HMC 870 Enhanced+ GUI Live Demo for the Power Systems Virtual User Group v4

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HMC Hardware update

Soon to be released: HMC running on a POWER8 server

**POWER8 HMC Appliance** – like the Intel HMC Appliance
- But more CPU cores, more RAM & disk space = faster too
- Special version of the POWER8 S821LC (Supermicro Stratton 1U)
- Simple to install, remotely start/stop using BMC + ipmitool + web

**POWER8 virtual HMC** – like the Intel vHMC
- Runs in a PowerVM LPAR on a POWER8 server (not KVM, XEN, VMware)
- Obviously, you can’t manage the server its actually running on!

Not covering that any more today ...

[[Mixed=OK, T42 rack mount, Intel HMC appliance still available/no follow-on planned, no prices yet]]
<table>
<thead>
<tr>
<th>HMC Software update</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HMC 860 today</strong></td>
</tr>
<tr>
<td>Run on Intel</td>
</tr>
<tr>
<td>POWER6</td>
</tr>
<tr>
<td>POWER7</td>
</tr>
<tr>
<td>POWER8</td>
</tr>
<tr>
<td>Classic &amp; Enhanced+</td>
</tr>
<tr>
<td>Support till Q4 2018</td>
</tr>
</tbody>
</table>

**HMC 870 soon**
Runs on Intel/POWER8
POWER6
POWER7
POWER8
Enhanced+ Only
Support at least 2019
CLI no change

Some “missing” features get added here like System Plans

**HMC 9xx - future**
Runs on Intel/POWER8
POWER7
POWER8
POWER9
Enhanced+ Only
Supported for years

Buying POWER9?
A good time to move to POWER8 HMC too

Not covering this any more today ...
HMC Enhanced+

There are good reasons for Enhanced+ and its 5 year plan:

• Covered very well in the AIX VUG session
  • by Mr HMC himself Shamsundar Ashok
  • [http://tinyurl.com/ibmAIXVUG](http://tinyurl.com/ibmAIXVUG)

• Including: faster to get a task done, less error prone, removing unneeded complexity, more informative, live changes, VIOS login unnecessary, better for Newbies, user research, ...

• New features are Enhanced+ only as they can’t work in Classic like templates, network diagrams, performance graphs & SSP details, ...
  ... and more
HMC Enhanced+

Personally:
• Been using Enhanced+ to 18 months
• It is faster, better, friendly
• I never use “clunky Classic” any more

HMC GUI Performance:
1. Try HMC 860 or 870
2. If its slow, raise a PMR to get your HMC HW/SW or network fixed or workstation or browser sorted out
HMC Enhanced+ Live Demo

I am using:
- POWER8 HMC running HMC 870 (beta version)
- Remotely over Internet – the computer room is 15 miles away
- Thinkpad T450, Windows 7 plus Chrome Browser

Covering:
1. Tour of the general user interface features
2. Specific common user tasks
3. Advanced features
to get you off to a flying start with your move over to Enhanced+

Not covering:
- Assuming you know HMC Classic = not covering identical parts
- Everything HMC feature = 8 hour demo
- Nor user requests for specific features
- The other 70 slides - which you can download later today.
Demo Time
Finished

1. HMC 870 Enhanced+ only
   a. Enhanced+ GUI is fast, flexible & simple to operate
   b. Still with unchanged CLI (local & remote) & REST API
   c. Results of a 5 year program for a better HMC
   d. Coming soon

2. POWER8 HMC with 870 is faster

3. HMC 860 has Classic GUI and support till Q4 2018
   • HMC 910 will be mandatory for POWER9
Screenshots from the Demo
The new HMC Logon Screen – nice Status Overview

Note in 870 the is no Classic / Enhanced+ GUI option

List of comparing the Menu’s Classic <-> Enhanced+

When you log in there is a peak in data being downloaded to your workstation
## All Systems

View and monitor the state, health, and capacity information of all the systems that are connected to the management console.

<table>
<thead>
<tr>
<th>System Type</th>
<th>Status</th>
<th>CPU</th>
<th>Memory</th>
</tr>
</thead>
<tbody>
<tr>
<td>P6-p520-bronze</td>
<td>Operating</td>
<td>0.5 CPU</td>
<td>4.3 GB</td>
</tr>
<tr>
<td>P6-p520-gold</td>
<td>Operating</td>
<td>0.6 CPU</td>
<td>11.8 GB</td>
</tr>
<tr>
<td>P6-p520-orange</td>
<td>Operating</td>
<td>0.5 CPU</td>
<td>4.8 GB</td>
</tr>
<tr>
<td>P6-p520-red</td>
<td>Operating</td>
<td>0.9 CPU</td>
<td>11.3 GB</td>
</tr>
<tr>
<td>P6-p520-silver</td>
<td>Operating</td>
<td>0.9 CPU</td>
<td>7.6 GB</td>
</tr>
<tr>
<td>P7-p750-peach</td>
<td>Operating</td>
<td>5.5 CPU</td>
<td>12.5 GB</td>
</tr>
<tr>
<td>P8-E850-ruby</td>
<td>Operating</td>
<td>22.5 CPU</td>
<td>166.5 GB</td>
</tr>
<tr>
<td>P8-S822-lime</td>
<td>Operating</td>
<td>2 CPU</td>
<td>19.8 GB</td>
</tr>
<tr>
<td>P8-S824-emerald</td>
<td>Operating</td>
<td>0 CPU</td>
<td>151.5 GB</td>
</tr>
</tbody>
</table>

