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Method and apparatus for de-duplication after mirror operation

US · [US7873809B2](#) · Yoshiki Kano · Hitachi, Ltd.

Priority 2007-03-29 · Filed 2007-03-29 · Granted 2011-01-18 · Published 2011-01-18

81, and may also include at least one back end port 19 for connection to disks 32, such as via a Fibre Channel connection, **SCSI (Small Computer System Interface)** or the like. Controller 31 preferably includes a non-volatile random access memory (NVRAM) as at least a portion of memory 17, and can ...

Managing metadata

US · [US7873619B1](#) · Sorin Faibish · Emc Corporation

Priority 2008-03-31 · Filed 2008-03-31 · Granted 2011-01-18 · Published 2011-01-18

... low connectivity. Performance requirements often dictate that hardware mechanisms control channel operations. The **Small Computer System Interface (SCSI)** is a common channel interfaces. Storage devices that are connected directly to computers are known as direct-attached storage (DAS) devices.

Storage control apparatus, data archive method for storage control apparatus, ...

US JP · [US20090100223A1](#) · Tomonori Murayama · Hitachi, Ltd.

Priority 2007-10-11 · Filed 2008-02-06 · Published 2009-04-16

7 are an example of 'random access-type storage devices'. Hard disks that can be used include, for example, FC (Fibre Channel) disks, **SCSI (Small Computer System Interface)** disks, SATA disks, ATA (AT Attachment) disks, SAS (Serial Attached **SCSI**) disks and so forth. Further, random access-type ...

External storage system, server and data storage method

CN · [CN101901623A](#) · 钱海鹏 · 奥泰瑞系统技术(北京)有限公司

Priority 2009-05-25 · Filed 2009-05-25 · Published 2010-12-01

Can pass through **SCSI (Small Computer System Interface)** between SSCS controller 0300 and the SSCS storage unit 0240, **small computer system interface**, FC (Fiber Channel, optical-fibre channel), iSCSI (internet **SCSI**, internet **SCSI**), SAS (Serial Attached **SCSI**, Serial Attached **SCSI** (SAS)), ATA (AT ...

Storage system of storage hierarchy devices and a method of controlling storage ...

EP US JP DE · [US7962704B2](#) · Akira Fujibayashi · Hitachi, Ltd.

Priority 2005-09-22 · Filed 2009-05-29 · Granted 2011-06-14 · Published 2011-06-14

1. A storage system comprising: a plurality of **SCSI (Small Computer System Interface)** disk devices storing data received from a host computer; a plurality of ATA (Advanced Technology Attachment) disk devices storing data received from the host computer; a plurality of non-volatile devices storing ...

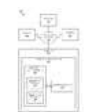
Location independent scalable file and block storage

US · [US20120011176A1](#) · Alexander AIZMAN · Nexenta Systems, Inc.

Priority 2010-07-07 · Filed 2010-09-02 · Published 2012-01-12

The single server bottleneck applies to the block storage as well. Block storage includes storage accessed via the **Small Computer System Interface (SCSI)** protocol family. **SCSI** itself is a complex set of standards that, among other standards includes **SCSI** Command Protocol and defines communications ...

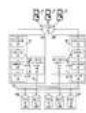
Apparatus, system and method for solid state storage as cache for high capacity ...

WO EP US CN JP KR CA ES · [JP5523835B2](#) · フリン, デイビッド · フュージョン-アイオー, インコーポレイテッド

Priority 2006-12-06 · Filed 2007-12-06 · Granted 2014-06-18 · Published 2014-06-18

An apparatus for managing storage of data with one or more high capacity non-volatile ("HCNV") storage devices, the apparatus comprising: Manage data transfers related to storage requests, the data transfer between the requesting device and the solid state storage device functions as a cache for ...

Bi-directional communication between redundant storage controllers

US · [US8650328B1](#) · Paresh Chatterjee · American Megatrends, Inc.

Priority 2008-12-15 · Filed 2009-11-05 · Granted 2014-02-11 · Published 2014-02-11

a first storage controller; a second storage controller connected to the first storage controller via a point-to-point communication channel, the point-to-point communication channel being a Serial-Attached **Small Computer System Interface (SCSI)** channel; a first instance of an inter-controller ...

Apparatus, system, and method for implementing protected partitions in storage ...

WO EP US CN JP TW · [TWI399646B](#) · Nils Hausteijn · Ibm

Priority 2005-10-21 · Filed 2006-10-19 · Granted 2013-06-21 · Published 2013-06-21

FIG. 5 is a schematic block diagram illustrating one embodiment of a mode select command 500 in accordance with the **SCSI-3** interface standard. The illustrated mode selection command 500 is a **SCSI (Small Computer System Interface)** command with command code 15h 502. Mode select command 500 is given ...



US • [US20130262615A1](#) • Ramachandra Reddy Ankireddypalle • Commvault Systems, Inc.

Priority 2012-03-30 • Filed 2013-03-11 • Published 2013-10-03

Techniques for providing shared access to, e.g., a **small computer system interface (SCSI)** storage device in a computer network include providing an operational mode on **SCSI** interfaces with a first media agent and a second media agent such that, in response to inquiry messages on the **SCSI** interfaces ...

Adjusting available persistent storage during execution in a virtual computer ...



US • [US8694713B2](#) • Matthew David GINZTON • VMware, Inc.

Priority 2007-04-26 • Filed 2012-04-30 • Granted 2014-04-08 • Published 2014-04-08

... ; or they may be emulated virtual system resources that do not directly correspond with host system resources, such as a physical USB (Universal Serial Bus) port, with a connected USB flash memory device, being emulated as an attached **SCSI (Small Computer System Interface)** hard drive, for example.

Higher-level redundancy information computation



WO EP US CN JP KR TW • [US8656101B2](#) • Jeremy Isaac Nathaniel Werner • Lsi Corporation

Priority 2011-01-18 • Filed 2012-01-18 • Granted 2014-02-18 • Published 2014-02-18

Higher-level redundancy information computation enables a Solid-State Disk (SSD) controller to provide higher-level redundancy capabilities to maintain reliable operation in a context of failures of non-volatile (e.g. flash) memory elements during operation of an SSD. A first portion of higher- ...

Virtual machine snapshotting in object storage system



US • [US8677085B2](#) • Satyam B. Vaghani • VMware, Inc.

Priority 2011-08-29 • Filed 2011-08-29 • Granted 2014-03-18 • Published 2014-03-18

... then connected to servers or "hosts" that require access to the data in the storage devices. The servers, switches and storage devices in a SAN typically communicate using the **Small Computer System Interface (SCSI)** protocol which transfers data across the network at the level of disk data blocks.

