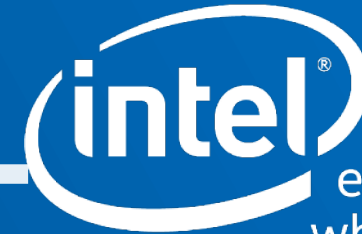




**Barcelona
Supercomputing
Center**
Centro Nacional de Supercomputación



experience
what's inside™

BSC's SSF System

Status update – May 4th,
2017

What is this machine about?

Machine provided by Intel in the frame of the Intel/BSC Exascale Lab SoW.

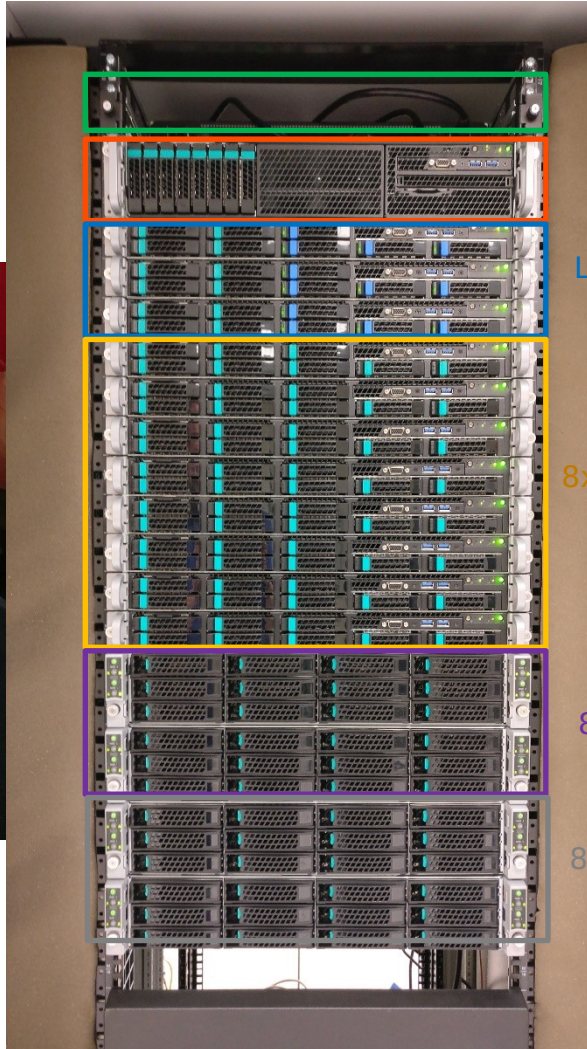
We envision the usage by BSC for research, testing and benchmarking purposes related to the SoW.

Intel would like to use the machine for demonstration purposes.

- *Important* Intel collaborators are “guests” as the machine belongs to BSC

We do not expect the machine to be used for “in-production”.

SSF machine installed! Up'n'running!



Intel OmniPath Fabric (100 Gb/s)

Head node (Xeon - Broadwell)

Lustre MDS and OSS nodes (~15 TB available)

8x Xeon (Broadwell) compute nodes (2 socket, 28 core/socket)

8x Xeon Phi (KNL) compute nodes (64 cores)

8x Xeon Phi (KNL) compute nodes (pre-production, 64/68 cores)

BSC sysadmins will give partial support.

Storage team (lead by Toni Cortés / Ramon Nou) will install their own “instrumented” version of the Lustre server/clients and kernel modules.

- Need root permissions

Performance tools / CASE are willing to use uncore counters.

- Need tuning on some /proc files (root permissions)

Sysadmins can give root permissions if needed **except on login node.**

- Ask if you need.

With great power comes great responsibility!

