



*Journée Common – Geneve Dec.2013*

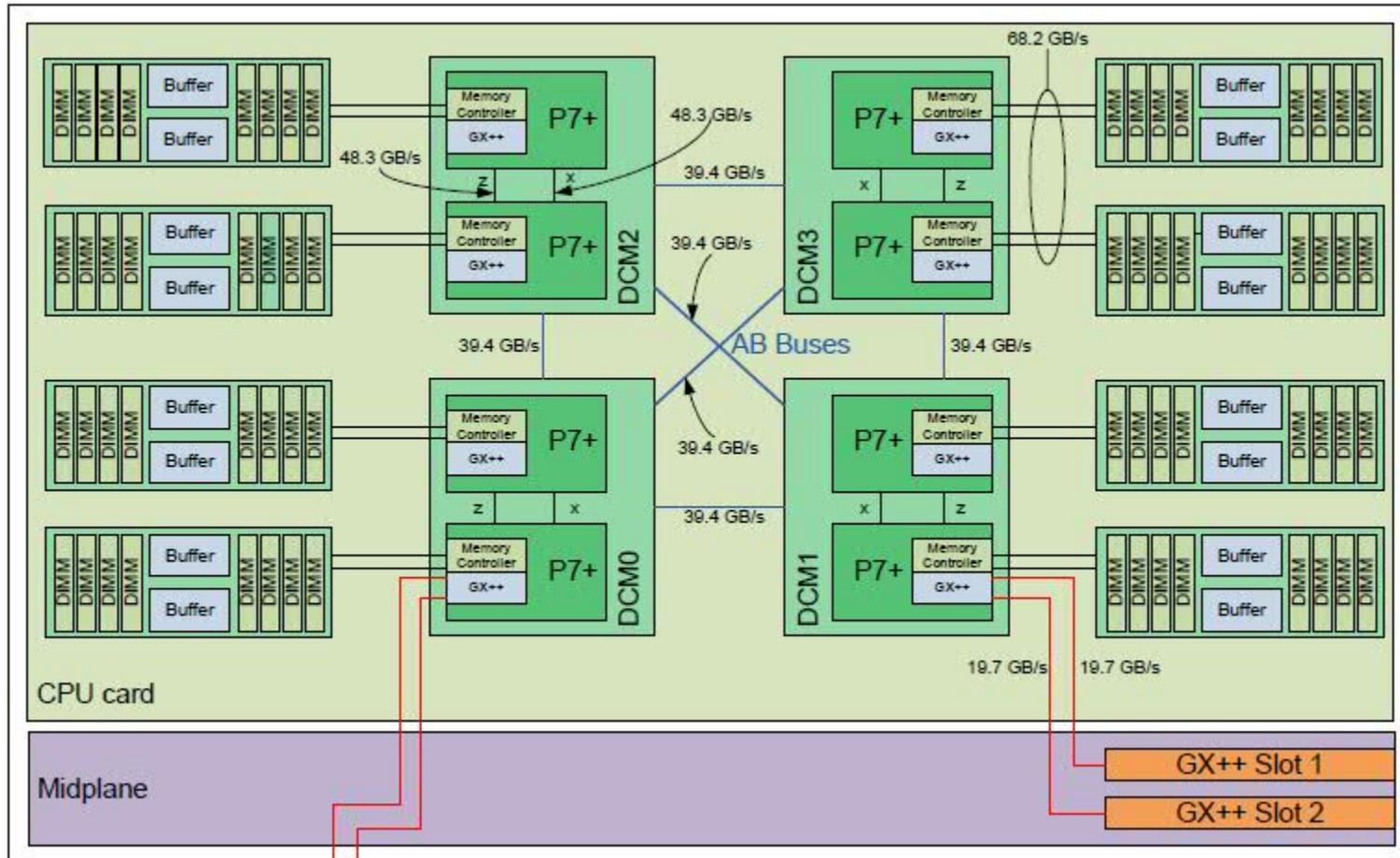
# IBM Power Systems PowerVP



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# POWER7+ 4 Socket Planer 750/760 Layout



[Power 750/760 D Technical Overview](#)



# Monitoring : New request from Power System users

*Power System is a concentrate of “high technology”,  
But sometime can be seen as a “BlackBox”*



## Client Needs :

- Understanding how the hardware is assigned to the Partitions
- Having **VISUAL** indication showing resource's consumption
- True Geek : I want to see everything !!! (GX++, Memory Ctrl, Interconnect bandwidth ...)