## Knowledge Center

- Installing and Configuring the HMC v8...
- Managing the HMC v8...
- Servicing the HMC v8...
- HMC Readme...
- Getting Started
- About...
<table>
<thead>
<tr>
<th>Model</th>
<th>CPU</th>
<th>Memory</th>
</tr>
</thead>
<tbody>
<tr>
<td>P6-p520-bronze</td>
<td>0.5</td>
<td>4.3 GB</td>
</tr>
<tr>
<td>P6-p520-gold</td>
<td>0.6</td>
<td>12.0 GB</td>
</tr>
<tr>
<td>P6-p520-orange</td>
<td>0.5</td>
<td>4.8 GB</td>
</tr>
<tr>
<td>P6-p520-red</td>
<td>1</td>
<td>9.0 GB</td>
</tr>
<tr>
<td>P6-p520-silver</td>
<td>1</td>
<td>7.0 GB</td>
</tr>
<tr>
<td>P7-p750-peach</td>
<td>5.5</td>
<td>145 GB</td>
</tr>
<tr>
<td>P8-S824-emerald</td>
<td>16</td>
<td>151.5 GB</td>
</tr>
<tr>
<td>P8-S824-lime</td>
<td>2</td>
<td>166.5 GB</td>
</tr>
<tr>
<td>P8-E850-ruby</td>
<td>22.5</td>
<td>345.5 GB</td>
</tr>
<tr>
<td>P8-E850-ruby</td>
<td>2</td>
<td>154.5 GB</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Actions:**
- **Select All**
- **Actions**
Hardware Management Console

All Systems

View and monitor the state, health, and capacity information of all the systems that are connected to the management console.

<table>
<thead>
<tr>
<th>Name</th>
<th>System State</th>
<th>Attention LED</th>
<th>Reference Code</th>
<th>Number of Partition</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>P6-5520-bronze</td>
<td>Operating</td>
<td>On</td>
<td></td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>P6-5520-gold</td>
<td>Operating</td>
<td>On</td>
<td></td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>P6-5520-orange</td>
<td>Operating</td>
<td>Off</td>
<td></td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>P6-5520-red</td>
<td>Operating</td>
<td>Off</td>
<td></td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>P6-5520-silver</td>
<td>Operating</td>
<td>Off</td>
<td></td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>P7-5750-peach</td>
<td>Operating</td>
<td>Off</td>
<td></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>P8-E650-ruby</td>
<td>Operating</td>
<td>Off</td>
<td></td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>P8-8822-lime</td>
<td>Operating</td>
<td>Off</td>
<td></td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>P9-S824-emerald</td>
<td>Operating</td>
<td>On</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All Systems

View and monitor the state, health, and capacity information of all the systems that are connected to the management console. The relational view shows the partitions and the virtual I/O servers of each system.

**P6-5522-lime** | System

<table>
<thead>
<tr>
<th>Name</th>
<th>Partition State</th>
<th>Partition ID</th>
<th>IP Address</th>
<th>Attention LED</th>
<th>Ref</th>
</tr>
</thead>
<tbody>
<tr>
<td>limevis1</td>
<td>Running</td>
<td>1</td>
<td>9.137.62.110</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>limevis2</td>
<td>Running</td>
<td>4</td>
<td>9.137.62.111</td>
<td>Off</td>
<td></td>
</tr>
</tbody>
</table>

**P6-5524-emerald** | System

<table>
<thead>
<tr>
<th>Name</th>
<th>Partition State</th>
<th>Partition ID</th>
<th>IP Address</th>
<th>Attention LED</th>
<th>Ref</th>
</tr>
</thead>
<tbody>
<tr>
<td>download-repo</td>
<td>Running</td>
<td>12</td>
<td>9.137.62.14</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>emeraldbackup-76855i</td>
<td>Running</td>
<td>1</td>
<td>9.137.62.169</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>emeraldtwos1</td>
<td>Running</td>
<td>2</td>
<td>9.137.62.99</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>emeraldtwos2</td>
<td>Running</td>
<td>3</td>
<td>9.137.62.99</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>vm173-056e0572-00000i</td>
<td>Not activated</td>
<td>6</td>
<td>-</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>vm173</td>
<td>Not activated</td>
<td>7</td>
<td>-</td>
<td>Off</td>
<td></td>
</tr>
</tbody>
</table>
Search on a selected Column

Clear
Search on a selected Column

All Systems

View and monitor the state, health, and capacity information of all the systems that are connected to this management station.

