



# Statement of Volatility – Dell PowerEdge C4130

Dell PowerEdge C4130 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 C4130 server.

Item	Non-Volatile or Volatile	Quantity	Reference Designator	Size
<b>Planar</b>				
PCH Internal CMOS RAM	Non-Volatile	1	U107	256 Bytes
BIOS Password	Non-Volatile	1	U107	16 Bytes
BIOS SPI Flash	Non-Volatile	1	U15	16 MB
iDRAC SPI Flash	Non-Volatile	1	U95	4 MB
iDRAC EMMC	Non-Volatile	1	U25	4 GB
CPU	Volatile	1 or 2	U1, U2	Various Cache Sizes
CPU VCORE regulators	Non-Volatile	2	U8003, U8043	512 Bytes
Memory regulators	Non-Volatile	2	U8011, U8051	512 Bytes
Embedded Network EEPROM	Non-Volatile	1	U89	8 Mbits
Embedded Network Flash	Non-Volatile	1	U87	512 Kbits
System CPLD RAM	Volatile	1	U20	1 KB
SEP for 1.8" SSD Backplane	Non-Volatile	1	U111	Flash:32KB+4KB EEPROM: 2KB
iDRAC	Volatile	1	U21	64 kbyte + registers
iDRAC DDR Memory	Volatile	1	U22	256 MB
System Memory	Volatile	Up to 8 DIMMs per CPU	CPU<2:1>_CH<3:0>_D<1:0>	Up to 32GB per DIMM
Internal USB port	Non-Volatile	1	N/A	Various (not factory installed)

Item	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)
<b>Planar</b>			
PCH Internal CMOS RAM	Battery-backed CMOS RAM	No	Real-time clock and BIOS configuration settings
BIOS Password	Battery-backed CMOS RAM	Yes	Password to change BIOS settings
BIOS SPI Flash	SPI Flash	No	Boot code, system configuration information, UEFI environment, Flash Descriptor, ME
iDRAC SPI Flash	SPI Flash	No	iDRAC Uboot (bootloader), server management persistent store (i.e. iDRAC MAC Address, iDRAC boot variables), lifecycle log cache, virtual planar FRU and EPPID, rac log, System Event Log,
iDRAC EMMC	eMMC NAND Flash	No	Operational iDRAC FW, Lifecycle Controller (LC) USC partition, LC service diags, LC OS drivers, USC firmware
CPU	Cache + registers	Yes	Processor cache + registers
CPU VCORE regulators	ROM	No	Operational parameters
Memory regulators	ROM	No	Operational parameters
Embedded Network EEPROM	EEPROM	No	LOM network settings
Embedded Network Flash	Flash	No	onboard LOM FW
System CPLD RAM	RAM	No	Not utilized
SEP for 1.8" SSD Backplane	Integrated Flash + EEPROM	No	BP Firmware + FRU
IDRAC	Cache + registers	No	Processor cache + registers
iDRAC DDR Memory	DRAM	No	iDRAC local memory

Item	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)
System Memory	RAM	Yes	System OS RAM
Internal USB port	Flash	Yes	General purpose USB key drive

Item	How is data input to this memory?	How is this memory write protected?
<b>Planar</b>		
PCH Internal CMOS RAM	BIOS	N/A – BIOS only control
BIOS Password	Keyboard	N/A
BIOS SPI Flash	SPI interface via host	Software write protected
iDRAC SPI Flash	SPI interface via iDRAC	Embedded iDRAC subsystem firmware actively controls sub area based write protection as needed.
iDRAC EMMC	NAND Flash interface via iDRAC	Embedded FW write protected
CPU	Various	Various
CPU VCORE regulators	N/A	N/A
Memory regulators	N/A	N/A
Embedded Network EEPROM	SPI interface via Intel i350 LOM	N/A
Embedded Network Flash	SPI interface via Intel i350 LOM	N/A
System CPLD RAM	Not utilized	Not accessible
SEP for 1.8" SSD Backplane	I2C interface via iDRAC	Program write protect bit
iDRAC	iDRAC Firmware	N/A
iDRAC DDR Memory	iDRAC Firmware	N/A
System Memory	System OS RAM	System OS Control
Internal USB port	USB interface via PCH. Accessed via system OS	No write protect

