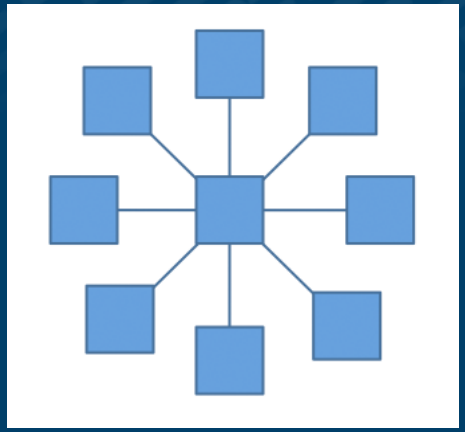
Cognitive System Management Update March 7, 2018

Ashok
sashok@us.ibm.com

First, a taxonomy



Traditional Enterprise Management Stack

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Cloud Management Stack

Cloud Orchestration Solutions

vmware vRealize

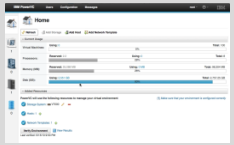
IBM Cloud private

HashiCorp Terraform

SAP LVM

openstack

IBM PowerVC



Cloud and Virtualization Management

- Build Power Systems private clouds
- Quickly capture and deploy VMs
- Virtual machine resiliency and more…

openstack

Alternate OpenStack solutions

OpenStack-aligned Management

OpenPOWER

KVM

docker

Linux

SUSE

redhat

Enterprise Power

i for Business

AIX

PowerVM

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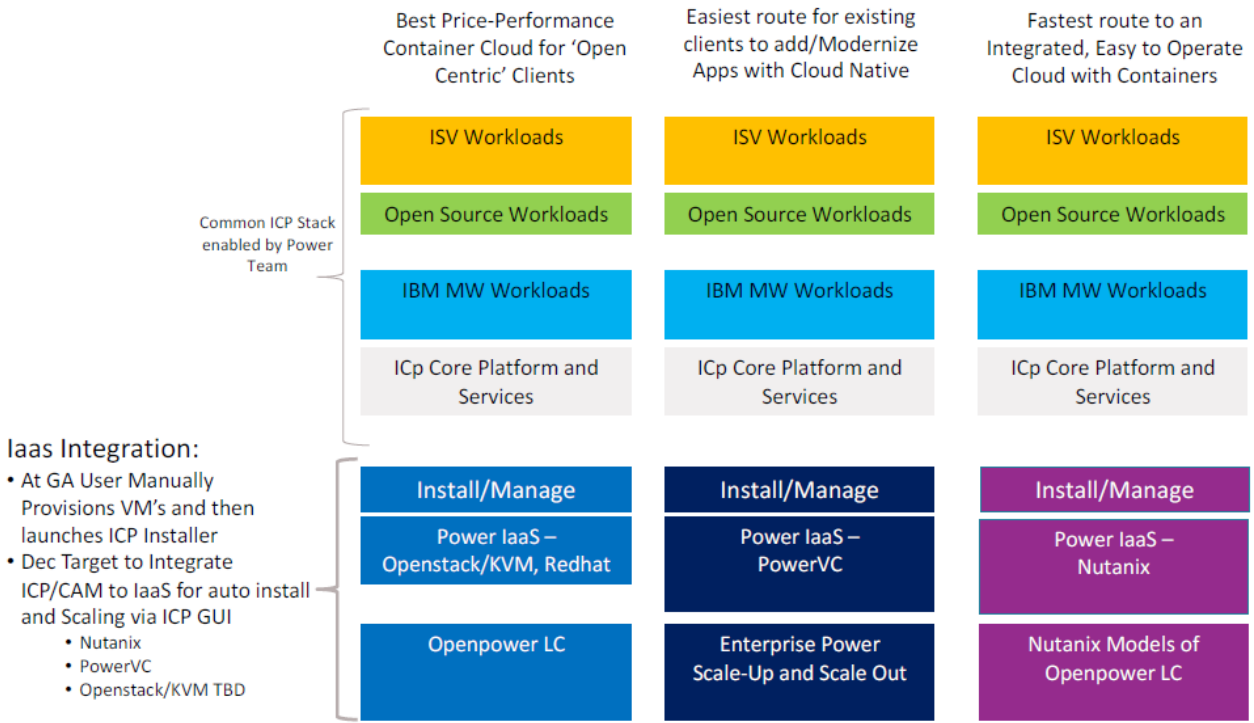
Power Systems Cloud Management Stacks
IBM Cloud Private (ICP)