Total: 1 Selected: 0

Select All

Actions

P8-E850-ruby

Operating

22.5 GB of 9.5 GB Available

166.5 GB of 145.6 GB Available

Number of VIOS

4

All Columns

Name
System State
Attention LED
Reference Code
Number of VIOS
Group Tags
Description
Data Collection
Machine Type
Firmware
Processor Usage (%)
Processor Installed (CPU)
Processor Allocated (CPU)
Processor Available (CPU)
CoO Processor Capability
Memory Usage (%)
Memory Installed (GB)
Memory Allocated (GB)
Memory Available (GB)
CoO Memory Capability
Network IO Usage (%)
Storage IO Usage (%)

P6-p520-bronze

Operating

0.5 GB of 11.3 GB Available

4.3 GB of 11.3 GB Available

P6-p520-orange

Operating

0.5 GB of 11.3 GB Available

4.8 GB of 11.3 GB Available

P6-p520-red

Operating

0.5 GB of 11.3 GB Available

4.3 GB of 11.3 GB Available

P8-S824-emerald

Operating

166.5 GB of 145.6 GB Available

22.5 GB of 9.5 GB Available
## Multi-column selection

### All Systems

View and monitor the state, health, and capacity information of all the systems that are connected to the management console.

<table>
<thead>
<tr>
<th>Name</th>
<th>System State</th>
<th>Attention LED</th>
<th>Reference Code</th>
<th>Number of Partition</th>
<th>Number of VIOGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text</td>
<td>![Attention LED]</td>
<td>![Attention LED]</td>
<td>0</td>
<td>0</td>
<td>8</td>
</tr>
</tbody>
</table>

**Attention LED** indicates the status of the system.

**Reference Code** provides additional information about the system.

**Number of Partition** shows the number of partitions in the system.

**Number of VIOGS** indicates the number of VIOGS connected to the system.

---

### View Default Columns

- Attention LED
- Reference Code
- Number of Partitions
- Number of VIOGS
- Description
- Data Collection
- Machine Type
- Firmware
- Processor Usage (%)
- Processor Installed (CPU)
- Processor Available (CPU)
- Processor Allocated (CPU)
- Processor Capability
- Memory Usage (%)
- Memory Installed (GB)
- Memory Permanent (GB)
- Memory Allocated (GB)
- Memory Available (GB)

**View Capacity Columns**

- Attention LED
- Reference Code
- Number of Partitions
- Number of VIOGS
- Group Tags
- Description
- Data Collection
- Machine Type
- Firmware
- Processor Usage (%)
- Processor Installed (CPU)
- Processor Available (CPU)
- Processor Allocated (CPU)
- Processor Capability
- Memory Usage (%)
- Memory Installed (GB)
- Memory Permanent (GB)
- Memory Allocated (GB)
- Memory Available (GB)
Add Managed Systems

Use this panel to add systems in the network to the systems managed by this HMC.

If you know the name or IP address of the system you want to add, enter its specific name or IP address and click Ok.

If you want to find the IP addresses of systems in the network, you can specify a range of IP addresses and click Ok to view the list of IP addresses with their system names that were discovered in the network. You can then select one or more systems from the list to add to the managed systems of this HMC. The discovery process will take a long time.

- Add a managed system
  - IP Address/Host name: 
  - Password:

- Find managed systems
  - Enter a range of IP addresses to search for managed systems.
    - Beginning IP Address: 
    - Ending IP Address: 

  OK  |  Cancel  |  Help
Pin current view to the list of quick lookup views

Hide/See Pin & Task Panels

Completed tasks Panel
Green=OK  Red=failed  DotDotDot=on-going
After drilling in to Server “emerald” we have a bread crumb trail use this to back out or pop a list down to godirectly to a sibling
Drill down in to the Systems = Server

Select this System then Action Drill into this System
Operations on a Systems = Server
<table>
<thead>
<tr>
<th>Operations</th>
<th>Attention LED</th>
<th>Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Off</td>
<td>Turn Attention LED Off</td>
<td>Service Processor Status</td>
</tr>
<tr>
<td>Power Management</td>
<td>Identify Attention LED</td>
<td>Reset or Remove System Connection</td>
</tr>
<tr>
<td>Schedule Operations</td>
<td>Test Attention LED</td>
<td>Disconnect another Management Console</td>
</tr>
<tr>
<td>Launch Advanced System Management (ASM)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rebuild System</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change System Password</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Templates</th>
<th>Updates</th>
<th>Legacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deploy System from Template</td>
<td>View System Information</td>
<td>Partition Availability Priority</td>
</tr>
<tr>
<td>Create Partition from Template</td>
<td>Change Licensed Internal Code for the Current Release to a New Release</td>
<td>View Workload Management Groups</td>
</tr>
<tr>
<td>Capture Configuration as Template</td>
<td>Check System Readiness</td>
<td>Manage System Profiles</td>
</tr>
<tr>
<td></td>
<td>SR-IOV Firmware Update</td>
<td>Manage Partition Data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Restore</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Initialize</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Backup</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Delete</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Utilization Data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Change Sampling Rate</td>
</tr>
</tbody>
</table>

View All Actions
Drill down in to a System = Server
Linux VM with no RMC setup
Make a change
Then click the blue button to confirm the update
### Processor, Memory, and I/O

View or change the memory, processor, and physical I/O resource settings for the managed system.

