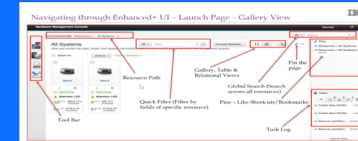


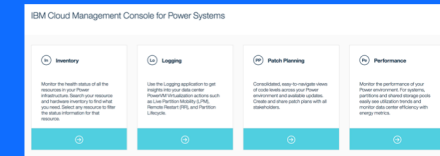
# HMC



# vHMC



# CMC



## Les nouveautés de 2018



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# **AGENDA :**

**HMC – vHMC nouveautés**

**HMC – Enhanced+ GUI**

**CMC – Services dans le cloud IBM**

# HMC – vHMC nouveautés



## x86 HMC comparison

Feature	CR6	CR7	CR8	CR9
Processor	<b>Westmere-EP</b>	<b>Intel Xeon E5 (Sandy Bridge)</b>	<b>Intel Xeon E5 v2 (Ivy Bridge)</b>	<b>Intel Xeon E5 v3 (Haswell)</b>
Memory	4 GB	8 - 16 GB	8 - 16 GB	16 GB - 192 GB
DASD	500 GB	500 GB	500 GB	500 GB
RAID 1 (2disks)	Defaulted	Optional	Optional	Defaulted
Integrated Networks	2 on Main Bus + 2 on expansion slot	4 x 1 GbE	4 x 1 GbE	4 x 1 GbE
I/O Slots	1 PCI Express 2.0 slot	1 PCI Express 3.0 slot	1 PCI Express 3.0 slot	1 PCI Express 3.0 slot
USB Ports	2 front / 4 back 1 Internal	2 front / 4 back 1 Internal	2 front / 4 back 1 Internal	2 front / 4 back 1 Internal



# HMC Hardware update Q3 2017

## **POWER8 HW Appliance** – like the Intel HMC HW Appliance

- But 6 POWER8 CPU cores, 32 GB RAM & two disks
- POWER8 faster than Intel + SMT=8 for massive concurrency
- Model: POWER8 7063-CR1 [Older Intel: 7042-CR9]

## **POWER8 virtual HMC** – like the Intel vHMC

- Runs in a PowerVM LPAR on a POWER8 server
- Obviously, you can't manage the server its actually running on!
- Note: not KVM, XEN, Vmware as these are Intel only
- Use a vHMC to test new HMC versions on temporary basis
- **Bottom line: minimum of one/two real physical HMCs is still normal**

# HMC 7063-CR1

GA 4Q2017

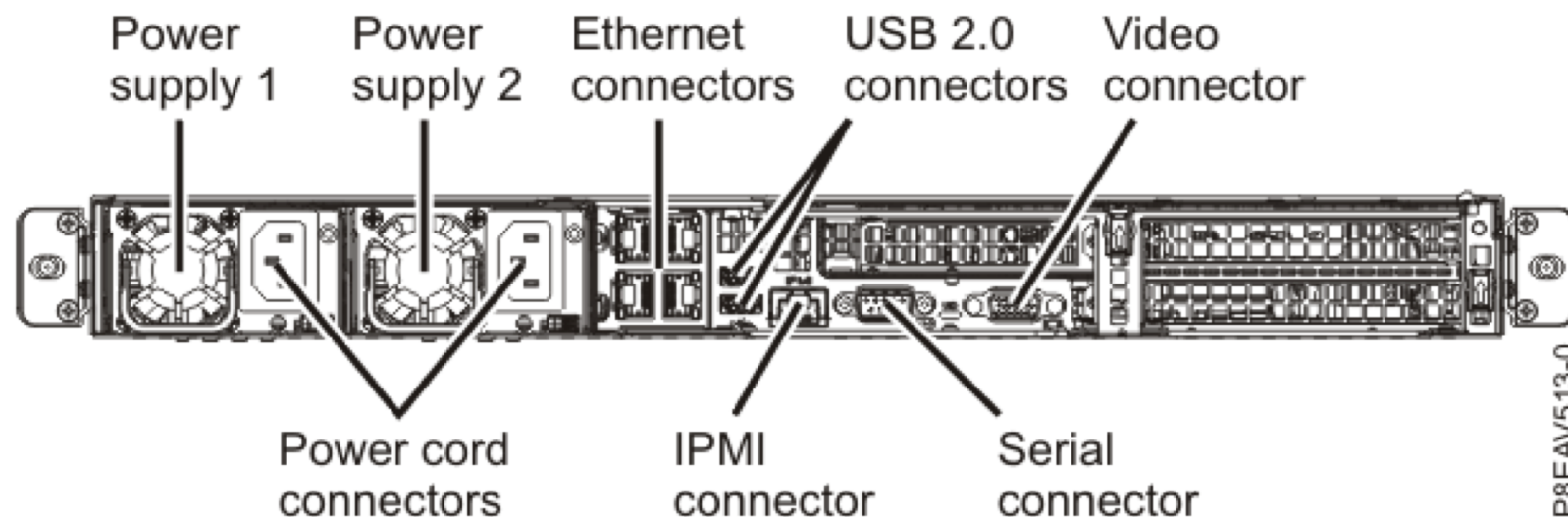
- 7063-CR1 is based on System S821LC

- Fixed Config
- 6 POWER8 cores with SMT8
- 32GB RAM
- 2 HDD
- Fits round holes and square holes

Massive  
concurrency

- Simple to install, remotely start/stop using BMC + ipmitool + web UI

- GA with HMC V8.870: **4Q 2017**



7063-CR1 has a lower list price  
than 7042-CR9

# POWER8 virtual HMC

- POWER8 virtual HMC – like the Intel vHMC
- Runs in a **PowerVM** LPAR on a POWER8 server
  - No, it will not run on a POWER7 processor
  - Yes, it will manage a POWER7 based server
- Obviously, you can't manage the server its actually running on!
- Note: not KVM, XEN, Vmware

# HMC Software Releases

## HMC 860 “old”

Runs on  
Intel

Manages  
POWER6  
POWER7  
POWER8

Classic GUI &  
Enhanced+ GUI  
Support till Q4 2018

## HMC 870 Q4 2017

Runs on  
Intel  
POWER8

Manages  
POWER6  
POWER7  
POWER8

Enhanced+ GUI Only  
Support at least 2019  
Some “missing” features  
get added here like  
System Plans  
CLI no change

## HMC 9xx – Q1 2018

Runs on  
Intel  
POWER8

Manages  
- ← gone  
POWER7  
POWER8  
POWER9 ← new

Enhanced+ GUI Only  
Supported for years

Buying POWER9?  
A good time to move up to a  
POWER8 HMC

★ = Most current releases

# HMC HW and SW support matrix

## Hardware support matrix

HMC Machine/ Type/Model	POWER9 Server Support	POWER8 Server Support	POWER7 Server Support	POWER6 Server Support	POWER5 Server Support	POWER4 Server Support	Minimum HMC Release	Last Supported HMC Release
7063-CR1	Yes	Yes	Yes	Last support on HMC V8.870	No	No	HMC V8.870.0	In support
7042-CR9	Yes	Yes	Yes	Last support on HMC V8.870	No	No	HMC V8.840.0	HMC V9.1.920
7042-CR8	Yes	Yes	Yes	Last support on HMC V8.870	No	No	HMC V8.810.0	HMC V9.1.920
7042-CR7	Yes	Yes	Yes	Last support on HMC V8.870	Last support on HMC V7.790	No	HMC V7.760.0	HMC V9.1.920
7042-CR6	No	Yes	Yes	Yes	Last support on HMC V7.790	No	HMC V7.720.0	HMC V8.860
7042-CR5	No	Yes	Yes	Yes	Last support on HMC V7.790	No	HMC V7.350.0	HMC V8.860

Pour supporter POWER9 : Minimum HMC CR7 et HMC code en V9R1.910



# POWER9

## HMC Requirements

HMC code level V9R1.910

CR7	7042-CR7	Non disponible à la vente
CR8	7042-CR8	Non disponible à la vente
CR9	7042-CR9	
CR1	7063-CR1	Appliance recommandée

# HMC V8R870

- No Classic GUI
- Enhanced+ GUI has all functionality that was in Classic
- Runs on Intel or POWER8
- Manages
  - POWER6
  - POWER7
  - POWER8
- HMC V8 will not manage POWER9 based servers
  - So use the Enhanced+ GUI **now**



# Can I use both Intel and POWER8 HMCs

- YES
- A server can be managed by 2 HMCs
- Any combination of Intel/POWER
- Any combination of hardware appliance/software appliance
- Do not think about using a vHMC in a PowerVM LPAR on a server which the HMC manages
- Allowed this time only one HMC at 860 + one HMC at 870
  - Normally both HMC must be at exactly the same level

# Suggestions

- Consider using a vHMC to test new versions of code
  - Assuming enough resources, very easy to fall back
- Theoretically, at large sites (1000's of POWER servers)
  - could have a pair of HMC HW Appliances to control some of the POWER servers
  - which run many vHMC for the rest of the servers.

