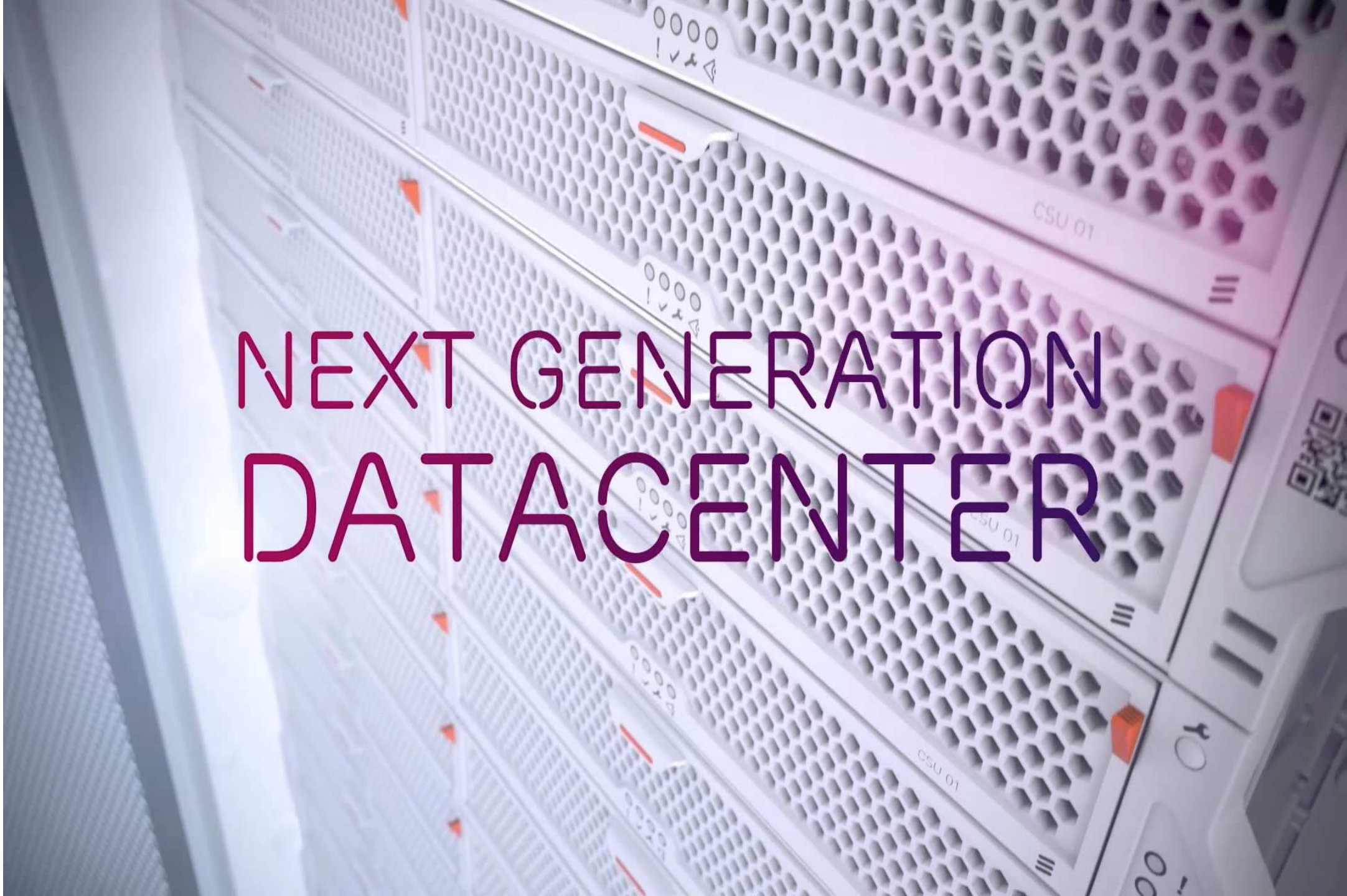
/OPEN SOURCE DAYS/ 2016

NEXT GENERATION DATACENTER



ERICSSON HDS 8000

- Next generation datacenter infrastructure platform
  - Ericsson HDS 8000 is a new generation of hyperscale datacenter systems
  - Uses Intel Rack Scale Architecture for a disaggregated hardware approach
  - Combines a disaggregated hardware architecture with optical interconnect
  - Dramatically improve efficiency, utilization, automation and total cost of ownership
  - HDS 8000 removes the traditional distance and capacity limitations of electrical connections

