

To: Membership of X3T10  
 From: Ralph O. Weber - Digital Equipment Corporation  
 Date: September 5, 1994  
 Subject: Proposal for TEST SUPPORT command

This document proposes a mechanism by which an application client can determine what SCSI commands are supported by a device server and what capabilities within those commands can be used. This proposal takes the form of a new command, TEST SUPPORT. The TEST SUPPORT command shall be defined in the SCSI-3 Primary Commands standard. Support for the TEST SUPPORT command shall be mandatory for all device types.

This proposal is a response to the decision to eliminate the requirement that device servers test all reserved fields for zeros. Said requirement is present in the SCSI-1 and SCSI-2 standards, but has been dropped from the SCSI-3 standard, via a X3T10 approved change to the SCSI-3 Architecture Model.

This proposal has the following advantages:

- + No need to validate received reserved fields on main-line device server code paths,
- + No mode page bits to manage device server checking/non-checking of reserved fields, and
- + No complex version-to-feature conversion tables (which eliminates a significant source of errors in both the application client and the device server)

Generally speaking, this proposal is modelled on the changeable parameters mode pages.

The following text is proposed for inclusion in the SPC.

#### 7.x TEST SUPPORT command

The TEST SUPPORT command (see table t1) is used to determine the extent of support for a given SCSI operation code.

Table t1 - TEST SUPPORT command

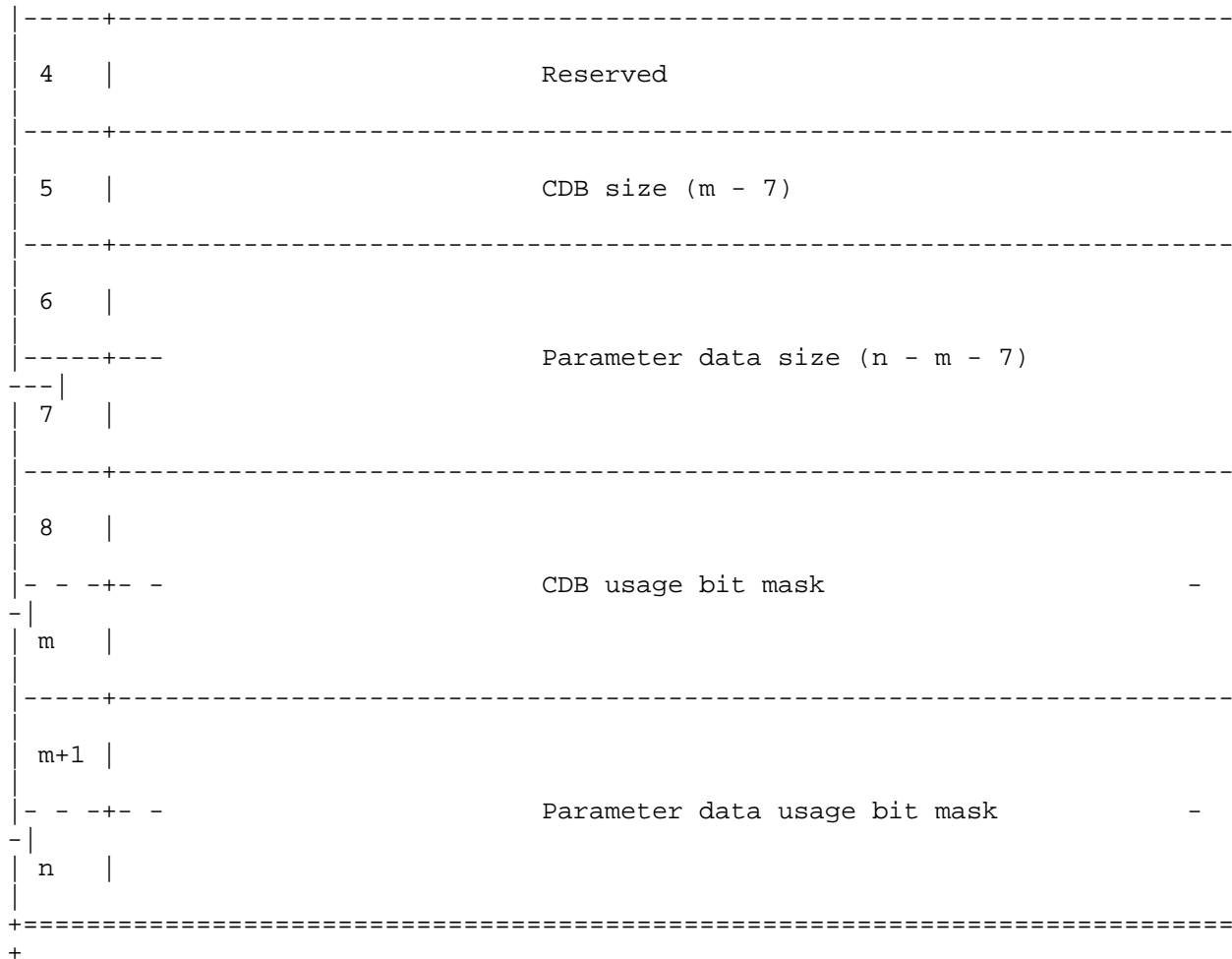
Bit	7	6	5	4	3	2	1	0
0	Operation code (4Fh)							
1	Reserved							
2	Test operation code							

