

Re: SCSI vs S-ATA

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"Jerry Dubuke" <jdubuke@not.gpdservices.com> wrote in message
news:ulMEECXeEHA.1644@tk2msftngp13.phx.gbl...

- > I have asked the following question of various resellers of hard disks ans
- > NAS solutions, and gotten cryptic answers at best...
- > So, the question is:
- > How does SATA perform relative to SCSI in a multi-user environment?
- > I am under the impression that SATA is still a "parallel" process, whereby
- > only one request can be handled at a time, vs SCSI, which can handle
- > multiple simultaneous requests.

Any disk has only a single headset and therefore any HD can only be doing a single seek and I/O at any one instant. The difference is more subtle. A SCSI HD may queue up a number of disk I/O requests onboard and choose the optimal order to do the I/Os. That optimization when several I/Os are queued onboard a SCSI HD can provide up to a 30% performance boost when doing small record random I/O.

For SCSI to support onboard command queuing and other features of SCSI, SCSI has a much higher single queued command overhead than [S]ATA. That's why late model SATA HDs actually beat SCSI performance wise on single user workstations.

On transaction servers where the load of small record random I/O can keep a SCSI HD's onboard queue non-empty then such a SCSI HD system can pump out the I/Os per second well above CURRENT [S]ATA configurations. On configurations not experiencing such saturated small record disk I/O, SCSI offers little performance advantage over top SATA HDs like the WDC Raptor unless of course one buys triple cost late model 15K RPM SCSI HDs like the Fujitsu MAS3735 which fly under ALL circumstances.

- > Is this still a true statement? If so, why would anyone want SATA in a
- > server, (or a NAS for that matter)?

Cost.

- > Along the same vein, does SATA use the main CPU for access the same was

that

> *IDE does, or does the "controller" have on-board dedicated CPU like a SCSI*
> *card does?*

SCSI cards do NOT have onboard CPUs that handle any load over [S]ATA implementations. Neither [S]ATA nor SCSI I/O puts a significant burden on the host's CPU. That changes for RAID 5.

The host CPU issue is relevant for RAID. HW RAID controllers, whether SCSI or [S]ATA, have onboard CPUs to offload the host CPU. That is important for any RAID like RAID 5 that does parity/ECC type calculations. For RAID 1 and RAID 0 that do NOT do any such calculations then HW RAID offers fewer advantages over SW/firmware RAID. SW/firmware RAID uses the host's CPU to do all processing but there is so little for RAID 1 and RAID 0 that it makes little difference performance wise. Therefore SBS2003's intrinsic SW RAID 1 is a great way to go.