

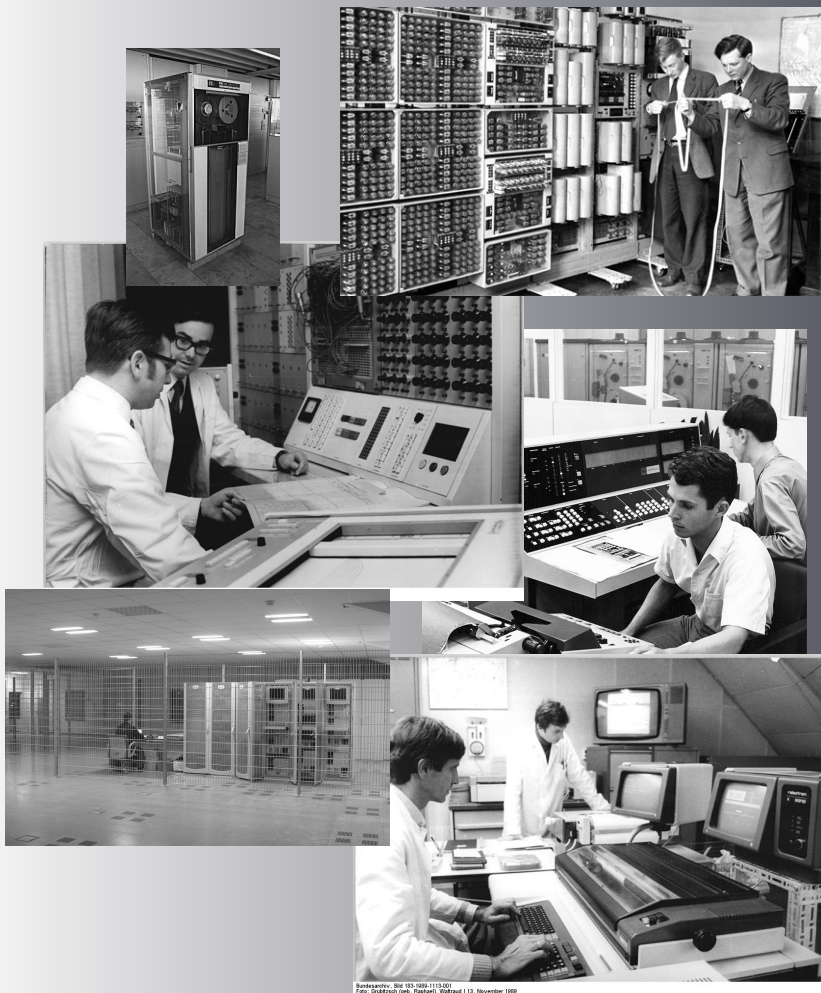
We adapt. You succeed.

