

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

Revision History

Revision 0: first revision

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

Option 1 (preferred):

Remove the WWPortName from the TransportID, making it solely based on WWNodeName. It is unlikely that systems will want to grant different access rights to different ports on the same node. Removing the port name reduces storage in the target.

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 RESERVED							
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 WWNODENAME field is the Worldwide_Name of the Fibre Channel node.~~

Option 2:

Require both WWPortName and WWNodeName be supplied. This requires the target manage controls on a port basis, but always qualifies the port with a node name so conflicts do not occur.

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

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...	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. The WWNODENAME field is the Worldwide_Name of the Fibre Channel node.