HDS 8000 Components

- Hardware
  - Chassis + Chassis Management Unit (CMU)
  - Compute Sled Unit (CSU)
  - Storage Sled Unit (SSU)
  - Network Sled Unit (NSU)

- Software
  - Command Center Manager (CCM) + UI
  - Command Center Agent
  - Equipment Access Manager (EAM = EAS + EAC)

ERICSSON HDS 8000

Disaggregated hardware

› Seamless scalability with efficient life cycle management

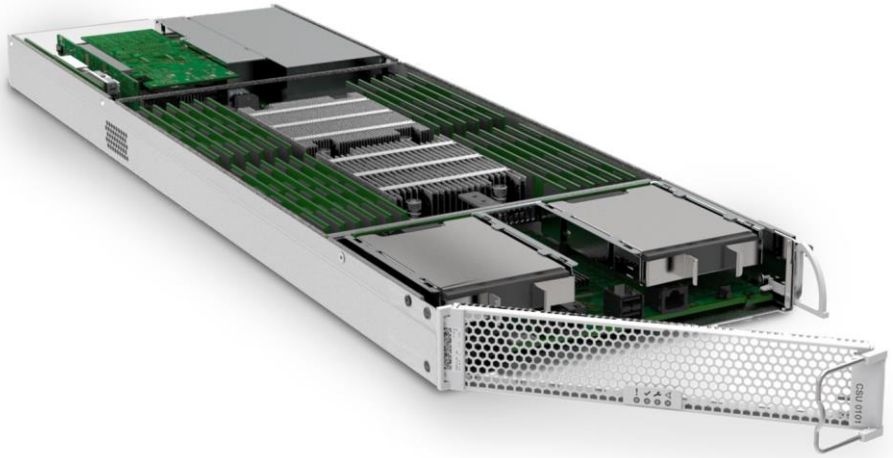
Full optical interconnect

› Enabling hyperscale

HDS Command Center

› Advanced automation, orchestration and asset governance

Compute Sled Unit (CSU)



- Intel processing subsystem (dual socket Intel XEON E5-2600)
- 24 DDR4 slots, up to 1536GB
- Intel Fortville Networking subsystem (XL710)
- Luxtera optical engine
- Power consumption: 200 - 500W (configuration dependent)

Storage Sled Unit (SSU)

- Optical SAS-based (Serial Attached SCSI) : Dual port 12Gb SAS expander
- Integrated optical Luxtera transceiver
- Power consumption : 150 - 350W (configuration dependent)
- Supported disks are: SSD 2.5”, HDD 2.5”, HDD 3.5” (12x3.5” HDD/SSD, 20x2.5” HDD/SSD)
- All SW loaded/updated over SAS, Ethernet or IPMB

Network Sled Unit (NSU)

- Payload
- 16 x 40Gb ports per sled, 1680 Mpps
- Netvisor OS (SDN)
- Power consumption: 400-1100W

Equipment Access Switch (EAS)

- Control
- 48 x RJ45 Ethernet, 10 x modular SFP+
- Power consumption: 350W max

Command Center Manager (CCM)

- Contains several software components that are used for controlling and management of Ericsson HDS 8000 system and 3PP servers

- CCM is hardware independant so it can manage and work on various machines (HP, Dell etc)

- The components:
  - CCM UI
  - CCM Core Software
  - Sparklog
  - Directive

➢ Some of CCM functionalities

- Network scan
- Managment and control (setting boot order, firmware update etc)
- OS provisioning (PXE boot, a.k.a. netboot)
- Gathering of metrics, logs and inventory data about the nodes