# I want to use the Classic GUI

- You can
  - But only up to HMC V8 R860
  - Support continues till end of 2018
  - Then the only supported GUI will be Enhanced+
  - HMC V8 will not manage POWER9 based servers



# Suggestions

- It is still normal to have 2 HMCs managing POWER servers
- Use the POWER8 based 7063-CR1
  - All new purchases
  - All HMC hardware refreshes
- Enterprise Servers
  - Have at least one HMC Hardware Appliance
- Lots of servers
  - Have at least one HMC Hardware Appliance

# Hardware Management Console Offerings

## x86 based HMC

### Hardware appliance

- 7042-CR9

**Withdrawal July 2018**



### Software appliance

- Requires x86 64 bit Hypervisor with HW virtualization (VT-x / AMD-V)
- Callhome on HMC serviceable events is disabled on vHMC

## POWER based HMC

### Hardware appliance

- 7063-CR1



### Software appliance





- Requires POWER8 and PowerVM with little endian support.
- System FW860 recommended
- The vHMC cannot manage the system it is running on
- Callhome on HMC serviceable events is disabled on vHMC

# HMC Software Releases today

	HMC 860	HMC 870 (Q4 2017)	HMC 9.1.910 (Q1 2018)
<b>HW platform</b>	x86 (C08, CR5)	x86 (C09, CR7) ppc64le (7063-CR1)	x86 (7042-CR7) ppc64le
<b>Managed server</b>	POWER6	POWER6	-
	POWER7	POWER7	POWER7
	POWER8	POWER8	POWER8
	-	-	<b>POWER9</b>
<b>GUI</b>	Classic & Enhanced+	Enhanced+ only	Enhanced+ only
<b>Support</b>	till Q4 2018	at least 2019	tbd

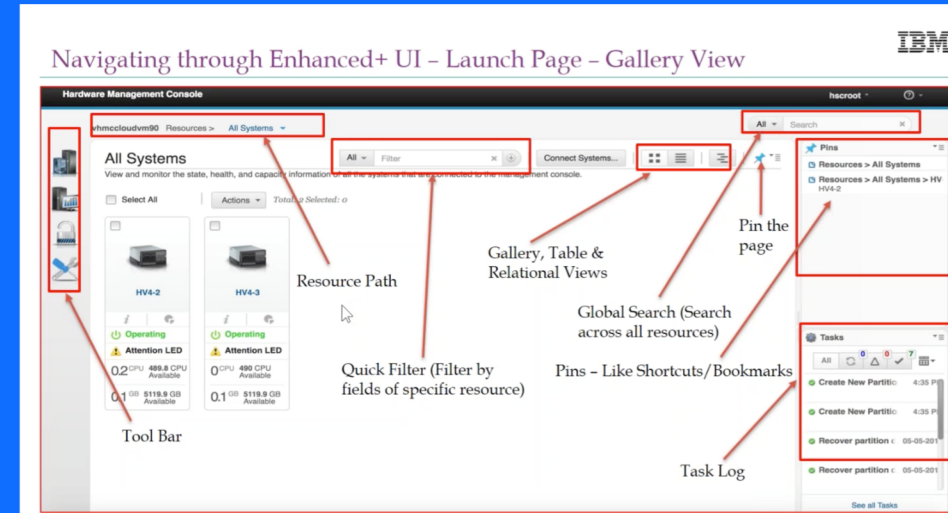
# Roadmap

Fin de  
vente  
HMC  
x86

	HMC V8		HMC V9 / POWER9		
	3Q 2017	4Q 2017	1Q 2018	3Q 2018	2Q 2019
Software	8.7.0  vHMC  x86 ppc64le		9.1.910  vHMC  x86 ppc64le	9.1.920  vHMC  x86 ppc64le	9.2.930  vHMC  ppc64le
Hardware	 x86  7063-CR1				
					
NovaLink	1.0.0.7	1.0.0.8	1.0.0.9	1.0.0.11	1.0.0.12
CMC					
myHMC	2.0				
IVM	Service stream				



# HMC enhanced GUI



# HMC V8 Reminder and level setting

- Massive Graphical overhaul (code name K2) but optional (originally)
  - One touch VIOS deploy
  - Templates to deploy similar LPAR / VM & whole system
  - Integrated Performance & Capacity (think hourly)
- Pre-reqs
  - HMC hardware CR5 or later
  - Memory 4 GB but 8 GB recommended (CR7/8 start at 8GB)
- Only connects to POWER6, 7 or 8 (no POWER5!)

# V8R870 Enhancements and new function

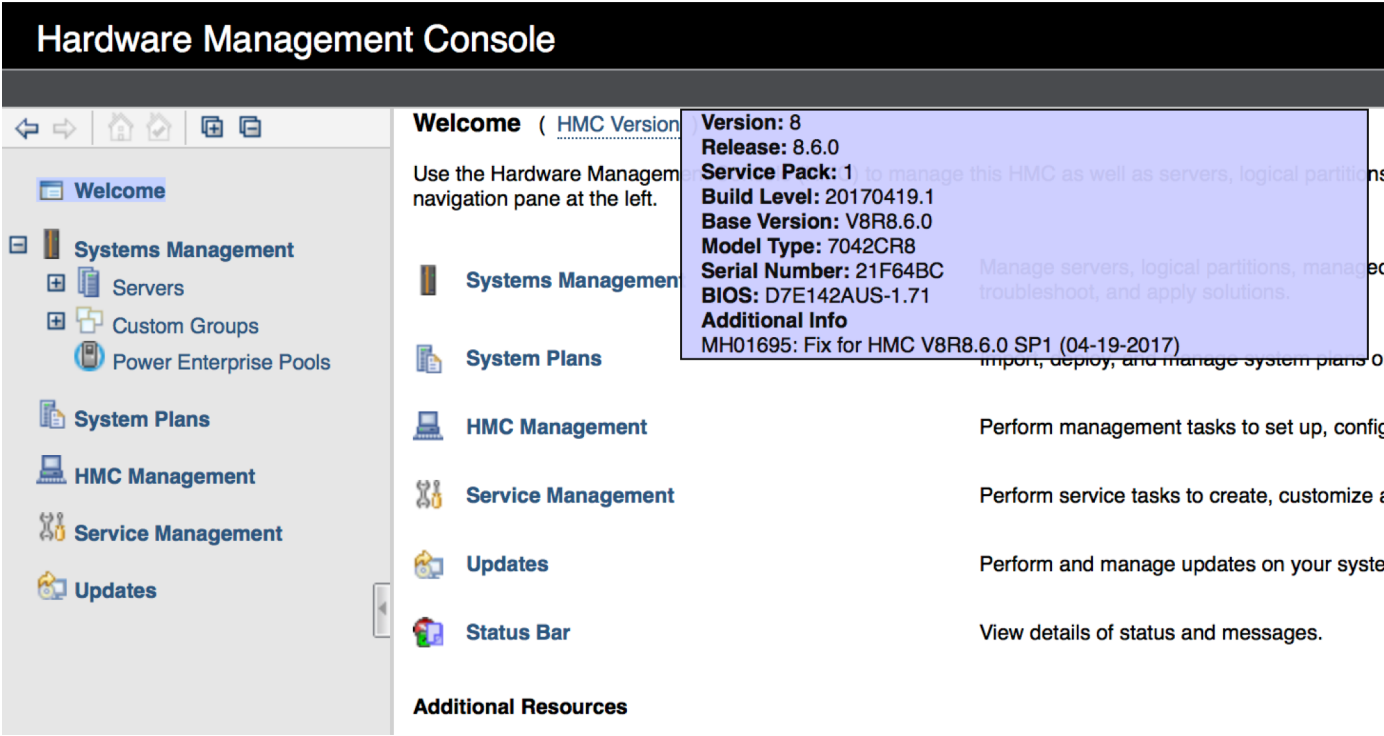
- Performance improvements including functions related to
  - virtual NICs
  - virtual storage
  - topology diagrams
- Enhanced Template deploy
  - More detailed information about the detailed progress
- Partition Virtual Storage Adapter View updates
  - show existing storage attached to adapters and to add storage from the adapter view.

