To:      T10 Technical Committee
From:   Rob Elliott, HP (elliott@hp.com)
Date:    14 September 2003
Subject: 03-316r1 SPC-3 Mode Page Policy VPD page

## Revision history
Revision 0 (6 September 2003) First revision
Revision 1 (14 September 2003) Incorporated comments from September CAP WG. Changed from a mode page to a VPD page and return an "if not specified" setting as page code 3Fh/subpage code FFh.

## Related documents
spc3r14 - SCSI Primary Commands revision 14

## Overview
There is no way in SCSI to tell the policy being used for a mode page. The policies are described in the MODE SELECT (6) command description in section 6.7.

**Table 1 — Mode page policies (Table 90 in spc3r14)**

| Mode page policy | Logical unit maintains |
|---|---|
| Shared | One copy of the mode page |
| Per initiator port | Separate copies of the mode page for each initiator port |
| Per I_T nexus | Separate copies of the mode page for each I_T nexus |

Assuming the worst case, each mode page could have a different policy.

A new VPD page is proposed which reports, for each mode page, which policy is in effect.

## Suggested changes

### 6.7 MODE SELECT (6) command

...

Logical units shall maintain current and saved values of each mode page based on any of the policies listed in table 90. The policy used for each mode page may be reported in the Mode Page Policy VPD page (see 7.6.nn).

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### 7.6.nn Mode Page Policy VPD page [new section]

[**Editor's note:** allocate a new VPD page code for this page. 86h is suggested since 03-183 is claiming 85h. Add to table 269 - VPD page codes.]

The Mode Page Policy VPD page (see table 2) indicates which mode page policy (see 6.7) is in effect for each mode page supported by the logical unit.

**Table 2 — Mode Page Policy VPD page**

| Bit<br>Byte | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|---|---|---|---|---|---|---|---|---|
| 0 | PERIPHERAL QUALIFIER | | | DEVICE TYPE | | | | |
| 1 | PAGE CODE (86h) | | | | | | | |
| 2 | PAGE LENGTH (n - 3) | | | | | | | |
| 3 | | | | | | | | |
| 4 | Mode page policy descriptors | | | | | | | |
| n | | | | | | | | |

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

The PAGE LENGTH field specifies the length of the mode page policy descriptor list.

If this VPD page is supported, the device server shall return mode page policy descriptors describing every mode page and subpage supported by the logical unit.

Table 3 describes the mode page policy descriptor.

**Table 3 — Mode page policy descriptor**

| Bit<br>Byte | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|---|---|---|---|---|---|---|---|---|
| 0 | MODE PAGE POLICY | | POLICY PAGE CODE | | | | | |
| 1 | POLICY SUBPAGE CODE | | | | | | | |

The MODE PAGE POLICY field defines the policy for the mode page or subpage indicated by the corresponding POLICY PAGE CODE field and POLICY SUBPAGE CODE field and is defined in table 4. See 6.7 and table 90 for descriptions of the mode page policies.

**Table 4 — Mode page policies**

| Value | Description |
|---|---|
| 00b | Shared |
| 01b | Per initiator port |
| 10b | Per I_T nexus |
| 11b | Reserved |

The mode page policy applies to one or more mode pages and/or subpages based on the values of the POLICY PAGE CODE field and the POLICY SUBPAGE CODE field as described in table 5. Mode page descriptors of level 1

have priority over mode page descriptors of level 2, which have priority over mode page descriptors of level 3. The device server shall not return any conflicting mode page policy descriptors (i.e., two or more descriptors of the same level covering the same mode page or subpage).

**Table 5 — Mode page policy descriptors describing multiple mode pages**

| POLICY PAGE CODE **field value** | POLICY SUBPAGE CODE **field value** | Level | Description |
|---|---|---|---|
| 00h - 3Eh | 00h - FEh | 1 (highest priority) | Mode page policy applies to the specified mode page or subpage. |
| | FFh | 2 | Mode page policy applies to all subpages of the mode page specified by the POLICY PAGE CODE field unless overridden by a level 1 mode page policy descriptor. |
| 3Fh | 00h - FEh | 2 | Mode page policy applies to the subpage specified by by the POLICY SUBPAGE CODE field of all mode pages unless overridden by a level 1 mode page policy descriptor. |
| | FFh | 3 (lowest priority) | Mode page policy applies to all mode pages and subpages unless overridden by a level 1 or level 2 mode page policy descriptor. |