

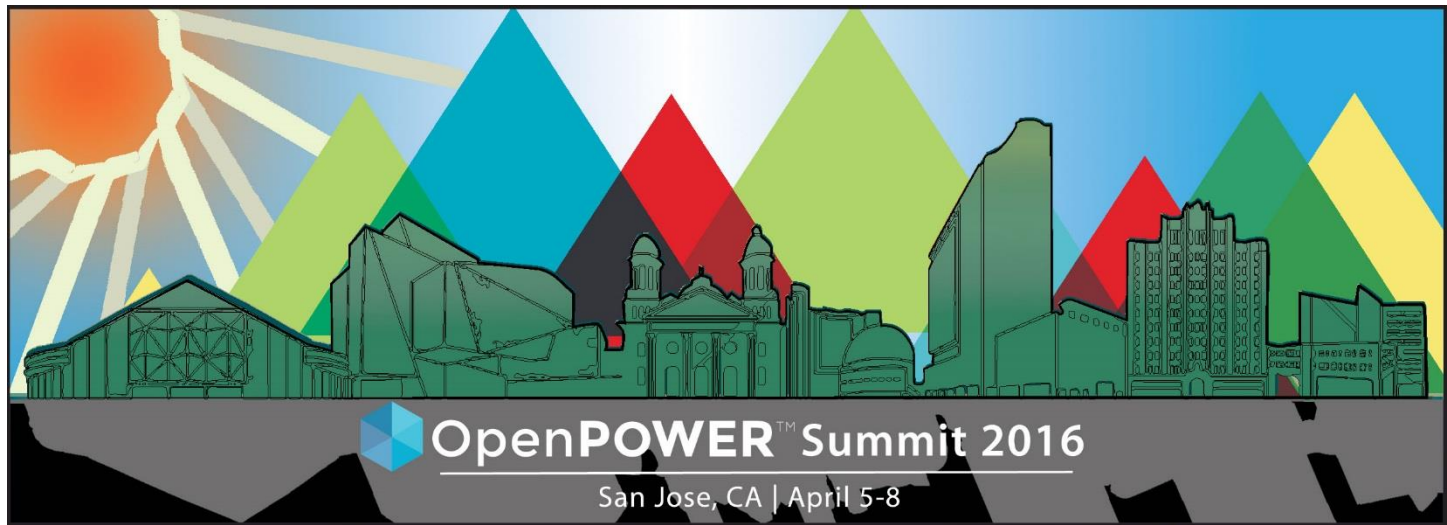


Pimp My HPC Cluster With (Open)POWER

Piero Altoè, MKTG & BDM

E4 Computer Engineering

Revolutionizing the Datacenter

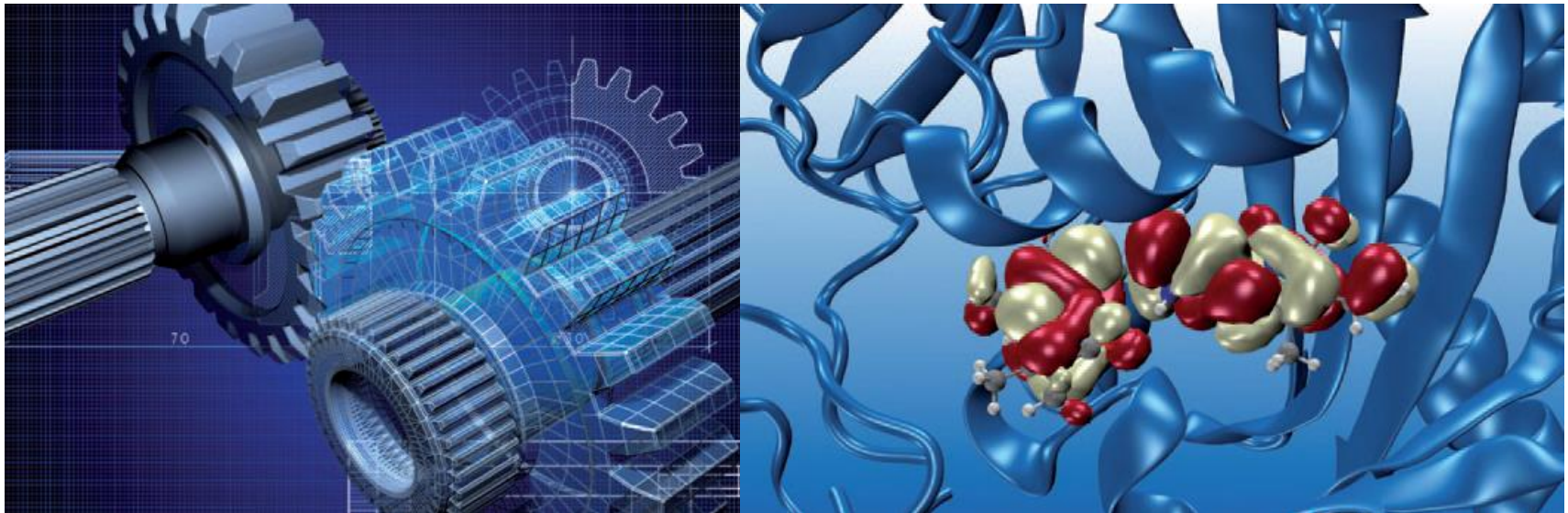


Join the Conversation #OpenPOWERSummit

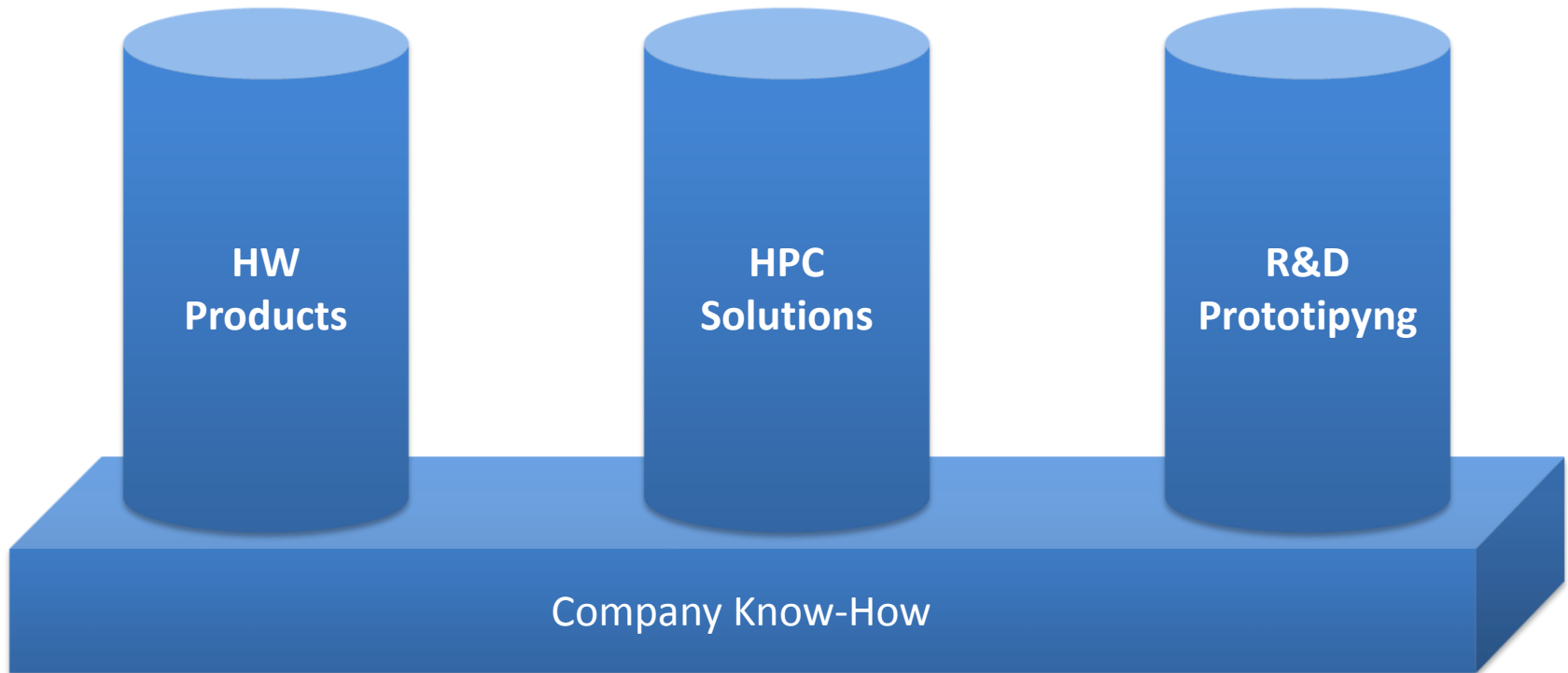
E4 in short

E4® Computer Engineering S.p.A. specializes in the manufacturing of high performance IT systems of medium and high range. Our products aim to meet both industrial and scientific research requirements with range fit for many environments, from universities to computing centers.

Thanks to the established experience acquired through the years, E4 is a valued technology's supplier acknowledged and appreciated by many worldwide organizations.