# Enhanced+ UI

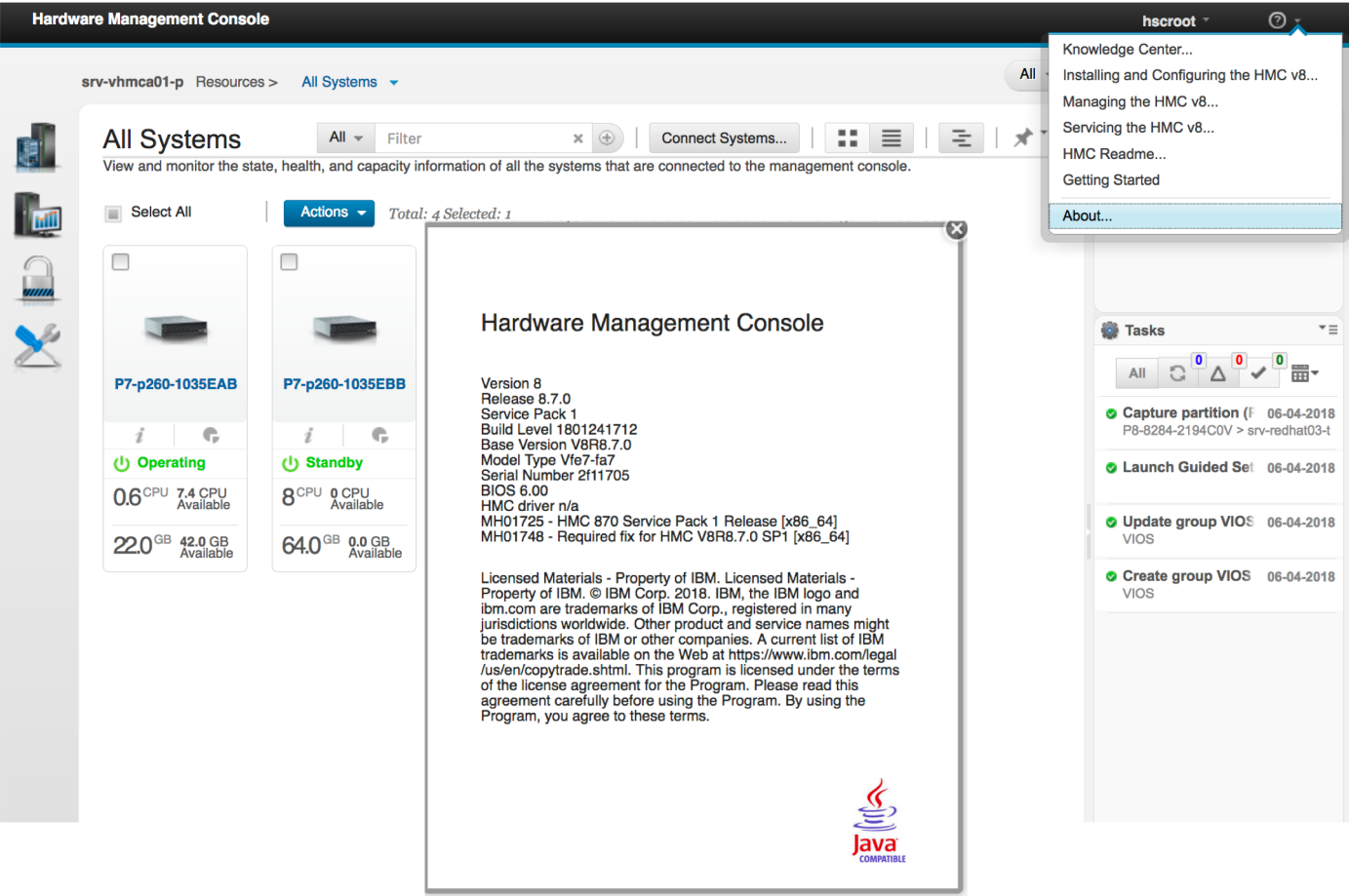


# HMC version

## CLASSICAL GUI

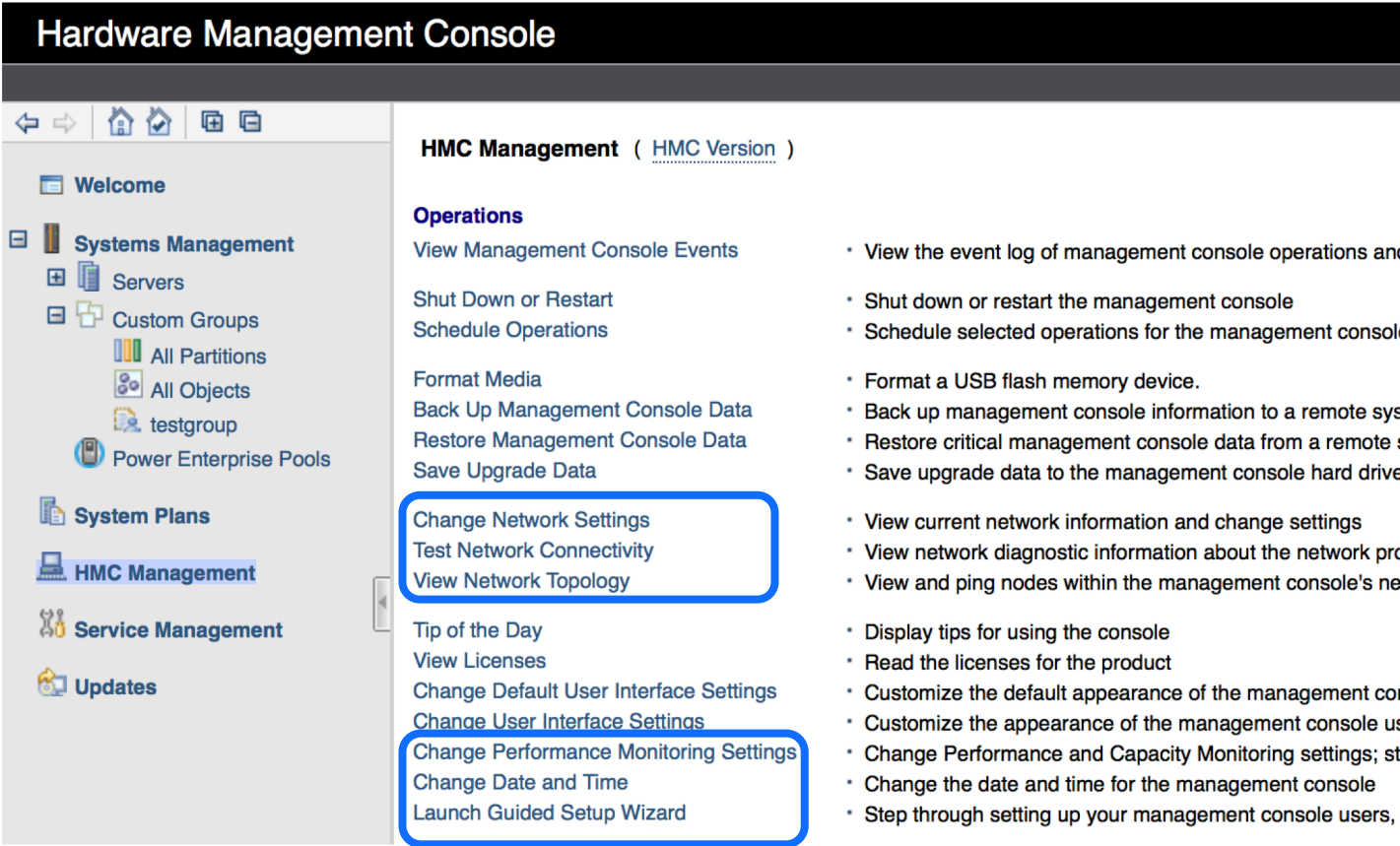


## ENHANCED GUI

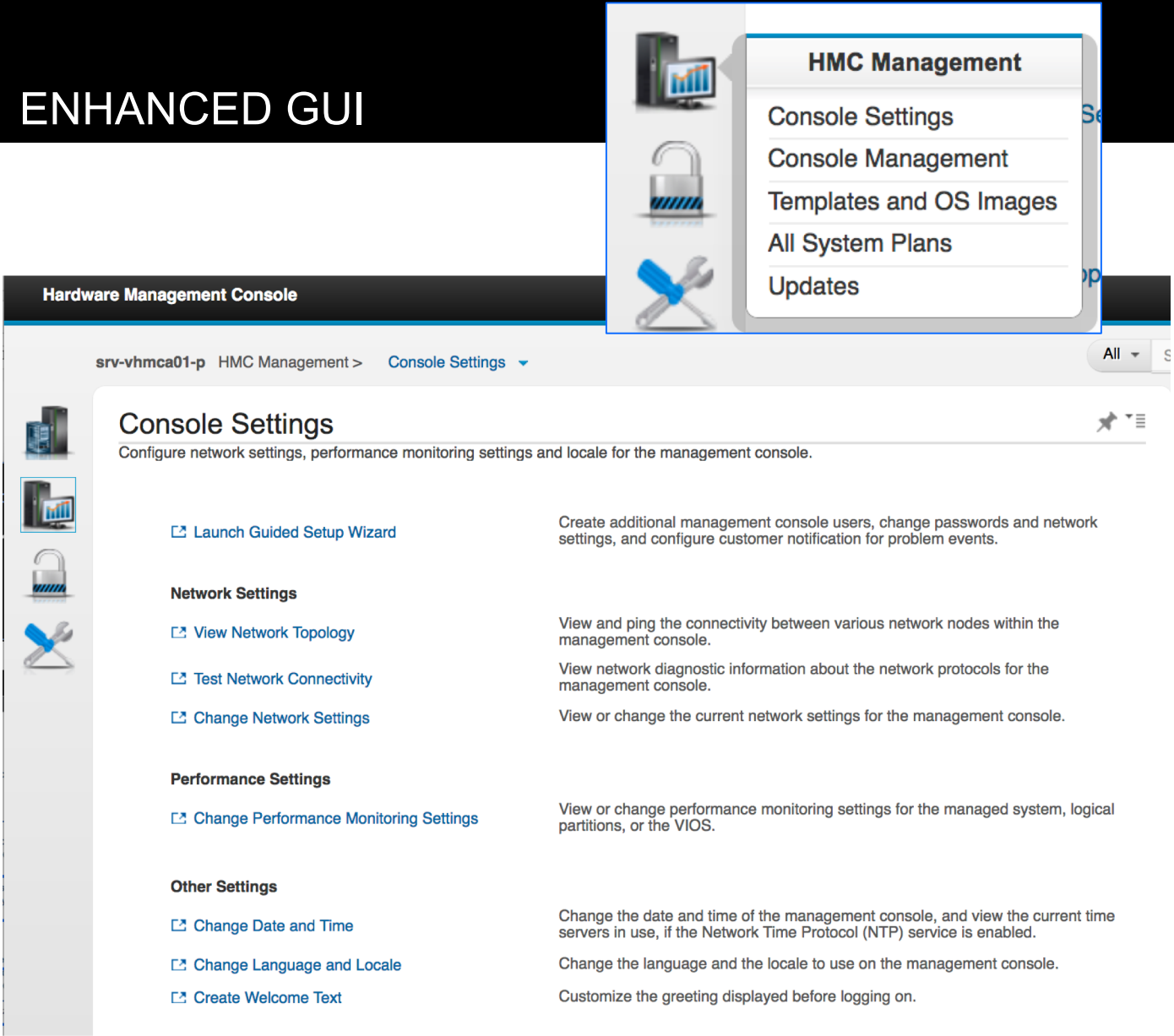


# HMC Management – Operations – Network and OS settings

## CLASSICAL GUI



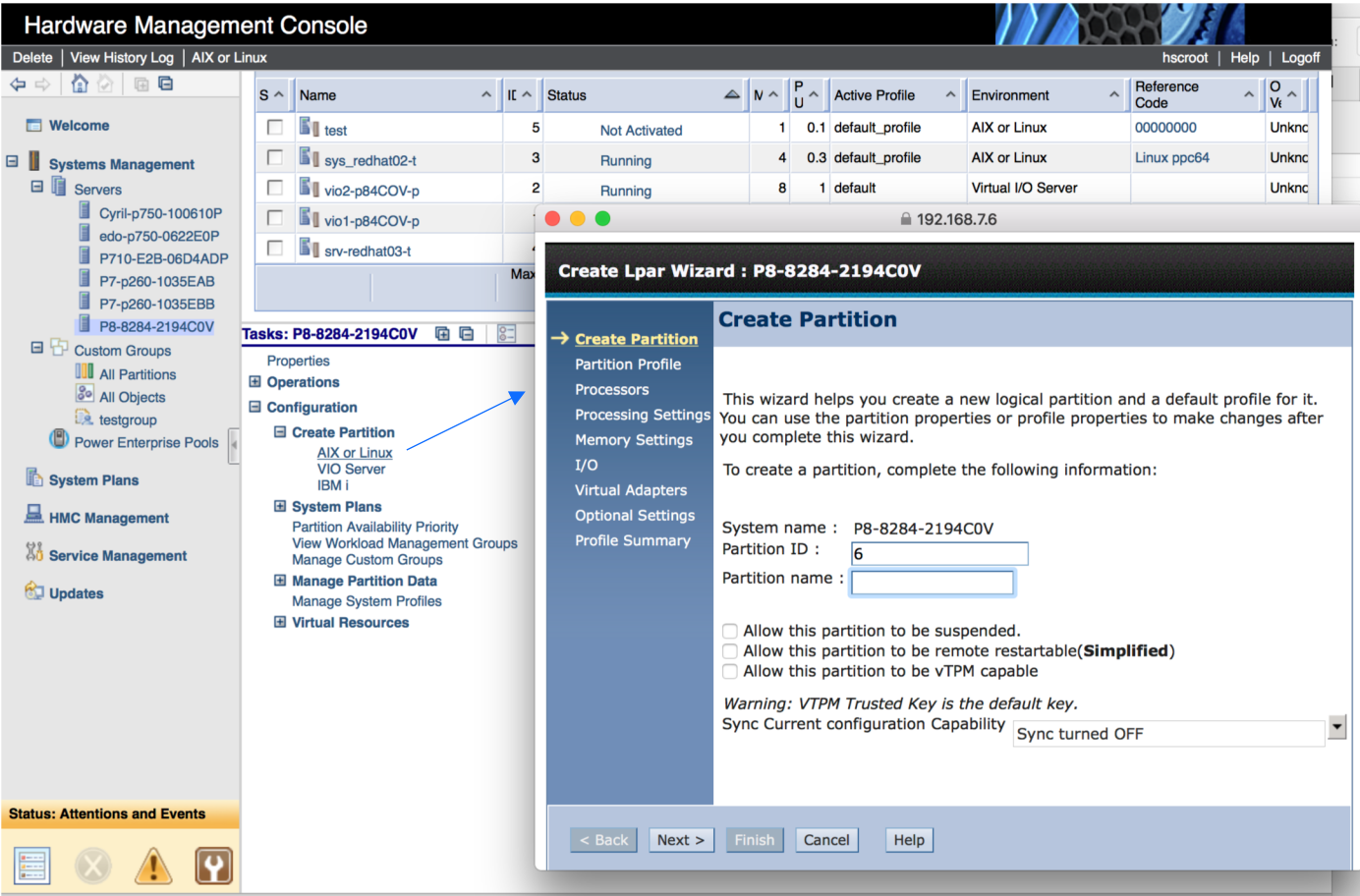
## ENHANCED GUI



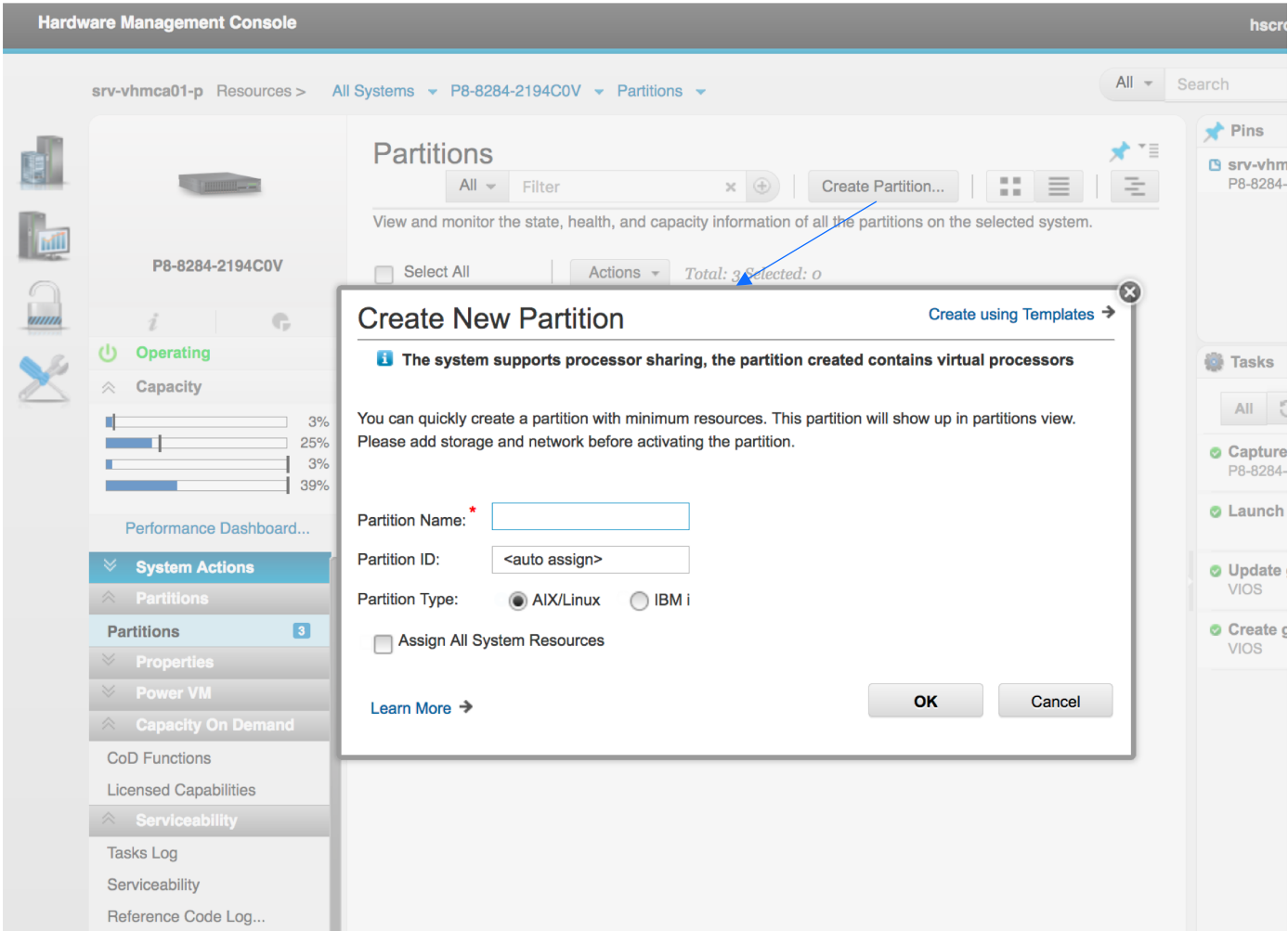


# System Configuration – Create partition

## CLASSICAL GUI



## ENHANCED GUI





# Virtualization dashboard

⌵

Topology

Virtual Networking Diagram

Virtual Storage Diagram

SR-IOV vNIC Diagram

Virtual Networking Diagram

View the end-to-end network configuration for the selected system, including the virtual and physical components. Double-click a resource to highlight the relationship between its various virtual and physical components in the network. Single-click and drag allows you to pan around the diagram. Right-click on a resource to view more detailed information in a click card. Hover over the label of a resource area to display the name in a tooltip.

The diagram illustrates the network configuration for a system. At the top, a 'Physical Network' section shows four physical network interfaces (U78CB.001.WZS04LT-P1-C11 to C14) connected to a central switch. Below this, a 'Virtual Network' section shows the virtual network topology, including virtual switches (VSw1, VSw2), virtual network interfaces (vnic1, vnic2), and virtual network adapters (vnic1, vnic2). The diagram is organized into layers: Physical, Virtual Network, and Virtual Machine. The Physical layer shows the physical network interfaces and their connections. The Virtual Network layer shows the virtual switches and their connections to the physical network. The Virtual Machine layer shows the virtual machines and their connections to the virtual network. The diagram is interactive, allowing users to double-click a resource to highlight its relationships, single-click and drag to pan, right-click to view details, and hover over labels for tooltips.

