SCSI ARCHITECTURE MODEL 3 pdf

1: SCSI-3 Architecture

So, when the SCSI-3 Architecture Model (SAM) was revised, it became the SCSI Architecture Model - 2 (SAM-2). While the individual components of the SCSI family continue to evolve, there is no SCSI-4 project envisioned.

Using robot software to mass-download the site degrades the server and is prohibited. See here for more. Find The PC Guide helpful? View over of my fine art photos any time for free at DesktopScenes. This structure is called the architecture of SCSI An important one is to organize and categorize the various other standards that fall under SCSI This serves to structure these standards in a way that makes sense to SCSI standards developers, hardware designers and users. The structure defines broad, generic requirements at a high level, which are refined to more specific low-level requirements through the use of particular implementation standards. Most of the different SCSI-3 documents fall into the following three general categories: These standards formalize the rules by which various devices communicate and share information, allowing different devices to work together. These standards are sometimes said to describe the transport layer of the interface. These are standards that define specific interface details, such as electrical signaling methods and transfer modes. They are sometimes called physical layer standards as well. The protocols and interconnects are often closely related, with a particular interconnect document typically being associated with a specific protocol standard. In some cases, especially lately, the protocol and interconnect standards are being combined into a single document. All of these standards are tied together by the architecture model, and also by the Common Access Method or CAM, which defines software services for host systems computers to interface with SCSI devices. The architecture model is also responsible for providing much of the "foundation" for the other standards. This is important, because while the standards are developed and enhanced independently of each other, they must share certain common features if SCSI-3 is to remain a coherent standard as a whole. The architecture model documents also serve as a single, unified place where common terms and concepts are defined. This is useful from a practical standpoint, to avoid the confusion that would result if the various SCSI-3 standards used inconsistent definitions for key terms and acronyms. For a list and brief description of the standards defined in the SCSI-3 architecture, see the next page.

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2: Explain SCSI-3 Architecture model and use of each layer for storage application.

dpANS. T10 Project D Revision 14 21 September Information technology SCSI Architecture Model - 3 (SAM-3) This is an internal working document of T10, a Technical Committee of Accredited Standards Committee INCITS (InterNational Committee for Information Technology Standards).

External cables are typically shielded but may not be , with 50â€” or 68â€—pin connectors at each end, depending upon the specific SCSI bus width supported. These connections are hot-pluggable and are usually implemented with optical fiber. This protocol can run over any RDMA-capable physical transport, e. SCSI command protocol[edit] Main article: In SCSI terminology, communication takes place between an initiator and a target. The initiator sends a command to the target, which then responds. The CDB consists of a one byte operation code followed by five or more bytes containing command-specific parameters. At the end of the command sequence, the target returns a status code byte, such as 00h for success, 02h for an error called a Check Condition , or 08h for busy. There are four categories of SCSI commands: N non-data , W writing data from initiator to target , R reading data , and B bidirectional. There are about 60 different SCSI commands in total, with the most commonly used being: Queries device to see if it is ready for data transfers disk spun up, media loaded, etc. Returns basic device information. Returns any error codes from the previous command that returned an error status. Send diagnostic and Receive diagnostic results: Prepares a storage medium for use. In a disk, a low level format will occur. Some tape drives will erase the tape in response to this command. Reads data from a device. Writes data to a device. Returns current information from log pages. Returns current device parameters from mode pages. Sets device parameters in a mode page. Devices may encompass multiple logical units, which are addressed by logical unit number LUN. A "direct access" i. A typical LBA equates to bytes of storage. The usage of LBAs has evolved over time and so four different command variants are provided for reading and writing data. The capacity of a "sequential access" i. Read and write operations on a sequential access device begin at the current tape position, not at a specific LBA. The block size on sequential access devices can either be fixed or variable, depending on the specific device. Parallel interface[edit] This section may be too technical for most readers to understand. Please help improve it to make it understandable to non-experts , without removing the technical details. Alternatively, the host adapter may come with software that must be installed on the host computer to configure the SCSI ID. The SCSI ID of a device in a drive enclosure that has a back plane is set either by jumpers or by the slot in the enclosure the device is installed into, depending on the model of the enclosure. The enclosure is packaged with connectors that must be plugged into the drive where the jumpers are typically located; the switch emulates the necessary jumpers. While there is no standard that makes this work, drive designers typically set up their jumper headers in a consistent format that matches the way that these switches implement. For example, a high-end disk subsystem may be a single SCSI device but contain dozens of individual disk drives, each of which is a logical unit. Further, a RAID array may be a single SCSI device, but may contain many logical units, each of which is a "virtual" diskâ€—a stripe set or mirror set constructed from portions of real disk drives. It is quite common, though incorrect, to refer to the logical unit itself as a "LUN". Device Type is a 5-bit field reported by a SCSI Inquiry Command ; defined SCSI Peripheral Device Types include, in addition to many varieties of storage device, printer, scanner, communications device, and a catch-all "processor" type for devices not otherwise listed. The initiator can communicate with the enclosure using a specialized set of SCSI commands to access power, cooling, and other non-data characteristics.