#### Processors

<table>
<thead>
<tr>
<th>Available</th>
<th>1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assigned to Partitions</td>
<td>15.0</td>
</tr>
<tr>
<td>Configurable</td>
<td>16.0</td>
</tr>
<tr>
<td>Installed</td>
<td>16.0</td>
</tr>
</tbody>
</table>

Multiple Shared Processor Pools Support: Yes

#### Memory

<table>
<thead>
<tr>
<th>Available</th>
<th>104.50 GB (107038.0 MB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assigned to Partitions</td>
<td>142.00 GB (145438.0 MB)</td>
</tr>
<tr>
<td>Reserved</td>
<td>9.50 GB (9728.0 MB)</td>
</tr>
<tr>
<td>Configurable</td>
<td>256.00 GB (262144.0 MB)</td>
</tr>
<tr>
<td>Installed</td>
<td>256.00 GB (262144.0 MB)</td>
</tr>
<tr>
<td>Memory Region Size</td>
<td>0.25 GB (256.0 MB)</td>
</tr>
<tr>
<td>Active Memory Sharing Support</td>
<td>Yes</td>
</tr>
</tbody>
</table>

#### Physical I/O Adapters

The table displays the physical I/O resources for the managed system.

Click the adapter description to view information on the selected I/O device.

Click I/O Pools to display all the I/O pools found in the managed system and the partitions that are participating in the pools.

<table>
<thead>
<tr>
<th>Adapter Description</th>
<th>info</th>
<th>Physical Location Code</th>
<th>Owner</th>
<th>Bus</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Gigabit Ethernet (UTP) 4 Port</td>
<td></td>
<td>U7BC9.001.WZ600UJ-</td>
<td>emeraldvios1</td>
<td>3</td>
</tr>
</tbody>
</table>
Virtual I/O Servers

View and monitor the state, health, and capacity information on your console.

Select All

Total: 2 Selected:

emeraldvios1
Running
0.6%
6 GB Allocated
27%
8 GB Allocated
1%

emeraldvios2
Running
7%
8 GB Allocated
18%
4%
Virtual Storage

Virtual storage management can be used to manage the storage capabilities of your managed system. Modify the configuration of the virtual storage devices that are allocated for each Virtual I/O Server (VIOS) on the managed system. You can also add a VIOS to a shared storage pool cluster and manage all the shared storage pool clusters.

Virtual Storage Management

The table lists the Virtual I/O Servers for which the virtual storage configuration can be managed. Select a row in the table and use the Actions menu to perform advanced tasks for the virtual storage management.

<table>
<thead>
<tr>
<th>Virtual I/O Server</th>
<th>ID</th>
<th>RMC Connection</th>
<th>Status</th>
<th>VIOS Version</th>
<th>SSP Cluster Name</th>
<th>Number of Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>emeraldvios2</td>
<td>3</td>
<td>Active</td>
<td>Running</td>
<td>VIOS 2.2.5.20</td>
<td>orbit</td>
<td>1</td>
</tr>
<tr>
<td>emeraldvios1</td>
<td>2</td>
<td>Active</td>
<td>Running</td>
<td>VIOS 2.2.5.20</td>
<td>orbit</td>
<td>2</td>
</tr>
</tbody>
</table>

Shared Storage Pool Cluster

The table lists the shared storage pools for which the virtual storage configuration can be managed. Select a row in the table and use the Actions menu to perform advanced tasks for the shared storage pool clusters.

<table>
<thead>
<tr>
<th>Cluster Name</th>
<th>Cluster Membership</th>
<th>Repository Disk</th>
<th>Number Of Nodes</th>
<th>Available Storage</th>
<th>Total Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>star</td>
<td>No</td>
<td>MPIO IBM 2076 FC Disk</td>
<td>5</td>
<td>976.9</td>
<td>1,023.5</td>
</tr>
<tr>
<td>spiral</td>
<td>No</td>
<td>MPIO IBM 2076 FC Disk</td>
<td>4</td>
<td>244.0</td>
<td>511.5</td>
</tr>
<tr>
<td>orbit</td>
<td>Yes</td>
<td>MPIO IBM 2076 FC Disk</td>
<td>9</td>
<td>2,200.4</td>
<td>4,094.0</td>
</tr>
</tbody>
</table>
Hardware Virtualized I/O

Displays all the I/O adapters that are configured for the managed system. You can view and modify the properties for the SRIOV, HEA, and HCA adapters.
Learn more →

SR-IOV Adapters
Select the required SR-IOV adapter and click Modify SR-IOV Adapters to modify the properties of the SR-IOV adapter. The operating mode of the SR-IOV adapter and its owning partition name are also displayed.

U78C9.001.WZS00DJ-P1-C7 PCIe2 4-port (10Gb FC0E & 1GbE) SR&RJ45 Adapter

Status: Running
Mode: Shared
Owner: Hypervisor
Maximum Logical Ports: 48
Configured Logical Ports: 0

View: Physical Ports Logical Ports

Physical Ports

<table>
<thead>
<tr>
<th>ID</th>
<th>Location Code</th>
<th>Type</th>
<th>Link Status</th>
<th>Label</th>
<th>Sub-label</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>U78C9.001.WZS00DJ-P1-C7-T1</td>
<td>Converged Ethernet</td>
<td>Up</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>U78C9.001.WZS00DJ-P1-C7-T2</td>
<td>Converged Ethernet</td>
<td>Up</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>U78C9.001.WZS00DJ-P1-C7-T3</td>
<td>Ethernet</td>
<td>Down</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>U78C9.001.WZS00DJ-P1-C7-T4</td>
<td>Ethernet</td>
<td>Up</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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.