Storage system and virtualization method



US JP • [US8683157B2](#) • Yoshihito Nakagawa • Hitachi, Ltd.

Priority 2007-10-05 • Filed 2012-04-16 • Granted 2014-03-25 • Published 2014-03-25

The storage system of the present invention is able to generate one virtual logical device from different logical devices which exist in each of the different storage control units and remote-copy all or part of the virtual logical device to another logical device. The same virtual identifier is ...

Clustered hierarchical file system



WO EP US • [US7580950B2](#) • Ravi K. Kavuri • Storage Technology Corporation

Priority 2004-02-11 • Filed 2006-12-22 • Granted 2009-08-25 • Published 2009-08-25

... available under GNU public license. SAN: Storage Area Network **SCSI: Small Computer System Interface**, a parallel interface standard used by Apple Macintosh computers, PCs, and many UNIX systems for attaching peripheral devices to computers. SMB: Server Message Block (protocol); System Management Bus ...

Virtual machine provisioning in object storage system



US • [US8650566B2](#) • Satyam B. Vaghani • VMware, Inc.

Priority 2011-08-29 • Filed 2011-08-29 • Granted 2014-02-11 • Published 2014-02-11

... then connected to servers or "hosts" that require access to the data in the storage devices. The servers, switches and storage devices in a SAN typically communicate using the **Small Computer System Interface (SCSI)** protocol which transfers data across the network at the level of disk data blocks.

Scalable storage devices

WO EP US CN JP KR TW • [CN103080917B](#) • 梯莫西·L·卡内帕 • Lsi公司

Priority 2010-06-18 • Filed 2011-06-17 • Granted 2014-08-20 • Published 2014-08-20

RMW Read-revise-write ROM ROM (read-only memory) SAS Serial connecting **small computer system interface** (serial **SCSI**) SATA Serial Advanced Technology Attachment (serial ATA) **SCSI Small computer system interface** SD Secure digital SSD Solid magnetic disc/driver USB USB (universal serial bus) Use can ...

Generating and using checkpoints in a virtual computer system

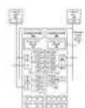


US • [US8266404B2](#) • Carl A. Waldspurger • VMware, Inc.

Priority 2003-12-31 • Filed 2011-06-28 • Granted 2012-09-11 • Published 2012-09-11

that emulates a standard **Small Computer System Interface (SCSI)** disk, so that the virtual disk 240 appears to the VM 200 to be a standard **SCSI** disk connected to a standard **SCSI** adapter, whereas the underlying, actual, physical disk 140 may be something else. In this case, a standard **SCSI** driver is ...

Configuring object storage system for input/output operations



WO EP US CN JP AU • [US8595460B2](#) • Rajesh BHAT • VMware, Inc.

Priority 2011-08-26 • Filed 2011-08-26 • Granted 2013-11-26 • Published 2013-11-26

... then connected to servers or "hosts" that require access to the data in the storage devices. The servers, switches and storage devices in a SAN typically communicate using the **Small Computer System Interface (SCSI)** protocol which transfers data across the network at the level of disk data blocks.

System and method for storing/caching, searching for, and accessing data



US • [US8542695B1](#) • Bruce D. Melick • Lightwave Systems, Inc.

Priority 1999-10-28 • Filed 2012-03-02 • Granted 2013-09-24 • Published 2013-09-24

... distributed data. However, as RAID, NAS, Fast and Gigabit Ethernet, SANs, and **SCSI (Small Computer System Interface)** links are usually implemented with PCI adapter cards or PCI components, all of the data traffic on these network devices is ultimately throttled by the low-speed I/O devices.

Apparatus, system, and method for conditional and atomic storage operations



WO US • [US8601222B2](#) • David Flynn • Fusion-Io, Inc.

Priority 2010-05-13 • Filed 2011-05-13 • Granted 2013-12-03 • Published 2013-12-03

Typically the data storage device where this one-to-one mapping between LBAs and PBAs is used is a random access storage device. The file server or file system may use **Small Computer System Interface ("SCSI")** commands to send blocks of data assigned to specific LBAs to the data storage device. For ...

SCSI I/O coordinator



US • [US7644204B2](#) • Gunneswara R. Marripudi • Hewlett-Packard Development Company, L.P.

Priority 2006-10-31 • Filed 2006-10-31 • Granted 2010-01-05 • Published 2010-01-05

A **Small Computer System Interface (SCSI)** input/output (I/O) coordinator of an apparatus in an example caches in memory local to the **SCSI** I/O coordinator one or more I/O request contexts stored in memory non-local to the **SCSI** I/O coordinator.

Memory system for mapping SCSI commands from client device to memory space of ...



US • [US8463866B2](#) • Yaron Haviv • Mellanox Technologies Tlv Ltd.

Priority 2008-12-04 • Filed 2011-03-08 • Granted 2013-06-11 • Published 2013-06-11

a network adapter to receive a **Small Computer System Interface (SCSI)** read command incoming from a client device, to map one or more parameters of the **SCSI** read command into an area of the memory space of the server from which data is requested to be read by the client device, said area ...

SCSI transport for fabric-backplane enterprise servers



US • [US7633955B1](#) • Nakul Pratap Saraiya • Habanero Holdings, Inc.

Priority 2004-02-13 • Filed 2006-01-19 • Granted 2009-12-15 • Published 2009-12-15

communicating some of the storage information to the selected fibre channel storage interface as storage frames; wherein a portion of the storage information is **Small Computer System Interface (SCSI)**-compatible storage system requests; wherein each of the reliable communication channels is ...

Layering serial attached small computer system interface (SAS) over ethernet



US • [US8140696B2](#) • Michael A. Ko • International Business Machines Corporation

Priority 2007-03-12 • Filed 2007-03-12 • Granted 2012-03-20 • Published 2012-03-20

Small Computer System Interface (SCSI) protocol or Serial Attached **SCSI** (SAS) is generally used for storage controller to storage device communication because each storage controller is typically located in the same physical location (e.g., in the same box) as multiple storage devices and **SCSI** and ...

Command tag checking in a multi-initiator media controller architecture



US • [US8352689B2](#) • David R. Noeldner • Lsi Corporation

Priority 2009-11-30 • Filed 2010-11-23 • Granted 2013-01-08 • Published 2013-01-08

3. The method of claim 1, wherein the data transfer request ID comprises a 16-bit **Small Computer System Interface (SCSI)** Command Tag, and the host device ID comprises a 64-bit Serial Attached **SCSI** (SAS) World Wide Name (WWN). 4. The method of claim 1, wherein the step of hashing the previous Tag ID ...

