PCIe in Enterprise

Plug and play? Sure…..but optimization may take some work….

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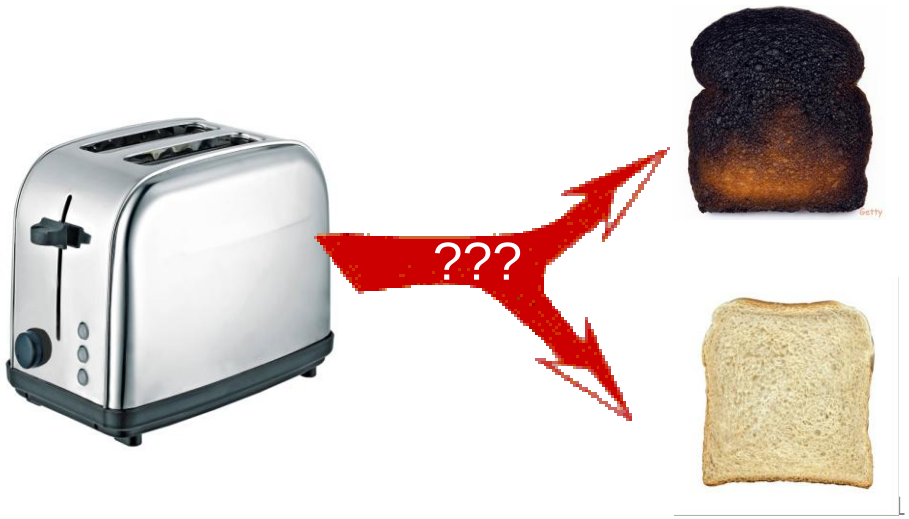

PCIe in Enterprise: Plug and Play?

- System options matter (more than you'd think)

CPU	4KiB RND READ (IOPS)	Delta
3.33GHz six-core x5680	***787, 000***	***Reference***
2.4GHz quad-core E5620	505, 485	-36%

Same system, different CPU

PCIe in Enterprise: Plug and Play?

- Settings can have an effect as well

Cores for IO	Core Processing IRQs	Delta
7 to 11	***6***	***Reference***
7 to 11	7	-17%

BIOS Option	Setting	Delta*
CPU Ratio	Manual	+12%
C-STATE	Disabled	+12%
EIST	Disabled	+12%
QPI Frequency	6.4GT	+10%
Throttling	Disabled	+11%
Enhanced Speed Step	Disabled	+13%

*relative to default setting

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- Settings effects can be subtle…

Worker Count	Thread Count	Delta
8		-5%
7		-1%
6	***255***	***Reference***
5		-1%

…or not…

Cores for IO	Core Processing IRQs	#Workers	#Threads	Delta
7 through 11	***6***			***Reference 1***
	5	***6***	***255***	-46%
0 through 4	***5***			***Reference 2***
	6			-47%

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  - A partner who will 'go the extra mile'
- All of you can do this – get the most for your investment – it just takes some extra effort