

Date: Mar. 12, 1997
To: T10 Committee
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Subj: Add Mode Page for fibre channel features

With Fibre Channel - Arbitrated Loop (FC-AL) interface, there are characteristics implementors desire to customize. This proposal includes control bits for interface characteristics of Fibre Channel Private Loop that implementors desire to control.

These controls are for characteristics that must be known when the device is powered on. They cannot be set during login or a later command. This behavior can be met by use of a Mode page with saved values.

As of Mar. 11 all of the known places in FC-AL-2 that require loop initialization have been softened to allow the options controlled in this mode page. There have been no objections raised at the Feb. T11 meeting to allow control of these functions.

Rev. 1: Proposal added control bits for new features to Disconnect/reconnect page. This approach was rejected at Jan. 7 SCSI Working Group meeting in favor of a new "protocol specific" mode page.

Rev. 2: Includes definition of protocol specific mode page for SPC and complete definition of Fibre Channel page for FCP-2.

Rev. 3: The Mar. 11 working group saw problems with trying to define a page code that is defined differently for different protocols. Therefore the page is changed to an FCP specific page with no attempt to allow use for other interfaces. The first byte of the page is left reserved, however, in case the committee wants to change back to a "sub page" structure.

Addition to SPC-2:

Table 97 (Mode page codes) and other general mode page references need to include page code 19h as "Fibre channel specific mode page - see FCP-2" .

Addition to SBC, SSC, and possibly other device type specific command set standards:

Each of these command set documents has a table for mode page codes. This table must be updated to describe page code 19h as "Fibre channel control page" and refer to "FCP-2" to find the description. Also, page code 19h must be removed from the range of page codes that are reserved.

Addition to FCP-2:

The following description must be added (new clause?) in FCP-2:

The fibre channel control page (see table xxx) is used to control options that are relevant to fibre channel protocol. It is intended for control of features unique to fibre channel protocol that are not suitable for control by login or other techniques defined for fibre channel.

Table xxx - Fibre channel control page

Bit Byte	7	6	5	4	3	2	1	0
0	PS	Resvd	Page code (19h)					
1	Page length (06h)							
2	Reserved							
3	Resvd	DDIS	DLM	DSA	ALWLI	DTIPE	DTOLI	
4	Reserved							
5	Reserved							
6	Reserved							
7	Reserved							

When Disable Target Originated Loop Initialization (DTOLI) bit is one, the target does not generate the initializing LIP following insertion into the loop. The target will respond to an initializing LIP when it is received. The target shall generate the Loop Failure LIP if it detects loop failure at its input and the Initializing LIP when the loop failure is corrected. When DTOLI bit is zero, the Target generates the Initializing LIP after it enables a port into a loop.

When Disable Target Initiated Port Enable (DTIPE) bit is one, the target waits for an initiator to send the Loop Port Enable primitive before inserting itself into the loop. The target uses the hard address available in the SCA connector or device address jumpers to determine if primitives are addressed to it. When DTIPE bit is zero, the target enables its port into the loop without waiting for a Loop Port Enable primitive.

When Allow Login Without Loop Initialization (ALWLI) bit is one, the target shall use the hard address available in the SCA connector or device address jumpers and accept logins without verifying the address with loop initialization. When ALWLI bit is zero, the target is required to verify its address through the loop initialization process before a login is accepted.

When Disable Soft Address (DSA) bit is one, the target does not select a soft address if there is a conflict for the hard address selection during loop initialization. In this case the target enters the non-participating state. If the target detects loop initialization while in the non-participating state, the target will again attempt to get its hard address. When DSA bit is zero, the target attempts to obtain a soft address during the loop initialization process.

When Disable Loop Master (DLM) bit is one, the target does not become loop master. The target only repeats LISM frames it receives. This allows the initiator to be loop master during loop initialization. When DLM bit is zero, the Target may become loop master during in the loop initialization process.

When Disable Discovery (DDIS) bit is one, the target does not require receipt of Address or Port Discovery following loop initialization. The target resumes processing of tasks on completion of loop initialization. When DDIS bit is zero, the target must wait to receive an Address or Port Discovery before it resumes processing tasks for that initiator.