## Requirements :

- Quick and Easy Setup
- Stand alone, not a plugin of T\*\*\*li of IBM System D\*\*\*\*\*or
- Deep technical details for expert but understandable by Everyone



# PowerVP - Virtualization Performance Intelligence



- Provides performance information to help **optimize virtualized systems**
- Understand the mapping of **virtualized workloads to physical hardware**
- **Accelerates identifying performance bottlenecks**
- **Operational health status**

**Content- Announce 10/8/2013 GA 11/15/2013**

- *Real time performance information which identifies performance bottlenecks*
- *Graphical display showing virtualized workloads health*

- Real-time continuous graphical monitor
- Replay option similar to a dvr replay of saved performance data
- Provides mapping of virtual workloads to the physical CPU & Memory resources
- Customizable thresholds for normal, warning, problem & inactive states
- System level Server information showing all running VMs resources mapped to hardware
- VM level drill down showing performance information for all VM types including AIX, Linux and IBM i



# Overview

- Graphically displays data from existing and new performance tools
- Converges performance data from across the system
- Shows CEC and partition level performance data
- Illustrates topology with utilization with colored “heat” threshold settings
- Enables drill down for both physical and logical approaches
- Allows real-time monitoring for immediate drill down
- Logs data for later analysis and comparison
- Simplifies physical/virtual environment, monitoring, and analysis

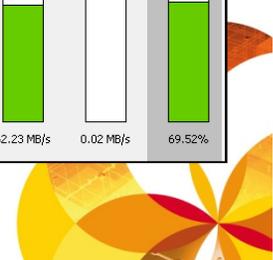
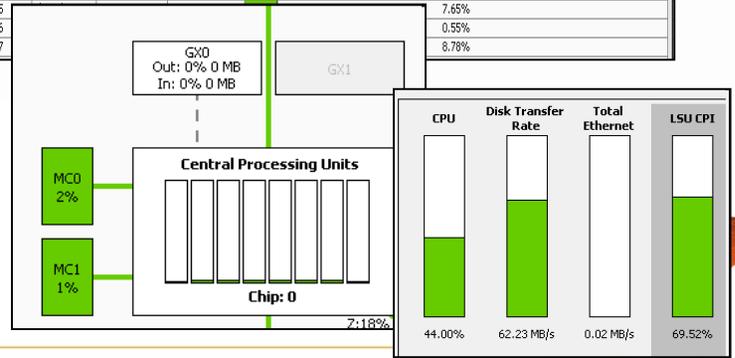
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System Report
Workload
System Performance Report
Member . . . : 0064_5MIN Model/Serial . . : 520/10-6A0BD Main storage . .
Library . . . : PFRDATA System name . . : SE520B2 Version/Release
Partition . . : 002 Feature Code . . : 7457_8955 Job Threshold
Virtual
QPFRADJ Work with System Status MCOOPR02
Interact % CPU used . . . . . 53.9 Auxiliary storage:
% DB capability . . . . . 0 System ASP . . . . . 457.1 G
Elapsed time . . . . . 00:04:48 % system ASP used . . . . . 3.6528
Jobs in system . . . . . 11033 Total . . . . . 457.1 G
% perm addresses . . . . . 007 Current unprotect used : 1819 M
% temp addresses . . . . . 010 Maximum unprotect . . . . . 2245 M
Total
Type changes (if allowed), press Enter:

System Pool Reserved Max Active-> Wait-> Active->
Pool Size (M) Size (M) Active Wait Incl Incl
1 764.00 89.84 +++++ 14.1 0 0
2 1275.94 4.33 1000 204.9 0 0
  
```

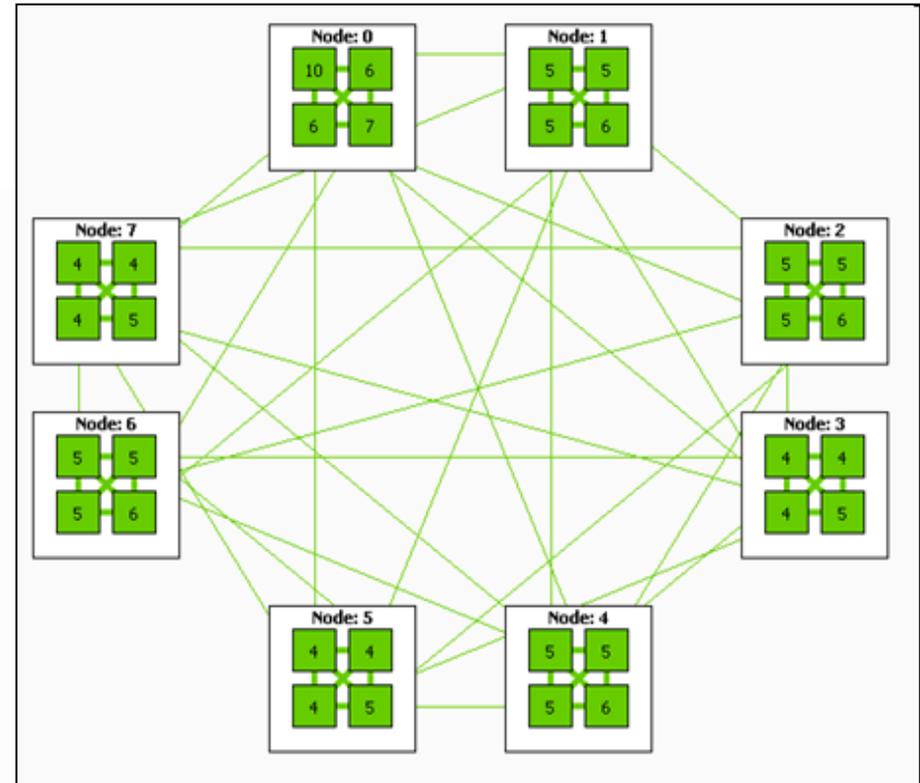


LPAR	State	Cores Enabled	Cores Assigned	Utilization
1	Shared	0.10	0.10	6.18%
2	Shared	0.10	0.10	2.88%
3	Shared	0.10	0.10	8.88%
4	Shared	0.10	0.10	5.20%
5				7.65%
6				0.55%
7				8.78%



## PowerVP – System Topology

- The initial view shows the hardware topology of the system that you logged into
- In this view, we see a Power 795 with all eight books or nodes are installed

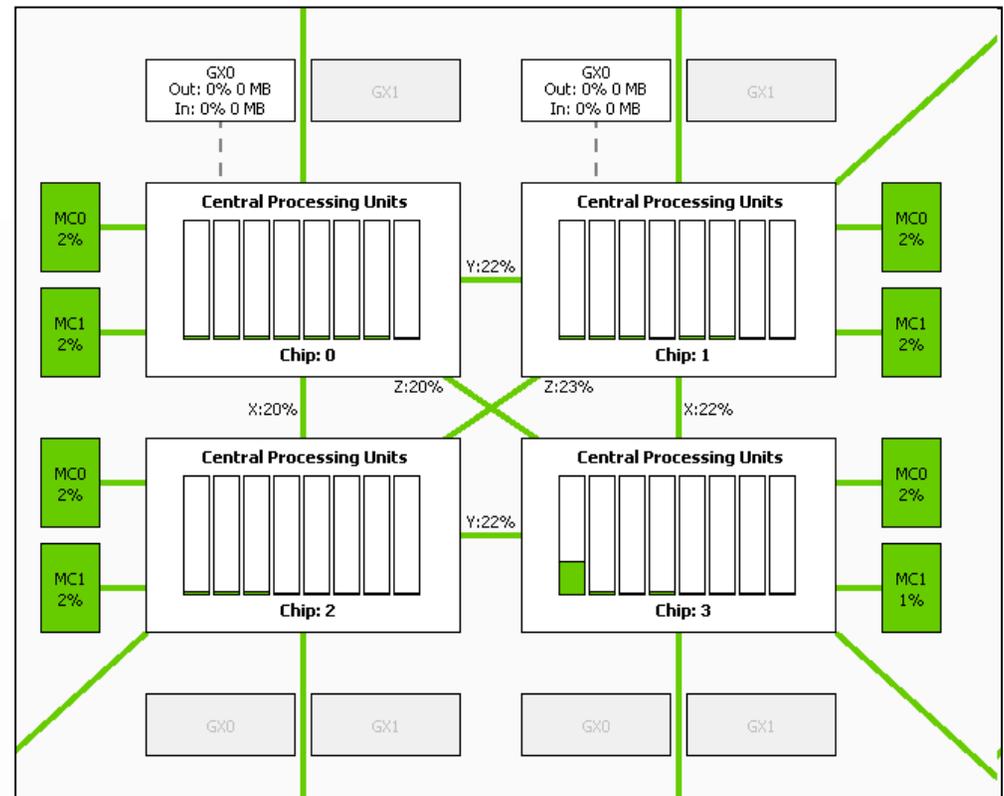


- We can see each node has four chips/sockets. We can also see numbers in the boxes which indicates how busy each of the chips are. The green lines between the nodes shows the traffic on the SMP fabric between each node.



## PowerVP – node drill down

- This view appears when you click on one of the nodes and allows you to drill down on the node resources
- In this view we can see this system is using eight core chips.



