DELL Technologies

Statement of Volatility – Dell PowerEdge T360

Dell PowerEdge T360 contains both volatile and non-volatile (NV) components. Volatile components lose their data immediately upon removal of power from the component. Non-volatile components continue to retain their data even after the power has been removed from the component. Components chosen as user-definable configuration options (those not soldered to the motherboard) are not included in the Statement of Volatility. Configuration option information (pertinent to options such as microprocessors, remote access controllers, and storage controllers) is available by component separately. The following NV components are present in the PowerEdge T360 server.

Item	Non-Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
Planar										
PCH Internal CMOS RAM	Non-Volatile	1	U_PCH1	256 Bytes	Battery-backed CMOS RAM	No	Real-time clock and BIOS configuration settings	BIOS	N/A – BIOS only control	1) Set NVRAM_CLR jumper to clear BIOS configuration settings at boot and reboot system. 2) Power off the system, remove coin cell battery for 30 seconds, replace battery and then power back on. 3) Restore default configuration in F2 system setup menu.
BIOS SPI Flash	Non-Volatile	1	U6	32 MB	SPI Flash	No	Boot code, system configuration information, UEFI	SPI interface via PCH	Software write protected	Not possible with any utilities or applications and system is not functional if corrupted or removed.

Item	Non-Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
							environment, ME			
BIOS Data SPI Flash	Non-Volatile	1	U3	4 MB	SPI Flash	No	4MB Data SPI ROM storage BIOS setting.	SPI interface via PCH	Software write protected	Not possible with any utilities or applications and the system is not functional if BIOS SPI is corrupted or removed.
iDRAC SPI Flash	Non-Volatile	1	U7	4 MB	SPI Flash	No	iDRAC Uboot (boot loader), server management persistent store (i.e. iDRAC boot variables), and virtual planar FRU	SPI interface via iDRAC	Embedded iDRAC subsystem firmware actively controls sub area based write protection as needed.	The user cannot clear memory completely. However, user data, lifecycle log and archive, SEL, and firmware image repository can be cleared using Delete Configuration and Retire System, which can be accessed through the Lifecycle Controller interface.
iDRAC EMMC	Non-Volatile	1	U21	8 GB	eMMC NAND Flash	No	Operational iDRAC FW, Lifecycle Controller (LC) USC partition, LC service diags, LC	NAND Flash interface via iDRAC	Embedded FW write protected	The user cannot clear memory completely. However, user data, lifecycle log and archive, SEL, and firmware image repository can be cleared

Item	Non-Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
							OS drivers, USC firmware, IDRAC MAC Address, and EPPID, rac log, System Event Log, lifecycle log cache			using Delete Configuration and Retire System, which can be accessed through the Lifecycle Controller interface.
iDRAC DDR4	Volatile	1	U_IDRAC9_DRAM1	8Gb	RAM	Yes	iDRAC RAM	iDRAC firmware	Not write-protected	Remove AC
System CPLD RAM	Volatile	1	U5802	432 kb	RAM	No	Not utilized	Not utilized	Not accessible	Not accessible
System CPLD Flash	Non-Volatile	1	U5802	448 kb	FLASH	No	Power on System Firmware	Firmware update	BIOS Security Protocols	Not user clearable
System Memory: UDIMM	Volatile	Up to 4	DIMM1A DIMM2A DIMM1B DIMM2B	Up to 32GB per DIMM	RAM	Yes	System OS RAM	System OS	OS Control	Reboot or power down system
CPU PVCC_CORE Regulators	Non-Volatile	2	PAAU1	64KB	OTP (one time programmable)	No	Operational parameters	Once values are loaded into register space a cmd writes to nvm.	There are passwords for different sections of the register space	The user cannot clear memory.

Item	Non-Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
USB Hub (PS5507)										
SPI flash	Non-Volatile	1	U5811	Flash: 4Mbit	Flash PROM	No	Firmware	SPI interface via USB Hub	Program write protect bit	Not user clearable

Item	Non-Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?