P8-8284-2194C0V

Operating

Capacity

System Actions

Partitions

Properties

Power VM

Capacity On Demand

Serviceability

Topology

Virtual Networking Diagram

Virtual Storage Diagram

SR-IOV vNIC Diagram

System Virtual Storage Diagram

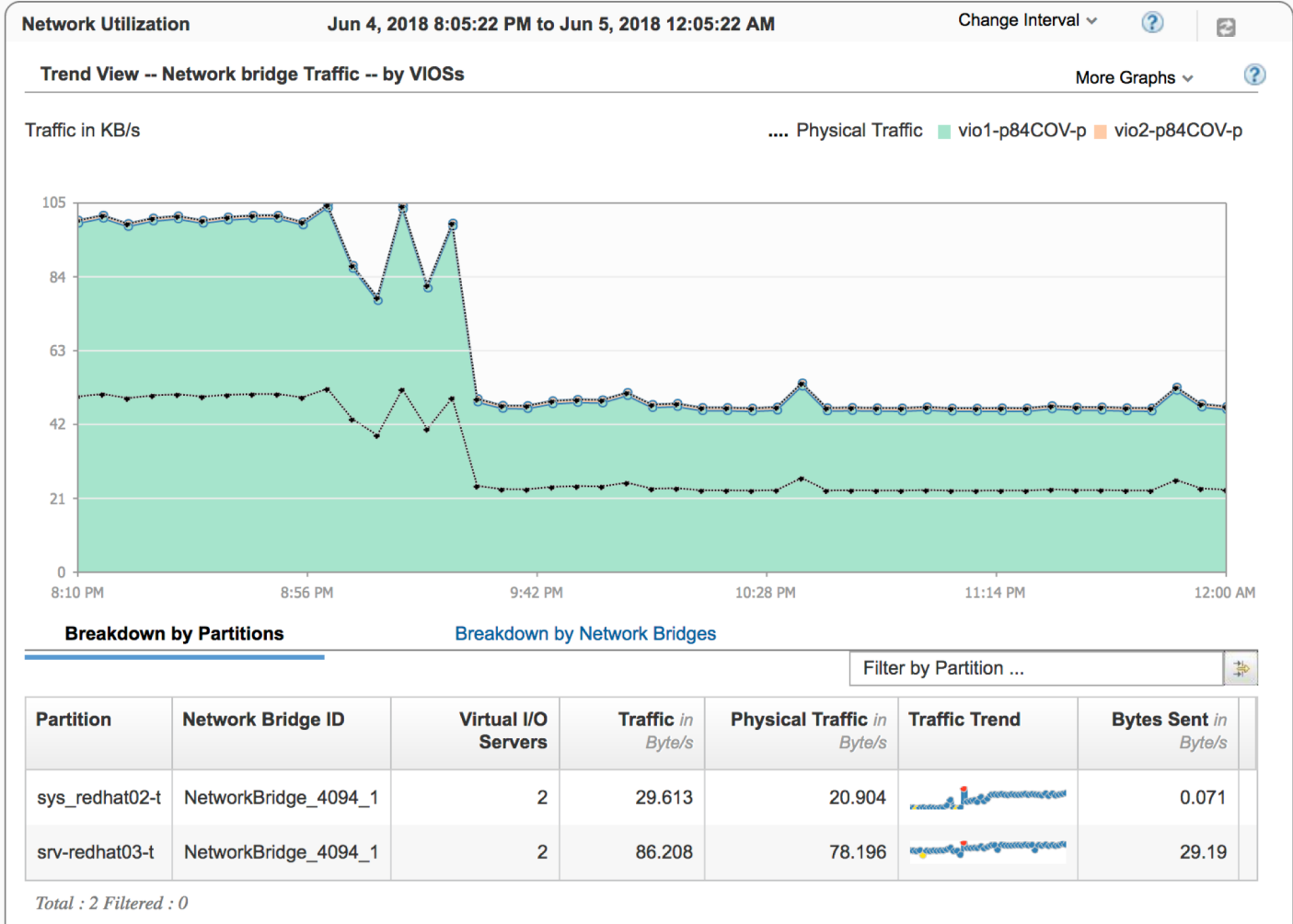
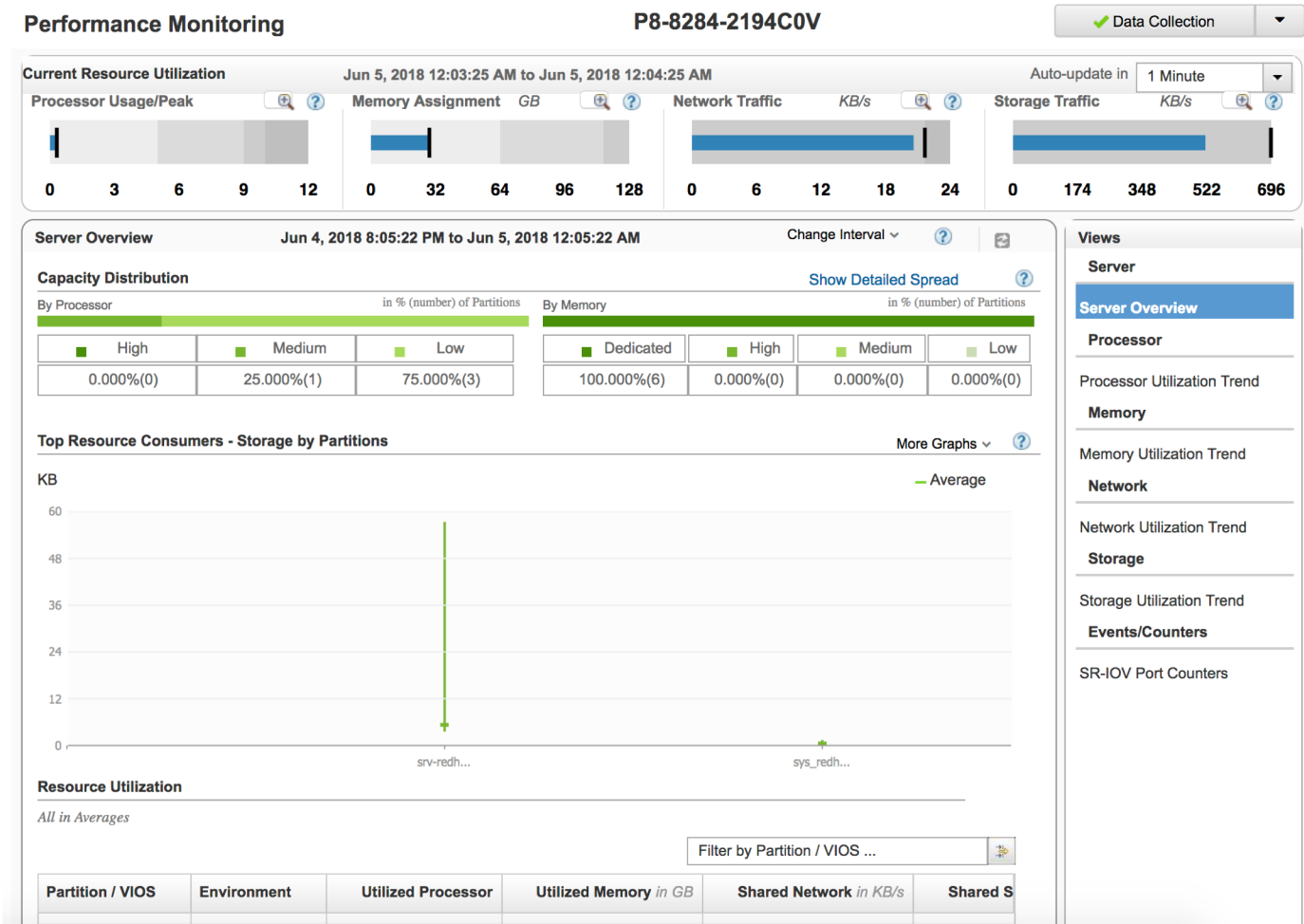
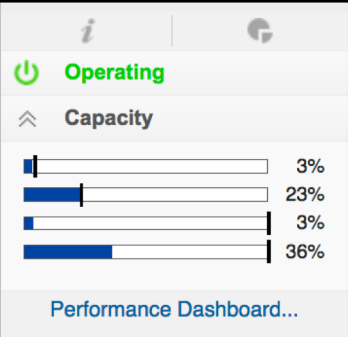
View the virtual storage configuration for the selected system, including the physical and virtual components of system storage. This diagram displays a high level overview of the contents of the system rather than the specific component relationships. Double-click a resource to highlight the relationship between its various virtual and physical components. Single-click and drag, allows you to pan around the diagram. Right-click on a resource to view more detailed information in a click card. Hover over the label of a resource area to display the name in a tooltip.

The diagram illustrates the virtual storage configuration for a system. It shows the physical storage components (Vio2, Vio1) and their connections to the virtual storage components (VHost 4, VHost 3). The diagram is organized into layers: Physical, Virtual Storage, and Virtual Machine. The Physical layer shows the physical storage components and their connections. The Virtual Storage layer shows the virtual storage components and their connections to the physical storage. The Virtual Machine layer shows the virtual machines and their connections to the virtual storage. The diagram is interactive, allowing users to double-click a resource to highlight its relationships, single-click and drag to pan, right-click to view details, and hover over labels for tooltips.

