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To: NCITS T10 Committee (SCSI)
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Subject: SCSI Socket/SSL Services (SSS) Review 97-07-16

1. SCSI Socket/SSL Services (SSS) Review 97-07-16

1.1 Remote Procedure Call (RPC) and Remote Procedure Set (RPS) models

1.1.1 Remote Procedure Call (RPC) model

Transport functionality, independent of API/RPS issues

Implementing orthogonality with an Initiator Only device (PC HBA)

Publishes standard SCSI Remote Procedure Sets (SRPS) supported

Publishes vendor unique SCSI Remote Procedure Sets (SRPS-VU) supported

RFC-1831: RPC: Remote Procedure Call Protocol Specification 2
<ftp://ds.internic.net/rfc/rfc1831.txt>

RFC-1832: XDR: External Data Representation Standard
<ftp://ds.internic.net/rfc/rfc1832.txt>

RFC-1833: Binding Protocols for ONC RPC Version 2
<ftp://ds.internic.net/rfc/rfc1833.txt>

1.1.2 Remote Procedure Set (RPS) model

API/RPS functionality, independent of transport issues

API (platform/language specific) transformed to/from XDR (External Data Representation)

Many different API/RPS standards use the same RPC standard

1.2 Splitting off a SCSI Remote Procedure Call (SRPC) standard?

1.2.1 Usable by other API / Remote Procedure Sets (API/RPS)

1.2.2 Simplifies multiple data link/protocol implementations

1.2.3 Natural project / team partitioning

1.2.4 Splitting not Spinning

1.3 Is SSS a Processor Device OR Communication Device OR Any Device/LUN ?

1.3.1 Processor Device

YES

Particularly with a separate SCSI Remote Procedure Call (SPRC) standard!

1.3.2 Communication Device

YES

1.3.3 Any Device/LUN

YES

1.4 Application Programming Interface (API) and Service Provider Interface (SPI) models

1.4.1 Application Programming Interface (API) model

Provides API functions used by applications
Useful for porting to new or small platforms

1.4.2 Service Provider Interface (SPI) model

Provides SPI functions used by platform/device drivers
Microsoft WinSock2 model
Other platform SPIs ?

1.5 Secure Sockets Layer (SSL) not supported in first standard

1.5.1 Get non-secure reliable first. KISS

1.5.2 Security (at SCSI level) not needed for many applications

Would delay any advantages of SSS until security complete
Applications can still implement their own security

1.5.3 Security would bog down fast track first implementation

Would delay any advantages of SSS until security complete

1.5.4 Security structures will be provided

Application provided bi-directional security fields transported transparently
Application provided security packet rejection
Very useful for debugging

1.6 BSD Socket issues

1.6.1 Standard file i/o access to sockets

1.7 WinSock2 issues

1.7.1 WinSock2 call duplication (Microsoft co-operation helpful)

1.7.2 Who to contact at Microsoft? Introduction?

1.8 Academic Involvement

1.8.1 Computer Science class implementations

Breaks availability chicken/egg loop at time of SSS standard adoption

Good match to 97-98 academic year

1.8.2 Multiple Platforms/OS implementations at standard adoption

Different schools, different platforms

1.8.3 Multiple Link/Protocol implementations at standard adoption

Possible, but not likely in 97-98

1.8.4 Common Access Method (CAM) access to SCSI ports

Platform/Device Independence

Thin wrapper over ASPI if needed

1.8.5 GNU General Public License (Linux model)

1.8.6 Extreme scrutiny by faculty & students

1.8.7 Who to contact?

1.9 SSS not associated with a particular SCSI version

Specifying SCSI-3 will scare people off!

2. New Stuff

Not SSS related

2.1 *Parallel Pin Alternate Use (PPAU)*

Adds flexibility to boards/modules

Reduces component type counts (raises volume per type)

2.1.1 Standardize alternate use of pins for Serial Protocols

Serial Storage Architecture (SSA)

Fibre Channel (FC-AL)

IEEE-1394 (FireWire)

IrDA (via GPP)

Serial Remote SPI (state-machine serial link to remote parallel drivers)

Serial pin usage uni-directional for remote driver devices/connectors

2.1.2 Printer Port SCSI Simulation option

Combo SCSI/LPT and SCSI/LPT/PPAU chips becomes viable products

Get SCSI into laptops via the printer port

Implies alternate LPT pin serial usage possible

2.1.3 Allows reuse of powerful SCSI engines

Add shift registers and clock insertion/separation

Adds flexibility to boards/modules

Reduces component type counts (raises volume per type)

Extend product line lifetimes

2.1.4 Define SCSI Diddling option

Use low end SCSI chips for general purpose I/O

Adds flexibility to boards/modules

Reduces component type counts (raises volume per type)

“SCSI Diddling”, Mouse Tracks, Portland Macintosh Users’ Group

2.1.5 Define high voltage option for SCSI Diddling

12/24 VDC nominal

Display and Electro-Mechanical interfacing

Adds flexibility to boards/modules

Reduces component type counts (raises volume per type)

3.

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SCSI Socket/SSL Services (SSS) Command Set

<http://www.europa.com/~diogenes/SSS/>

Diogenes SCSI Magic File Drive Systems Manifesto

<http://www.europa.com/~diogenes/DSMFDSM/>