Item	Non-Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
H755 PERC Adapter										
SDRAM	Volatile	9	U1077~U1085	8GB	SDRAM	No	Cache for HDD I/O	ROC writes to this memory - using it as cache for data IO to HDDs	no write protected. Not visible to Host Processor	Cache can be cleared by powering off the card
NV Flash	Non-volatile	1	U1100	512Gb	SPI Flash	No	Card firmware	Pre-programmed before assembly. Can be updated using Dell/LSI tools	no write protected. Not visible to Host Processor	User cannot clear the memory.
BMU	Non-Volatile	1	U1126	180KB	Integrated Flash + EEPROM	No	Battery Management Control	ROC may program data during FW and during boot during battery detection	Not write protected Not visible to host CPU	User cannot clear this memory
SPI Flash	Non-Volatile	1	U1086	128Mb	SPI Flash	No	Holds cache data during power loss	FPGA backs up DDR data to this device in case of a power failure	no write protected. Not visible to Host Processor	Flash can be cleared by powering up the card and allowing the controller to flush the contents to VDs. If the VDs are no longer available, cache can be

Item	Non-Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
										cleared by going into controller BIOS and selecting Discard Preserved Cache.
NVSRAM	Non-volatile	1	U1087	128KB	NVSRAM	No	Configuration data	ROC writes configuration data to NVSRAM	no write protected. Not visible to Host Processor	User cannot clear the memory.
FRU	Non-volatile	1	U1019	2Kb	EEPROM	No	Card manufacturing information	Programmed at ICT during production.	no write protected	User cannot clear the memory.
SPD	Non-volatile	1	U22	2Kb	EEPROM	No	Memory configuration data	Pre-programmed before assembly	no write protected. Not visible to Host Processor	User cannot clear the memory.
CPLD	Non-volatile	1	U1088	64kb	Flash	No	Power sequencing and Cache Offload	ROC may program data during FW update	Not write protected Not visible to host CPU	User cannot clear this memory
HBA355i Adapter										
SPI Flash	Non-Volatile	1	U2	128Mb	SPI Flash	No	Card firmware	Pre-programmed before assembly. Can	Not write protected. Not visible to Host Processor	User cannot clear the memory.

Item	Non-Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
								be updated using Dell/LSI tools		
FRU	Non-volatile	1	U5	2Kb	EEPROM	No	Card manufacturing information	Programmed at ICT during production.	Not write protected	User cannot clear the memory.
CPLD	Non-volatile	1	U23	24kb	Flash	No	Power sequencing	Controller may program data during FW update	Not write protected Not visible to host CPU	User cannot clear this memory
HBA355E										
SPI Flash	Non-Volatile	1	U2	128Mb	SPI Flash	No	Card firmware	Pre-programmed before assembly. Can be updated using Dell/LSI tools	Not write protected. Not visible to Host Processor	User cannot clear the memory.
FRU	Non-volatile	1	U5	2Kb	EEPROM	No	Card manufacturing information	Programmed at ICT during production.	Not write protected	User cannot clear the memory.
CPLD	Non-volatile	1	U23	24kb	Flash	No	Power sequencing	Controller may program data	Not write protected	User cannot clear this memory

Item	Non-Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
								during FW update	Not visible to host CPU	
H355 Adapter										
SPI Flash	Non-Volatile	1	U2	128Mb	SPI Flash	No	Card firmware	Pre-programmed before assembly. Can be updated using Dell/LSI tools	Not write protected. Not visible to Host Processor	User cannot clear the memory.
FRU	Non-volatile	1	U5	2Kb	EEPROM	No	Card manufacturing information	Programmed at ICT during production.	Not write protected	User cannot clear the memory.
CPLD	Non-volatile	1	U23	24kb	Flash	No	Power sequencing and Cache Offload	Controller may program data during FW update	Not write protected Not visible to host CPU	User cannot clear this memory
NVSRAM	Non-volatile	1	U3	128kB	NVSRAM	No	Configuration data	ROC writes configuration data to NVSRAM	Not write protected Not visible to host CPU	User cannot clear this memory

Item	Non-Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
TPM										
Trusted Platform Module (TPM)	Non-Volatile	1	U2	128 Bytes	EEPROM	Yes	Storage of encryption keys	Using TPM Enabled operating systems	SW write protected	F2 Setup option
Front IO module										
SPI Flash	Non-Volatile	1	U_SPI_FLASH1	32 Mb	SPI Flash	No	EasyRestore functionality contains Service Tag, Copy of SEL logs	SPI interface from iDRAC to Right Cntl Panel	Embedded iDRAC subsystem firmware actively controls sub area based write protection as needed.	The user cannot clear memory.
BOSS-N1										
FRU	Non-volatile	1	U4	2Kbit	EEPROM	No	Card manufacturing information	During Manufacturing, by programming the image via firmware update process. During runtime, by I2C Proprietary	No write protected	User cannot clear the memory.