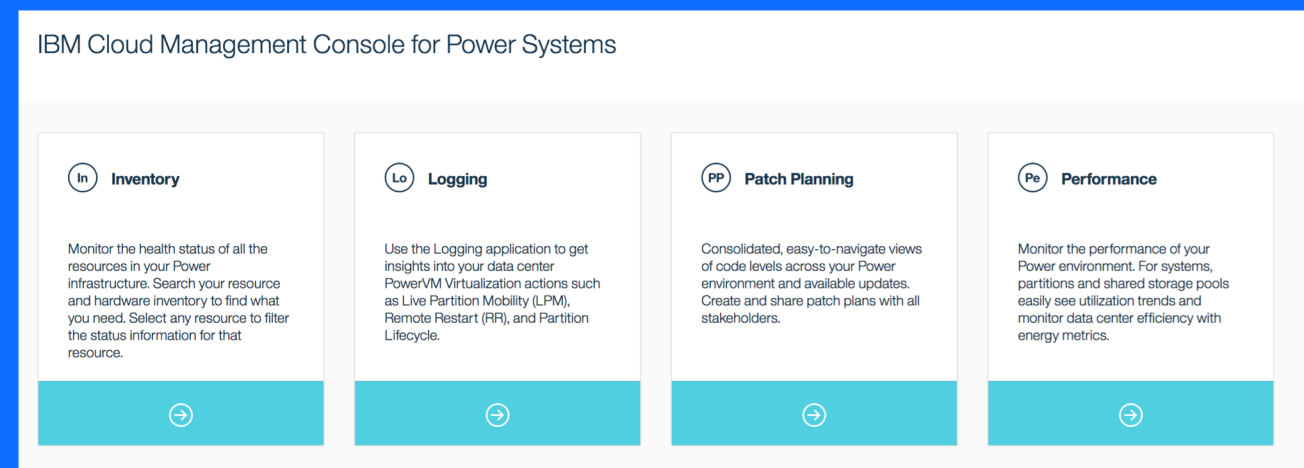
34

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# Performance dashboard



# CMC : IBM Cloud Management Console

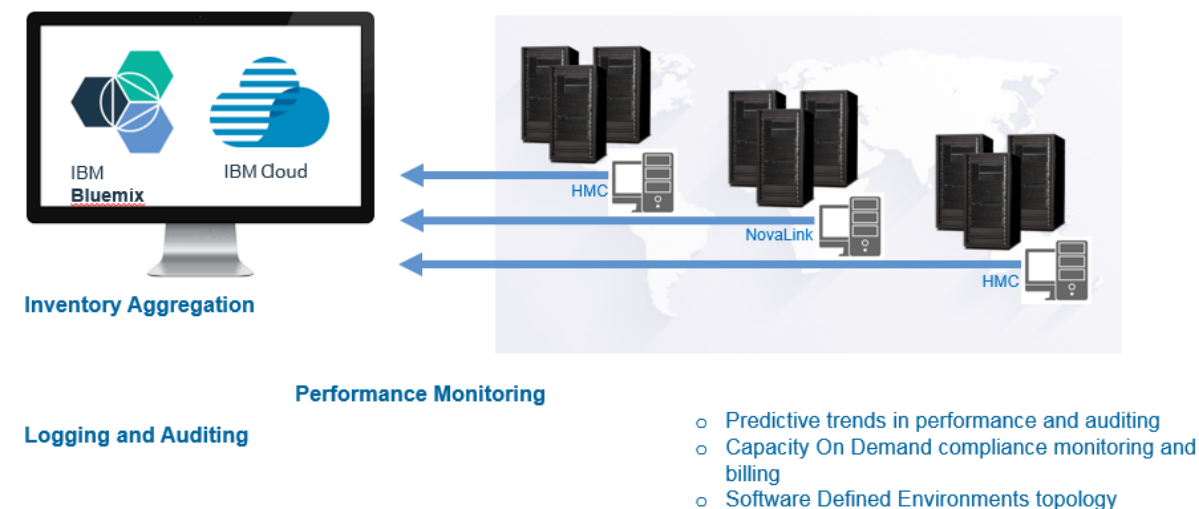


# CMC – What is ?

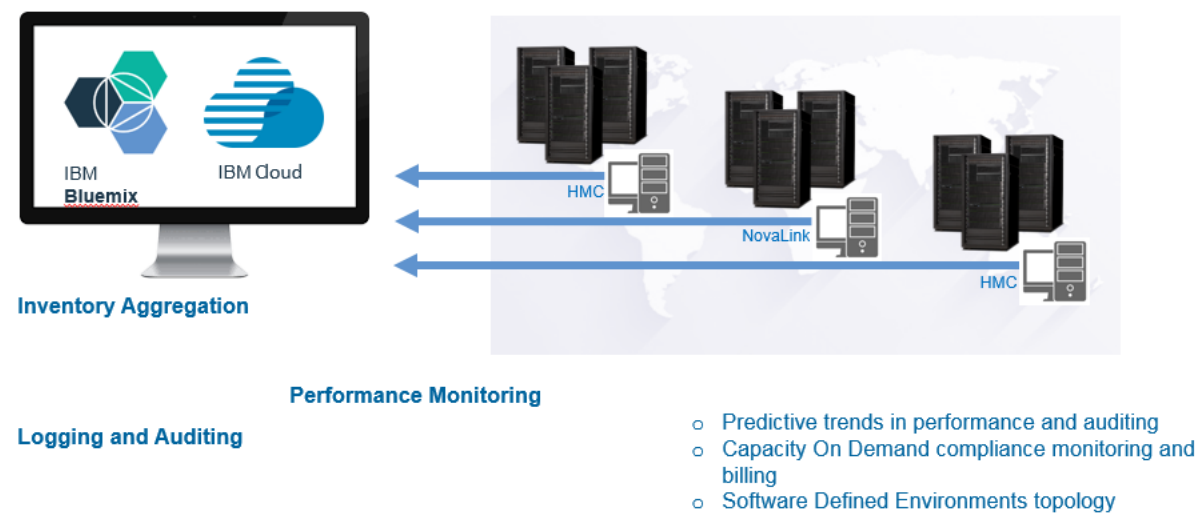


IBM® Cloud Management Console for Power Systems™ is a software as a service (SaaS) offering that provides enterprise-wide performance, inventory, and logging insight for IBM Power Systems servers.

This SaaS offering gives clients a central enterprise-wide view of their Power Systems servers without having to install or maintain software at their data centre.



# CMC – Where is it ?



The bit in the cloud lives in the IBM Cloud - BlueMix

- Secure
- Resilient

The bit on the ground is in

- HMC with MH01695
- Novalink, V1.0.0.6

Communication is via an encrypted “Cloud Connector”

- Disabled by default
- Enabled by using a ~500 character key (survives an HMC reboot)

Easily accessible from any device with a browser

READ ONLY



# CMC : what are the services ?

## IBM Cloud Management Console

PP

Patch Planning

Consolidated, easy-to-navigate views of code levels across your Power environment and available updates. Create and share patch plans with all stakeholders.

→

Pe

Performance

Monitor the performance of your Power environment. For systems, partitions and shared storage pools easily see utilization trends and monitor data center efficiency with energy metrics.

→

In

Inventory

Monitor the health status of all the resources in your Power infrastructure. Search your resource and hardware inventory to find what you need. Select any resource to filter the status information for that resource.

→

Lo

Logging

Use the Logging application to get insights into your data center PowerVM Virtualization actions such as Live Partition Mobility (LPM), Remote Restart (RR), and Partition Lifecycle.

→



# PP: Patch planning interface

Need Update

14

Up-to-date

457

All

471

Need Update

TYPE

AIX

7

FW

3

LINUX

1

VIOS

3

DESCRIPTION

Power 770

4Power E850Power 730 IOC+ 4 more

CURRENT LEVEL

FW780.81

1FW860.30AL740\_159+ 7 more

RECENTLY USED (0)

Search

Add a Tag

Add to Plan

Showing 14 of 14





# In : Inventory

Inventory

Dashboard

Full Inventory

Manage Tags

Managed Systems and HMCs

Partitions and Virtual I/O Servers

Shared Storage Pool Clusters

?

Aide

Filter by

STATE

☐

▲

Error

1

☐

▲

Inactive

11

☐

▲

Incomplete

1

☐

▲

No connection

10

☐

▲

Unknown

2

☐

▲

Version mismatch

1

☐

●

Active

1

☒

●

Operating

31

☐

●

Stand by

1

TYPE

☐

HMC

14

☒

Managed System

45

MACHINE TYPE

☐

7042

1

☐

7063

1

☐

7914

1

☐

8202

1

☐

8205

2

Search

🔍

Add a Tag

▼

Showing 31 result(s) for:

Operating

×

Managed System

×

Clear all searches

<input type="checkbox"/>	<input type="checkbox"/>	NAME	TYPE	MACHINE TYPE	AVAIL MEMORY (GB)	AVAIL CPU	HMC		
<input type="checkbox"/>	●	devopsalpf098	Managed System	8408	102.25 of 128	17 of 24	cr9hmc02	1	
<input type="checkbox"/>	●	brazoscap01a	Managed System	9119	952.67 of 1024	27.8 of 40	cr9hmc02, rickhmc11		
<input type="checkbox"/>	●	zzfp221	Managed System	8375	118 of 240	9.95 of 20	cr9hmc02		
<input type="checkbox"/>	●	zepp13fp	Managed System	9040	655.75 of 1024	21.75 of 32	cr9hmc02		
<input type="checkbox"/>	●	tulcapfp02	Managed System	8286	929.75 of 1024	14.6 of 24	cr9hmc02, rickhmc11		
<input type="checkbox"/>	●	devopstul303fp	Managed System	8284	82.5 of 128	14.95 of 24	cr9hmc02		
<input type="checkbox"/>	●	zzfp226	Managed System	8375	193.75 of 256	11.6 of 20	cr9hmc02		
<input type="checkbox"/>	●	ART_use_I8	Managed System	9117	36 of 192	3.95 of 48	strat-phmc2, rickhmc11		

Monitor the health status of all the resources in your Power infrastructure. Search your resource and hardware inventory to find what you need.