HDS

172.19.83.145/#hds

Ericsson HDS 8000

Search | 16:58 (+02:00) | Help | Logout

Ericsson HDS 8000 / HDS

HDS

Newsfeed

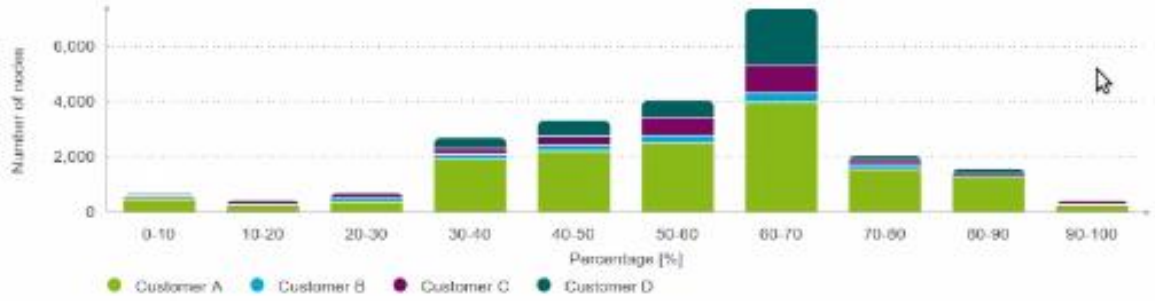
Summary

Number of nodes
17749
→ No change since 6.9.2015, 16:57

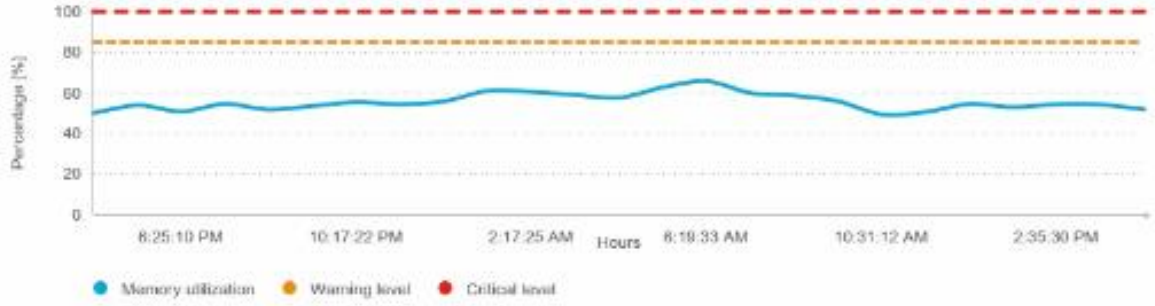
Number of managers
No data

Number of active alarms
13
→ No change since 31.8.2015, 15:32

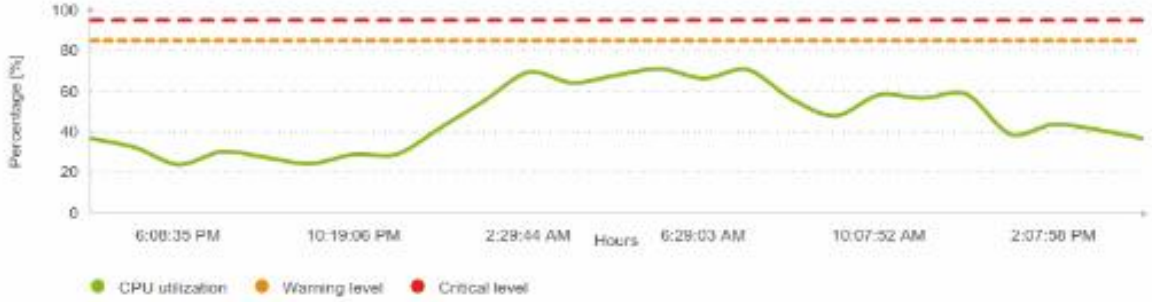
CPU load distribution



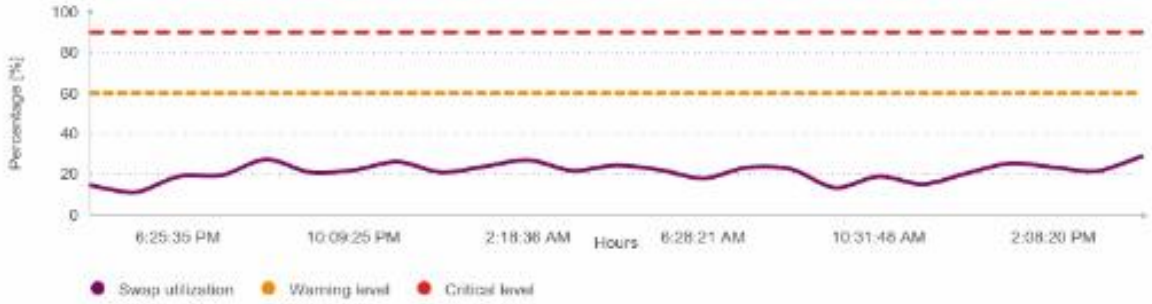
Memory utilization



Average CPU load



Swap utilization



Datacenter allocation

Compute

172.19.83.145/#hds/inventory/compute/6e6a67aa-6eef-4b33-b49c-d7569fccb58e

Ericsson HDS 8000

Search | 17:03 (+02:00) | Help | Logout

Ericsson HDS 8000 / HDS / Inventory / Compute

Node view - ymir-1210

On | Force Off | Force Restart | Set boot order | Deallocate | Newsfeed

Overview

NON SPECIFIED

INTEL(R) XEON(R) CPU E5-265..

10.0.13.228/8

8.00 TB

LINUX 3.16.0-23-GENERIC

14

Performance

35 Memory

50 Storage

7 CPU

Useful links

Monitoring

Metrics | Thresholds

