

iSCSI, Hype or Reality?

Separating the Hype from Reality

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Preamble

- New Technologies Driving Investment don't Always win Big Immediately
- Not all New Storage Theories are as New as One Might Expect
- IT Managers and CIOs don't Dump Existing Technologies for Hype
- iSCSI will Slowly Begin to Win Converts

Overview

- iSCSI and its Big Stumbling Blocks
- Why iSCSI wins in Specific Applications
- Who Should buy Initial iSCSI Products?
- Applications of iSCSI
- Why will iSCSI Replace FC?
- Specifics, iSCSI vs. Everything Else

iSCSI Blocking Issues

- Products by Committee
 - Too many Cooks, not Enough Diners
- Performance - Missing TOE Chips
- Infrastructure Standard Pieces
 - Security Choices
 - Discovery and Naming Choices
- Initial Cost of Deploying iSCSI

Missing Pieces

- iSCSI Transport Specification Progress is Good, but Delayed
 - iSCSI Revision 15, Maybe Final Draft
- iSCSI Discovery and Naming underway, yet remains splintered
 - SLP and iSNS (Optional)
- iSCSI Security out of focus, initial vendors will assume closed iSCSI infrastructure

TOE Performance

- TCP Offload Engines Required, but Deliveries are Delayed
- Initial Infrastructure Performance Requires full Gigabit Speeds
- Initial iSCSI Success will not be Sensitive to Performance
- Distraction of Initial iSCSI Startups Folding

Winning iSCSI Infrastructure

- Deployments behind Secure Firewalls will not Distract Leading Adopters
- Departmental iSCSI Applications
- Bridged FC and SCSI Deployments
 - iSCSI used as Infrastructure
- Initial SAN Deployments

