SAS (Serial Attached SCSI)

Let MindShare Bring SAS to Life for You
MindShare’s SAS Architecture course provides a comprehensive understanding of the Serial Attached SCSI interface. The course covers all aspects of the standard, primarily from a hardware perspective, and compares the usage model of SAS with other enterprise interface designs. Practical examples of the discovery process, transactions on the link, and error conditions help provide a great introduction for those new to this material. MindShare’s established background in legacy platform design, coupled with a comprehensive understanding of the latest bus technologies, provides rich insight into the SAS design and results in a superior training experience. This course will provide the kind of in-depth information, example implementations, and practical guidance that will give your team a running start on working with SAS.

You Will Learn:
- The basics of the serial interface
- System topology considerations
- How connections are built and handled
- How the SAS infrastructure handles different protocols
- The responsibilities of each design layer
- How problems are reported and handled

Course Length: 3 Days

Who Should Attend?
Our target audience for this class is design or validation engineers working on an RTL-level, chip-level, system-level or system board-level design. Although the material is hardware oriented, software engineers can also benefit from seeing the big picture.

Course Contents:
- Background
  - SCSI
  - Fibre Channel (FC)
  - Serial ATA (SATA)
- Introduction to SAS
- Usage Model: Comparing SAS, SATA, and Fibre Channel
- Introduction to the Architectural Layers
  - Physical
  - Phy
  - Link
  - Port
  - Transport
- Expander Devices
- Application Layer Responsibilities
  - Discovery process
- Transport Layer Responsibilities
  - SSP and Error Handling
  - STP
  - SMP
- Port Layer Responsibilities
  - Call Center Routing Model
- Link Layer Responsibilities
  - Primitives
  - Serial Support
  - Connections
• Phy Layer Responsibilities
  o Encoding, OOB, Initialization, Resets
• Physical Layer Responsibilities
  o Differential signaling
  o Inter-Symbol Interference and Compensation
• Enclosure Services Management

Recommended Prerequisites:
A basic understanding of SCSI is recommended but not required.

Course Material:
MindShare’s *SAS Storage Architecture* textbook
Author: Mike Jackson
Publisher: MindShare Press

Available through the MindShare Store and major bookstore outlets.
Are your company’s technical training needs being addressed in the most effective manner?

MindShare has over 25 years experience in conducting technical training on cutting-edge technologies. We understand the challenges companies have when searching for quality, effective training which reduces the students’ time away from work and provides cost-effective alternatives. MindShare offers many flexible solutions to meet those needs. Our courses are taught by highly-skilled, enthusiastic, knowledgeable and experienced instructors. We bring life to knowledge through a wide variety of learning methods and delivery options.

training that fits your needs

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- Scalable cost training
- Customizable training options
- Just-in-time training
- Overview and advanced topic courses
- Reducing time away from work
- Training delivered effectively globally
- Concurrently delivered multiple-site training
- Training in a classroom, at your cubicle or home office

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- PCI Express 2.0®
- Intel Core 2 Processor Architecture
- AMD Opteron Processor Architecture
- Intel 64 and IA-32 Software Architecture
- Intel PC and Chipset Architecture
- PC Virtualization
- USB 2.0
- Wireless USB
- Serial ATA (SATA)

- Serial Attached SCSI (SAS)
- DDR2/DDR3 DRAM Technology
- PC BIOS Firmware
- High-Speed Design
- Windows Internals and Drivers
- Linux Fundamentals
... and many more.

All courses can be customized to meet your group’s needs. Detailed course outlines can be found at www.mindshare.com

*PCI Express® is a registered trademark of the PCISIG*
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- NASA
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- NETAPP
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