- We can also see the green lines showing the busses between the chips. We can also see the Memory controllers and the GX busses which shows traffic to and from our remote I/O. We also see green lines on the top, bottom, and corners. These are the SMP connections to other nodes.



## PowerVP - Partition drill down

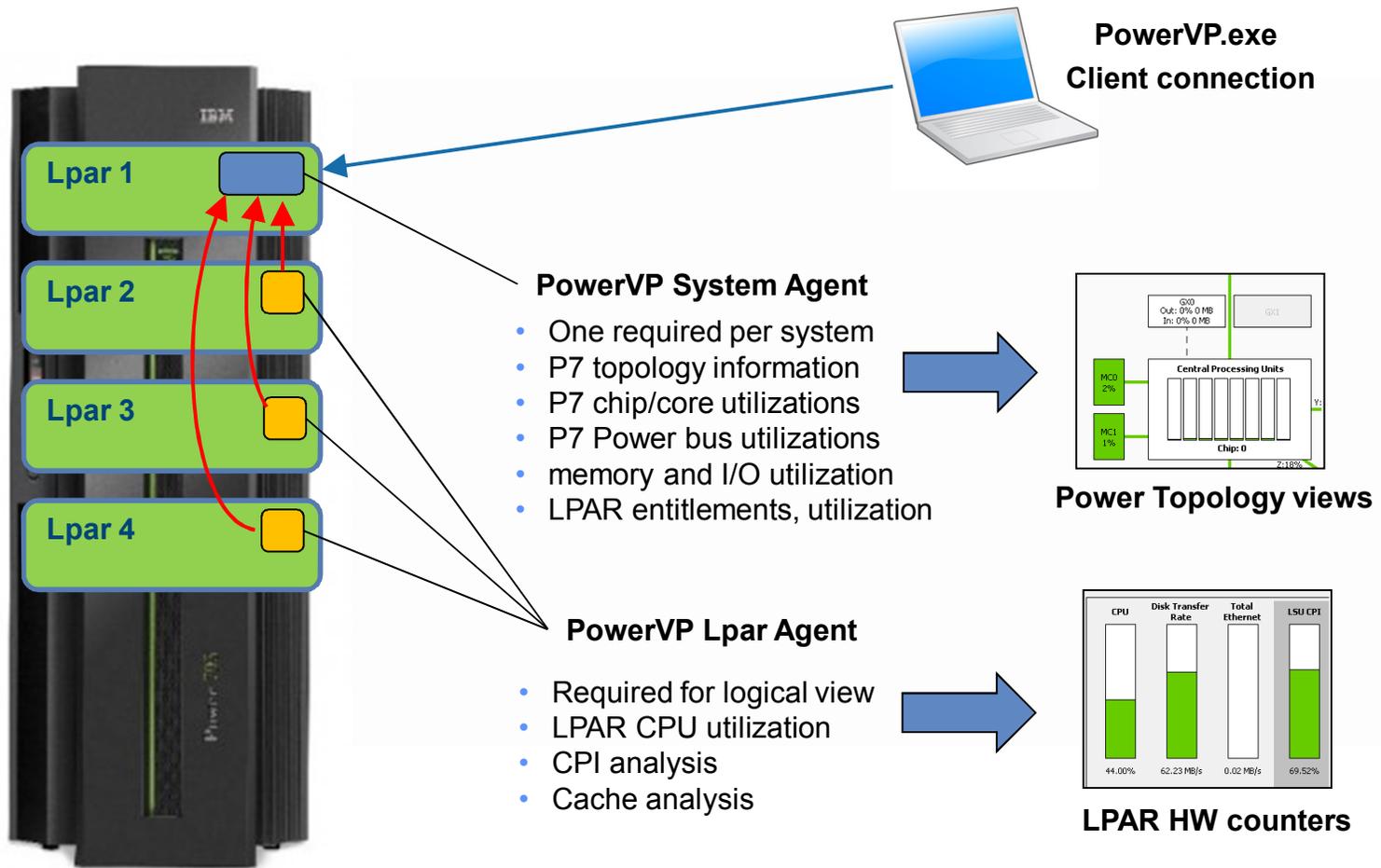
- The view allows us to drill down on resources being used by a specific partition that we clicked on.
- You will find statistics about number of core installed, Disk, Network cards... and CPI counter



- You can select Disk transfer or Total Ethernet metrics to drill down on which disk or NIC or generated the loads.
- But the most important is LSU (Load Store Unit). Selected this counter and you will know on which cache/Memory Level you are waited for.



# PowerVP – Installation / Concepts



## PowerVP (Sleuth) supported models and ITE's

- Power System models and ITE's with 7.7 firmware support
  - 710-E1D, 720-E4D, 730-E2D, 740-E6D (also includes Linux D models)
  - 750-E8D, 760-RMD
  - 770-MMC, 780-MHC
  - p260-22X, p260-23X, p460-42X, p460-43X, p270-24X, p470-44X, p24L-7FL