Selective I/O to logical unit when encrypted, but key is not available or when ...



US • [US8166314B1](#) • Helen S. Raizen • Emc Corporation

Priority 2008-12-30 • Filed 2008-12-30 • Granted 2012-04-24 • Published 2012-04-24

, further comprising the unordered steps of: (o) if the encrypted storage device is in the waiting for encryption key state: (o-1) allowing the I/O request if it comprises a read or **SCSI** CDB read, so long as the I/O request is not directed to any encrypted locations on the encrypted storage device; ...

Server-side storage area network management interface



US • [US8019849B1](#) • Joe Lopilato • Symantec Operating Corporation

Priority 2002-09-13 • Filed 2009-04-06 • Granted 2011-09-13 • Published 2011-09-13

102. A LUN (logical unit number) is the **SCSI (Small Computer System Interface)** identifier of a logical unit within a target, the system component that receives a **SCSI** I/O command. A logical unit is an entity within a **SCSI** target that executes I/O commands. **SCSI** I/O commands are sent to a target and ...

Processing diagnostic requests for direct block access storage devices



US • [US8762789B2](#) • Timothy Lund • Lsi Corporation

Priority 2009-09-23 • Filed 2010-09-01 • Granted 2014-06-24 • Published 2014-06-24

An HDD or SSD media controller might operate in compliance with one or more host communication protocols, for example, the **Small Computer System Interface ("SCSI")** protocol, the Serial Attached **SCSI** ("SAS") protocol, or the Serial Advanced Technology Attachment ("SATA") protocol. The **SCSI** protocol ...

Storage paths

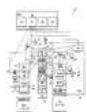


US • [US7668981B1](#) • Venkata Sreenivasa Rao Nagineni • Symantec Operating Corporation

Priority 2007-03-28 • Filed 2007-03-28 • Granted 2010-02-23 • Published 2010-02-23

... I/O timeout and throttles the requests to the device. This has been the approach in the standard **SCSI (small computer system interface)** driver for a long time, but the technique is inefficient as there is flooding at the I/O subsystem until the queue-full condition is reported by the device. Thus ...

Hardware-accelerated high availability integrated networked storage system



US • [US8099474B2](#) • Roger Thorpe • Promise Technology, Inc.

Priority 2003-02-14 • Filed 2009-09-21 • Granted 2012-01-17 • Published 2012-01-17

2. The system of claim 1 wherein, the first instruction set comprises a **small computer system interface (SCSI)** instruction set. 3. The system of claim 1 wherein, the second instruction set comprises an Internet **Small Computer System Interface (iSCSI)** instruction set. 4. The system of claim 1

System for providing data analysis services using a support vector machine for ...



US • [US7797257B2](#) • Stephen Barnhill • Health Discovery Corporation

Priority 1998-05-01 • Filed 2007-10-29 • Granted 2010-09-14 • Published 2010-09-14

A computer system for performing data analysis services using a support vector machine for analyzing data received from a remote source on a distributed network includes a server in communication with the distributed network for receiving a data set and a financial account identifier associated ...

Virtual machines and cloud storage caching for cloud computing applications



US • [US8805951B1](#) • Sorin Faibish • Emc Corporation

Priority 2011-02-08 • Filed 2011-02-08 • Granted 2014-08-12 • Published 2014-08-12

shows data structures in random access memory of a cloud computing server; FIG. 13 is a flowchart of a procedure for processing a cloud application request for **Small Computer System Interface (SCSI)** device blocks; FIG. 14 is a flowchart of a procedure for processing a cloud application request for ...

Systems and methods for accessing storage or network based replicas of ...



US • [US8416954B1](#) • Helen S. Raizen • Emc Corporation

Priority 2008-09-30 • Filed 2008-09-30 • Granted 2013-04-09 • Published 2013-04-09

... driver, in accordance with one embodiment of the invention; FIG. 3B is a block diagram illustrating a second input/output (I/O) stack configuration that includes a **SCSI** driver, illustrating the location of the I/O filter system with driver, in accordance with one embodiment of the invention; FIG. 4

SCSI protocol emulation for virtual storage device stored on NAS device



US • [US7865663B1](#) • Michael Nelson • Vmware, Inc.

Priority 2007-02-16 • Filed 2007-02-16 • Granted 2011-01-04 • Published 2011-01-04

23. A system comprising: a network attached storage (NAS) device adapted to store a file backing a virtual **SCSI** storage device; and a computing device adapted to run a virtualization layer for emulating **small computer system interface (SCSI)** commands by performing the following method: receiving a ...

Method and apparatus for storage-service-provider-aware storage system



US • [US7801993B2](#) • Hidehisa Shitomi • Hitachi, Ltd.

Priority 2007-07-19 • Filed 2007-07-19 • Granted 2010-09-21 • Published 2010-09-21

... according to claim 1, wherein the block-based protocol is **SCSI (Small Computer System Interface)**, and wherein said IP-supported protocol is one of FTP (File Transfer Protocol), HTTP (Hyper Text Transfer Protocol), NFS/CIFS (Network File System/Common Internet File System) or iSCSI (Internet **SCSI**).

Storage apparatus, memory area managing method thereof, and flash memory ...

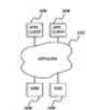


EP US JP • [US8127103B2](#) • Yoshiki Kano • Hitachi, Ltd.

Priority 2008-07-30 • Filed 2008-10-09 • Granted 2012-02-28 • Published 2012-02-28

The SAN 300 may be a switch in general which allows communication according to the **SCSI (Small Computer System Interface)** protocol. For example, in the case of the Fiber Channel protocol, a Fiber Channel switch is used. In the case of the iSCSI (Internet **Small Computer System Interface**) protocol, ...

System for providing multi-path input/output in a clustered data storage ...

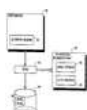


US • [US7865588B2](#) • Mark G. Hayden • Hewlett-Packard Development Company, L.P.

Priority 2005-06-03 • Filed 2009-03-30 • Granted 2011-01-04 • Published 2011-01-04

108 (or storage servers). As mentioned above, iSCSI is Internet **SCSI (Small Computer System Interface)**, an Internet Protocol (IP)-based storage networking standard for linking data storage facilities. By carrying **SCSI** commands over IP networks, iSCSI is used to facilitate data transfers over ...