Organization

- Ask accounts to sysadmin@bsc.es
 - Local accounts, not LDAP-linked
- Mailing-list for the users?
- Bi-weekly meetings for KNL topics (Thursdays at noon)
 - Also, IXPUG (Intel Xeon Phi User Group - <https://www.ixpug.org>)

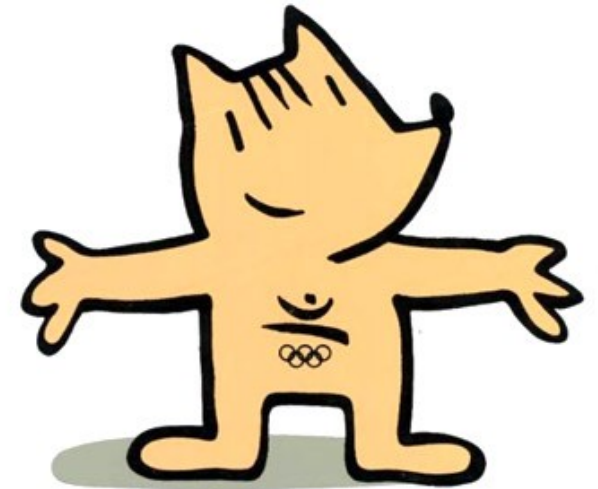
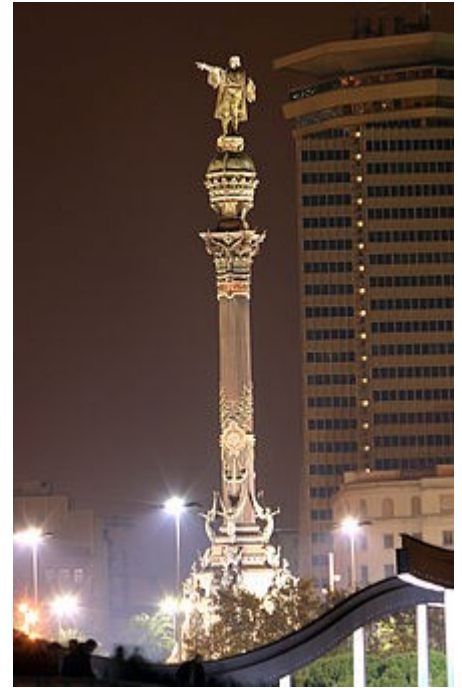
Current software installation

- Intel HPC Orchestrator
- SLURM
 - Partitions for Xeon, KNL (production, qual and beta)
- “modules”
- Intel Compiler/Tools evaluation license
 - We are checking on re-using MN3 licenses

Rest of software to be installed either by user (or sysadmins if it is used by many?)

Others

- Any suggested name for the machine? □
 - Current alternatives
 - Columbus
 - Cobi (Barcelona 1992 mascot – 25th anniversary)



Detailed specs

BSC Head Node

Item	MM	QTY	Deal#
LWT2208YXXXX425	955766	1	997.06

Deal Number		SDS	Configuration Request
Customer		BSC-SSF	ČVUT
Component Type	Product Code	Product Description	Quantity Per System
PCSD_Board_System	R2208WTTYSR	Intel® Server System R2208WTTYSR	1
PCSD_Chassis			
CPU	E5-2690v4	Intel Xeon E5-2690v4	2
Memory	16GB RDIMM 2400	16 GB, 2400 MHz RDIMM	8
SSD	SSDSC2BX480G401	Intel® SSD DC S3610 Series (480GB, 2.5in SATA 6Gb/s, 20nm, MLC)	4
Accessory	A2UL16RISER2	2U Riser A2UL16RISER2 (2 Slot) (R2000WT Family)	1
Accessory	AXXRMM4LITE2	Remote Management Module AXXRMM4LITE2	1
RAID	RMS3CC040	Intel® Integrated RAID Module RMS3CC040, Single	1
Fabric	100HFA016LS	Omni Path Host Interface Adapter	1
Rails	AXXPRAIL	1U/2U Premium Rail AXXPRAIL (R1000WT/R2000WT Family)	1
Integration, Test, and Shipping			1