Physical Network

Physical

U78C9.001.W2S00DJ-P1-C10
C10

U78C9.001.W2S00DJ-P1-C2
C2

Physical

emeraldiost1

2

ent4

SEA
ent6

emeraldiost1

2

ent5

SEA
ent10

Physical

emeraldiost2

2

ent4

emeraldiost1

2

ent3

emeraldiost2

2

ent5
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.
Partitions = Logical Partition (LPAR)
Virtual Machines (VM)
All Partitions

View and monitor the state, health, and capacity information of all the systems that are connected to the management console.

- **download-repo**
  - Status: Running
  - CPU: 0.2%
  - Memory: 4 GB Allocated (84% of 8 GB)
  - Storage: 2.50 GB Allocated (30% of 8 GB)

- **nim32**
  - Status: Not activated
  - CPU: 87%
  - Memory: 8 GB Allocated
  - Storage: 8.00 GB Allocated

- **peach-tube**
  - Status: Running
  - CPU: 1.00 GPU
  - Memory: 3 GB Allocated (0.2% of 15 GB)
  - Storage: 2.00 GB Allocated

- **peach23-gaz**
  - Status: Not activated
  - CPU: 0%
  - Memory: 0 GB Allocated
  - Storage: 0 GB Allocated

- **peach45_AIX72_1534A**
  - Status: Running
  - CPU: 1.00 GPU
  - Memory: 4.00 GB Allocated

- **rubybackup**
  - Status: Running
  - CPU: 0.2%
  - Memory: 6 GB Allocated (88% of 7 GB)

- **vm16-PowerVC132**
  - Status: Running
  - CPU: 14%
  - Memory: 16 GB Allocated
  - Storage: 16.00 GB Allocated

- **vm17-PowerVC132cloud**
  - Status: Not activated
  - CPU: 0%
  - Memory: 8 GB Allocated
  - Storage: 8.00 GB Allocated

- **vm170-04a8cf40-00000010**
  - Status: Running
  - CPU: 30%
  - Memory: 6 GB Allocated

- **vm173-05ec5972-0000000e**
  - Status: Running
  - CPU: 0.1%
  - Memory: 0 GB Allocated

- **vm177-postgres-db64f25-00000001e**
  - Status: Running
  - CPU: No RMC connection
  - Memory: 0 GB Allocated

### All Partitions

View and monitor the state, health, and capacity information of all the systems that are connected to the management console.

<table>
<thead>
<tr>
<th>Name</th>
<th>Partition State</th>
<th>Partition ID</th>
<th>IP Address</th>
<th>Attention LED</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>download-repo</td>
<td>Running</td>
<td>13</td>
<td>9.137.62.14</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>emeraldbackup-70005di</td>
<td>Running</td>
<td>1</td>
<td>9.137.62.169</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>nim32</td>
<td>Not activated</td>
<td>14</td>
<td>-</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>peach-tube</td>
<td>Not activated</td>
<td>24</td>
<td>-</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>peach23-gaz</td>
<td>Running</td>
<td>23</td>
<td>9.137.62.43</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>peach45_AIX72_1534A</td>
<td>Not activated</td>
<td>45</td>
<td>-</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>rubybackup</td>
<td>Running</td>
<td>10</td>
<td>9.137.62.170</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>vm15-PowerVC132</td>
<td>Running</td>
<td>5</td>
<td>-</td>
<td>Off</td>
<td>Linux ppc6</td>
</tr>
<tr>
<td>vm17-PowerVC132cloud</td>
<td>Not activated</td>
<td>6</td>
<td>-</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>vm171-04a8cf46-00000</td>
<td>Not activated</td>
<td>11</td>
<td>-</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>vm173-05ec6972-00000</td>
<td>Running</td>
<td>6</td>
<td>9.137.62.173</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>vm177-postgre-6db64f2</td>
<td>Running</td>
<td>12</td>
<td>-</td>
<td>Off</td>
<td>Linux ppc6</td>
</tr>
<tr>
<td>vm179</td>
<td>Not activated</td>
<td>7</td>
<td>-</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>vm179-cctb17c5-00000</td>
<td>Running</td>
<td>9</td>
<td>9.137.62.179</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>vm19</td>
<td>Not activated</td>
<td>7</td>
<td>-</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>vm180-6acae750-00000</td>
<td>Not activated</td>
<td>13</td>
<td>-</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>vm181-04be1466-00000</td>
<td>Not activated</td>
<td>15</td>
<td>-</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>vm20</td>
<td>Not activated</td>
<td>10</td>
<td>-</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>vm25</td>
<td>Not activated</td>
<td>4</td>
<td>-</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>vm26</td>
<td>Running</td>
<td>5</td>
<td>-</td>
<td>Off</td>
<td>Linux ppc6</td>
</tr>
</tbody>
</table>
## All Partitions

View and monitor the state, health, and capacity information of all the systems that are connected to the management console.