Methods and apparatus for multiple point in time data access

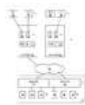


US • [US7849361B2](#) • Shlomo Ahal • Emc Corporation

Priority 2005-12-22 • Filed 2006-12-12 • Granted 2010-12-07 • Published 2010-12-07

110 issues I/O requests (write/read operations) to storage system 120 using, for example, **small computer system interface (SCSI)** commands. Such requests are generally transmitted to storage system 120 with an address that includes a specific device identifier, an offset within the device, and a ...

System and method for managing data policies on application objects



WO EP US • [US8650165B2](#) • Neelesh M. Thakur • Netapp, Inc.

Priority 2010-11-03 • Filed 2010-11-03 • Granted 2014-02-11 • Published 2014-02-11

... Each physical server may have one or more LUs available for use from one or more storage systems. A mounted storage object may appear to the server as a direct-attached physical storage device, such as a direct-attached **Small Computer System Interface (SCSI)** or Serial ATA (SATA) disk device. Some ...

Integrated remote replication in hierarchical storage systems



US JP • [US8170990B2](#) • Hidehisa Shitomi • Hitachi, Ltd.

Priority 2008-05-30 • Filed 2008-05-30 • Granted 2012-05-01 • Published 2012-05-01

... 2300 . The storage mediums 2400 may be disk drive devices or other suitable storage mediums for processing I/O requests and storing data in accordance with storage protocol commands such as **SCSI (small computer system interface)** commands. The hardware configuration of the lower tier storage 3000 (...

Fast path for performing data operations



US • [US7280536B2](#) • Richard Testardi • Incipient, Inc.

Priority 2001-12-10 • Filed 2006-09-15 • Granted 2007-10-09 • Published 2007-10-09

... , and the data storage system of the computer system 10 may use a variety of different communication protocols such as **SCSI (Small Computer System Interface)**, ESCON, Fibre Channel, or GIGE (Gigabit Ethernet), and the like. Some or all of the connections by which the hosts, data management system 16

System and method for storage takeover



US • [US7930587B1](#) • Susan M. Coatney • Netapp, Inc.

Priority 2006-11-30 • Filed 2009-08-27 • Granted 2011-04-19 • Published 2011-04-19

... on the portion of the writable storage device. 15. The method of claim 14 wherein the first storage system node reservation comprises a small computer systems interface (**SCSI**) reservation. 16. The method of claim 1 wherein the writable storage device comprises electronic random access memory.

Using the LUN type for storage allocation



WO US • [US7890504B2](#) • Rupesh Nasre • Netapp, Inc.

Priority 2007-12-19 • Filed 2007-12-21 • Granted 2011-02-15 • Published 2011-02-15

To that end, a storage appliance presents (exports) disks to SAN clients through the creation of LUNs or vdisk objects. Therefore, the vdisks objects are accessible as LUNs from the SAN (FC (fiber channel) and **SCSI (Small Computer System Interface)**) protocols. Therefore, a LUN can generally be ...

Network scanning system



EP US • [US8320007B2](#) • Daisuke Fujita • Canon Denshi Kabushiki Kaisha

Priority 2002-11-19 • Filed 2011-01-03 • Granted 2012-11-27 • Published 2012-11-27

... OF THE INVENTION Generally, an image scanner device is connected to a general information processing apparatus such as a personal computer or a work station (hereinbelow, generally referred to as a "PC") via a **SCSI (Small Computer System Interface)** or a USB (Universal Serial Bus) interface.

... intermediary/virtual machine guest operating system collaborative SCSI path ...

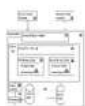


US • [US8719817B2](#) • Sanjana ASWANI • Vmware, Inc.

Priority 2010-03-25 • Filed 2010-03-25 • Granted 2014-05-06 • Published 2014-05-06

... to VMMn may be set up to expose "generic" devices, which facilitate VM migration and hardware platform-independence. For example, the VMM 1 may be set up to emulate a standard **Small Computer System Interface (SCSI)** disk, so that the virtual disk 122 appears to the VM 1 to be a conventional **SCSI** disk ...

System and method for performing rapid data snapshots



US • [US8307154B2](#) • Timothy Allen Stabrawa • Kove Corporation

Priority 2009-03-03 • Filed 2010-02-25 • Granted 2012-11-06 • Published 2012-11-06

In a second example, the storage protocol may be the **SCSI** command protocol. In a third example, the storage protocol may be the SATA protocol. Additional examples of the storage protocol include Serial Attached **SCSI** (SAS) and Internet **Small Computer System Interface** (iSCSI). Alternatively or in ...

Fibre channel switching system

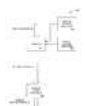


WO EP US CA • [US8204045B2](#) • Stuart B. Berman • Emulex Design & Manufacturing Corporation

Priority 1997-02-18 • Filed 2010-03-29 • Granted 2012-06-19 • Published 2012-06-19

HIPPI is described by the ANSI standard X3T9/88-127. "**SCSI**" or **Small Computer System Interface** is a standard for system-level interfacing between a computer and intelligent devices including hard disks, tape drives, and many more. **SCSI** is described by the ANSI standard X3.131-1986 and by ISO/IEC ...

Method and apparatus for in-band management of storage devices

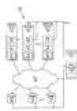


US • [US8631150B2](#) • Ramamurthy Krithivas • Intel Corporation

Priority 2006-06-21 • Filed 2006-06-21 • Granted 2014-01-14 • Published 2014-01-14

104 using one of a plurality of **Small Computer System Interface (SCSI)** protocol suites, for example, Internet Small Computer Systems Interface (iSCSI), Serial Attached **Small Computer System Interface** (SAS) and Fibre Channel (FC). A version of the Fibre Channel standard is described in the American ...

Computer system input/output management

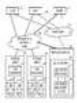


US • [US8635376B2](#) • David Michael Barrett • Emulex Design & Manufacturing Corporation

Priority 2006-02-22 • Filed 2009-06-17 • Granted 2014-01-21 • Published 2014-01-21

... data may also be connected to the SAN using a Host Bus Adapter (HBA), Network Interface Card (NIC), or other similar adapter or interface device (generally referred to herein as an Input/Output (I/O) controller). The disk arrays in the SAN can be presented as **Small Computer System Interface (SCSI)** ...

Access control to block storage devices for a shared disk based file system

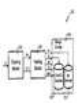


US • [US8086585B1](#) • Per Brashers • Emc Corporation

Priority 2008-09-30 • Filed 2008-09-30 • Granted 2011-12-27 • Published 2011-12-27

wherein said at least one data processor is programmed to receive the **Small Computer System Interface (SCSI)** read or write command from the client, and to evaluate the virtual block address in the block address field of the **Small Computer System Interface (SCSI)** read or write command from the ...

Hardware acceleration of commonality factoring with removable media



US • [US8028106B2](#) • Matthew D. Bondurant • Proster Systems, Inc.

