage System. The System Recovery DVD that is provided with your storage System Recovery. A Regulatory compliance is provided with your storage System Recovery. A Regulatory compliance for the server after clicking Yes. System Recovery model number can be found on the product nameplate label, along with all required approval markings and inform

Korean notices Class A equipment Class B equipment Taiwanese notices BSMI Class A notice Taiwan battery recycle statement Recovery mark: Recovery text: • Four-in-one recycling symbol • "Please recycle waste batteries" Regulatory compliance notices... Laser compliance notices English laser notice This device may contain a laser that is classified as a Class 1 Laser Product in accordance with U.S. FDA regulations and the IEC 60825-1. The product does not emit hazardous laser radiation exposure. French laser notice German laser notice Regulatory compliance notices... Japanese laser notice System... Bulgarian notice Czech notice Datich notice Datich notice Regulatory compliance notices...

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