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T10: T10 Technical Committee (SCSI)

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Subject: New Inquiry VPD Page – Management Network Address

Revision History

Revision 0 (May 7, 2003), first revision

Revision 1 (June 26, 2003), incorporate comments from T10, rework as actual SPC suggested wording

Revision 2 (July 7, 2003), incorporate comments from T10 and SNIA

Revision 3 (July 8, 2003), incorporate comments from T11

Revision 4 (September 5, 2003), Internet Protocol Number field is removed after examining similar IETF RFCs, NETWORK ADDRESS now null-terminated, network address descriptor four-byte-aligned, removed vendor-specific network service types, reworked to require IANA-registered schemes and to describe table x+3 as examples of formats rather than an exhaustive list of formats.

Revision 5 (November, 2003), Remove all example URLs and all text attempting to explain URL format per the September CAP working group.

Related Documents

SPC-3r15 – SCSI Primary Commands – 3, revision 15

Overview

Many storage devices are providing TCP/IP based services for management. These services may be embedded in the storage device, may be running on a separate management host bundled with the storage device, or may be running on a management host that provides a central point for management of multiple devices. Management software running elsewhere on the network needs to be able to locate these management services. This is a proposal for a VPD page that returns the address information about these management services.

The response format is loosely based on the T11 FC-GS Platform Management Address List, but provides a transport-independent interface and is available in FC configurations without switches.

Previous versions of this proposal described URL schemes (for example, “snmp://” that were not approved by IETF/IANA. The current proposal does not attempt to explain or give examples of a URL, but merely points to the RFC (thus implicitly requiring the use of IANA registered schemes). Projects have been planned/started to get the following storage-related schemes not currently registered with IANA approved and registered:

- SNMP started
- CIM planned
- SSH planned

Proposed SPC Change

Add the following entries to section 3.2 Acronyms:

URI Uniform Resource Identifier (see RFC 2396, RFC 3305, and E.x)
URL Uniform Resource Locator (see RFC 2396, RFC 3305, and E.x)
HTTP Hypertext Transfer Protocol (see RFC 2616)

Modify Table 266 – Vital product page codes

- *Insert Management Network Address as page code 85h.*
- *Changed the Reserved page code list to start at 86h.*
- *Adjust reference numbers accordingly.*

(changes shown with gray highlighting)

Table 269 — Vital product data page codes

Page code	VPD Page Name	Reference	Support Requirements
82h	ASCII Implemented Operating Definition	7.6.2	Optional
01h - 7Fh	ASCII Information	7.6.3	Optional
83h	Device Identification	7.6.4	Mandatory
85h	Management Network Addresses	7.6.5	Optional
81h	Obsolete	3.3.7	
84h	Software Interface Identification	7.6.6	Optional
00h	Supported VPD Pages	7.6.7	Mandatory
80h	Unit Serial Number	7.6.8	Optional
86h - AFh	Reserved		
B0h - BFh	(See specific device type)		
C0h - FFh	Vendor specific		

Modify clause numbers for 7.6.5 through 7.6.7. Adjust table numbers in remainder of

document.

Insert new clause 7.6.5 as follows:

7.6.5 Management Network Addresses VPD Page

This VPD page (see table x) provides a list of network addresses of management services associated with a SCSI target device, SCSI target port, or logical unit.

Table x - Management Network Addresses VPD Page

Bit / Byte	7	6	5	4	3	2	1	0
0	PERIPHERAL QUALIFIER			DEVICE TYPE				
1	PAGE CODE (85H)							
2	(MSB)	PAGE LENGTH (N-3)						
3								(LSB)
	Network services descriptor list							
4		Network service descriptor (first)						
	. . .							
		Network service descriptor (last)						
n								

The PERIPHERAL QUALIFIER field and the PERIPHERAL DEVICE TYPE field are defined in 6.4.2.

The PAGE LENGTH field specifies the length of the network services descriptor list.

Each network service descriptor contains information about one management service. The format of the Network Service Descriptor is shown in Table x+1.

Table x+1 - Network Service Descriptor

Bit / Byte	7	6	5	4	3	2	1	0
0	Reserved	ASSOCIATION		SERVICE TYPE				
1	Reserved							
2	(MSB)	NETWORK ADDRESS LENGTH (n-3)						
3								(LSB)
4		NETWORK ADDRESS						
n								

The ASSOCIATION field specifies the entity (i.e., SCSI target device, SCSI target port, or logical unit) with which the service is associated. See table 275.

The SERVICE TYPE field allows differentiation of multiple services with the same protocol running at different port numbers or paths. (e.g., A device may provide separate HTTP services for configuration and diagnostics. One of these services may use the standard HTTP port 80 (see E.y) and the other service may use a different port, e.g., 8080. The SERVICE TYPE field lets an application differentiate these two services.) SERVICE TYPE values are listed in Table x+2.

Table x+2 - Network services type

00h	Unspecified
01h	Storage Configuration Service
02h	Diagnostics
03h	Status
04h	Logging
05h	Code Download
06h - 1Fh	Reserved

The NETWORK ADDRESS LENGTH field contains the length in bytes of the NETWORK ADDRESS field. The network address length shall be a multiple of four.

The null-terminated, null-padded NETWORK ADDRESS field contains the Uniform Resource Locator (URL) form of a Uniform Resource Identifier (URI) as defined in RFC 2396.

Annex E - Bibliography

E.x URI Schemes: IANA maintains a list of schemes for URI and URL names at http://www.iana.org/assignments/uri-schemes.

E.y TCP / UDP port numbers: IANA maintains a list of port numbers for the TCP and UDP protocols at http://www.iana.org/assignments/port-numbers.