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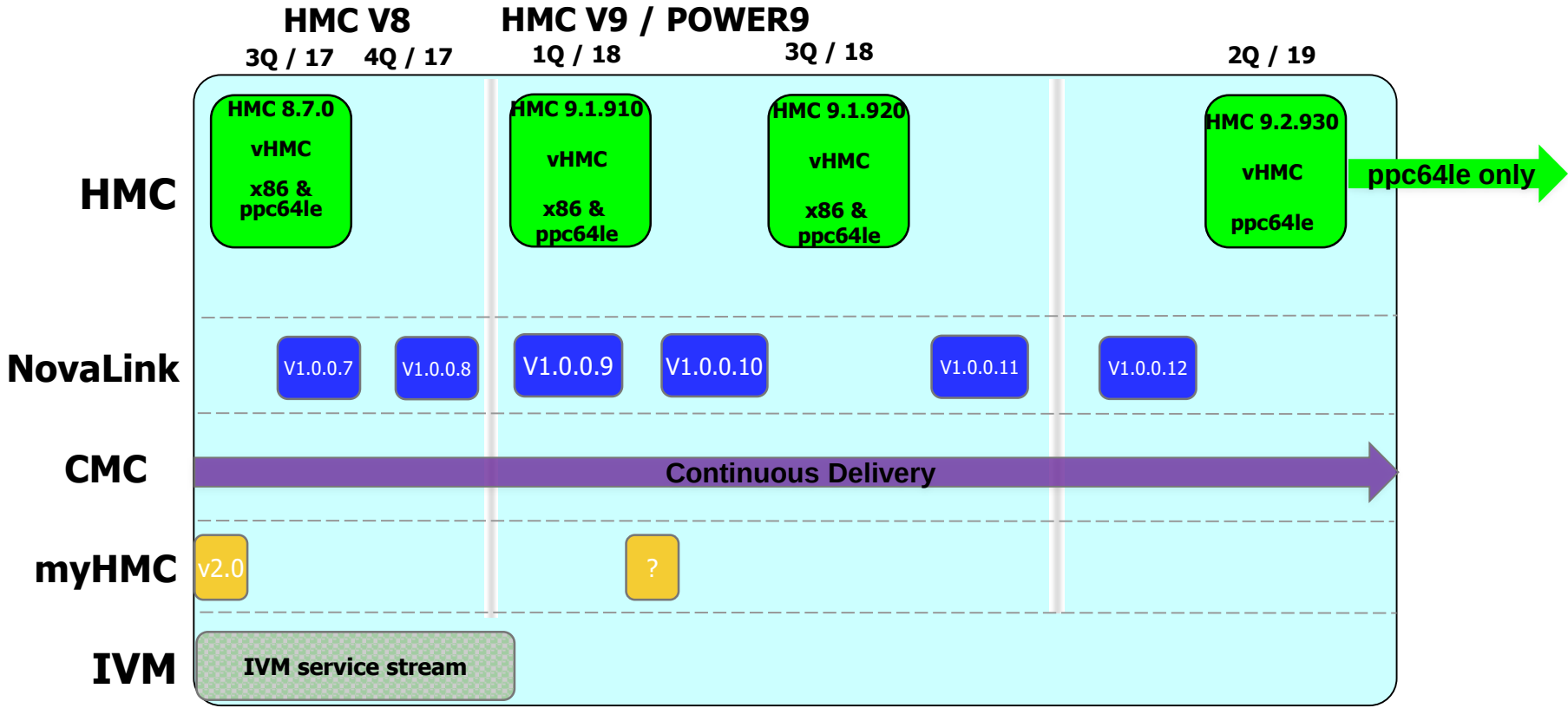
Icon Roadmaps

Release Roadmap



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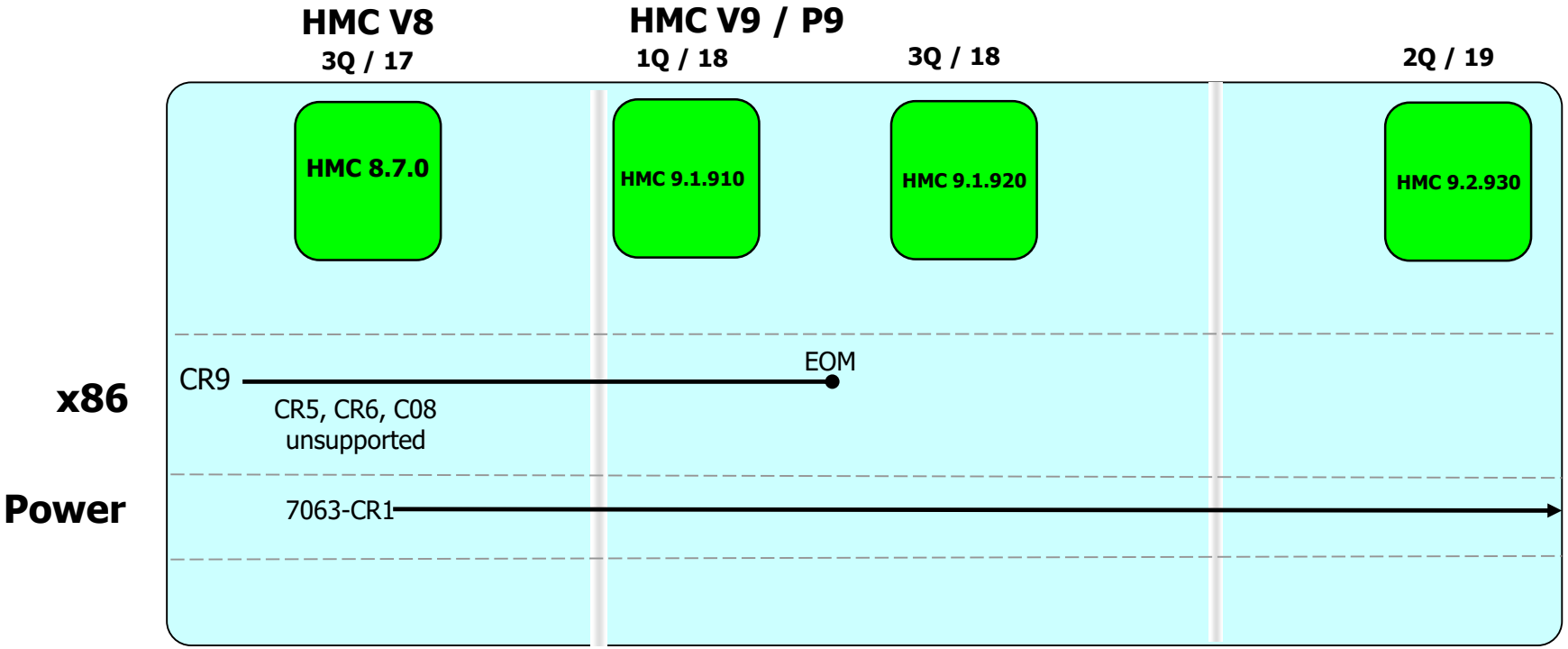
Hardware Roadmap