### Actions

- Select All

### View Partition Properties

- Restart...
- Shutdown...
- Turn Attention LED Off...
- Schedule Operations...
- Mobility
- Suspend Operations
- Console
- Templates
- Profiles

### View All Actions

### Operations

- Restart
- Shutdown
- Schedule Operations
- Mobility
  - Migrate
  - Validate
  - Recover
- Suspend Operations
  - Suspend
  - Recover

### Console

- Open Terminal Window
- Close Terminal Connection

### Templates

- Capture Partition as a Template
Drill down into a VM

Change & Save
View and modify the client partition name and enable the advanced and virtualization capability for the partition. You can also specify advanced settings based on the operating system for the partition.

**Partition Name:** w3-blue

**OS Type / Environment:** AIX/Linux

**OS Version:** AIX 7.2 7200-01-01-1642

**IP Address:** 9.137.62.3

**Boot Mode:** Normal

**Resource Configuration:** Configured

**Key Lock Position:**
- Manual
- Normal

**System Machine Type * Serial Number:** 8286-42A*100EC

**Description:**

**Group Tags:**

**Virtualization Capabilities**
- Suspend / Resume
- Simplified Remote Restart

**State**: Remote Restartable
Drill down into a VM
Virtual Networks

The table lists all virtual networks that are associated with the selected logical partition. You can view the virtual switch and the network bridge that are associated with each virtual network. Click Manage Network Connections to view all available virtual networks and associate additional virtual networks to the logical partition.

Learn More ➔

Virtual Networks

<table>
<thead>
<tr>
<th>Virtual Network Name</th>
<th>VLAN ID</th>
<th>Virtual Switch</th>
<th>Virtual Network Bridge</th>
</tr>
</thead>
<tbody>
<tr>
<td>VLAN62-ETHERNET0</td>
<td>62</td>
<td>ETHERNET0</td>
<td>NetworkBridge_62</td>
</tr>
</tbody>
</table>
The table displays the Virtual SCSI devices that are configured to a logical partition. You can also view the information about the physical volume groups, shared storage pool volume, and the logical volume.

### Physical Volume

<table>
<thead>
<tr>
<th>User Defined Name</th>
<th>OS Device Name</th>
<th>Size in GB</th>
<th>Connections</th>
<th>Unique Device ID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

No items to display

### Shared Storage Pool Volume

<table>
<thead>
<tr>
<th>Device</th>
<th>Size in GB</th>
<th>Shared Storage Pool Cluster</th>
<th>Tier</th>
<th>Thin Provisioning</th>
<th>Conne</th>
</tr>
</thead>
<tbody>
<tr>
<td>blueroot</td>
<td>128</td>
<td>orbit</td>
<td>SYSTEM (SYSTEM) (DEFAULT)</td>
<td>Yes</td>
<td>Green</td>
</tr>
<tr>
<td>blueweb</td>
<td>128</td>
<td>orbit</td>
<td>SYSTEM (SYSTEM) (DEFAULT)</td>
<td>Yes</td>
<td>Green</td>
</tr>
<tr>
<td>blueback</td>
<td>128</td>
<td>orbit</td>
<td>SYSTEM (SYSTEM) (DEFAULT)</td>
<td>Yes</td>
<td>Green</td>
</tr>
<tr>
<td>blusscratch</td>
<td>128</td>
<td>orbit</td>
<td>SYSTEM (SYSTEM) (DEFAULT)</td>
<td>Yes</td>
<td>Green</td>
</tr>
</tbody>
</table>

### Logical Volume

<table>
<thead>
<tr>
<th>Device</th>
<th>Volume Group</th>
<th>Size in GB</th>
<th>Virtual I/O Server</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

No items to display
Partition Virtual Storage Diagram

View the virtual storage configuration for a single partition within a selected system, including the physical and virtual components of storage assigned to that particular partition. Double-click a resource to highlight the relationship between its various virtual and physical components in storage diagram. 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.
Virtual I/O Server (VIOS)
Very like Partitions
Groups
Groups can contain:
System (Server)
Partition (VM)
VIOS
Create a group

Create a custom group of resources. A custom group can consist of any systems, partitions and Virtual I/O Servers that the management console manages.

Name: 
Description: 
Tag color: 

Select the resources that you want to add to the group:

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>ID</th>
<th>System</th>
<th>State</th>
<th>Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>P6-p520-bronze</td>
<td>System</td>
<td></td>
<td>P6-p520-bronze</td>
<td>OK</td>
<td>POWER6</td>
</tr>
<tr>
<td>bronzeiost1</td>
<td>Virtual I/O Server</td>
<td>1</td>
<td>P6-p520-bronze</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>P6-p520-gold</td>
<td>System</td>
<td></td>
<td>P6-p520-gold</td>
<td>OK</td>
<td>POWER6</td>
</tr>
<tr>
<td>goldiost1</td>
<td>Virtual I/O Server</td>
<td>2</td>
<td>P6-p520-gold</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>P6-p520-orange</td>
<td>System</td>
<td></td>
<td>P6-p520-orange</td>
<td>OK</td>
<td>POWER6</td>
</tr>
<tr>
<td>orangeiost1</td>
<td>Virtual I/O Server</td>
<td>1</td>
<td>P6-p520-orange</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>P6-p520-red</td>
<td>System</td>
<td></td>
<td>P6-p520-red</td>
<td>OK</td>
<td>POWER6</td>
</tr>
<tr>
<td>rediost1</td>
<td>Virtual I/O Server</td>
<td>1</td>
<td>P6-p520-red</td>
<td>OK</td>
<td></td>
</tr>
</tbody>
</table>