# Lo : Logging

Logging

/

Live Partition Mobility & Remote Restart

Partition Lifecycle

Filter by

Edit Filter

Click "Edit Filters" to change filters

PARTITION NAME

Partitions

TIME RANGE

All

TYPE

☐ Activate

☐ Apply

☐ Create

☐ Delete

☐ Shutdown

FAIL CODE

☐ HSCLO229

☐ HSCLO25A

☐ HSCLO26E

☐ HSCLO25A

Advanced Information

lpmftclp062

Operation Status

FAIL / SUCCESS / ALL

AVG SUCCESS TIME

OPERATION TYPE

FAIL CODES / COUNT

6 / 9 / 15

00:00:15

Activate

HSCLO1464

10

Showing 15 Operation(s):

OCURRED

SUCCESS TIME

4/5/17, 12:41 AM

Fail Codes  
HSCLO1464

4/5/17, 12:33 AM

Fail Codes  
HSCLO1464

fail Codes / Count

HSCLO1464

HSCLO05DF

HSCLO05EA

HSCLO4435

HSCLO03EA

LAST OPERATION

3/7/17, 8:03 AM

4/2/17, 9:39 PM

4/5/17, 1:04 AM

3/29/17, 6:02 PM

3/20/17, 3:29 AM

4/5/17, 1:49 AM

4/5/17, 1:51 AM

Activate

lpmftclp063

5 / 13 / 18

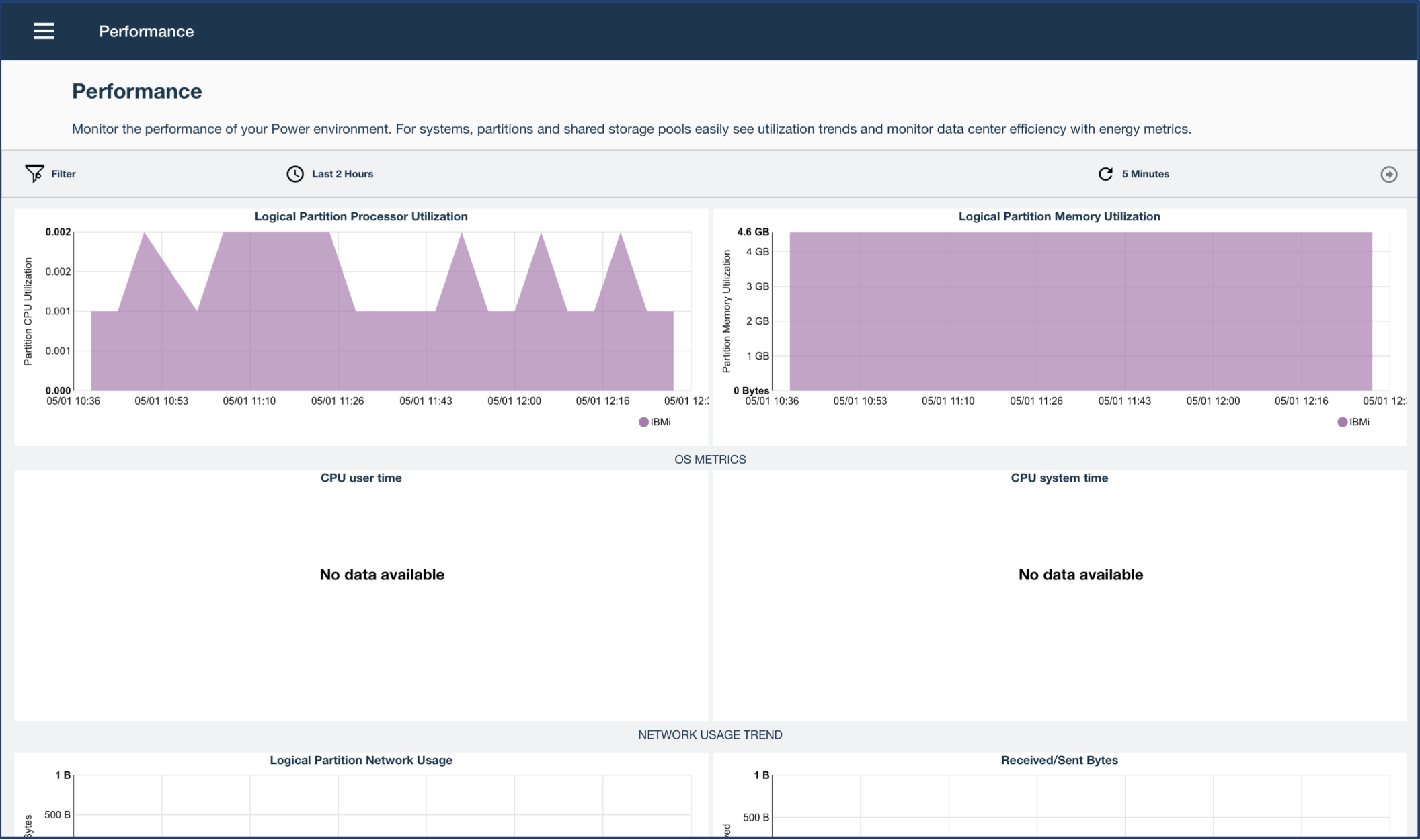
00:00:15

4/5/17, 1:51 AM

Insights into your data center PowerVM Virtualization actions such as Live Partition Mobility (LPM), Remote Restart (RR), and Partition Lifecycle.



# Pe : Performance



Monitor the performance of your Power environment. For systems, partitions and shared storage pools easily see utilization trends and monitor data center efficiency with energy metrics



# IBM Cloud Management Console for Power Systems

## Value

### Aggregation and Insights

**View data anywhere, anytime**

### No maintenance

### Continuous value

### Security

**On prem and Off prem**

### Reduce Cost

## Proof

IBM CMC takes data already collected by IBM Power Systems HMCs (Hardware Management Consoles) and ingests them into a SaaS cloud platform, where information is presented in apps that visualize the data in various ways

Because it's not behind a firewall, admins and managers can check health and status of their enterprise on mobile devices and tablets

Once the client enters their unique cloud connector key on their HMC, there's no further maintenance required. No patching, no upgrading, no evaluating versions or compatibility

Because it's a SaaS offering, and a platform for insight – Inventory, Performance, and Logging are just the first apps available. IBM CMC has a roadmap of deeply useful features coming down the pipeline, with no restrictions on how fast that value can be delivered to the user

Client Data is encrypted – both in-flight and on storage. Manage what apps are enabled, what apps each user has access to, and blacklist servers that shouldn't be connected to the service.

Pull data from the main datacenter, a backup site, even systems managed by a 3<sup>rd</sup> party. As long as they're managed by an HMC (and soon by a Novalink partition), they can send data to IBM CMC.

Eliminate legacy software cost, reduce fraud and abuse and reduce SLA violation penalties

# CMC – Security

User IDs based on IBM ID

- (as opposed to Intranet ID)

Server blacklists

- Hide particular machines

Data filters

Restricted resource lists for users

These features can be used to restrict what data is sent to the cloud and what data users can see.

## IBM Security



# CMC – Getting it

This offering is sold through a monthly subscription on a per managed system basis

As a Software-as-a-Service offering, the Cloud Management Console for Power Systems will continuously evolve to meet user requirement.

New app versions and functions will constantly and rapidly be released to users as part of their subscription

**£€\$  
month**

# CMC – Can I get it free?

## Enterprise “C class” get 36 months free

It depends


Clients who purchase a new **9080-MHE, 9080-MME, or 8408-44E** server are entitled to a 36-month subscription to the IBM Cloud Management Console for Power Systems SaaS offering at **no additional charge**.

This entitlement allows you to monitor this server only.

There is a 72 hour free trial

- <https://www-01.ibm.com/marketing/iwm/iwmdocs/web/cc/earlyprograms/cap/index.shtml>






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