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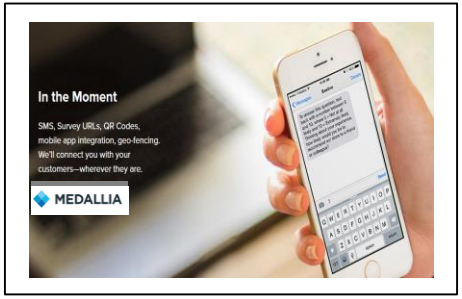
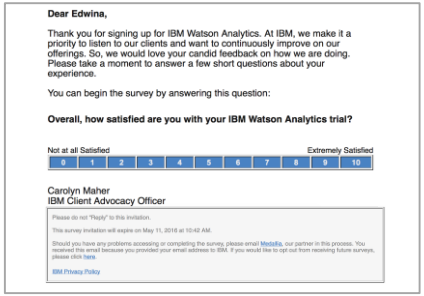
NPS & Enhanced UI

Client Experience Transformation Through Net Promoter Score (NPS)

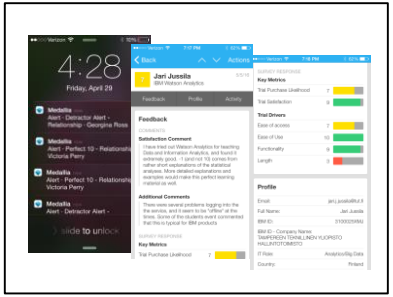
- IBM is partnering with **Medallia**, best in class in helping **manage client experience feedback**.
- Medallia has helped companies including Apple, Citigroup, Delta Airlines, GE Healthcare, Marriott Hotels, Mercedes Benz, Toyota, and hundreds more



A catalyst for change includes a new digital client experience management platform, powered by Medallia, designed to **gather feedback where it matters most - at the point where clients interact with IBM**

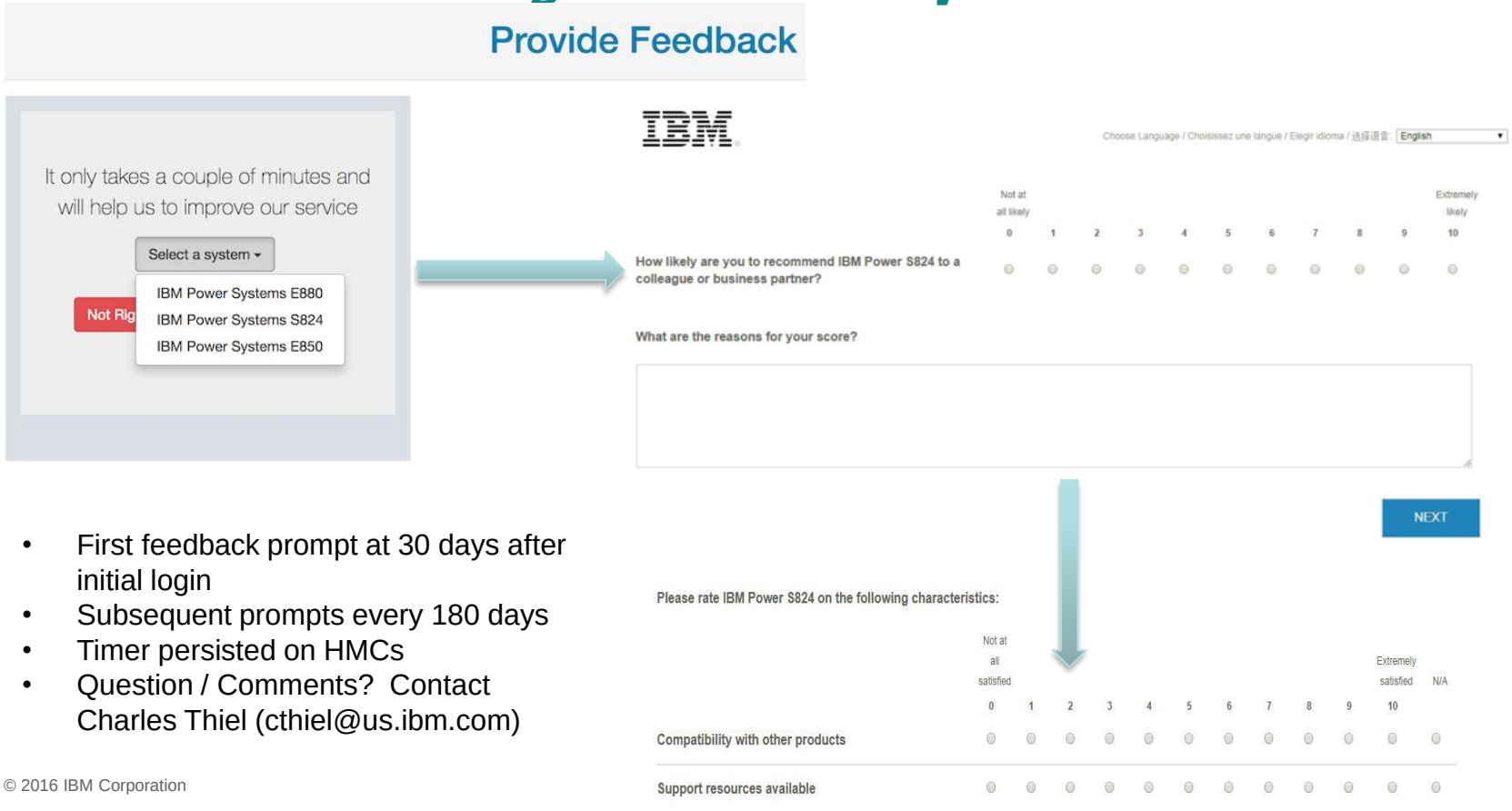


Clients will see **short, more targeted surveys** across multiple touchpoints, and across a class of users – IT, Developers, Data Scientists, DBAs



Feedback is **immediately routed to IBMers who drive action and close the loop with the client** – triggering new ways of working

