

To: X3T10 Committee (SCSI)

From: George Penokie (IBM)/Giles Frazier (IBM)

Subject: Commands required by SCSI-2 and optional in SCSI-3

#### THE PROBLEM:

- Up to now, simplified device drivers could use only CCS commands
- If the ANSI-approved version in Inquiry data was SCSI-2, CCS support was guaranteed.
  - No recovery code for unsupported commands was required.
- If the ANSI-approved version is SCSI-3, CCS support is NOT guaranteed:
  - Until now, CCS support WAS guaranteed by SCSI-3, and drivers exist which assume CCS support if a SCSI-3 ANSI version is reported.
  - Now, uncertainty exists for all mandatory SCSI-2 commands which are optional in SCSI-3.
  - Six-byte Read, Reserve, & Release are examples.
- Device drivers must rely on trial and error to determine CCS support.
  - Trial and error recovery code adds complexity.

#### SOLUTION 1

- Require implementation of Command Support Inquiry data ONLY for those commands which were mandatory in SCSI-2 and are NOT implemented.
  - Drives need not implement command support data if the optional command is implemented
  - If the optional command is NOT implemented, command support data is simple: (all zeroes).
- A device driver can determine CCS command support without trial and error:
  - If ANSI version is SCSI-2, then driver uses CCS
  - If version is SCSI-3, then driver queries command support for newly made optional commands (e.g. Read, Reserve, Release)
  - CCS can be used either if command support data is unavailable (ILLEGAL REQUEST) or if it is available and the command is supported.

#### SOLUTION 2

- Add a bit in either standard Inquiry Data or the command support Inquiry data specifying support for SCSI-2 mandatory commands.

#### ADVANTAGES

- Simplifies device drivers
  - Eliminates complex trial and error code to determine CCS support.
- Does not require implementation of command support Inquiry data if mandatory SCSI-2 commands are supported
  - If a command is not supported, Inquiry data to indicate this is simple. (i.e. all zeroes.)