Select the resources that you want to add to the group:

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>ID</th>
<th>System</th>
<th>State</th>
<th>Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>P6-p520-red</td>
<td>System</td>
<td></td>
<td>P6-p520-red</td>
<td>OK</td>
<td>POWER6</td>
</tr>
<tr>
<td>rediost1</td>
<td>Virtual I/O Server</td>
<td>1</td>
<td>P6-p520-red</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>silveriost1</td>
<td>System</td>
<td></td>
<td>P6-p520-silver</td>
<td>OK</td>
<td>POWER6</td>
</tr>
<tr>
<td>P7-p700-peach</td>
<td>System</td>
<td></td>
<td>P7-p700-peach</td>
<td>OK</td>
<td>Crash_L_Burn</td>
</tr>
<tr>
<td>peachiost1</td>
<td>Virtual I/O Server</td>
<td>15</td>
<td>P7-p700-peach</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>peachiost2</td>
<td>Virtual I/O Server</td>
<td>16</td>
<td>P7-p700-peach</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>playiost</td>
<td>Virtual I/O Server</td>
<td>1</td>
<td>P7-p700-peach</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>peachiost4</td>
<td>Partition</td>
<td>24</td>
<td>P7-p700-peach</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>peach23-gaz</td>
<td>Partition</td>
<td>23</td>
<td>P7-p700-peach</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>peach45_40X72_15</td>
<td>Partition</td>
<td>45</td>
<td>P7-p700-peach</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>P8-EB50-ruby</td>
<td>System</td>
<td></td>
<td>P8-EB50-ruby</td>
<td>OK</td>
<td>POWER8</td>
</tr>
<tr>
<td>rubyiost1-orbit</td>
<td>Virtual I/O Server</td>
<td>1</td>
<td>P8-EB50-ruby</td>
<td>OK</td>
<td>Production</td>
</tr>
<tr>
<td>rubyiost2-orbit</td>
<td>Virtual I/O Server</td>
<td>1</td>
<td>P8-EB50-ruby</td>
<td>OK</td>
<td>Production</td>
</tr>
</tbody>
</table>

[OK] [Cancel]
# Mixture of Systems, Partitions & VIOS

## Systems

<table>
<thead>
<tr>
<th>Name</th>
<th>System State</th>
<th>Processor Installs</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS-S824-emerald</td>
<td>Operating</td>
<td>16</td>
</tr>
<tr>
<td>PS-E850-ruby</td>
<td>Operating</td>
<td>32</td>
</tr>
</tbody>
</table>

## Partitions

<table>
<thead>
<tr>
<th>Name</th>
<th>Partition State</th>
<th>Partition ID</th>
<th>IP Address</th>
<th>Attention LED</th>
<th>Reference Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>w3-blue</td>
<td>Running</td>
<td>17</td>
<td>9.137.02.3</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>rubybackup</td>
<td>Running</td>
<td>10</td>
<td>9.137.02.170</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>nm32</td>
<td>Not activated</td>
<td>14</td>
<td>-</td>
<td>Off</td>
<td>00000000</td>
</tr>
<tr>
<td>download-repo</td>
<td>Running</td>
<td>13</td>
<td>9.137.02.14</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>emeraldbackup-76665c</td>
<td>Running</td>
<td>1</td>
<td>9.137.02.169</td>
<td>Off</td>
<td></td>
</tr>
</tbody>
</table>

## Virtual I/O Servers

<table>
<thead>
<tr>
<th>Name</th>
<th>Partition State</th>
<th>Partition ID</th>
<th>IP Address</th>
<th>Attention LED</th>
<th>Reference Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>emeraldvios2</td>
<td>Running</td>
<td>3</td>
<td>9.137.62.99</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>emeraldvios1</td>
<td>Running</td>
<td>2</td>
<td>9.137.62.98</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>rubyvios2-orbit</td>
<td>Running</td>
<td>2</td>
<td>9.137.62.216</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>rubyvios1-orbit</td>
<td>Running</td>
<td>1</td>
<td>9.137.62.215</td>
<td>Off</td>
<td></td>
</tr>
</tbody>
</table>
Shared Storage Pools

Warning: some panels take time as it queries the VIOS
Need to have VIOS(s) - not already in a SSP - with LUNs that could be used - attached to this HMC

Then you can select the LUNs, a Repo and build a SSP.
Failure Group View = mirrors on a different Disk unit

Rename or Replace a disk = can move you data to a different Disk unit
SSP View = virtual SSP disks (called a LU)

You can perform various actions on the SSP volumes. Click Show Assignment, to view the associated partitions that the disks are assigned to.