New HMC Post-Login NPS Survey – R8.7.0 SP1



- First feedback prompt at 30 days after initial login
- Subsequent prompts every 180 days
- Timer persisted on HMCs
- Question / Comments? Contact Charles Thiel (cthiel@us.ibm.com)

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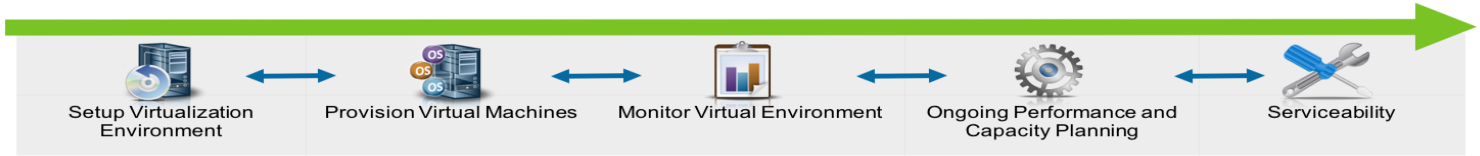
PowerVM Simplification Enhancements



Simplified Deployment of Virtualization Infrastructure using Templates

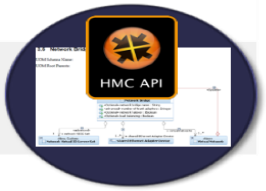
- System and Partition "starter" templates can be easily tailored to customer's environment
- Deploy System Template wizard guides user through simple set up to reduce time to value
- Capture function saves existing configurations as a Template

Simplified Virtualization Management and Partition Provisioning

- Single point of management for all PowerVM configuration, including VIOS
- Integrated virtual I/O management for quicker virtual machine provisioning
- One-touch VIOS deployment

Integrated Performance & Capacity Metrics

- Performance dashboard for quick visualization of system and partition capacity metrics
- Custom sample rates and historic data for performance trend views
- Virtual I/O performance metrics for easy monitoring of virtual environment status / health



Full PowerVM REST-API

- Use-case driven programmatic APIs to enable Cloud Solutions
- Provide access to all PowerVM function, including the VIOS
- Provide access to PowerVM performance and capacity metrics

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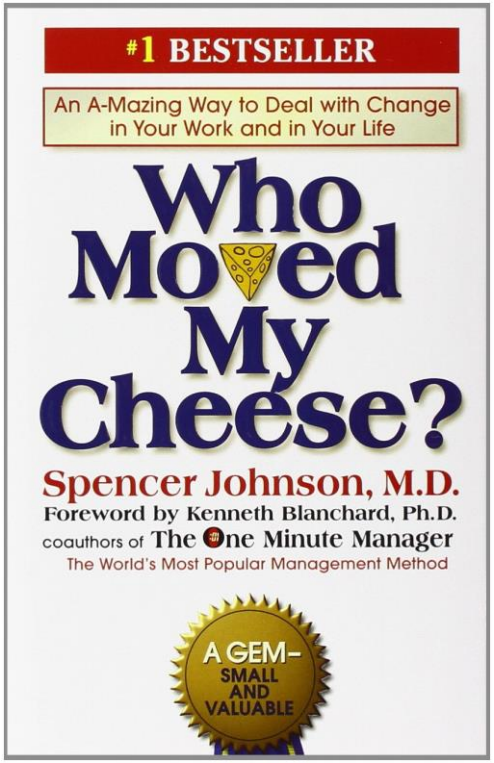
Enhanced UI – Battle for Hearts and Minds!



Glenn Robinson · 2mo
Systems Architect for IBM Systems and Storage at RSI Consulting Limited

HMC V8R860 SP1 - Superb

I've updated a couple of HMCs to SP1 and I have to say it's very good.

The new login screen is very funky and I like the way it defaults to Enhanced GUI but allows the Luddites to easily change to Classic 😁.

The experience is smoother and faster and makes the Enhanced GUI much more usabke. No going back to Classic now.

Unlike · Comment · You + 20 · 13

Larry Bolhuis Gotta disagree. First off it defaults to the Enhanced + GUI which does not do everything needed for IBM i Hosting partitions and is roundly incomplete and hard to navigate. Secondly if you shut down a partition that owns a 'shared' res... **Show more**
Like · 2mo

Glenn Robinson It's not perfect but it's sooooo much better than it was.
I recall people complaining about the HMC GUI who were used to WebSM.
No choice, get used to it and embrace it.
Like · 2mo

Dave Cappello We have 6 HMC's at the 886 SP1 level. The enhanced UI will be nice, but it's not there yet. There are several known problems, as well as missing or broken functionality. So while there are a lot of nice adds in the enhanced UI, the enhanced UI is far from production ready.
Like · 2mo

Henrik Mainz I've just upgraded My first HMc to 8.6 and I'm impressed by the speed enhancements to the GUI . As with all software I expect it to have problems but I'm confident that we are on the right path .
Keep up the good work guys !!

Nigel Griffiths @mr_nmon · Follow

For 12 months, I've only used HMC Enhanced+ GUI
Now with 860+ it is excellent & fast
Classic view=good in its day but now so old & clunky!

