To: T10 Technical Committee
From: Rob Elliott, Compaq Computer Corporation (Robert.Elliott@compaq.com)
Date: 23 January 2001
Subject: SPC-3 Access Controls LUN conflicts due to transport IDs

Revision History
Revision 0: first revision
Revision 1: dropped the combined node+port ID option (option 2) per January CAP WG.
Switched option 1 from node ID only to port ID only per January T10 plenary (Bob Snively's
friendly amendment).

Related Documents
T10/99-245r9 Access Controls (by Jim Hafner)
T10/00-261r0 Discussion of editorial changes to Access Controls (by Jim Hafner)
T10/00-287r1 TransportIDs for Access Controls (by Jim Hafner)
T10/00-381r0 Three minor modifications to Access Controls (by Jim Hafner)

Overview
The Access Controls model covers the cases where LUN maps granted via access ID and
transport ID differ. In a large list, certain entries have priority. In other cases, the access ID is
refused. What happens if the LUN maps are indeterminate due to conflicting transport IDs?

The Fibre Channel transport ID is specified with either:
a) both port ID and node ID,
b) port ID only, or
c) node ID only.

With this, a LUN map can be specified for the port ID that differs from that for the node ID,
creating a conflict. Since one of the reasons to use transport IDs rather than access IDs is to
support software that doesn't understand ACL CONFLICT sense codes, it is preferable to avoid
conflicts.

(excerpt from 00-287r1):

Table xx. TransportID for SCSI over Fibre Channel (from T10/00-287r1)

Byte Bit	7	6	5	4	3	2	2	0
0	TYPE (01H)							
1	RESERVED						PN_VAL	NN_VAL
2	RESERVED							
…	RESERVED							
7	RESERVED							
8	(MSB)							
…	WWPORTNAME							
15								(LSB)
16	(MSB)							
…	WWNODENAME							
24								(LSB)

A PN_VAL bit of one indicates that the WWPORTNAME field is valid. Similarly, the NN_VAL bit of
one indicate that the WWNODENAME field is valid. A value of zero for any of these bits indicate
that the corresponding field is invalid and shall be ignored. At least one of these validity bits must
be set to one. If not, then the TransportID is invalid.

If both WWN fields are valid but are inconsistent, that is, they do not correspond to a device in the fabric, then the TransportID is invalid.

Suggested Changes

Remove the WWPortName from the TransportID, making it solely based on WWPortName. This is the same identifier used to track initiators for persistent reservations.

Since SPC-3 revision 0 has not been released, the fields can probably be reclaimed as reserved rather than marked as obsolete.

Table xx. TransportID for SCSI over Fibre Channel (from T10/00-287r1)

Byte Bit	7	6	5	4	3	2	2	0
0	TYPE (01H)							
1	RESERVED						~~PN_VAL~~ *RSVD*	~~NN_VAL~~ *RSVD*
2	RESERVED							
…	RESERVED							
7	RESERVED							
8	(MSB)							
…	WWPORTNAME							
15								(LSB)
16	(MSB)							
…	~~WWNODENAME~~							
24								(LSB)

~~A PN_VAL bit of one indicates that the WWPORTNAME field is valid. Similarly, the NN_VAL bit of one indicate that the WWNODENAME field is valid. A value of zero for any of these bits indicate that the corresponding field is invalid and shall be ignored. At least one of these validity bits must be set to one. If not, then the TransportID is invalid.~~

~~If both WWN fields are valid but are inconsistent, that is, they do not correspond to a device in the fabric, then the TransportID is invalid.~~
The WWPORTNAME field is the Worldwide_Name of the Fibre Channel port.