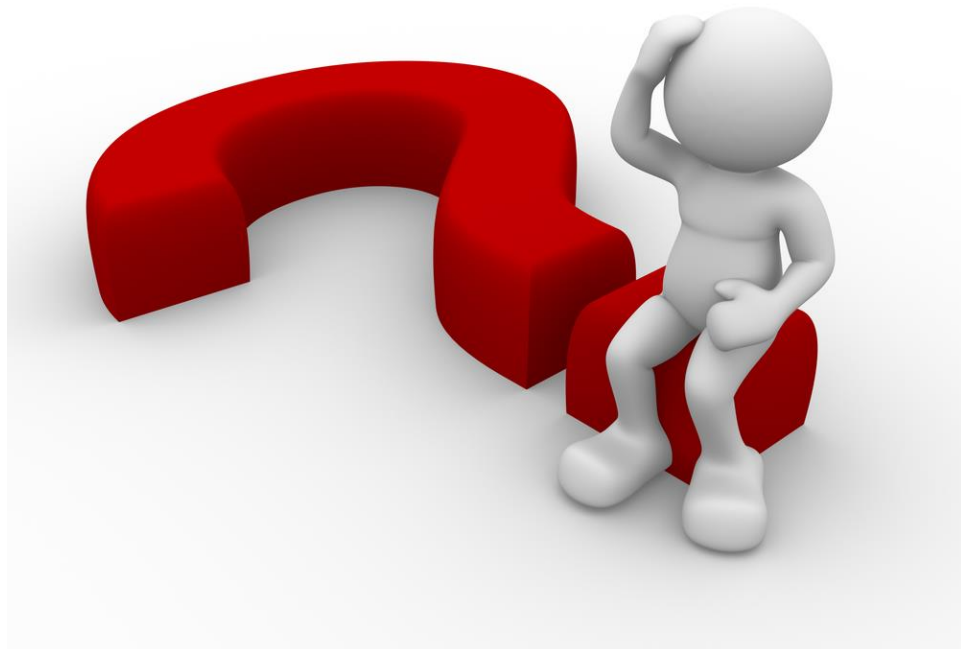
What we do



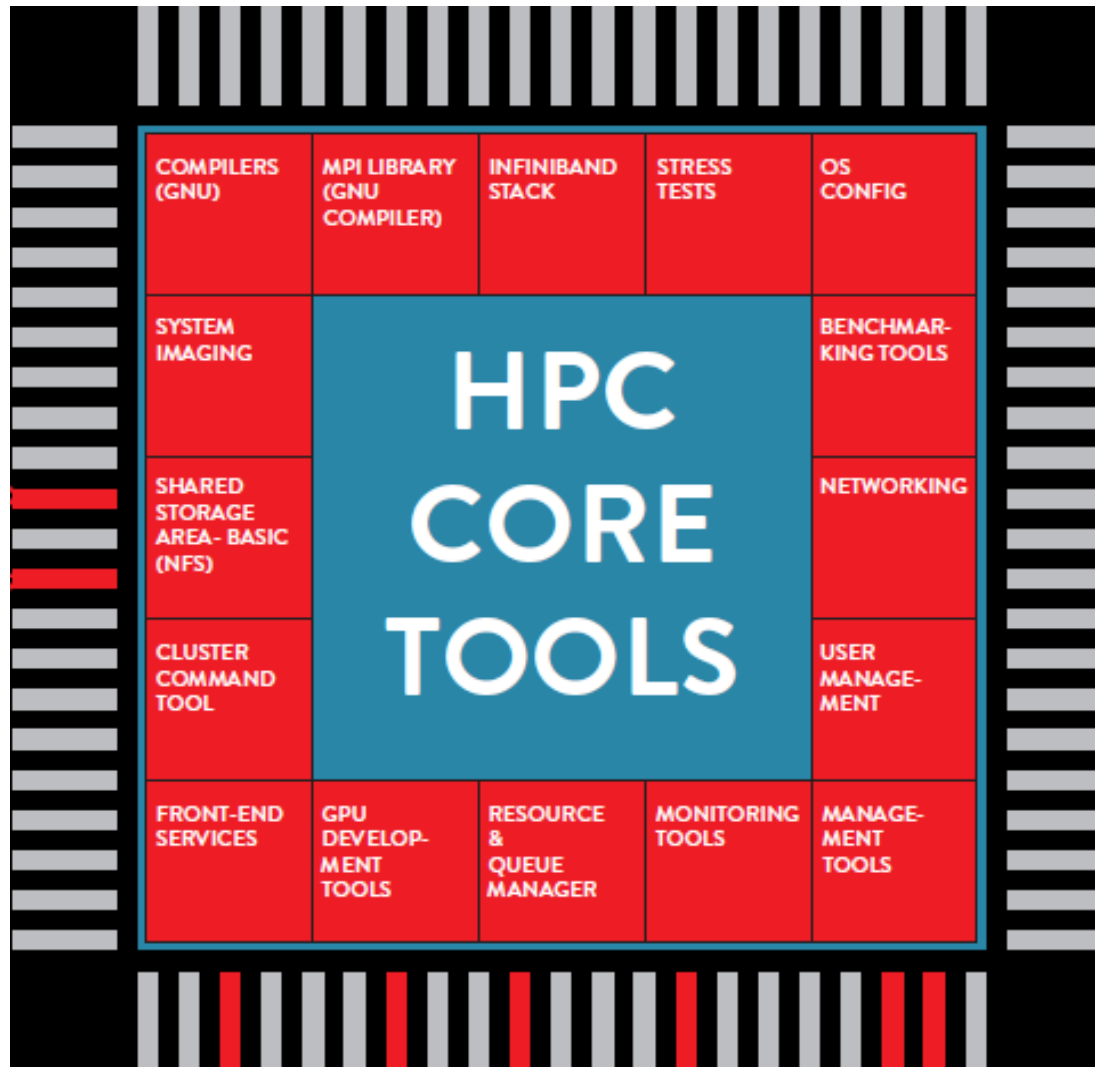
OpenPOWER what to improve?