Kai Dupke

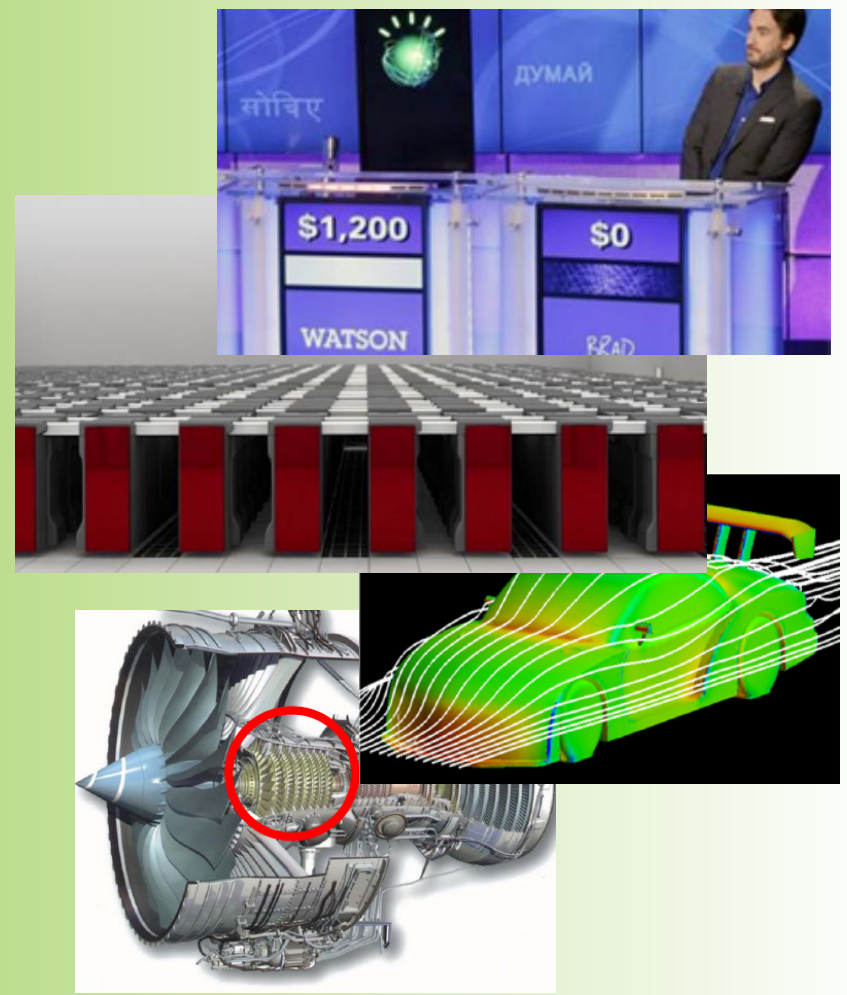
Senior Product Manager

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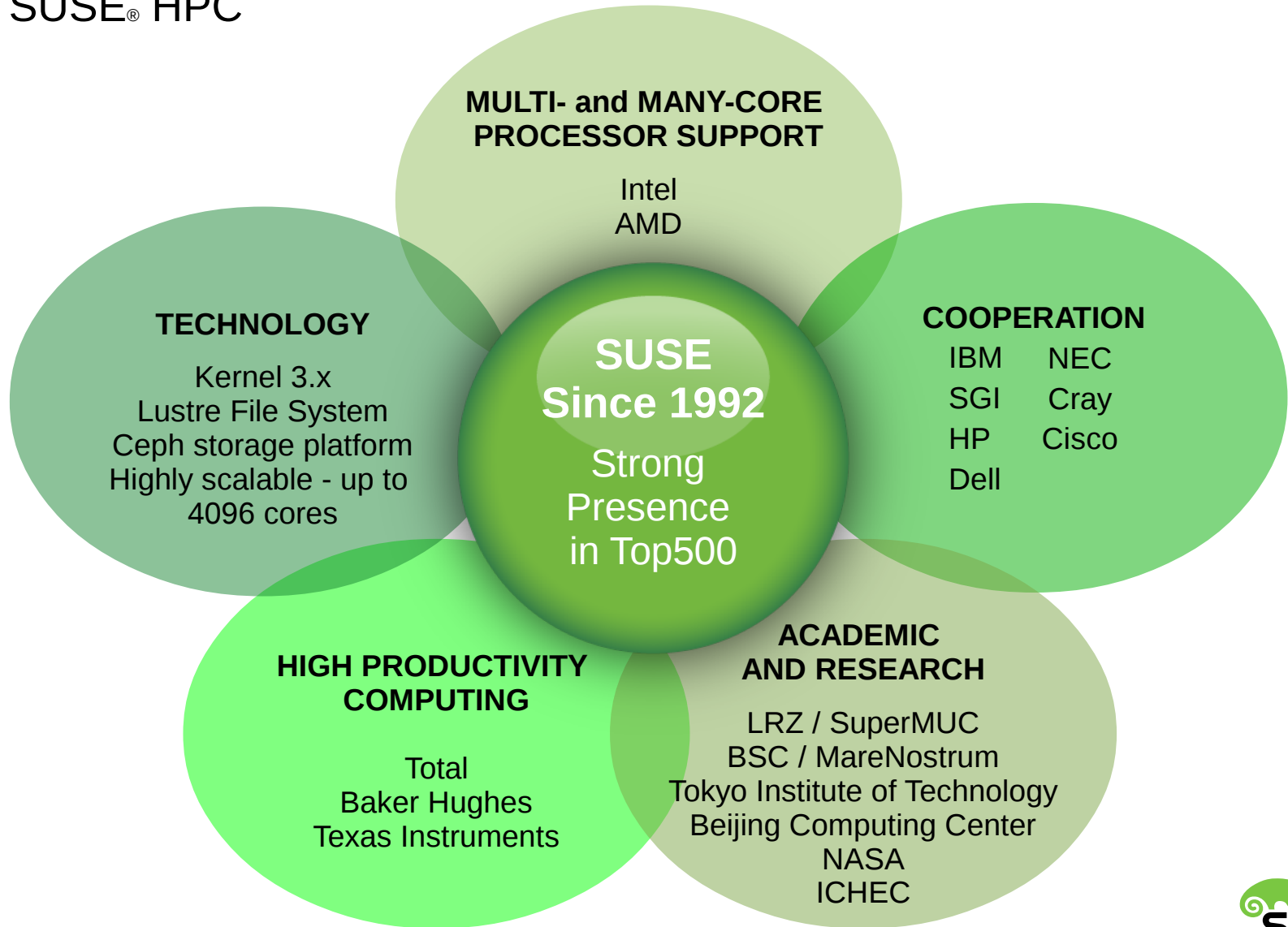
History



Future

SUSE – Strong in HPC Market!

