

Re: SCSI vs S-ATA

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From: Jerry Dubuke (*jdubuke_at_not.gpdservices.com*)

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great descriptions – thank you...

Jerry

"root" <postmaster@buchanangc.com> wrote in message
news:%23qSXmQZeEHA.2532@TK2MSFTNGP09.phx.gbl...

>

> *"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.
- >
- >