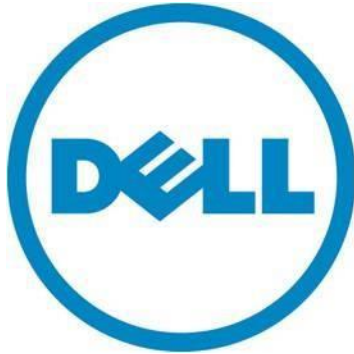


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Date: Sept12, 2018

Subject: Statement of Volatility—Dell™ PowerVault ME4084, ME4012, ME4024, ME484, ME412, ME424

Dear Reader:

The Dell™ PowerVault ME4084, ME4012, ME4024, ME484, ME412, ME424 enclosures contain non-volatile (NV) components. Non-volatile components continue to retain their data even after the power has been removed from the component

All definitions are per controller, 1 or 2 controllers can be used in each chassis.

The following NV components are present in the Dell™ PowerVault ME4084, ME4012, ME4024, ME484, ME412, ME424:

Mid-Plane FRU EEPROMs (2)	
Size	64 Kb (each)
Type [e.g. Flash PROM, EEPROM]	EEPROM
Can user programs or operating system write data to it during normal operation?	No
Purpose	Service Tag and FRU Data Storage
How is data input to this memory?	When necessary, portions of the FRU EEPROM data may be updated by the expander FW. Service tag information may be updated after mid-plane replacements.
How is this memory write protected?	Not Write-Protected

RBOD Controllers and code flash - (ME4084 , ME4024 , ME 4012 only)	
Size	16MB+16MB and 16MB+64MB Storage Controller and Management Controller (Boot+main)
Type [e.g. Flash PROM, EEPROM]	EEPROM
Can user programs or operating system write data to it during normal operation?	No
Purpose	RAID functionality
How is data input to this memory?	When necessary, portions of the FRU EEPROM data may be updated by serial connection .
How is this memory write protected?	Not Write-Protected

Compact Flash (ME4084 , ME4024 , ME 4012 only)	
Size	8G
Type [e.g. Flash PROM, EEPROM]	Flash
Can user programs or operating system write data to it during normal operation?	No
Purpose	Data Storage, cached data.
How is data input to this memory?	The Compact Flash is contained within the controller unit and is only used when a power failure occurs. When a power failure occurs, the cache memory is written into the Compact Flash. The Compact Flash holds this information until the power is restored and the system is rebooted, this ensures no data is lost.
How is this memory write protected?	Not Write-Protected

Power Supply FRU EEPROM	
Size	2 Kb
Type [e.g. Flash PROM, EEPROM]	EEPROM
Can user programs or operating system write data to it during normal operation?	No
Purpose	FRU Data Storage
How is data input to this memory?	When necessary, portions of the FRU EEPROM may be updated by the expander FW.
How is this memory write protected?	Not Write-Protected

FPGA embedded Functional Unit processor (ME4084 , ME4024 , ME 4012 only)	
Size	16 Mbit
Type [e.g. Flash PROM, EEPROM]	Flash
Can user programs or operating system write data to it during normal operation?	No
Purpose	program for RAID logical operations
How is data input to this memory?	When necessary, the RAID may update the functional unit program.
How is this memory write protected?	Not Write-Protected

RAID Configuration settings / persisted data (ME4084, ME4024 , ME 4012 only)	
Size	128 Kbit
Type [e.g. Flash PROM, EEPROM]	nvSRAM
Can user programs or operating system write data to it during normal operation?	No
Purpose	Controller configuration data
How is data input to this memory?	When necessary, the RAID may update the stored configurational data
How is this memory write protected?	Not Write-Protected

IOM (EMM) / Expander FRU EEPROM	
Size	64 Kb
Type [e.g. Flash PROM, EEPROM]	EEPROM
Can user programs or operating system write data to it during normal operation?	No
Purpose	FRU Data Storage
How is data input to this memory?	When necessary, portions of the FRU EEPROM data may be updated by the expander FW.
How is this memory write protected?	Not Write-Protected

SAS Expander RAM	
Size	128 Mb
Type [e.g. Flash PROM, EEPROM]	RAM
Can user programs or operating system write data to it during normal operation?	No
Purpose	Contains scratch data and operating parameters for SAS expander.
How is data input to this memory?	The contents of the RAM are managed by the expander FW.
How is this memory write protected?	Not Write-Protected

SAS Expander Flash	
Size	16 Mb
Type [e.g. Flash PROM, EEPROM]	Flash
Can user programs or operating system write data to it during normal operation?	No
Purpose	Contains SAS expander FW.
How is data input to this memory?	A Dell Update Package (DUP) may be run to update the expander FW contained in the flash.
How is this memory write protected?	Not Write-Protected

Please direct any questions to your Dell Marketing contact.

Sincerely,

Dell Enterprise Storage Marketing