

Date: October 22, 2002

To: T10 Committee (SCSI)

From: George Penokie (IBM/Tivoli)

Subject: WWNs for WLUNs

## 1 Overview

As a result of all W-LUNs being required to support the INQUIRY command every W-LUN will have to have a name. The current definition of W-LUNs is silent on this issue and as a result implementations will not doubt go from having no name to having a different name for each W-LUN within a target device. In the interest of keeping things simple this proposal requests that all W-LUNs within a single target device be assigned the name of that target device.

This works because there can be no more than one of each kind of W-LUN within a given target device.

This has the side benefit of being able to find out the target device's name if the target device supports any W-LUN.

This proposal also adds in the ability for VPD page 83h to return target device name information.

## 2 SPC-3 Additions in section 9.1

Add the following text into section 9.1 of SPC-3:

All W-LUNs:

- a) shall not have logical unit names;
- b) shall identify themselves using the SCSI target device name(s) of the target device in which they are contained; and
- c) within a single target device shall have the same SCSI target device name as the target device in which they are contained.

A target device may have more than one SCSI target device name if the target supports multiple protocols.

The name of the W-LUN may be determined by issuing an INQUIRY command requesting the Device Identification VPD page.

All W-LUNs shall support the Inquiry commands Device Identification VPD page (83h) and, at a minimum, support the Identify Descriptor with the identifier type set to the NAA identifier (3h) or the EUI-64 identifier (2h). The contents of the IDENTIFIER field shall be equal to one of the SCSI target device's name. The returned Device Identification VPD page (83h) shall contain all the SCSI target device names and all W-LUNs within a SCSI target device shall return the same list of SCSI target device names.

Add the following to section 8.6.4.1

A target device may have more than one name if the target supports multiple protocols. If the returned Device Identification VPD page (83h) contains any SCSI target device names it shall contain all the SCSI target device names.

The following needs to be added to the association table (Table 269 SPC-3 rev 9):

Add-in a new association type (2h) described as: The IDENTIFIER field is associated with the SCSI target device that contains the addressed logical unit.

Change the type 0h description from: The IDENTIFIER field is associated with the addressed physical or logical device. To: The IDENTIFIER field is associated with the addressed logical unit.

The paragraph after table 270 (SPC-3 rev 9) needs to be changed from:

At least one identification descriptor shall contain 1h, 2h, or 3h in the IDENTIFIER TYPE field and 0h in the ASSOCIATION field. At least one identification descriptor should contain 2h or 3h in the IDENTIFIER TYPE field and 0h in the ASSOCIATION field.

to:

At least one identification descriptor shall contain 1h, 2h, or 3h in the IDENTIFIER TYPE field and a 0h or 2h in the ASSOCIATION field. At least one identification descriptor should contain 2h or 3h in the IDENTIFIER TYPE field and a 0h or 2h in the ASSOCIATION field.

In table 267 (SPC-3 rev 9) add in the following field and bit and the descriptions of the field and bit:

In Byte 0 bits 7-4 place a PROTOCOL TYPE field.

If the ASSOCIATION field contains a value of 1h or 2h then the PROTOCOL IDENTIFIER field (see 8.5.1) indicates the SCSI transport protocol to which the name in the IDENTIFY field applies. The device server shall set the PROTOCOL IDENTIFIER field to one of the values shown in table 235 to indicate the SCSI transport protocol to which the name is assigned. If the ASSOCIATION field contains a value other than 1h or 2h then the ASSOCIATION field shall be ignored.

In Byte 1 bit 7 place a PTV bit.

A protocol type valid (PTV) bit of zero indicates the PROTOCOL IDENTIFIER field should be ignored. If the ASSOCIATION field contains a value of 1h or 2h then a PTV bit of one indicates the PROTOCOL IDENTIFIER field contains a valid protocol identifier. If the ASSOCIATION field contains a value other than 1h or 2h then the PTV bit shall be ignored.

### **3 SAM-3 Additions (new section 4.7.8 titled 'Logical unit name')**

A logical unit name is an optional name (see 3.1.68) for a logical unit that is world wide unique within the SCSI transport protocol of each SCSI domain in which the logical unit may be accessed. A logical unit name shall never change and may be used to persistently identify a logical unit.

A SCSI transport protocol standard may require that a logical unit include a logical unit name if the logical unit is accessed through a SCSI domain of that SCSI transport protocol.