

Server hardware trends

IT Lightning Talks: session #3 – Eric Bonfillou



Introduction

- Processors and memory
- Storage and networking
- Open Compute project

Processors and memory (1)

- Always more cores per CPU package...
- ... and more L3 cache!

Intel Haswell CPU overview					
Physical cores (virtual cores)	Maximum nominal frequency in MHz	Maximum L3 cache in MB	Max TDP in W	Price in USD	
4 (8)	3500	15	135	996	
6 (12)	3400	20	135	1552	
8 (16)	3200	20	135	2057	
10 (20)	2600	25	105	1445	
12 (24)	2600	30	135	2094	
14 (28)	2600	35	145	2706	
16 (32)	2300	40	135	TBA	
18 (36)	2300	45	145	TBA	

Processors and memory (2)

- Moving from DDR3 to DDR4 (for Intel only)
 - Lower power consumption
- Higher capacity per memory module
 - > 32GB already available
 - Still more expensive than DDR3
- Same “restrictions” still apply
 - The more memory, the lower the frequency

Storage and networking (1)

- Lots of upcoming changes on the storage!
 - [HDD] 4k native sector size
 - [HDD] Transition from PMR to SMR
 - [S/HDD] 12G SAS but no evolution foreseen on SATA
 - [SSD] NVMe = Greater PCIe SSD Adoption

Storage and networking (2)

- 10 Gigabit Ethernet on-board is here 😊
 - 10GBase-T mostly, SFP+ still as add-on cards

Open Compute project

- To share designs of data center products
- First evaluations are positive
- Market survey on-going
- Hopefully, some OCP hardware on-site Q2 2015