HPC community requires tested and fully configured tools production ready .

- Cluster tools
- Libraries
- Compilers
- File systems
- Job schedulers
-



E4 Experience: HPC OpenSuite



OpenPOWER server E4 OP205

1. 2 x GPU accelerators
2. 5 x PCIe Gen3 slots (2 x8 LP slot, 2 x16 FHFL slot, 1 x16 LP slot)
3. System board
4. 2 x 1300W 80 PLUS Platinum-level hot-swap power supplies
5. 2 x POWER8 processors
6. 8 x Memory risers (4 x DDR3L RDIMMs per riser)
7. 2 x 2.5" Hot-swap SATA HDDs
8. 4 x Hot-swap cooling fans



wistron®

The E4 OpenPOWER Cluster

1. 4 Computer Nodes
 2. 1 Front end
 3. EDR Mellanox network
 4. 2x K80 per node
-
1. Resource/Queue manager
 2. Monitoring tools for cluster
 3. Parallel shell for cluster-wide CLI
 4. Bare-metal restore
 5. GNU Compiler
 6. XL Compiler
 7. OpenBlas
 8. ESSL Libs

AVAILABLE FOR TEST DRIVE



E4 Experience: HPC OpenSuite

- OS Installation & configuration (RH, Ubuntu)
- Node provisioning/deployment (COBBLER, PUPPET)
- User Management (LDAP)
- Queue and Resource Manager (SLURM, LSF)
- Compilers (XL, GNU, LLVM)
- Benchmark Tools (SHOC, HPL, STREAM,...)
- Infiniband Stack & MPI Libraries (OpenMPI, MVAPICH)
- Scientific Libraries (OpenBLAS, ESSL, netCDF, FFTW)
- Applications for HPC
- Parallel filesystem Configuration (GPFS, BeeGFS, PanFS, Lustre)
- Infrastructure management (UPS, rack sensors, NAGIOS)
- Monitoring tools (Ganglia)

Bare metal installation

cobbler Logged in: **cobbler** [Logout](#)

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Systems

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<input type="checkbox"/>	Name ↓	Profile	Status	Netboot_Enabled	Actions
<input type="checkbox"/>	Opower01	CentOS-7-1511LE-ppc64	testing	<input type="checkbox"/>	Edit Copy Rename Delete View Kickstart
<input type="checkbox"/>	Opower02	CentOS-7-1511LE-ppc64	testing	<input type="checkbox"/>	Edit Copy Rename Delete View Kickstart
<input type="checkbox"/>	Opower03	CentOS-7-1511LE-ppc64	testing	<input type="checkbox"/>	Edit Copy Rename Delete View Kickstart
<input type="checkbox"/>	Opower04	CentOS-7-1511LE-ppc64	testing	<input type="checkbox"/>	Edit Copy Rename Delete View Kickstart
<input type="checkbox"/>	feV4	CentOS-6.6_server_e4lustre1_1HD	testing	<input type="checkbox"/>	Edit Copy Rename Delete View Kickstart
<input type="checkbox"/>	nodeV4-01	CentOS-6.6_server_e4lustre1_1HD	testing	<input type="checkbox"/>	Edit Copy Rename Delete View Kickstart
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<input type="checkbox"/>	nodeV4-04	CentOS-6.6_server_e4lustre1_1HD	testing	<input type="checkbox"/>	Edit Copy Rename Delete View Kickstart

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Node provisioning



ANSIBLE

Conclusions

- E4 create HPC OpenPOWER hardware solutions
- Full stack of tools for cluster management
- Cluster available for remote access
- Performance tuning services