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Questions & Answers

LSI® SAS6160 Switch FAQ

Does the LSI™ SAS6160 Switch require special ordering for power outside of the US?

The SAS6160 Switch power supply is universal, supporting from 100 to 240 VAC @ 50 or 60 Hz. The switch always includes a domestic US power cord. Power cords with an IEC320 C5 connector and appropriate wire gauge may be substituted, subject to local agency approvals, to support alternate power connections.

How do I mount the SAS6160 Switch Storage Enclosure in a rack?

The SAS6160 Switch may be placed on any stationary surface capable of supporting its weight and having access to required cables. LSI supplies an accessory 1U Mounting Tray that is intended to be mounted in the back of a standard rack to hold one or two switches. The LSI tray employs a unique mechanism for locking the switch in place, which facilitates the actual plugging and unplugging of cables and makes their connection more secure by eliminating any motion of the switch itself. The LSI tray, ordering PN LSI00270 is available from authorized distributors.

What cables should be used to connect to SAS6160 Switch?

All data connections to the SAS6160 Switch are made via 4x multilane SAS cables that meet the requirements of the SAS Standard and have connectors conforming to the SFF8088 connector specification. For ease of use it is recommended that the connectors also have a "universal" key (i.e. 3 slots on the top of the connector). LSI cables meeting these requirements are available in 1 meter, PN CBL-SASSFF8088-10M, and 2 meter, PN CBL-SASSFF8088-20M, lengths from LSI authorized distributors.

Can I expand connectivity of the SAS6160 Switch by connecting 4 devices directly to one of sff8088 connectors with a "breakout" cable?

No. Although each of the 16 SAS ports does indeed contain 4 distinct 6Gb/s SAS "lanes," they are grouped together as a SAS "wide port". This gives the group a single combined SAS address for that connector. Attempting to connect separately SAS addressed devices, like disk drives, will cause errors. A list of products that LSI has tested and confirmed to interoperate with the SAS6160 is maintained at http://www.lsi.com/channel/products/switch/sas6160/index.html.

Can I connect an LSI SAS6160 Switch to another SAS6160?

Yes. Connecting two – or more –SAS6160 Switches together can create a wide variety of possible system topologies. Typical uses may be to use two switches for redundancy, or multiple "daisy chained" for additional connectivity, or in conjunction with "Active" cables to provide extended distance and connectivity in a data center. Specific examples are contained in the LSI SAS Switch User Guide that came with the SAS6160 or you can download the user guide at http://www.lsi.com/channel/products/switch/sas6160/index.html.

What is an "Active" SAS cable?

Recently the SCSI Trade Association (STA) proposed an extension to the 6Gb/s SAS standard that would increase the allowable operation of SAS 2.0 compliant products from 10 meters to 25 meters. The primary mechanism for this change is in the adoption of "Active" cabling. To support active cables, the connected devices must be able to supply a small amount of power to asics in the cable itself that assure the signal transmission over the greater distances. There is also a keying scheme that prevents active cables from being plugged into devices that cannot supply power.

The SAS6160 Switch has dedicated two of its 16 ports to support active cables. LSI currently also supports active cables on its 9200 and 9201-16e 6Gb/s host bus adapter (HBA), available from LSI authorized distributors.

How many devices can I attach to the SAS6160 Switch?

The SAS6160 internal routing table capacity ultimately limits the size of a topology that contains the switch. That limit is currently 1000 SAS addresses, which includes all initiators, targets and other switches that may be connected together. In designing a switch topology all SAS Domain rules must also be followed; the key one of which is that there is a unique path to each and every address in a strict "tree" architecture (no loops).

What is the RJ45 connector on the SAS6160 Switch for?

The RJ45 connector on the SAS6160 provides access to the embedded SAS Domain Manager ™ management utility. Connection may be made to an existing network, or to a laptop browser via a network "crossover" cable. Consult the LSI SAS Switch User Guide that came with the SAS6160 or you can download the user guide at http://www.lsi.com/channel/products/switch/sas6160/index.html.

How can I identify what devices are attached to the SAS6160?

The embedded SAS Domain Manager (SDM) of the LSI SAS6160 Switch displays all the available information for each SAS address in the topology. It also shows there relationship to one another and their zone affiliations. Details of displaying the information are contained in the LSI SAS Switch User Guide that came with the SAS6160 or you can download the user guide at http://www.lsi.com/channel/products/switch/sas6160/index.html.

What is "zoning" and when is it used?

Zoning is an attribute of SAS technology that does not have widespread use in small topologies. With the LSI SAS6160's potential for support of very large topologies, however it is very useful. The complete physical connection of a SAS topology is architecturally a SAS Domain. Efficient deployment of hardware, support and connectivity considerations rarely align with the IT security, application, change and performance needs across the same set of hardware however. A "zone" is an artificial sub-domain of the overall SAS topology domain. Partitioning the space into more manageable size facilitates many aspects and optimizations of: performance, security, independent scaling of applications, application updating etc.

How do I create and manage zones?

In a large system topology of hundreds of units, there are likely to be several areas of centralized control. A logical choice for the control of zoning is in a switch, and in some cases may actually be the justification for the switch in the topology, even if it could be obtained via a different hardware connection. In the SAS6160, zone creation and management is part of the SAS Domain Manager embedded utility. A powerful feature of it is the ability to define up to 10 "zone groups". Each zone group can be totally independent of the others. This allows the entire topology to be quickly changed for recurrent tasks, backup for example, or for contingent tasks like OS upgrades, or disaster recovery. Further discussion of zone groups and management of zones is contained in the LSI SAS Switch User Guide that came with the SAS6160 or you can download the user guide at http://www.lsi.com/channel/products/switch/sas6160/index.html.

Can I buy spare parts for my SAS6160 switch?

There is only one designated field spare part for the SAS6160. It is the power supply module and power cord; LSI Spare Power Supply, ordering PN LSI00271 is available from authorized distributors. Additional cables and trays can be purchased as accessories.

Can I "badge" my product identity onto the SAS6160 Switch?

LSI is only manufacturing a "standard" model for the distribution channel. It is possible to modify the SAS Domain Manager utility with your company's name or model designation.

How can I get answers to my other questions?

There are numerous ways to get help regarding LSI SAS6160 SAS Switch and accessories. General information, answers to other product questions and product information can be found at http://www.lsi.com/channel/products/index.html. Remaining specific questions can be addressed via http://www.lsi.com/channel/ContactUs/ or by calling the supplier of your LSI SAS6160, your local LSI authorized distributor or LSI directly at 1.800.633.4545 in North America or at 00.800.5745.6442 Internationally.

For more information and sales office locations, please visit the LSI web sites at:
lsi.com lsi.com/channel

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