BSC MDS Node

Item	MM	QTY	Deal#
LWT1208GXXXX424	955769	1	997.09

Deal Number		SDS	Configuration Request
Customer		BSC-SSF	ČVUT
Component Type	Product Code	Product Description	Quantity Per System
PCSD_Board_System	R1208WT2GSR	Intel® Server System R1208WT2GSR	1
PCSD_Chassis			
CPU	E5-2667v4	Intel Xeon E5-2667v4	2
Memory	16GB RDIMM 2400	16 GB, 2400 MHz RDIMM	8
SSD	SSDSC2BB240G701	S3520 Series 240GB	3
SSD	SSDPE2MD400G410	P3700 Series 400GB	4
Accessory	AXXRMM4LITE2	Remote Management Module AXXRMM4LITE2	1
Accessory	A1U44X25NVMEDK	1U Hot-swap Backplane Upgrade Kit with 4x NVMe SSD Support A1U44X25NVMEDK (R1000WT Family)	1
Fabric	100HFA016LS	Omni Path Host Interface Adapter	1
Rails	AXXPRAIL	1U/2U Premium Rail AXXPRAIL (R1000WT/R2000WT Family)	1
Integration, Test, and Shipping			1

BSC OSS Node

Item	MM	QTY	Deal#
LWT1208GXXX425	955770		2997.10

Deal Number	SDS	Configuration Request	
Customer	BSC-SSF	CVUT	
Component Type	Product Code	Product Description	Quantity Per System
PCSD_ Board_ System	R1208WT2GSR	Intel® Server System R1208WT2GSR	1
PCSD_ Chassis			
CPU	E5-2667v4	Intel Xeon E5-2667v4	2
Memory	16GB RDIMM 2400	16 GB, 2400 MHz RDIMM	8
SSD	SSDSC2BB240G701	S3520 Series 240GB	1
SSD	SSDPE2MD020T401	P3700 Series 2 TB	4
Accessory	AXXRMM4LITE2	Remote Management Module AXXRMM4LITE2	1
Accessory	A1U44X25NVMEDK	1U Hot-swap Backplane Upgrade Kit with 4x NVMe SSD Support A1U44X25NVMEDK (R1000WT Family)	1
Fabric	100HFA016LS	Omni Path Host Interface Adapter	1
Rails	AXXPRAIL	1U/2U Premium Rail AXXPRAIL (R1000WT/R2000WT Family)	1
Integration, Test, and Shipping			1

BSC XEON Compute Node

Item	MM	QTY	Deal#
LWV1208GXXX423	955767	8	997.07

Deal Number	SDS	Configuration Request	
Customer	BSC-SSF	CVUT	
Component Type	Product Code	Product Description	Quantity Per System
PCSD_Board_System	R1208WTTGSR	Intel® Server System R1208WTTGSR	1
PCSD_Chassis			
CPU	E5-2690v4	Intel Xeon E5-2690v4	2
Memory	16GB RDIMM 2400	16 GB, 2400 MHz RDIMM	8
SSD	SSDSC2BB240G701	Intel® SSD DC S3520 Series (240GB, 2.5in SATA 6Gb/s, 20nm, MLC)	4
Accessory	AXXRMM4LITE2	Remote Management Module AXXRMM4LITE2	1
Fabric	100HFA016LS	Omni Path Host Interface Adapter	1
Rails	AXXPRAIL	1U/2U Premium Rail AXXPRAIL (R1000WT/R2000WT Family)	1
Integration, Test, and Shipping			1

BSC KNL Compute Node

Item	MM	QTY	Deal#
LADMP2312KXX249	955768	2	997.08

Deal Number	SDS	Configuration Request	
Customer	BSC-SSF	ČVUT	
Component Type	Product Code	Product Description	Quantity Per System
PCSD_Board_System	HNS7200APX	Intel® Compute Module HNS7200APX	4
PCSD_Chassis	H2312XXLR2	Intel® Server Chassis H2312XXLR2	1
CPU	Intel ® Xeon Phi 7210	Intel Xeon Phi	4
Memory	16GB RDIMM 2400	16 GB, 2400 MHz RDIMM	24
SSD	SSDSC2BB240G701	Intel® SSD DC S3520 Series (240GB, 2.5in SATA 6Gb/s, 20nm, MLC)	4
Accessory	AXXRMM4LITE2	Remote Management Module AXXRMM4LITE2	4
Fabric	100HFA016LS	Omni Path Host Interface Adapter	4
Integration, Test, and Shipping			1