SUSE® HPC



Split Market

SUSE® HPC

Scientific Top 500-class

- Lighthouse projects
- Government sponsored
- Generic workloads
- Often self-supported by Academic staff
- Specialized hardware

Commercial High Productivity Computing

- Highly specialized application
- ROI and reliability are key
- Data Center support
- Commodity hardware

Business Update

Simplify projects!

SUSE® HPC

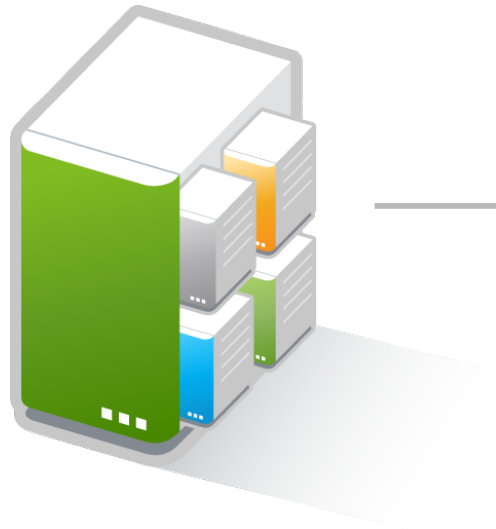
- Simplified model
 - Only number of socket pairs matter
 - Socket pairs are accumulated per system
 - Head nodes and compute nodes are threaten equal



Keep it running!

SUSE® HPC

- SUSE Vendor Support
 - All levels of support for the whole system
 - Maintenance, Standard, Priority
- Intel Enterprise Lustre Support
 - Get Lustre support from Intel/Whamcloud



Technical Update

SUSE Linux Enterprise Server 12

SUSE® HPC

- Major 4 virtualization technologies
 - XEN, KVM, LXC, Docker¹
- Workload management with systemd
 - Prioritization with CGroups
- Tracing tools for software optimization
 - LTTng with graphical frontend



LTTng viewer

SUSE® HPC

File Edit Navigate Search Project Run Window Help

Quick Access Java LTTng Kernel

Project Ex Control Flow Resources CPU Graph Statistics

Process	TID	PTID	Birth time	Trace	11:16:23	11:16:24	11:16:25	11:16:26
javaldx	2933	2932	11:16:22.995338807	kernel				
javaldx	2934	2933	11:16:22.998814389	kernel				
oosplash	2935	2922	11:16:23.003043313	kernel				
oosplash	2936	2935	11:16:23.003787418	kernel				
soffice.bin	2936	2935	11:16:23.003787418	kernel				
soffice.bin	2937	2936	11:16:23.025629034	kernel				
soffice.bin	2938	2936	11:16:23.322339382	kernel				
configmgrWriter	2938	2936	11:16:23.322339382	kernel				
soffice.bin	2939	2936	11:16:23.322785335	kernel				
OfficePCThread	2939	2936	11:16:23.322785335	kernel				
soffice.bin	2940	2936	11:16:23.392768046	kernel				
soffice.bin	2941	2936	11:16:23.493777015	kernel				
soffice.bin	2942	2936	11:16:23.618657069	kernel				
sh	2942	2936	11:16:23.618657069	kernel				
soffice.bin	2944	2936	11:16:23.788353685	kernel				
soffice.bin	2945	2936	11:16:23.788484402	kernel				
soffice.bin	2946	2936	11:16:23.788572955	kernel				

Process States

- UNKNOWN
- WAIT
- USERMODE
- SYSCALL
- INTERRUPTED

Events - kernel

Timestamp	Channel	Event Type	Content
<srch>	<srch>	<srch>	<srch>
11:16:23.051310469	test-channel_1_2	sched_wakeup	tid=2936, target_cpu=0, comm=soffice.bin, prio=120, success=1
11:16:23.051311815	test-channel_1_2	exit_syscall	ret=32
11:16:23.051312895	test-channel_1_2	svs_setitimer	value=140734130965696, which=0, ovalue=0