Priority 2007-07-06 • Filed 2008-07-03 • Granted 2011-09-27 • Published 2011-09-27

interface to the host computer 102 may be any version of **Small Computer System interface (SCSI)**, a Fiber Channel (FC) interface, an Ethernet interface, an Advanced Technology Attachment (ATA) interface, or any other type of interface that allows the removable cartridge device 110 to communicate ...

Dynamically controlling virtual machine access to optical disc drive by ...



WO EP US CN • [US8661436B2](#) • James McKenzie • Citrix Systems, Inc.

Priority 2009-12-14 • Filed 2010-12-14 • Granted 2014-02-25 • Published 2014-02-25

... machine of the plurality of virtual machines from transacting with the optical disc drive. 5. The method of claim 1, wherein intercepting a transaction stream further comprises intercepting a transaction stream comprising **small computer system interface (SCSI)** commands. 6. The method of claim 1, ...

Method for configuring a physical adapter with virtual function (VF) and ...



US • [US8473947B2](#) • Edward J. GOGGIN • VMware, Inc.

Priority 2010-01-18 • Filed 2010-01-18 • Granted 2013-06-25 • Published 2013-06-25

1 to VMMn may be set up to expose "generic" devices, which facilitate VM migration and hardware platform-independence. For example, the VMM 1 may be set up to emulate a standard **Small Computer System Interface (SCSI)** disk, so that the virtual disk 122 appears to the VM 1 to be a conventional **SCSI** disk ...

Computing system utilizing dispersed storage

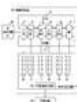


WO EP US • [US8533424B2](#) • Gary W. Grube • Cleversafe, Inc.

Priority 2009-07-31 • Filed 2010-04-06 • Granted 2013-09-10 • Published 2013-09-10

may include an access protocol that mimics a conventional file system interface and may be any one or more of network file system (NFS), flash file system (FFS), disk file **system (DFS)**, **small computer system interface (SCSI)**, internet **small computer system interface (iSCSI)**, file transfer protocol ...

Network communications processor architecture with memory load balancing



US • [US8255644B2](#) • David P. Sonnier • Lsi Corporation

Priority 2009-05-18 • Filed 2010-05-18 • Granted 2012-08-28 • Published 2012-08-28

TABLE 1 USB Universal Serial Bus SATA Serial Advanced Technology Attachment **SCSI Small Computer System Interface** SAS Serial Attached **SCSI** PCI-E Peripheral Component Interconnect Express SoC System-on-Chip AXI Advanced eXtensible Interface AMBA Advanced Microcontroller Bus Architecture PAB Packet ...

High performance memory based communications interface



WO US EA • [US7773630B2](#) • Kaiyuan Huang • Liquid Computing Corporation

Priority 2005-11-12 • Filed 2006-09-26 • Granted 2010-08-10 • Published 2010-08-10

Importantly, this protocol still only sends one frame (or packet) at a time. The latest NICs have included TCP offload, Direct Memory Access (DMA), Remote Direct Memory Access (RDMA), and Internet **SCSI (Small Computer System Interface)** (iSCSI) hardware support. Software maps the services to ...

High availability virtual machine cluster

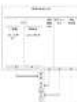


US • [US8554981B2](#) • Rene W. Schmidt • VMware, Inc.

Priority 2007-02-02 • Filed 2008-01-21 • Granted 2013-10-08 • Published 2013-10-08

and/or directors are employed to mediate high bandwidth access (typically using a **SCSI (Small Computer System Interface)** command set) to an extensible and potentially heterogeneous set of storage resources 132 A, 132 B, 132 C, 132 D, 132 E, 132 F, 132 G, e.g., SATA (Serial ATA) and/or **SCSI** disks, tape ...

Supporting virtual input/output (I/O) server (VIOS) active memory sharing in a ...



US • [US8458413B2](#) • Veena Ganti • International Business Machines Corporation

Priority 2010-10-27 • Filed 2010-10-27 • Granted 2013-06-04 • Published 2013-06-04

A method, system, and computer program product provide a shared virtual memory space via a cluster-aware virtual input/output (I/O) server (VIOS). The VIOS receives a paging file request from a first LPAR and thin-provisions a logical unit (LU) within the virtual memory space as a shared paging ...

Data copyright management device



EP US JP DE • [JP4944256B2](#) • 誠 齊藤 • インターシア ソフトウェア エルエルシー

Priority 1994-10-27 • Filed 2011-01-12 • Granted 2012-05-30 • Published 2012-05-30

A first computer system receives an encrypted version of the data; The first computer system decrypts the encrypted version of the data; The first computer system re-encrypts the decrypted data to generate a re-encrypted version of the data; The first computer system adds identification ...

Direct access to a hardware device for virtual machines of a virtualized ...



US • [US8527673B2](#) • Mallik Mahalingam • VMware, Inc.

Priority 2007-05-23 • Filed 2008-05-21 • Granted 2013-09-03 • Published 2013-09-03

... . 1A, system hardware 30 includes Central Processing Unit 32 (CPU 32), host/PCI bridge 36, system memory 40, **Small Computer System Interface (SCSI)** Host Bus Adapter (HBA) card 44 (**SCSI** HBA 44), Network Interface Card 46 (NIC 46), and graphics adapter 48, each of which may be conventional devices. As ...

Pass-through and emulation in a virtual machine environment



US • [US7945436B2](#) • Boon Seong Ang • VMware, Inc.

Priority 2007-11-06 • Filed 2008-07-24 • Granted 2011-05-17 • Published 2011-05-17

40, **SCSI** HBA 44, network interface card or controller (NIC) 46, and graphics adapter 48. Processor 32 is connected to host/PCI bridge 36 by CPU local bus 34 in a conventional manner; system memory 40 is connected to host/PCI bridge 36 by memory bus 38 in a conventional manner; and **SCSI** HBA 44, NIC

Method for controlling storage system, and storage control apparatus



EP US JP AT DE • [US7412543B2](#) • Hiroshi Ohno • Hitachi, Ltd.

Priority 2002-04-26 • Filed 2006-01-25 • Granted 2008-08-12 • Published 2008-08-12

13. A control unit according to claim 8, wherein said predetermined copy command is a command defined in **Small Computer System Interface (SCSI)** standards. 14. A control unit according to claim 13, wherein said predetermined copy command is an extended copy command defined in **SCSI** standards. 15. A ...

Management device and computer system



US JP • [US8041672B2](#) • Yukio Ogawa • Hitachi, Ltd.