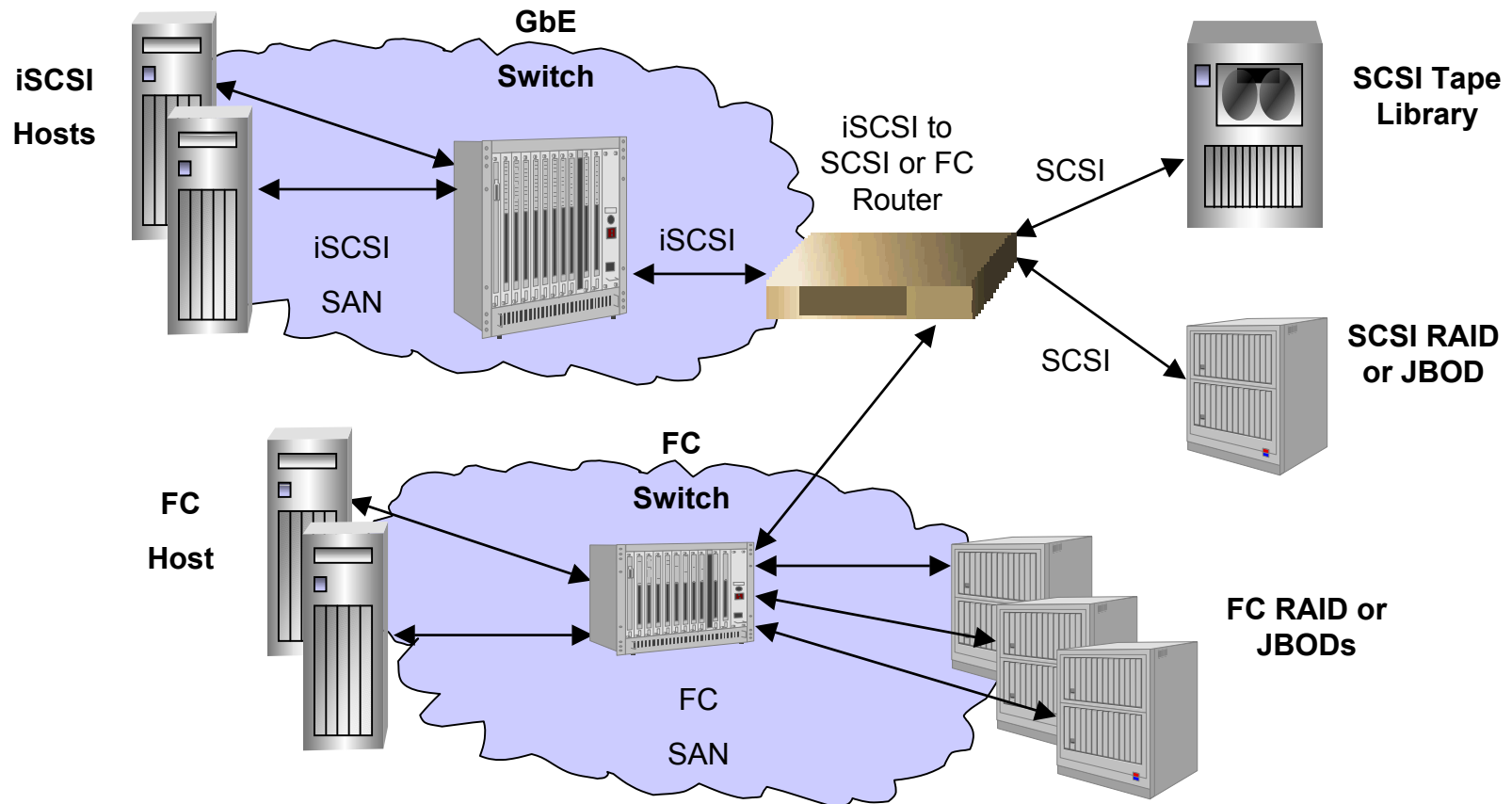
Bridging iSCSI = Success

- *“From our point of view, the iSCSI storm won’t arrive until affordable native or bridged connectivity to SCSI devices becomes available”* – InfoWorld, July ‘02
- Gateways will Interconnect FC SANS
- Routers and Bridges will Attach SCSI and FC LUNs to iSCSI Fabric

Initial iSCSI Purchases

- Solving the Technical Chicken and Egg
 - iSCSI HBAs (*not* NICs) will Drive Performance Connectivity
- GbE Infrastructure Expansion
 - 100BaseT still Dominates Infrastructure
- iSCSI to Native SCSI or FC Routers
 - Solves Lack of Native iSCSI Devices

An Initial iSCSI SAN Example



iSCSI Topology Applications

- Initial iSCSI Topologies will Exist within Their Own Ethernet Segments, Air-Gap Firewalls
 - Desire to Keep Storage Traffic from User Data Traffic is Seen as a Requirement
- iSCSI Devices will Initially be Low- to Mid-Range Implementations
 - Little to No Initial Enterprise Applications
- FC Orphaned Environments
 - Are these also iSCSI Orphaned?

First iSCSI Devices

- Cisco's 5428 Storage Gateway and Nishan's IP Storage Switch
 - Bridging FC SANs and Devices to IP Storage SAN Infrastructure
- IBM's i200 iSCSI Disk Storage System
 - Discontinued
- Crossroad's iSCSI to FC or SCSI Storage Router
 - Already in Prototype Samples, Product in Q1'03

iSCSI Replacing Fibre Channel

- IP Storage Port Count Shipments begin Rapid Deployment in 2004
- Decision of FC vs. iSCSI Originally made in non-SAN IT Environments
- No Clear Phase-Out timing by Industry Analysts
- FC Vendors won't let High Margin Infrastructure Pieces Die Easily

Replacing FC with iSCSI

- First Decision is Why?
 - FC Falling Behind in New Technologies?
 - Support Personnel Education
 - Current Vendors Converting to iSCSI?
- Portions of FC Infrastructure Useful to new IP SAN?

iSCSI Versus the World

- Just as with FC in the Early 1990's, iSCSI Faces Installed Prejudice
- IT Storage Professionals are Slow to Change, Slower than IT Overall
- Emulex, QLogic, Brocade, JNI, McData and EMC want *slow* iSCSI Adoption
- Slow IETF Process keeps iSCSI at “in progress” mode

Epilog

- Crossroads is Supporting iSCSI, but not Dependent on it
 - Neutral, as iSCSI isn't a required protocol, yet
- iSCSI will Help Drive Additional SAN Installations, as Costs Drop
- iSCSI SANs won't be Free, Maybe more Expensive to Start
- Adoption will Drive Production