



Power and Performance

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The following table lists the power and performance BIOS settings that you can configure through a BIOS policy or the default BIOS settings:

Name	Description	Supported Attributes			
		Versions	Platforms	Values	Dependencies
Optimized Power Mode	Automatically varies processor speed and power usage based on processor utilization to increase performance per watt. Most effective under moderate utilization.	4.3(2)	C220 M7, C240 M7, X210c M7, X410c M7	Disabled , Enabled <ul style="list-style-type: none"> • Disabled—This option is Disabled. • Enable—This options is enabled. 	
C1 Auto Demotion	If enabled, CPU automatically demotes to C1 based on un-core auto-demote information.	4.0(2), 4.0(4), 4.1(1), 4.1(3), 4.2(1), 4.3(3a)	All M5 servers, C220 M6, C240 M6, B200 M6, X210c M6, C220 M7, C240 M7, X210c M7, X410c M7	Disabled, Enabled, Auto <ul style="list-style-type: none"> • Disabled—This option is Disabled. • Enable—This options is enabled. 	

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C1 Auto UnDemotion	Select whether to enable processors to automatically undemote from C1.	4.0(2), 4.0(4), 4.1(1), 4.1(3), 4.2(1), 4.3(3a)	All M5 servers, C220 M6, C240 M6, B200 M6, X210c M6, C220 M7, C240 M7, X210c M7, X410c M7	Disabled, Enabled, Auto <ul style="list-style-type: none"> • Disabled—This option is Disabled. • Enable—This options is enabled. 	
Core Performance Boost	Whether the AMD processor increases its frequency on some cores when it is idle or not being used much	4.0(2), 4.0(4), 4.1(1), 4.1(3), 4.2(1)	C225 M6, C245 M6	Disabled, Auto <ul style="list-style-type: none"> • Disabled—This option is Disabled. • Auto—The CPU automatically determines how to boost performance. 	
Global C State Control	Whether the AMD processors control IO-based C-state generation and DF C-states.	4.0(2), 4.0(4), 4.1(1), 4.1(3), 4.2(1)	C225 M6, C245 M6	Auto , Disabled, Enabled <ul style="list-style-type: none"> • Auto—This options is set to auto mode. • Disabled—This option is Disabled. • Enable—This options is enabled. 	
Ln Stream HW Prefetcher , where n value is 1 and 2.	Whether the processor allows the AMD hardware prefetcher to speculatively fetch streams of data and instruction from memory into the L1 or L2 cache when necessary.	4.0(2), 4.0(4), 4.1(1), 4.1(3), 4.2(1)	C225 M6, C245 M6	Auto , Disabled, Enabled <ul style="list-style-type: none"> • Auto—This options is set to auto mode. • Disabled—This option is Disabled. • Enable—This options is enabled. 	

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Determinism Slider	Allows AMD processors to determine how to operate.	4.0(2), 4.0(4), 4.1(1), 4.1(3), 4.2(1)	C225 M6, C245 M6	Auto , Performance, Power <ul style="list-style-type: none"> • Auto—The CPU automatically uses default power determinism settings. • Performance—Processor operates at the best performance in a consistent manner. • Power—Processor operates at the maximum allowable performance on a per die basis. 	
Efficiency Mode Enable	Allows you to configure power consumption based on efficiency.	4.0(2), 4.0(4), 4.1(1), 4.1(3), 4.2(1)	C225 M6, C245 M6	Auto , Enabled <ul style="list-style-type: none"> • Enabled—This option is enabled. • Auto—The CPU automatically uses default settings. 	
CPPC	Allows you to configure Collaborative Processor Performance Control.	4.0(2), 4.0(4), 4.1(1), 4.1(3), 4.2(1)	C225 M6, C245 M6	Auto , Disabled, Enabled <ul style="list-style-type: none"> • Enabled—This option is enabled. • Disabled—This option is disabled. • Auto—The CPU automatically uses default settings. 	
cTDP Control	Allows you to set customized value for Thermal Design Power (TDP).	4.0(2), 4.0(4), 4.1(1), 4.1(3), 4.2(1)	C225 M6, C245 M6	Auto, Manual <ul style="list-style-type: none"> • Auto—Uses the rated TDP value of the processor. • Manual—Allows you to customize the TDP value. 	