Priority 2008-09-25 • Filed 2008-11-28 • Granted 2011-10-18 • Published 2011-10-18

are each a storage unit such as FC (Fibre Channel) disk drive, SATA (Serial Advanced Technology Attachment) disk drive, PATA (Parallel Advanced Technology Attachment) disk drive, FATA (Fibre Attached Technology Adapted) disk drive, SAS (Serial Attached **SCSI**) disk drive, or **SCSI** (**Small Computer** ...

Apparatus and methods using invalidity indicators for buffered memory



US CN JP KR DE TW • [US8051258B2](#) • Chan-ik Park • Samsung Electronics Co., Ltd.

Priority 2004-12-21 • Filed 2010-08-23 • Granted 2011-11-01 • Published 2011-11-01

... of the existence of room to store additional data in the buffer memory. 7. The memory storage system of claim 1, wherein the interface is a **small computer system interface (SCSI)**. 8. The memory storage system of claim 1, wherein the interface is an integrated drive electronics (IDE) interface.

Virtual formatting method based on allocation unit and device using the method



WO EP US JP • [JP5047365B2](#) • スタインメッツ、ジョセフ・エイチ・エミュレックスデザイン アンド マニ ュファクチャリング コーポレーション

Priority 2007-11-26 • Filed 2008-11-17 • Granted 2012-10-10 • Published 2012-10-10

Fiber Channel ("FC") is an architecture and protocol for data communication networks that interconnects multiple different combinations of computers and peripheral devices. FC supports a variety of higher level protocols including the **Small Computer System Interface** ("SCSI") protocol. Computers or ...

Method for recovering from memory I/O errors using checkpoints



WO EP US CN JP • [JP5438668B2](#) • ベリー、ロバート・シマンテック コーポレーション

Priority 2004-08-24 • Filed 2010-12-27 • Granted 2014-03-12 • Published 2014-03-12

The storage management device 38 communicates with the host 34 via a first communication link 40. The first communication link 40 can be any type of data communication link, such as a LAN, storage network, or bus, including Fibre Channel and **Small Computer System Interface** ("SCSI"). Ethernet (e.g., ...

Method and apparatus using CRC for data health in on-chip memory

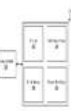


WO US CN JP KR DE GB • [JP4547452B2](#) • ウェストビー、ジュディ、リン・シーゲイト テクノロジー エルエルシー

Priority 1997-11-17 • Filed 2008-12-26 • Granted 2010-09-22 • Published 2010-09-22

Fiber Channel offers significant advantages over **small computer system interface** ("SCSI") based designs. Fiber Channel currently provides higher bandwidth, reaching about 106 megabytes per second, compared to 2-20 megabytes per second with conventional **SCSI**-based designs. Also, in a normal **SCSI**- ...

Programming method for multi-level cell flash for minimizing inter-cell ...

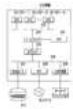


US • [US8228728B1](#) • Xueshi Yang • Marvell International Ltd.

Priority 2009-09-14 • Filed 2010-09-13 • Granted 2012-07-24 • Published 2012-07-24

Systems, methods and computer program products for minimizing floating gate coupling interference and threshold voltage drift associated with flash memory cells are described. In some implementations, the memory cells can be programmed in a predetermined sequence that allows pages with the most- ...

Computer and virtual device control method



US JP • [JP4295783B2](#) • 聡一 ▲高▼重 • 株式会社日立製作所

Priority 2006-12-13 • Filed 2006-12-13 • Granted 2009-07-15 • Published 2009-07-15

It has been realized mainly in the control of frames (general-purpose large computers). There are two methods for controlling devices such as a network interface card (NIC) and a **SCSI (Small Computer System Interface)** card on a computer in the virtual computer system as described above. Hereinafter ...

Storage device system and storage control method



EP US JP • [JP4890033B2](#) • 昇 森下 • 株式会社日立製作所

Priority 2006-01-19 • Filed 2006-01-19 • Granted 2012-03-07 • Published 2012-03-07

In a storage device system capable of communicating with one or a plurality of external devices that issue IO commands and having a plurality of storage control functions, A pool with a number of pool areas, which are storage areas that are dynamically allocated and freed, and A plurality of ...

Configuring a storage drive to communicate with encryption and key managers



WO EP US CN JP • [CN101501698B](#) • B-G 古德曼 • 国际商业机器公司

Priority 2006-09-07 • Filed 2007-08-31 • Granted 2011-07-13 • Published 2011-07-13

12a and/or 12b can comprise serial line interface, parallel interface or optical fiber interface, for example RS-232, USB (USB (universal serial bus)), serial or parallel ATA (AT annex), **SCSI (small computer system interface)**, SAS (Serial Attached **SCSI** (SAS)), optical-fibre channel, IEEE 1394 (...)

Virtual computer system and virtual computer migration control method



US JP • [JP4871850B2](#) • 洋 作田 • 株式会社日立製作所

Priority 2007-12-04 • Filed 2007-12-04 • Granted 2012-02-08 • Published 2012-02-08

... system. . The disk unit 6 includes a large number of hard disks (not shown) that form a plurality of volumes 60. The hard disk is composed of an expensive disk such as a **SCSI (Small Computer System Interface)** disk or an inexpensive disk such as a SATA (Serial AT Attachment) disk or an optical disk. ...

Virtual target addressing during direct data access via VF of IO storage ...



US • [US8239655B2](#) • Edward J. GOGGIN • VMware, Inc.

Priority 2010-01-18 • Filed 2010-01-18 • Granted 2012-08-07 • Published 2012-08-07

... **SCSI** commands to the disk drive; and when the disk controller receives a request to get information of a SATA disk drive, the disk controller sends ATA commands to the disk drive. 7. A method of managing a storage system having a plurality of disk controllers, each having a Serial Attached **Small** ...

Apparatus and method for managing a plurality of kinds of storage devices



US JP • [US7546413B2](#) • Yasuyuki Mimatsu • Hitachi, Ltd.

Priority 2005-01-13 • Filed 2007-11-02 • Granted 2009-06-09 • Published 2009-06-09

... **SCSI** commands to the disk drive; and when the disk controller receives a request to get information of a SATA disk drive, the disk controller sends ATA commands to the disk drive. 7. A method of managing a storage system having a plurality of disk controllers, each having a Serial Attached **Small** ...

Data programming method for multi-plane flash memory, device and system using ...

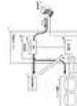


WO EP US JP KR TW • [JP5360214B2](#) • 晶央 後藤 • マーベル ワールドトレード リミテッド

Priority 2008-09-03 • Filed 2009-09-01 • Granted 2013-12-04 • Published 2013-12-04

Systems, methods and computer program products for programming data into a multi-plane memory device employ a multi-plane data order. To allow multiple data pages to be programmed without a need to increase the size of page buffers, in some implementations, a data transfer scheme at which the data ...

