Clearing Effects of SCSI Initiators on mode page values

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Background

- **For FC SCSI devices PLDA addressed the clearing effects of initiator actions**

  - Actions include the SCSI defined (power cycle, Target Reset, Clear Task Set, Abort Task Set) and FC defined (Reset LIP, Login, ABTS) functions.

  - PLDA did not cover the implementation of shared mode pages.

  - The shared mode pages implementation is widely implemented in hard disk.

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Background

- SAM & SAM-2 specify the clearing effects of common SCSI defined function, e.g.,power cycle, Target Reset.

  - These actions affect all initiators.

- FC introduces a protocol unique concept of logins. (N_Port, F_Port, and process)

  - The scope of login is the initiator/target pair.

T10-00-342r0.pdf

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Background

- FCP and FCP-2 equate the status for the initiator/target pair following a successful process login to a post power-on state.

    - The target sends a Unit Attention (2900) on the first SCSI command from the new initiator

    - A process login by one initiator does not effect initiators already logged-in

Issue

- **FCP-2 absorbs the PLDA clearing effects of initiator actions and enhances the definition to include shared mode pages. For targets supporting shared mode pages:**

    - The current mode page values are reset to the saved or default values for actions that affect all initiators, power on reset (LIP Reset), Target Reset - Consistent with mode page per initiator.

    - The current values are maintained for all initiators as long as one initiator remains logged-in - New definition.

    - In the event no initiators are logged-in at any instant in time, the current mode page values are reset to the saved or default values. - New definition.

Problem

- Initiators do not know the status of other initiator/target logins.

- An initiator following process login always receives a UA (2900) even if the current mode pages are not changed.

- In most cases, timing of relogin, i.e., after loop initialization, preserves the current mode page values.

- Timing variations for relogin or configuration changes may cause the current values to be reset without any additional status to the initiators.

Suggested solution

- Change FCP-2 table 5- Management of mode pages during PRLI and PRLO

    - For the condition of PRLI, shared, none logged in

    from

    "use saved or default mode pages"

    to

    "unchanged, most current values if no reset "

Justification

- Provides a compatible behavior to parallel SCSI.

- Initiators that run with current mode page values that are not saved already manage the mode page values (read and test).

- Provides a consistent environment for an operating configuration across relogin.

- There is a large installed base using this behavior.

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Proposed Table 5

Table 5 - Management of mode pages during PRLI and PRLO

Function	mode page shared/unshared	other initiators	Proper management of mode pages
PRLI	shared	already logged in	use current shared mode pages
		none logged in	~~use saved or default mode pages~~
	unshared		use saved or default mode pages
PRLO	shared	some still logged in	continue using shared mode pages
		last one logged out	~~discard current mode pages~~
	unshared		~~discard current mode pages~~

unchanged, most current values if no reset

unspecifed

unspecifed