Location

Configure

Boot rules | OS deployment

Firmware upgrade | Console

- Packages
- Operating system
- Storage devices
- Storage controller
- Memory details
- Processors
- Network
- Peripheral devices

Inventory

172.19.83.145/#hds/inventory

Ericsson HDS 8000

Search 17:02 (+02:00) Help Logout

Ericsson HDS 8000 / HDS / Inventory

Inventory

Newsfeed

Inventory

Hostname	Manufacturer	Model	Management State	Serial Number	Bios Version	Processor Count	Processor Model	Total System Memory (GIB)
thor-7161	Dell Inc.	PowerEdge 2950	-	2B70WT9X	1.8	1	Xeon	18
ymir-23747	Dell	R620	-	1WLDT87Y	1.2	2	Xeon	184
thor-8442	Dell	R620	-	1WLQRDFO	1.1	2	Xeon	184
ymir-8164	Dell	R620	-	1WL2QHGN	1.5	2	Xeon	184
ymir-1210	Ericsson	HDS 8000	-	1WLNVJQI	1.1	2	Xeon	384
ymir-23607	Dell	XS23-TY3	-	1WL9PY4Q	1.0	2	Xeon	48
ymir-16541	Dell	R620	-	1WLTXYRZ	1.4	2	Xeon	184
aphrodite-16284	Dell	R730XD	-	1WLNYVUS	1.8	2	Xeon	184
thor-19986	Supermicro	6015TW-TB	-	1WL98JZQ	1.8	2	Xeon	32
aphrodite-1751	HP	ProLiant DL360p G7	-	MXQZWQ3U	1.2	2	Xeon	32