Storage management device, storage system control device, storage management ...



EP US JP DE • [JP4480756B2](#) • 泰生 野口 • 富士通株式会社

Priority 2007-12-05 • Filed 2007-12-05 • Granted 2010-06-16 • Published 2010-06-16

As a result, the storage device using the disk array and the PC server are not fixedly connected by **SCSI** connection or the like, but by a storage area network using Fiber Channel or iSCSI (Internet **Small Computer System Interface**). By connecting to a PC server, you can continue to access the data ...

Automatic connection to an online service provider from a backup system

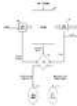


US • [US8050905B2](#) • Jeffrey Brunet • Storage Appliance Corporation

Priority 2005-10-12 • Filed 2010-11-01 • Granted 2011-11-01 • Published 2011-11-01

A software application is provided for a user to select a backed up data file and specify a task to be performed by an online service provider on the selected file. The application automatically connects to the online service provider and uploads the selected file for the online service provider ...

Method and system for interlocking data integrity for network adapters



US • [US7809870B2](#) • Scott McDaniel • Broadcom Corporation

Priority 2006-10-17 • Filed 2007-10-17 • Granted 2010-10-05 • Published 2010-10-05

, wherein said plurality of output data packets corresponding to said second protocol is one of: Ethernet packets, Fiber Channel packets, Infiniband packets, peripheral component interconnect (PCI) packets, PCI Express (PCIe) packets, Hypertransport packets, **small computer system interface (SCSI)** ...

Management of temporary and permanent areas in nonvolatile memories of a ...



EP US CN JP • [US8028146B2](#) • Yasutomo Yamamoto • Hitachi, Ltd.

Priority 2007-08-09 • Filed 2008-01-03 • Granted 2011-09-27 • Published 2011-09-27

... an access target device from the port ID and LUN (Logical Unit Number) contained in the received I/O request. In this embodiment, although a port that corresponds with the fibre channel interface for which **SCSI (Small Computer System Interface)** serves as the higher level protocol is assumed as port ...

Method of saving power consumed by a storage system

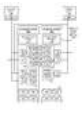


US JP • [US7908503B2](#) • Yoichi Mizuno • Hitachi, Ltd.

Priority 2005-10-03 • Filed 2008-05-28 • Granted 2011-03-15 • Published 2011-03-15

113, the disk IF 114 and the management IF 115 include Fibre Channel, **SCSI (Small Computer System Interface)**, iSCSI (Internet **Small Computer System Interface**), Infiniband, SATA (Serial ATA), and SAS (Serial Attached **SCSI**). The cache memory 117 temporarily stores data sent from the host computer 2. ...

Computer system accessing object storage system



WO EP US CN JP AU • [US8650359B2](#) • Satyam B. Vaghani • VMware, Inc.

Priority 2011-08-26 • Filed 2011-08-26 • Granted 2014-02-11 • Published 2014-02-11

... then connected to servers or "hosts" that require access to the data in the storage devices. The servers, switches and storage devices in a SAN typically communicate using the **Small Computer System Interface (SCSI)** protocol which transfers data across the network at the level of disk data blocks.

Dynamic, on-demand storage area network (SAN) cache



WO EP US • [US7774548B2](#) • Raghavendra J. Rao • Cisco Technology Inc.

Priority 2006-07-05 • Filed 2008-07-10 • Granted 2010-08-10 • Published 2010-08-10

claim 12, wherein the initiation of the caching is accomplished by setting up caching using a **SCSI (Small Computer System Interface)** Flow service provided by one or more network device(s) of the SAN and wherein the initiating caching is accomplished by: (a) providing a port coupled to the first ...

Storage system control device that can be a component of a virtual storage ...



EP US JP • [JP4963892B2](#) • 愛里山 • 株式会社日立製作所

Priority 2006-08-02 • Filed 2006-08-02 • Granted 2012-06-27 • Published 2012-06-27

... drive 240 is an FC (Fibre Channel) disk drive, SATA (Serial Advanced Technology Attachment) disk drive, PATA (Parallel Advanced Technology Attachment) disk drive, FATA (Fibre Attached Technology Adapted) disk drive, SAS (Serial Attached **SCSI**) disk. A physical device such as a drive or a **SCSI (Small ...**

Storage system front end



WO US • [US20090222569A1](#) • Guy David Frick • Atrato, Inc.

Priority 2008-02-29 • Filed 2009-02-27 • Published 2009-09-03

may provide an interface for communications between protocol-translator m 120 and pseudo-target module 124. Mid-level interface 122 may be a **small-computer-system-interface (SCSI)** interface. Mid-level interface 122 may also be an interface that supports any other suitable protocol. FIG. 1 also shows ...

Method to delete partial virtual tape volumes

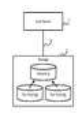


US • [US7620765B1](#) • James P. Ohr • Symantec Operating Corporation

Priority 2006-12-15 • Filed 2006-12-15 • Granted 2009-11-17 • Published 2009-11-17

claim 13, further comprising: wherein the backup server device is further configured to send the one or more tape-specific write commands as one or more **small computer system interface (SCSI)** commands over a SAN fabric to the virtual tape library device; and wherein the virtual tape library device ...

Method and apparatus of storage tier and cache management



US • [US20140082310A1](#) • Akio Nakajima • Hitachi, Ltd.

Priority 2012-09-14 • Filed 2012-09-14 • Published 2014-03-20

In related art implementations, the new file copy operation is defined by INCITS T10 **SCSI** (International Committee for Information Technology Standards—Technical Committee 10—**Small Computer System Interface**). In the related art implementation, the host copy manager sends a read token command with a ...

System and method for guiding using external memory device



US CN • [CN101206581B](#) • 小哈罗德·H·霍尔 • 国际商业机器公司

Priority 2006-12-20 • Filed 2007-11-15 • Granted 2010-11-03 • Published 2010-11-03

Virtual **small computer system interface scsi** device module, be arranged to and use the virtual i/o server to be mapped to the virtual **scsi** device of creating the first logical partition LPAR that is assigned to computing machine with the related uniquely **SCSI** ID of described virtual **scsi** device by ...

Bandwidth request system, bandwidth request apparatus, client device, bandwidth ...