Item	Non-Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
								Command Protocol		
MCU	Non-Volatile	1	U41	8kB	Flash ROM	No	BOSS-N1 information	The data is flash via iDRAC auto update	No write protected	User cannot clear the memory.
SPI flash	Non-Volatile	1	U5	128 Mb	SPI Flash EEPROM	Yes	Firmware, Boot code	Firmware and some configuration data flashed via Dell Update Package (DUP); some configuration data is programmed during manufacturing ; end user configuration data is written via UEFI HII	No write protected	User cannot clear the memory.
LOM										

Item	Non-Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
SPI Flash	Non-Volatile	1	U2001	8-Mbit DataFlash (with Extra 256-Kbits)	SPI Flash EEPROM	Yes	Firmware, configuration data	Firmware and some configuration data flashed via Dell Update Package (DUP); some configuration data is programmed during manufacturing ; end user configuration data is written via UEFI HII	Reserving write protection function for HW design.	User cannot clear the memory.
MCU	Non-Volatile	1	U5809	64KB Flash and 8KB of SRAM	Flash ROM	No	LOM Security data	Off-line programming Before production	No write protected. Not visible to Host Processor	User cannot clear the memory

Item	Non-Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
Liteon PSU (300W)										
NA										NA
Non-volatile	1	IC400	16K	OTP ROM	No	Housekeeping, FW	By Weltrend tools	OTP type memory cannot be rewritten	No way to clear data due to the memory type(OTP)	Non-volatile
NA										NA
Liteon PSU (500W)										
Primary MCU	NA									
Secondary MCU	Non-volatile	1	IC401	16K	OTP ROM	No	Housekeeping, FW	By Weltrend tools	OTP type memory cannot be rewritten	No way to clear data due to the memory type(OTP)
FRU	NA									
Delta (300W)										
Primary MCU	Non-Volatile	1	IC801_TEA2016AAT	512bit	MTP	No	Primary FW	For users: Data input by RFC (remote function call) via I2C. NXP GUI software can be used.	MTP setting (NXP GUI software can be used to activate the write protection)	MTP setting (NXP GUI software can be used to activate the write protection) For users: by I2C RFC of the MTP erase function. NXP GUI software can be used.

Item	Non-Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
								NXP production: CTAG/AMS		NXP production: CTAG/AMS
Secondary MCU	Non-Volatile	1	IC601_WT7658P	16Kb	One-time Programmable Memory	No	Secondary FW	Only via Weltrend proprietary programming tool.	1. Programming tool is under controlled. 2.Programming commands won't be public.	One-time Programmable Data can't be over written.
FRU	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Delta PSU (500W)										
Primary MCU	Non-Volatile	1	IC801_HR1211	256 bytes	MTP	Yes	Primary FW	Data input by MPS dongle kit	None	Cleared by MPS dongle kit
Secondary MCU	Non-Volatile	1	IC601_WT7658P	16Kb	One-time Programmable Memory	No	Secondary FW	Only via Weltrend proprietary programming tool.	1. Programming tool is under controlled. 2.Programming commands won't be public.	One-time Programmable Data can't be over written.
FRU	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chicony (300W)										

Item	Non-Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
Primary MCU	N/A									
Secondary MCU	**Non-Volatile**	1	U2	16K	OTP rom	No	Housekeeping	by Weltrend tools	No way to clear data due to the memory type(OTP)	No way to clear data due to the memory type(OTP)
FRU	N/A									
Huntkey (500W)										
Primary FPGA	Non-Volatile	1	U201	256b	EEPROM	No	Primary FW F653	Need using MPS communication protocol to input data to memory	No data can be read or written until the user inputs the correct password into the specific unlock register(address 7Dh).This unlocks the read-write protection status.	Customer only change data by GUI or Excel,can't cleared the data of memory
Secondary MCU	Non-Volatile	1	IC901	16Kb	One-time Programable Memory	No	Secondary FW 4968	Only via Weltrend proprietray programming tool	1.Programing tool is under controlled 2.Programing commands won't be public	One-time Programmable. Data can't be over written
FRU	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NOTE: For any information that you may need, direct your questions to your Dell Marketing contact.

---

05 - 2024