‹ 1 2 3 4 5 6 7 8 9 10 11 12 ... 1775 ›

Metrics

172.19.83.145/#hds/inventory/metrics/6e6a67aa-6eef-4b33-b49c-d7569fccb58e

Ericsson HDS 8000

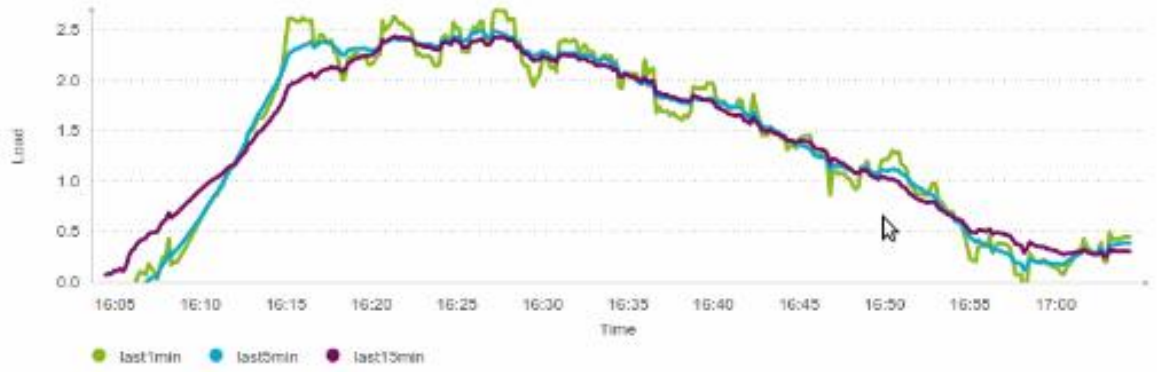
Search | 17:04 (+02:00) | Help | Logout

Ericsson HDS 8000 / HDS / Inventory / Metrics

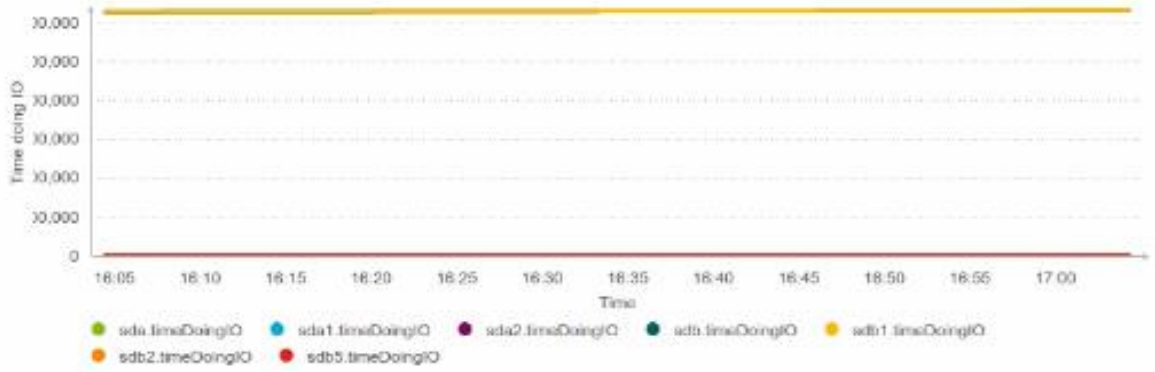
Metrics

New Chart | Newsfeed

CPU usage

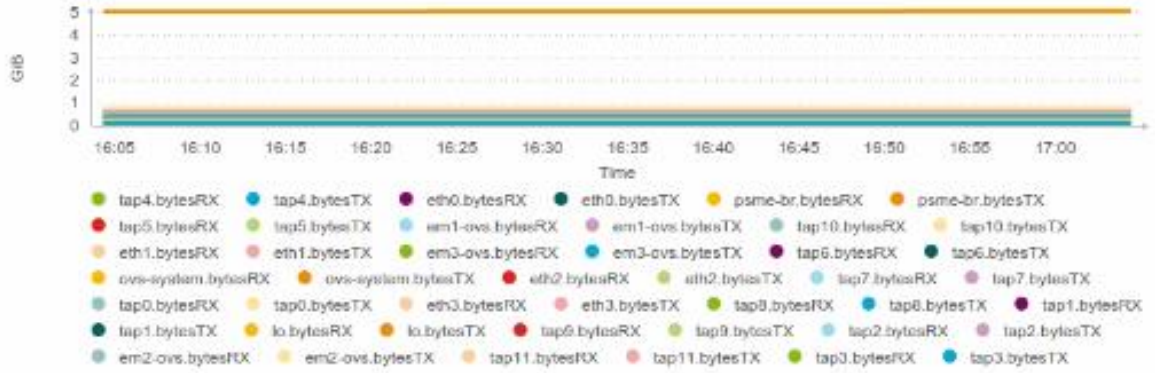


Disk usage



Memory usage

Network usage



Network errors

HDS 8000 Certification process

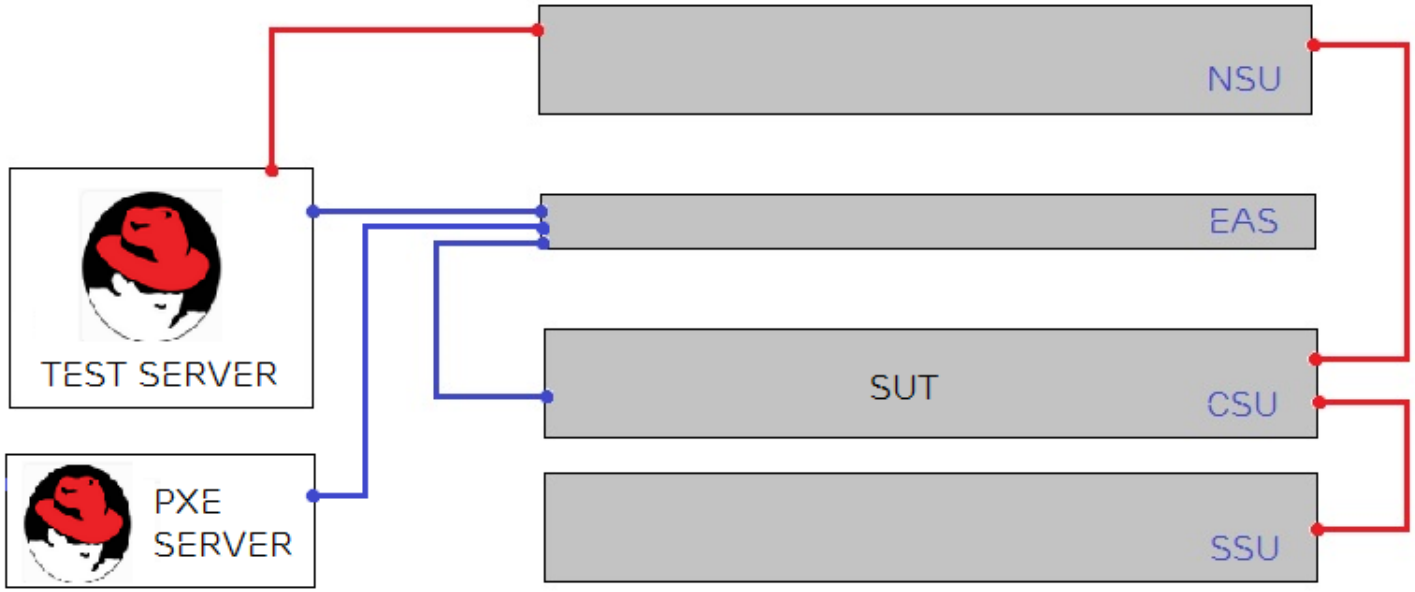
- Receive certification test suite based on HDS specs that define the scope of certification

- Construct the required eco system
  - System Under Test (SUT) – One or more HDS8K compute sleds
  - Local Test server (LTS), mainly VMs running on ESXi (VMware) from where the test suites will be executed from Dell or HDS etc

- Run test cases
  - Troubleshoting failed testcases

RedHat Certification

- HDS 8000 solution will be certified for RedHat 6.8 and 7.2
- RedHat certification Eco system



- RedHat certification test tool
- Fortville XL710 drivers issues

Red Hat Certification | Red Hat Customer Portal

192.168.137.160/results/hardware/3/192.168.137.165/2016-01-19 15:04:16/

RED HAT CERTIFICATION — localhost.localdomain (2.0-20151117)