Item	Non-Volatile or Volatile	Quantity	Reference Designator	Size
<b>Optional PCIe switch board</b>				
SPI Serial EEPROM	Non-Volatile	1	U2	256 Kb
External FRU	Non-Volatile	1	U7	256 Bytes

Item	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)
<b>Optional PCIe switch board</b>			
SPI Serial EEPROM	SPI EEPROM	No	Configuration data
External FRU	I2C EEPROM	No	FRU data

Item	How is data input to this memory?	How is this memory write protected?
<b>Optional PCIe switch board</b>		
SPI Serial EEPROM	Programmed at ICT during production	N/A
External FRU	Programmed at ICT during production	N/A

Item	Non-Volatile or Volatile	Quantity	Reference Designator	Size
<b>Optional PERC H330</b>				
NVSRAM	Non-Volatile	1	U1033	128 KB
FRU	Non-Volatile	1	U1019	256 Bytes
1-wire EEPROM	Non-Volatile	1	U1004	128 Bytes
SBR	Non-Volatile	1	U1020	8 KB
Flash	Non-Volatile	1	U3	16 MB

Item	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)
<b>Optional PERC H330</b>			
NVSRAM	NVSRAM	No	Configuration data
FRU	FRU EEPROM	No	Card manufacturing information
1-wire EEPROM	1-wire EEPROM	No	Holds default controller properties/settings
SBR	SBR	No	Bootloader
Flash	Flash	No	Card Firmware

Item	How is data input to this memory?	How is this memory write protected?
<b>Optional PERC H330</b>		
NVSRAM	ROC writes configuration data to NVSRAM	Not WP. Not visible to Host Processor
FRU	Programmed at ICT during production	Not WP
1-wire EEPROM	ROC writes data to this memory	Not WP. Not visible to Host Processor
SBR	Pre-programmed at ICT during production	Not WP. Not visible to Host Processor
Flash	Pre-programmed before assembly. Can be updated using Dell tools.	Not WP. Not visible to Host Processor

Item	Non-Volatile or Volatile	Quantity	Reference Designator	Size
<b>Optional IDSDM module</b>				
SPI Serial EEPROM	Non-Volatile	1	U2	8 Mb
MCU	Non-Volatile	1	U6	512 KB

Item	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)
<b>Optional IDSDM module</b>			
SPI Serial EEPROM	SPI Flash	No	Controller configuration data
MCU	Embedded Flash	Yes	Firmware

Item	How is data input to this memory?	How is this memory write protected?
<b>Optional IDSDM module</b>		
SPI Serial EEPROM	SPI interface via iDRAC	Hardware strapped
MCU	USB3.0 interface via PCH, FW can be updated via iDRAC which runs on Linux	N/A

Item	Non-Volatile or Volatile	Quantity	Reference Designator	Size
<b>Control Panel</b>				
SPI Serial EEPROM	Non-Volatile	1	U6	32 Mb

Item	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)
<b>Control Panel</b>			
SPI Serial EEPROM	SPI EEPROM	No	For field maintenance. Have License, Service Tag and system information

Item	How is data input to this memory?	How is this memory write protected?
<b>Control Panel</b>		
SPI Serial EEPROM	SPI interface via iDRAC	Not user clearable

Item	Non-Volatile or Volatile	Quantity	Reference Designator	Size
<b>Optional TPM module</b>				
Trusted Platform Module (TPM)	Non-Volatile	1	U_TPM	128 Bytes

Item	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)
<b>Optional TPM module</b>			
Trusted Platform Module (TPM)	EEPROM	Yes	Storage of encryption keys

Item	How is data input to this memory?	How is this memory write protected?
<b>Optional TPM module</b>		
Trusted Platform Module (TPM)	Using TPM Enabled operating systems	SW write protected





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

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