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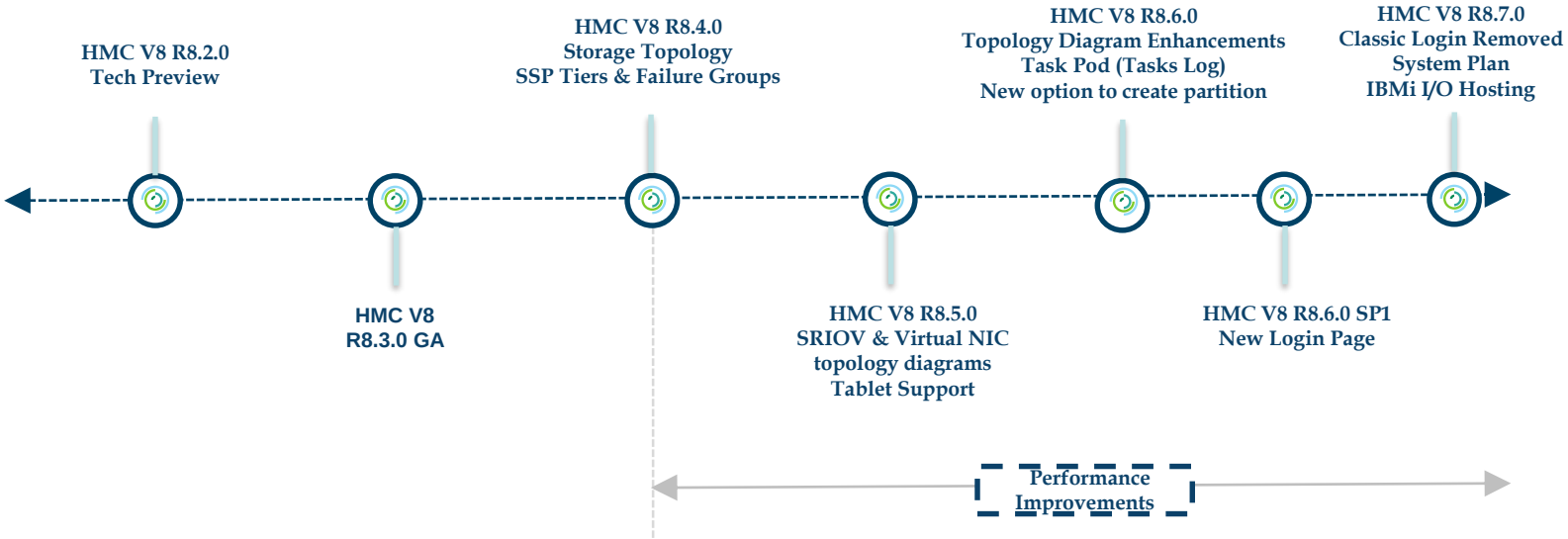
Enhanced UI Roadmap



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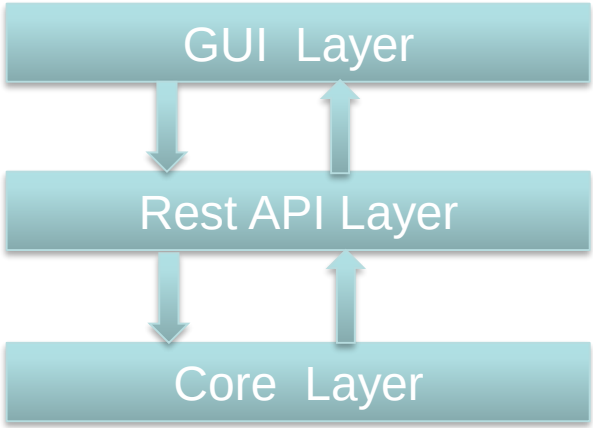
Performance Approach and Targets

- Analyze end-to-end flow

- Customized REST API's (query parameters, search parameters, filters) for UI usage
  - Identify and remove redundant / duplicate API invocations

- Performance at scale

- Focus on
  - ppc64le
  - partition creation & deploy
  - Manage Partition – virtual network & storage



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HMC V9 R1

HMC Version Format Today – V8 R870 M1

V(ersion)

- Power family
  - ex. POWER8

R(elease)

- Corresponding firmware release
  - ex. 860
- Must be greater than or equal to the level this HMC is managing

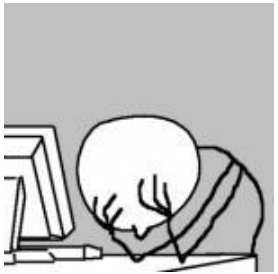
M(aintenance)

- aka Service Pack
  - ex. SP1

F(ix)

- Not currently used

- A release is supported for two years
  - This includes Service Packs and PTFs
  - There are four to five releases in support concurrently at any given point in time. Providing support for all these releases has proved challenging for IBM, and clients have perhaps experienced some unfortunate quality escapes.
- Many clients have strict processes and procedures in place that prevent upgrading to a new release in cadence with when IBM GAs it.
  - It's not always possible to obtain the latest functional fixes and enhancements as they're typically issued on the latest release stream.
- From the perspective of security alone in how often, and with what severity, vulnerabilities are disclosed, the above two points are proving to be more and more of an issue.



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HMC Version Format Tomorrow – V9 R1 M910

V(ersion)

- Power family
  - ex. POWER9

R(elease)

- Only increment on major revisions
  - ex. base OS upgrade
  - much less frequency than today

M(aintenance)

- Corresponding firmware release
  - ex. 910
- Must be greater than or equal to the level this HMC is managing
- Last digit indicates Service Pack

F(ix)

- aka PTF
- lshmc output will show “MH” mapping

- A release is supported for two years, same as today.
- Maintenance releases will be supported until they're superseded by the next subsequent maintenance level
- The cadence with new firmware releases and Power system models will remain unchanged.
  - Rather than receiving a new HMC release, (more often than not) there will be a new HMC maintenance level.
  - When there's no new firmware or Power system model, there can still be a new HMC maintenance level.
- Less releases allow freedom to update to the latest maintenance level without worrying about stack (VIOS, firmware, OS) compliance.
- Easier to stay current with functional fixes and enhancements. IBM can focus mostly on the current release (because there will be less releases) and making sure each maintenance level is delivered with increased quality.