Ericsson Ericsson AB
Hyper-scale data center
(HDS8000)

Ecosystem: Hardware
Workflow: Catalog

Products » Ericsson Ericsson AB Hyper-scale data center (HDS8000) » Red Hat Enterprise Linux 6.5

Test Results

localhost.localdomain (192.168.137.165) 2016-01-19 15:06:25

Host Vendor Ericsson AB
Host Model BFB80101/1
Host Arch x86_64

Run:		1	2	3	4	5	Run Selected debug
hwcert/optical/cdrom	sr0						Run Interactive
hwcert/usbbase /usbbase/usb2	/devices/pci0000:00 /0000:00:1d.0/usb1			FAIL			Run Interactive
hwcert/kdump	nfs						Run Interactive
hwcert/kdump	local				FAIL	PASS	Run Interactive
hwcert/network /Ethernet /100MegEthernet	eth2	PASS					
hwcert/network /Ethernet /1GigEthernet	eth0	FAIL					
hwcert/memory		FAIL threaded_memtest.c	PASS threaded_memtest.c				
hwcert/core		PASS clocktest.c					
hwcert/cpuscaling		PASS					
hwcert/fvtest/fv_core		FAIL	PASS				
hwcert/fvtest /fv_memory		FAIL	PASS				
hwcert/fvtest /fv_network		FAIL	FAIL				
hwcert/fvtest /fv_storage		FAIL	PASS				
hwcert/profiler		PASS					
hwcert/storage	host7	PASS					
hwcert/storage	host6	PASS					
hwcert/storage	host5	FAIL					
hwcert/video	/devices/pci0000:00 /0000:00:1c.3 /0000:16:00.0 /0000:17:00.0	PASS Xorg.0.log x11perftest.c Xorg.2.log					
hwcert/info		PASS sosreport-localho...	PASS sosreport-localho...	PASS sosreport-localho...	PASS sosreport-localho...	PASS sosreport-localho...	post-run
hwcert/storage	host10						
hwcert/storage	host11						

client: 2.0 20151117

SUBSCRIPTIONS DOWNLOADS SUPPORT CASES

redhat CUSTOMER PORTAL

Products & Services | Tools | Security | Community

Hardware Catalog Home > Ericsson Hyperscale Datacenter System 8000 CSU 0101

RED HAT CERTIFICATION WORKFLOW

WORK QUEUES

- Specification Review
- Results Package Review
- Leverage Validation
- ~~Pass-Through Verification~~
- Dialog Response Requested
- Support Approval
- ~~RHELOSP Certification Verification~~
- ~~RHEV Certification Verification~~
- ~~RHS Certification Verification~~

Average Closure Age: 19 days

- FAQs
- How-to Wiki
- Create
- Show In Progress Certifications
- Hardware Certification Policy Guide
- Logout

Ericsson Hyperscale Datacenter System 8000 CSU 0101

Certification

Summary | Publish | Dialog | Review | Advanced

TEST PLAN STATE

Leave Test Plan as Frozen

TEST PLAN PROGRESS

16/16 Items Completed
100

64bit Requirements

SYSTEM

2x 14C - Intel Haswell-EP processors (Integrated)			Confirmed
2x Intel Xeon Processor E5-2697v3/E5-2695v3 with HT,TurboBoost (56 logical Cores)	CORE	[353585](RE	Results Hardware (INFO) Results Hardware
2x Intel Xeon Processor E5-2697v3/E5-2695v3 with HT,TurboBoost (56 logical Cores)	CPUSCALING	[353590](RE	Results Hardware (INFO) Results Hardware
	FV_CORE	[353580](RE	Results Hardware (INFO) Results Hardware
	FV_MEMORY	[353599](RE	Results Hardware (INFO) Results Hardware
56GB	MEMORY	[353589](RE	Results Hardware

TEST RUN INFORMATION

Test File	rhcert-results-host0000000004.vdc-20160427110648.xml.gz (id=1151481)
Kernel	2.6.32-431.el6
Status	Reviewed