EP US CN JP KR ES • [JP4844425B2](#) • 靖明 山岸 • ソニー株式会社

Priority 2007-02-15 • Filed 2007-02-15 • Granted 2011-12-28 • Published 2011-12-28

The connection port 323 is, for example, a USB (Universal Serial Bus) port, i. It is a port for directly connecting devices such as an IEEE1394 port such as Link, a **SCSI (Small Computer System Interface)** port, an RS-232C port, and an optical audio terminal to the bandwidth requesting device 30. By ...

System and method for providing remote forensics capability



US • [US8171108B2](#) • Matthew M. Shannon • Agile Risk Management Llc

Priority 2007-03-29 • Filed 2011-01-17 • Granted 2012-05-01 • Published 2012-05-01

... commands of the non-proprietary communication protocol standard; and wherein the non-proprietary communication protocol comprises an Internet **Small Computer System Interface** (iSCSI) protocol, or any **Small Computer System Interface (SCSI)** protocol communication exchanged over a network via HTTPS;

Automatic data block misalignment detection and correction in a computer system ...



US • [US7809919B2](#) • Mark J. Thompson • Hewlett-Packard Development Company, L.P.

Priority 2006-07-26 • Filed 2006-07-26 • Granted 2010-10-05 • Published 2010-10-05

can implemented completely in software, integrated into the host computer system, or as an add on card such as IDE (Integrated Drive Electronics), EIDE (Enhanced IDE), **SCSI (Small Computer System Interface)**, ATA (AT Attachment), FAST-ATA, SATA (Serial ATA), ESDI (Enhanced Small Device Interface) or ...

Systems and methods for selective encryption of operating system metadata for ...



US • [US8261068B1](#) • Helen S. Raizen • Emc Corporation

Priority 2008-09-30 • Filed 2008-09-30 • Granted 2012-09-04 • Published 2012-09-04

is a block diagram illustrating a second input/output (I/O) stack configuration that includes a **SCSI** driver, illustrating the location of the I/O ... can be performed in accordance with standards for the Internet—**Small Computer System Interface** (iSCSI) or the Fibre Channel over Ethernet (FCoE). ...

System and method for server based control



US • [US20130201316A1](#) • Yehuda Binder • May Patents Ltd.

Priority 2012-01-09 • Filed 2013-01-03 • Published 2013-08-08

A system and method in a building or vehicle for an actuator operation in response to a sensor according to a control logic, the system comprising a router or a gateway communicating with a device associated with the sensor and a device associated with the actuator over in-building or in-vehicle ...

Flash memory with millimeter wave host interface and method for use therewith



US • [US8010735B2](#) • Ahmadreza (Reza) Rofougaran • Broadcom Corporation

Priority 2007-07-31 • Filed 2007-07-31 • Granted 2011-08-30 • Published 2011-08-30

wherein the host interface protocol includes at least one of: Advanced Technology Attachment (ATA), Serial ATA (SATA), Fibre channel ATA (FATA), **Small Computer System Interface (SCSI)**, Integrated Drive Electronics (IDE), Enhanced IDE (EIDE), MultiMedia Card (MMC), Universal Serial Bus (USB), Serial ...

Storage medium storing control program, method of controlling information ...

WO EP US CN JP KR TW • [TW201401047A](#) • Daisuke Hashimoto • Toshiba Kk

Priority 2012-06-19 • Filed 2013-02-23 • Published 2014-01-01

... embodiment, the SATA (Serial Advanced Technology Attachment) interface is used as the interfaces 19A and 19B, but it may be a USB (Universal Serial Bus) or SAS. (Serial Attached **SCSI**: Serial **SCSI**), Thunderbolt (registered trademark), PCI Express, LAN (Local Area Network), Fibre Channel or Ethernet.

Successively layered modular construction for a portable computer system



US • [US8385075B2](#) • Jeffry Harlow Loucks • Hewlett-Packard Development Company, L.P.

Priority 2001-09-19 • Filed 2008-05-06 • Granted 2013-02-26 • Published 2013-02-26

180 is a serial communication port, but could also be of any number of well-known communication standards and protocols, e.g., parallel, **SCSI (small computer system interface)**, Firewire (IEEE 1394), Ethernet, etc. It should be appreciated that in one embodiment, multiple implementations of ...

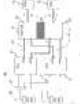
Storage system logical block address de-allocation management and data ...

WO US CN JP KR • [CN102449610B](#) • 罗斯·斯滕福特 • Lsi公司

Priority 2009-03-27 • Filed 2010-03-27 • Granted 2014-07-16 • Published 2014-07-16

Personal digital assistant RAID Cheapness/independent disk redundancy permutation SAS Serial connecting **small computer system interface** (serial **SCSI**) SAT **SCSI** ATA conversion SATA Serial Advanced Technology Attachment (serial ATA) SBC-3 **SCSI** block command **SCSI Small computer system interface** SD ...

Redundant storage virtualization subsystem with SAS interface on the host side ...



EP US CN TW • [CN1971497B](#) • 方庆华 • 普安科技股份有限公司

Priority 2005-11-23 • Filed 2006-05-10 • Granted 2011-05-18 • Published 2011-05-18

And the output/input interface between sas storage virtualization controller pair and main frame, in general with fiber channel (Fiber Channel, FC) be more common standard with **small computer system interface** arranged side by side (Parallel Small ComputerSystem Interface, **SCSI** side by side).Fiber ...

Storage virtualization computer system and method for managing data snapshot ...

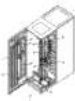


EP US CN TW • [CN100592251C](#) • 施明文 • 普安科技股份有限公司

Priority 2006-01-26 • Filed 2007-01-26 • Granted 2010-02-24 • Published 2010-02-24

And a plurality of entity storage devices, its each is to link via the attached **small computer system interface** of a tandem (Serial Attached **SCSI**) to be coupled to this sas storage virtualization controller, and this storage virtual computer system is given in the storage area to give information ...

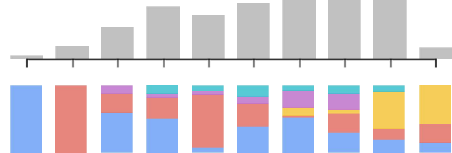
Selective encryption of data stored on removable media in an automated data ...



WO EP US CN JP ~~AF~~ DE • [CN101512538B](#) • J-A-菲舍尔 • 国际商业机器公司
Priority 2006-09-07 • Filed 2007-08-22 • Granted 2011-06-29 • Published 2011-06-29
... (for example common bus network).Interface 70,80,81 and/or 82 can comprise serial line interface, parallel interface or optical interface, such as but not limited to RS-232, USB (USB (universal serial bus)), serial or parallel ATA (AT attachment device), **SCSI (small computer system interface)**, SAS ...

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