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HMC V9 R1.910 Highlights

Server Management

- Support for 914, 922, and 924 systems
- **No POWER6 support**
- Custom DHCP ranges

Virtualization Management

- Mobility
  - **Automatic VIOS data collection upon abort**
  - **Override for page table size & affinity loss to preserve SAP HANA workload performance across migrations**
  - Maintain resource roles across migrations
- Remote Restart override to use LPAR's minimum resources
- SR-IOV
  - **Max capacity / bandwidth setting**
  - Enable / disable SR-IOV logical port
- Enhanced UI
  - Cleanup disk mappings on LPAR deletion
  - Add multiple LPAR veth adapters on the same virtual network
  - Improve progress messages during System Template deployment
  - Add multiple physical volumes to an LPAR at once
  - Persist user preferences (ex. column width)
  - Copy WWPNs to Clipboard
- Templates
  - support for VIOS rules

Console Management

- **vHMC-on-Power support for MPIO**
- display NTP status
- HMC NPS survey option
- FFDC logging enhancements
- Language Translation Update

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HMC V9 R1.920 Highlights

Server Management

- Support for 950 and 980 systems

Virtualization Management

- Configure AIX secure boot
- NX Accelerator apportionment
- Mobility
  - **MES upgrade support – LPM between two servers with same serial number**
  - encryption and compression of transferred data
- Enhanced UI
  - iSCSI support
  - client adapter slot ID
  - PCM REST API for SSP SSD caching metrics
  - deploy VIOS images from USB

Console Management

- **Upgrade and backup restore across platform (e.g. x86 and ppc64le) and hardware appliance / vHMC**
- **PowerSC MFA support**
- **vHMC**
  - DLPAR and LPM
  - BigFix / ILMT inventory reporting
- Ethernet failover capacility
- Data replication CLI
- Specifiable certificate expiration
- Multiple Base DN support for LDAP
- Language Translation Update

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HMC Management of OpenPOWER

Hardware and Service Management – Enterprise vs OpenPOWER

HMC

HMC

scale up systems

AIX Linux i for Business

HMC (Optional)

scale out systems

Linux

'L' systems with PowerVM

No IBM provided solutions

Linux

'L' systems with OPAL

Linux

OpenPOWER Systems with KVM

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HMC Support for OpenPOWER – May 2018

Supported Functions[1]
Event alerts with SNMP traps
Event polling
REST and CLI support for creating and reporting events
REST and CLI support for BMC configuration
Support for calling home BMC events
Limited Repair and Verify function
Launch Local BMC WEB UI from Console[2]
Launch managed system BMC WEB UI from Console
View sensor data and view/delete service event logs
Periodic call home with VPD, sensor, etc
Limited Hardware management function (power on/off, LED, etc)

- Targeted for LC9* systems
  - POWER8 LC support will follow in 2H2018
- Support will go into x86 & ppc64 HMC and vHMC
  - Manage both enterprise and OpenPOWER from the same HMC / vHMC
    - Non-supported functions will either be inaccessible or give appropriate error messages
  - 911 release
- Future roadmap includes
  - Additional event handling such as log analysis, event duplication, problem report generation, and call home management
  - Fully guided service procedures based on FRU call out for BMC
  - Dump management
  - FRU status
  - Inventory/performance call home

[1]existing HMC functions for Enterprise
[2]not applicable for vHMC

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Cloud Management Console

IBM Cloud Management Console for Power Systems

Cloud-based micro-services that can be accessed securely, anytime, anywhere for your complete enterprise

As data centers scale out and up, there's an increasing need for a complete view of the infrastructure.

Inventory Aggregation
- Power Systems, HMCs, LPARs, etc.
- Health and State
- Hardware Inventory

Log Trends
- Log Aggregation
- Telemetry

Patch Planning
- View current code levels and available updates
- Create update plans for collaboration

Performance Monitoring
- Aggregated views across Enterprise
- Energy Monitoring

With a roadmap to include features like:
- Codestack Compliance Checker
- Thesholds & Alerts
- Pay-Go Capacity on Demand for Enterprise Pools
- Predictive Trends
- Recommendation Engine