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Enhanced CPU Performance	Enhances CPU performance by adjusting server settings automatically.	4.0(2), 4.0(4), 4.1(1), 4.1(3), 4.2(1), 5.0(1), 5.0(2)	C220 M6, C240 M6, B200 M6, X210c M6, C220 M7, C240 M7, X210c M7, X410c M7	Disabled, Auto <ul style="list-style-type: none"> Disabled—This option is Disabled. Auto—Allows to adjust server settings to increase the processor performance. <p>Note Enabling this functionality may increase power consumption.</p>	The server should meet the following requirements in order to use this functionality: <ul style="list-style-type: none"> The server should not contain Barlow Pass DIMMs. DIMM module size present in the Cisco UCS C220 M6 server should be less than 64GB and in Cisco UCS C240 M6 server should be less than 256GB. No GPU cards are present in the server.

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LLC Dead Line	In CPU non-inclusive cache scheme, Mid-Level Cache (MLC) evictions are filled into the Last-Level Cache (LLC). When lines are evicted from the MLC, the core can flag them as dead (not likely to be read again). The LLC has the option to drop dead lines and not fill them in the LLC.	4.0(2), 4.0(4), 4.1(1), 4.1(3), 4.2(1)	C220 M6, C240 M6, B200 M6, X210c M6, C220 M7, C240 M7, X210c M7, X410c M7	Disabled, Enabled, Auto <ul style="list-style-type: none"> • Disabled—The dead lines are always dropped and are never filled into the LLC. • Enable—Allows the LLC to fill dead lines into the LLC if there is free space available. This is the default option. • Auto—The CPU determines the LLC dead line allocation. 	
UPI Link Enablement	Enables the number of Ultra Path Interconnect (UPI) links required by the processor.	4.0(2), 4.0(4), 4.1(1), 4.1(3), 4.2(1), 5.0(1), 5.0(2)	All M5 servers, C220 M6, C240 M6, B200 M6, X210c M6, C220 M7, C240 M7, X210c M7, X410c M7	Auto , 1, 2, 3	
UPI Power Management	The UPI power management can be used for conserving power on the server.	4.0(2), 4.0(4), 4.1(1), 4.1(3), 4.2(1)	All M5 servers, C220 M6, C240 M6, B200 M6, X210c M6, C220 M7, C240 M7, X210c M7, X410c M7	Disabled, Enabled <ul style="list-style-type: none"> • Disabled—This option is Disabled. • Enable—This options is enabled. 	
Virtual NUMA	The Virtual NUMA (virtual non-uniform memory access) is a memory-access optimization method for VMware virtual machines (VMs), which helps prevent memory-bandwidth bottlenecks.	4.0(2), 4.0(4), 4.1(1), 4.1(3), 4.2(1), 5.0(1), 5.0(2)	All M5 servers, C220 M6, C240 M6, B200 M6, X210c M6, C220 M7, C240 M7, X210c M7, X410c M7	Disabled , Enabled <ul style="list-style-type: none"> • Disabled—This option is Disabled. • Enable—This options is enabled. 	

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XPT Remote Prefetch	This feature allows an LLC request to be duplicated and sent to an appropriate memory controller in a remote machine based on the recent LLC history to reduce latency.	4.0(2), 4.0(4), 4.1(1), 4.1(3), 4.2(1), 5.0(1), 5.0(2)	All M5 servers, C220 M6, C240 M6, B200 M6, X210c M6, C220 M7, C240 M7, X210c M7, X410c M7	Disabled , Enabled <ul style="list-style-type: none"> • Disabled—This option is Disabled. • Enable—This options is enabled. • Auto—The CPU determines the functionality. 	