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3: SCSI architectural model - Wikipedia

SCSI-3 architecture derives its base from the client-server relationship, in which a client directs a service request to a server, which then fulfills the client's request. In a SCSI environment, an initiator-target concept represents the client-server model.

SCSI-3 includes command sets for magnetic and optical disks, tapes, printers, processors, CD-ROMs, scanners, medium changers, and communications devices. In other words this version of SCSI is out-dated, and in fact any specification released in is dated. Single-ended and differential devices are electrically incompatible and can not be mixed on the same physical bus [refer to the electrical description]. SCSI-3 asynchronous transfers would operate up to 1. SCSI commands are sent at the asynchronous rate. Fast only operates in a synchronous mode. Parity bits were not required in SCSI The differential characteristics conform to EIA interface standard. The cable used may be either a conductor flat cable or signal twisted-pair cable. The A cable has 50 conductors and provides an 8 bit data bus. The differential cable impedance is between and ohms [W nominal]. The minimum conductor size [for terminator power] is 28 AWG solid or stranded, other wires may be smaller. Or refer to the Cable manufacturers page, and Cable Assembly manufacturers. Keep in mind that the older SCSI becomes, the fewer companies supplying products remain. SCSI is a chained parallel bus, cables start at the Host and run from device to device in a chain. A total of 16 devices may be connected on the bus. The two devices at each end of the chain require terminations, either added external to the devices or provided internal to the devices. Some SCSI devices have internal terminators. The voltage is normally provided by the bus line: Decoupling capacitors ranging between 2. The primary problem is double clocking on the Strobe lines, which may occur because of a reflection. SCSI I devices only used passive terminations. The pin out for the B cable is shown below. The pinout for the pin connector differs from the cable pinout provided below. The signal-ended B cable has a maximum length of 6 meters. The cable impedance is between 90 and ohms. The minimum conductor size is 30AWG. SCSI-3 specification defines the mechanical, electrical and protocol layers of the interface. Data transfers of 8 bits at 20MBps over a 50 pin connector, and 16 bits at 40MBps over a 68 pin connector. The number of devices on the bus increased to 16 for Fast , Fast allows 8 devices maximum, with a number of other combinations. There are a number of different transfer rates, depending on the transceiver used: Normally 10 meters maximum for 4 devices on the bus, 1. Normally cable lengths up to 12 meters 39,3 ft. Also the bus may be either Single ended or Differential; however the two are mutually exclusive SCSI is a chained parallel bus, cables start at the Host and run from device to device in a chain. SCSI may be used for asynchronous and synchronous transfers; Asynchronous transfers using Start and Stop bits and synchronous transfers using system timing Hand-Shaking. The data bus also carries one parity bit. But at the same time a mention has to be made in regards to the interface bus being obsolete. Just to make note that the interface it self is obsolete and should not be used for new designs.

4: SCSI - Wikipedia

EDUCATION SCSI - The Protocol for all Storage Architectures David Deming, Solution Technology April 12,

5: SCSI Architecture

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