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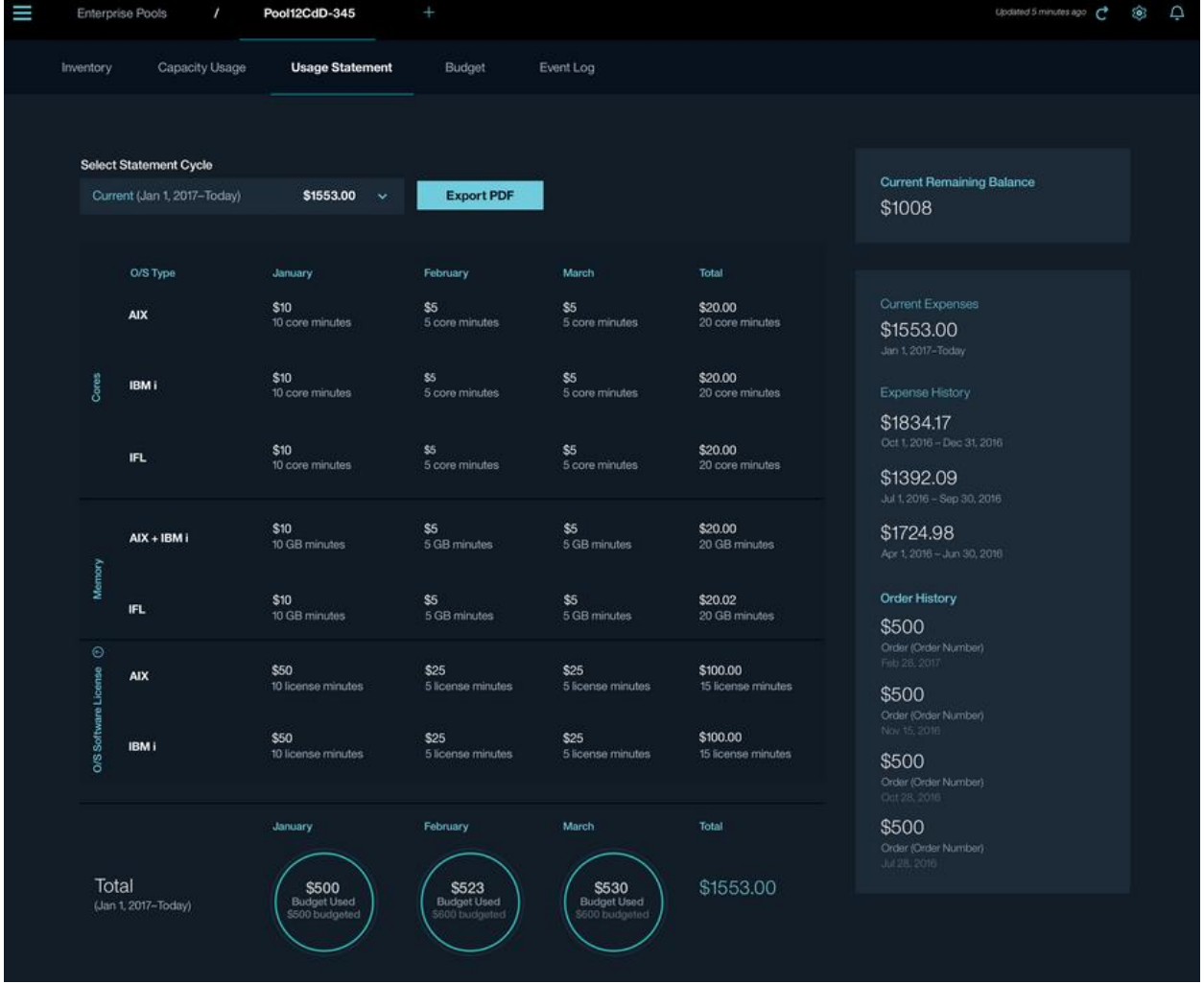
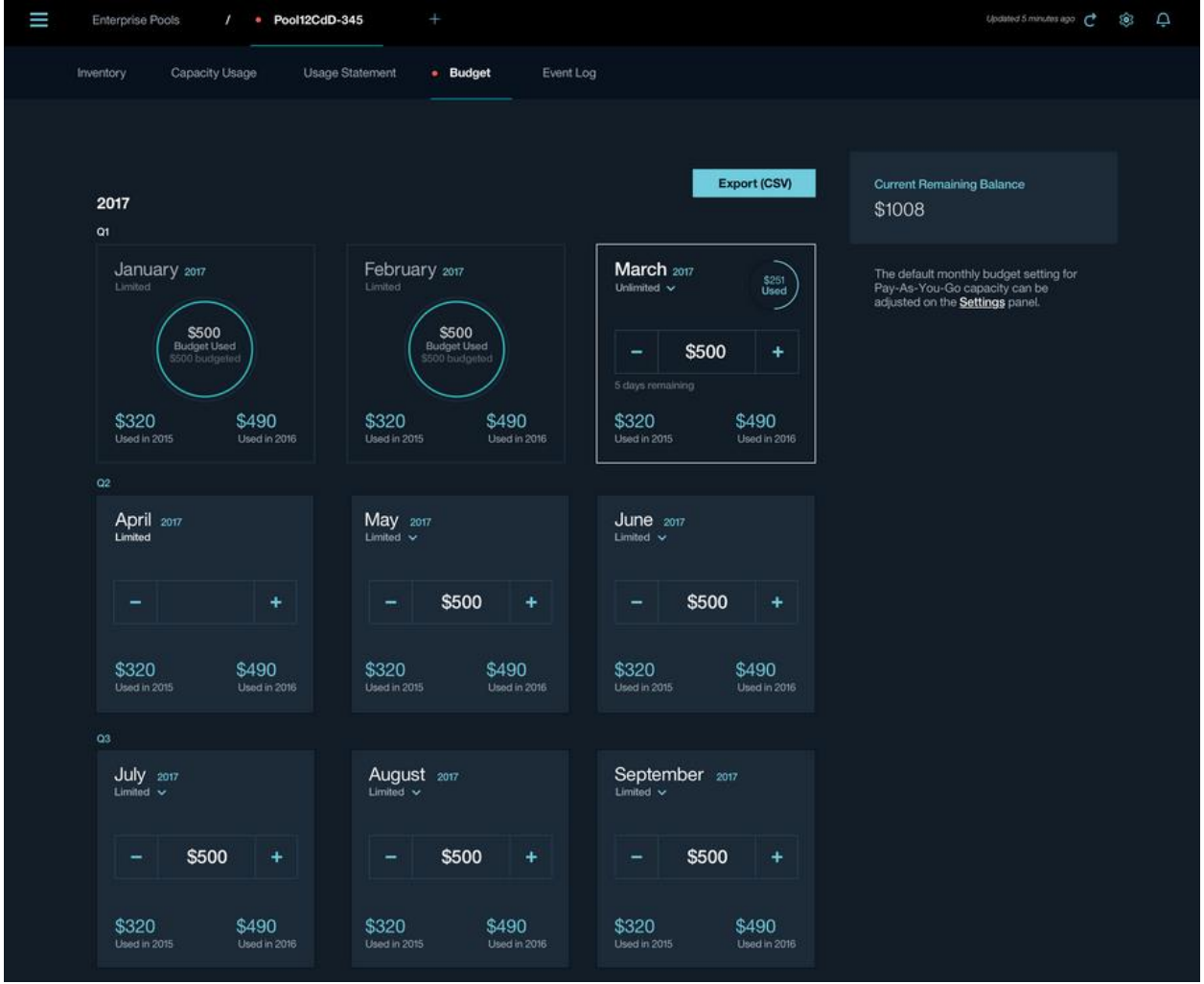
Enterprise Pools / Pool12CdD-345
Updated 5 minutes ago
Inventory
Capacity Usage
Usage Statement
Budget
Event Log
Memory Usage
Apr 2017
Total Usage $313
Budget $500
Core Usage $268
Memory Usage $45
March 2017
April 2017
Today
Yesterday
Week to Date
Month to Date
Last Month
Year to Date
Last Year
Usage History
Core Usage
Memory Usage
DEC 16 $322
JAN 17 $722
FEB 17 $122
MAR 17 $788
APR 17 $313
Filter
O/S TYPE
AIX 3000
IBM i 300
Linux 200
VIOS 200
SYSTEM TYPE
High-End Systems 17
Mid-Range Systems 29
Graph Zoom
Hours
Export CSV
Fri, Apr 24, 2017 (12:00 am - 7:00 am)
View Details
AIX and IBM i Memory GB Minutes
PAYG 2.1 M ($2.4 M)
Total AIX 4.6 M Total IBM i 4.6 M
IFL Memory GB Minutes
PAYG 2.1 M ($2.4 M)
Total VIOS 4.6 M Total Linux 4.6 M
Other Memory GB Minutes
Total VIOS 4.6 M
PAYG Usage (x10 Memory Minutes)
Total Usage (x1000 Memory Minutes)
Wed, Apr 21, 2017
Wed, Apr 22, 2017
Thu, Apr 23, 2017
Fri, Apr 24, 2017
Purchased Memory
12 month trend line
24 month trend line
36 month trend line
Only show timeframes with PAYG