Test Run 0 Arch x86_64

Test ID	Results	Hardware	Runtime Log	Extra Files 0
353581	PASSED	PROFILER	PROFILER	
353582	PASSED	STORAGE	STORAGE	
353583	PASSED	STORAGE	STORAGE	
353584	PASSED	STORAGE	STORAGE	
353585	PASSED	CORE	CORE	
353586	PASSED	INFO	INFO	sosreport-host000...
353587	PASSED	STORAGE	STORAGE	
353588	PASSED	FV_CORE	FV_CORE	
353589	PASSED	MEMORY	MEMORY	
353590	PASSED	CPUSCALING	CPUSCALING	
353591	PASSED	VIDEO	VIDEO	
353592	PASSED	FV_MEMORY	FV_MEMORY	
353593	PASSED	1GIGETHERNET	1GIGETHERNET	

Test Run 1 Arch x86_64

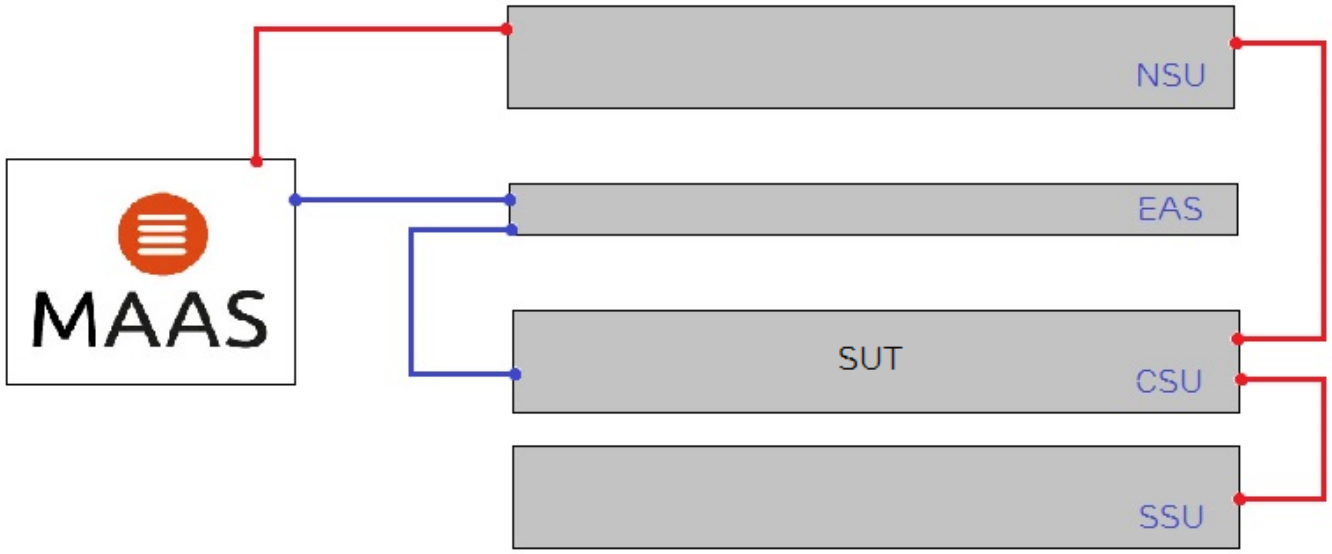
Test ID	Results	Hardware	Runtime Log	Extra Files 1
353577	PASSED	INFO	INFO	sosreport-host000...
353578	PASSED	KDUMP	KDUMP	

Test Run 2 Arch x86_64

Test ID	Results	Hardware	Runtime Log	Extra Files 2
353596	PASSED	INFO	INFO	sosreport-host000...
353597	PASSED	KDUMP	KDUMP	

Ubuntu Certification

- HDS 8000 solution Certified for Ubuntu 14.04.
- 4.2 kernel used
- Ubuntu Certification suite (
  - Network tests
  - Processor tests
  - Storage tests
  - Firmware tests
  - Virtualization tests



ERICSSON

/OPEN SOURCE DAYS/ 2016