  - 71R-L1S, 71R-L1C, 71R-L1D, 71R-L1T, 7R2-L2C, 7R2-L2S, 7R2-L2D, 7R2-L2T
  -
- Power System models with 7.8 firmware support (future plans)
  - 795-FHB (4Q2013)
  - 770-MMD, 780-MHD (2014)

All models with pre- 7.7 firmware does not support new instrumentation

\* Some Power models and firmware releases listed above are currently planned for the future and have not yet been announced.  
\* All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.



## Product Plans

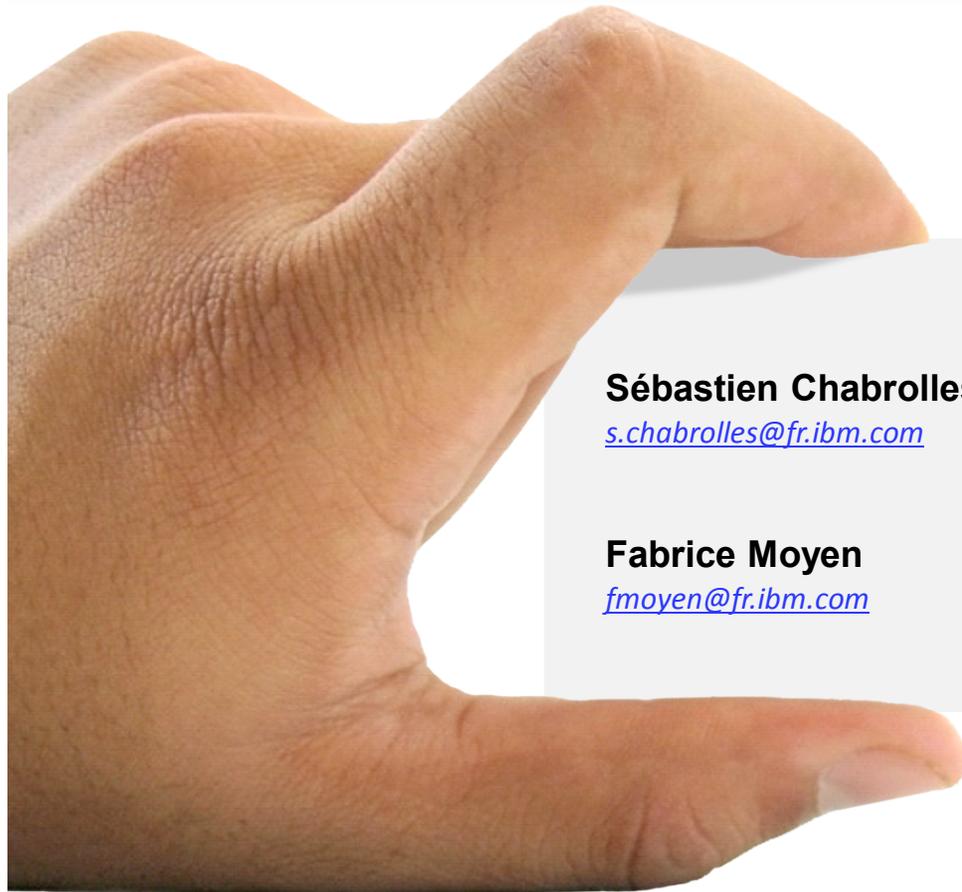
- Current plans
  - Announce and GA in 4Q 2013 as part of PowerVM EE
  - Dependent on 7.7 or later firmware
    - Select POWER7 and POWER7+ models supported
      - (see chart for details)
  - Agents will run on IBM i, AIX, Linux on Power and VIOS
    - i 7.1, AIX 6.1 and 7.1, Linux (RHEL 7 64 bit, others?)
  - Will be available in upcoming GA8 beta program
- Future plans
  - Support new hardware
  - Integration with other performance tools and advisors
  - Add additional metrics



# PowerVP - Demo



# Thank You



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## ...any Question ?