Enterprise Pools / Pool12CdD-345 +
Updated 5 minutes ago
Inventory
Capacity Usage
Usage Statement
Budget
Event Log
Select Statement Cycle
Current (Jan 1, 2017–Today)
$1553.00
Export PDF
Current Remaining Balance
$1008
O/S Type
January
February
March
Total
Cores
AIX
$10
10 core minutes
$5
5 core minutes
$5
5 core minutes
$20.00
20 core minutes
IBM i
$10
10 core minutes
$5
5 core minutes
$5
5 core minutes
$20.00
20 core minutes
IFL
$10
10 core minutes
$5
5 core minutes
$5
5 core minutes
$20.00
20 core minutes
Memory
AIX + IBM i
$10
10 GB minutes
$5
5 GB minutes
$5
5 GB minutes
$20.00
20 GB minutes
IFL
$10
10 GB minutes
$5
5 GB minutes
$5
5 GB minutes
$20.02
20 GB minutes
O/S Software License
AIX
$50
10 license minutes
$25
5 license minutes
$25
5 license minutes
$100.00
15 license minutes
IBM i
$50
10 license minutes
$25
5 license minutes
$25
5 license minutes
$100.00
15 license minutes
Total
(Jan 1, 2017–Today)
$500
Budget Used
$500 budgeted
$523
Budget Used
$600 budgeted
$530
Budget Used
$600 budgeted
$1553.00
Current Expenses
$1553.00
Jan 1, 2017–Today
Expense History
$1834.17
Oct 1, 2016 – Dec 31, 2016
$1392.09
Jul 1, 2016 – Sep 30, 2016
$1724.98
Apr 1, 2016 – Jun 30, 2016
Order History
$500
Order (Order Number)
Feb 28, 2017
$500
Order (Order Number)
Nov 15, 2016
$500
Order (Order Number)
Oct 28, 2016
$500
Order (Order Number)
Jul 28, 2016


Enterprise Pools / Pool12CdD-345
Updated 5 minutes ago
Inventory
Capacity Usage
Usage Statement
Budget
Event Log
Export (CSV)
2017
Q1
January 2017
Limited
$500
Budget Used
$500 budgeted
$320
Used in 2015
$490
Used in 2016
February 2017
Limited
$500
Budget Used
$500 budgeted
$320
Used in 2015
$490
Used in 2016
March 2017
Unlimited
$251
Used
$500
5 days remaining
$320
Used in 2015
$490
Used in 2016
Current Remaining Balance
$1008
The default monthly budget setting for Pay-As-You-Go capacity can be adjusted on the Settings panel.
Q2
April 2017
Limited
$320
Used in 2015
$490
Used in 2016
May 2017
Limited
$500
$320
Used in 2015
$490
Used in 2016
June 2017
Limited
$500
$320
Used in 2015
$490
Used in 2016
Q3
July 2017
Limited
$500
$320
Used in 2015
$490
Used in 2016
August 2017
Limited
$500
$320
Used in 2015
$490
Used in 2016
September 2017
Limited
$500
$320
Used in 2015
$490
Used in 2016

Backup

Nigel's Enhanced UI Videos

https://twitter.com/mr_nmon/status/902448239894462464

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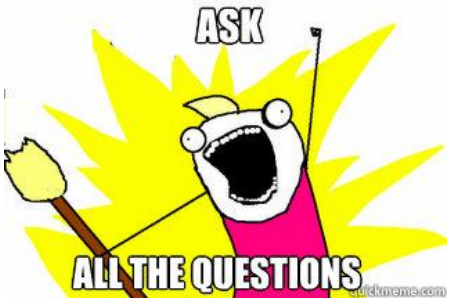
Power Systems

Other Enhanced UI Resources

See http://www-01.ibm.com/support/docview.wss?uid=nas8N1022258 for many helpful documents and articles

And visit https://www.ibm.com/developerworks/community/forums/html/forum?id=45c57f22-9da9-4e3c-bb9b-75a5c9d177a0 to ask us further questions



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How to Get Started With CMC

Your Education: Document #POP04049USEN Sellers (SSI) / Business Partners (PW)

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

Prepare the Datacenter: Review the Cloud Connector Security Whitepaper for more information on firewall changes that should be requested and HMC code updates

Purchase:

- C Model Clients: Send an email to powercmc@us.ibm.com with server serial number, primary administrator IBM ID email address and preferred subdomain name
- All other systems: $50 USD per managed server, per month Purchasable in Passport Advantage SaaS Catalog (D1SNQLL)

Help? Contact Ashok sashok@us.ibm.com

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