### SSP View

<table>
<thead>
<tr>
<th>Device Name</th>
<th>Size in GB</th>
<th>Thin Provisioning</th>
<th>Assigned Partitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>volume-rubybackup166-83fee54d-00000008-boot--8d8c06bc-0487</td>
<td>32</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>volume-emeraldbackup-76665db5-00000009-boot--b966dc4-2dfa</td>
<td>32</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>vm17boot</td>
<td>64</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>vm16boot</td>
<td>64</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>microVM</td>
<td>8</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

### Actions
- Migrate to Different Tier
- Increase Size
- Remove
Templates can be for

1. System – whole new machine
   • Useful if you have many identical servers

2. Partitions – a new VM
   • Useful for a quick LPAR/VM

3. Also managing OS and VIOS images
to allow HMC to install them = a “Classic HMC” feature
Templates and OS Images

Use templates to configure the managed system or partitions that are connected to the managed system. You can also manage installation resources for the management console.

System templates contain configuration information about resources such as shared processor pools, reserved storage pool, shared memory pool, physical I/O adapters, Host Ethernet Adapters, single root I/O virtualization (SRIOV) adapters, Virtual I/O Server, virtual networks, and virtual storage. Click on the template name to see the details about the template. Select a system template from the following list.

<table>
<thead>
<tr>
<th>Template Name</th>
<th>Description</th>
<th>Number of VIOS</th>
<th>Number of Virtual Networks</th>
<th>Physical I/O Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>QuickStart_with_2_VIOS</td>
<td>2 VIOS, 1 Virtual Network</td>
<td>2</td>
<td>1</td>
<td>No</td>
</tr>
<tr>
<td>QuickStart_with_4_VIOS</td>
<td>4 VIOSes, 1 Development Network, 1 Production Network</td>
<td>4</td>
<td>2</td>
<td>No</td>
</tr>
</tbody>
</table>

View
Edit
Copy
Delete
Deploy
Export
Description

View or modify the template name and description for the template that you have selected.

Template Name: nag_with_1_VIOS
Template Description: 1 VIOS, 1 Virtual Network
**Templates and OS Images**

Use templates to configure the managed system or partitions that are connected to the managed system. You can also manage installation resources for the management console.

**What is a Template?**

**System**  **Partition**  **OS and VIOS Images**

Partition templates contain details about partition resources, such as physical adapters, virtual networks, and storage configuration. Click on the template name to see the details about the template. Select a partition template from the following list.

<table>
<thead>
<tr>
<th>Template Name</th>
<th>Description</th>
<th>Partition Type</th>
<th>Processors</th>
<th>Network</th>
<th>Storage</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>QuickStart_ipar_rpa_1</td>
<td></td>
<td>AIX/Linux</td>
<td>Dedicated</td>
<td>None</td>
<td>None</td>
<td>Suspend Results</td>
</tr>
<tr>
<td>QuickStart_ipar_rpa_2</td>
<td>without Virtualization capabilities</td>
<td>AIX/Linux</td>
<td>Dedicated</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>QuickStart_ipar_rpa_3</td>
<td></td>
<td>AIX/Linux</td>
<td>Dedicated</td>
<td>None</td>
<td>None</td>
<td>Simplified Remote</td>
</tr>
<tr>
<td>nag_simple_1_VIOS</td>
<td></td>
<td>Virtualised</td>
<td></td>
<td></td>
<td></td>
<td>None</td>
</tr>
</tbody>
</table>

**Action**

- **Import**
- **View**
- **Edit**
- **Copy**
- **Delete**
- **Deploy**
- **Export**
Create Partition from Template

Welcome

Use this wizard to select a template and configure a partition. You can use a template to customize a partition based on the processor, network, virtual NIC, storage, and other characteristics of the target system on which you want to create the partition.

The wizard guides you through completing the following steps:
1. Choosing a template.
2. Naming the partition.
3. Assigning physical I/O resources.
4. Configuring Network, Virtual NIC, and Storage I/O.
5. Reviewing the configuration settings for the partition.

Learn More on Prerequisites.

Select a System

The wizard has three parts: create partition, configure the I/O settings, and apply the virtual network and virtual storage settings. After you complete successfully, the client partition is ready to be activated. Choose a system for which you want to deploy the selected template.

Selected Template: mag_simple_1_VIOS

Create Partition from Template

Configuration Summary

Defines the name and resources for the partition that are specified in the template.

Name: CHANGE_THIS
Partition ID: 3
Type: AIX/Linux
Shared Processors: 1
Memory (GB): 2.0
Shared Processor Pool ID: DefaultPool(0)

I/O Adapter and HEA Configuration

Assign Physical I/O adapters or Hardware-Virtualized I/O adapters (Logical SR-IOV or Logical HEA) to the partition.

- Physical I/O Adapters
- Logical Host Ethernet Adapter
Similar for VIOS images
Then the HMC can install AIX VIOS
Using NIMOL = NIM on Linux
Performance Dashboard

Big area so just a quick look around
If time allows show some common tasks
1. VM Start and stop
2. Dynamic LPAR change add a couple of CPUs
3. LPM
4. System Power-off and On
Finished

Replay and these slides from the Power Systems Virtual User Group

http://tinyurl.com/PowerVUG

Cheers, Nigel Griffiths & Jyoti Dodhia