Control

Histogram Properties Bookmarks

Current Event (sec): 1382606183.051312352
Window Span (sec): 4.478854063

4177

1382606182.424501239

1382606186.901516346

104558

1382606025.287325292

1382606191.080750009

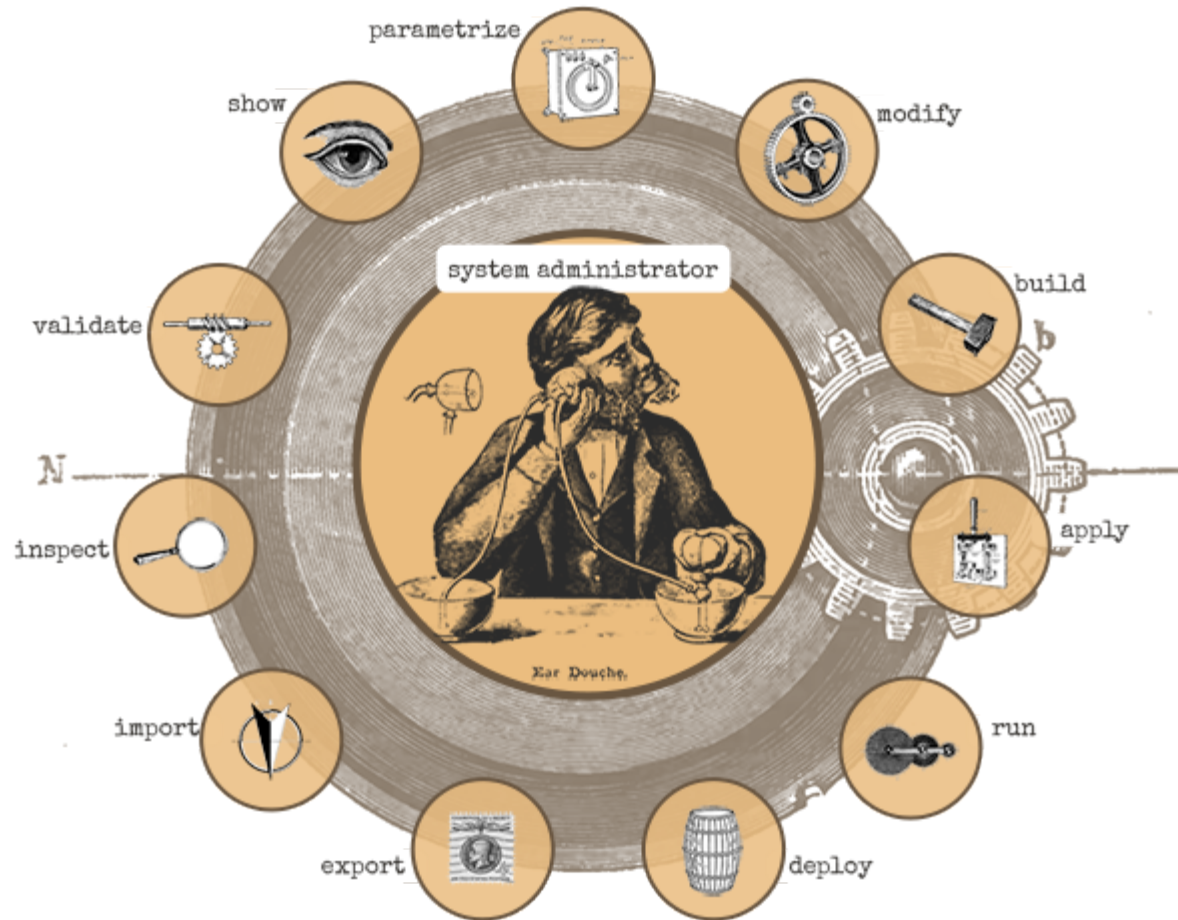
SUSE Linux Enterprise Server 12

SUSE® HPC

- ***Machinery*** module
 - KIWI image creation
 - cfengine, puppet
 - System verification & analysis
- Updated Stack
 - Kernel, Tools, pNFS, OFED, openmpi, chipset support

Machinery

SUSE® HPC



Customers & Partners

Customers and Partners

SUSE® High Performance Computing

Customers



PORSCHE



Partners



Fionn – SUSE benefits

SUSE High Performance Computing

- Irish Center for High-End Computing
- Power efficiency
 - 1st for x86 in top500 (June 2014)
- Winning partnering
 - SGI, SUSE, Intel working together
- 3 use cases
 - Thin: latest Intel Ivy Bridge
 - Fat: large shared-memory
 - Hybrid: Xeon Phi & NVIDIA Tesla

“The stability is impressive“

“SUSE Linux Enterprise Server doesn’t get in the way of the computational workload”

“... great tools for set up and configuration, but gives us the flexibility to use other tools, which simplifies maintenance.“

„In our view, ... very well suited to high-performance computing.“

— Niall Wilson
Infrastructure Manager
ICHEC





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