3		Reserved
4		Reserved
5		Reserved
6		Reserved
7	(MSB)	Parameter list length
8		
9		Control

The Test operation code field shall contain the operation code for the SCSI command for which support is being tested. The device server shall return parameter data as shown in table t2 describing its support for the operation code contained in the Test operation code field.

Table t2 - TEST SUPPORT data

format		Table t2 - TEST SUPPORT data							
Bit	7	6	5	4	3	2	1	0	
Byte									
0	Reserved			PdSD	Reserved		VSop	StdOp	
1	Reserved								
2	ISO version		ECMA version			ANSI-approved version			
3	Reserved								



If the operation code being tested is supported as defined in a SCSI standard, the StdOp bit shall be one, the VSop bit shall be zero, and the ISO version, ECMA version, and ANSI-approved version fields shall contain standard INQUIRY data naming the standard that defines the SCSI command. (Information about standard INQUIRY data can be found in clause ??.?.) If the operation code being tested is supported in a vendor-specific way, the StdOp bit shall be zero, the VSop bit shall be one, and the contents of the ISO version, ECMA version, and ANSI-approved version fields shall vendor-specific. If the operation code being tested is not supported, both the StdOP and VSop bits shall be zero.

The PdSD bit shall be one when the parameter data used by the command being tested provides a self-defining mechanism by which the application client can determine the parameter data format. The LOG SELECT and MODE SELECT commands are examples of commands whose parameter data provides a self-defining mechanism. When the PdSD bit is one, the Parameter data size field shall contain a zero. When the parameter data definition does not include a self-defining mechanism, the PdSD bit shall be zero.

The CDB size field shall contain the number of bytes in the CDB for the operation code being tested, and the size of the CDB bit mask field. If the PdSD bit is zero and the operation code being tested requires the application client to send command parameter data to the device server, the Parameter data size field shall contain the number of bytes in the Parameter data usage bit mask field. Otherwise, the

Parameter data size field shall contain zero.

The CDB usage bit mask field shall contain a usage map for all the bits in the CDB for the operation code being tested. The bits in the usage map shall have a one-for-one correspondence to an actual CDB for the operation code being tested. If the device server evaluates a bit as all or part of a field in the CDB for the operation code being tested, the usage map shall contain a one in the corresponding bit position. If the device server ignores a bit in the CDB for the operation code being tested, the usage map shall contain a zero in the corresponding bit position.

Thus, the CDB usage bit map for the TEST SUPPORT command would be: FFh, 0, FFh, 0, 0, 0, 0, FFh, FFh, 07h. This example assumes that the SAM defines uses for only the low-order three bits of the Control byte.

When the Parameter data size field is not zero, the Parameter data usage bit mask field shall contain a usage map for all the bits in the parameter data for the operation code being tested. When the parameter data for the operation code being tested contains repeating fields or sections, the Parameter data usage bit mask field shall contain exactly one instance of the repeatable data.

The bits in the usage map shall have a one-for-one correspondence to the actual parameter data for the operation code being tested. If the device server evaluates a bit as all or part of a field in the parameter data for the operation code being tested, the usage map shall contain a one in the corresponding bit position. If the device server ignores a bit in the parameter data for the operation code being tested, the usage map shall contain a zero in the corresponding bit position.