



HEPIX SPRING 2015 WORKSHOP

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A look beyond x86: OpenPOWER8 & AArch64

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x86 is the uncontested leader for server platforms in terms of market share and is currently the architecture of choice for High Energy Physics applications. But as more and more importance is given to power efficiency, physical density and total cost of ownership we are seeing new processor architectures emerging and some existing ones becoming more open. With the introduction of AArch64, ARM's 64-bit architecture, coupled with the adoption of industry standards such as UEFI, ACPI and SMBIOS, ARM has for the first time in history the opportunity of becoming a real contender in the server space. Sharing some similarities with the Open Computer Project and with a strong industry backing the OpenPOWER Foundation aims to create an open ecosystem around the enterprise centric POWER architecture. I will present the specificities of each of these alternative architectures highlighting the differentiating server features of each. Performance and power profiling of the following uni-socket platforms will be presented: Intel Xeon E3-1200 v3 (Haswell), Intel Atom (Avoton), Applied Micro X-Gene and OpenPOWER 8.

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