Power Ask The Experts 2013

IBM

Tricks of the Power Masters

Advanced Technology Support, Europe.

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IBM Power Ask the Experts 2013

09:30 - 10:00	Registration and coffee
10:00 - 11:15	Power Systems Update - Pat O'Rourke: Austin Briefing Centre
11:15 - 12:30	Performance Best Practices with POWER7 - Nigel Griffiths
12:30 - 13:30	Lunch
13:30 - 14:30	Tricks of the Power Masters - Gareth Coates
14:30 - 15:15	Cost Comparison between IBM Power and Intel - David Spurway
15:15 - 15:30	Coffee
15:30 - 16:45	Power Systems Trends and Directions - Pat O'Rourke: Austin Briefing Centre
16:45	Close

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Introduction

- Lots of tips and tricks.
  – Hopefuly useful

- Hardware

- Firmware

- HMC

- VIOS

- AIX

- One liners

- Concepts

- Other pointers which may need more research
  – eg: Redbooks

DISCLAIMER

Neither I nor IBM can take any responsibility for any work you carry out without our direct involvement!

Credits

- The tips here came from many sources

- Personal experience

- Other people, including

  – Nigel Griffiths
    • EMEA ATS
  – Andy Thomas
    • Power FTSS, UK
  – Graeme Penman
    • Power FTSS, UK
  – Paul Chapman
    • SSiS Services, UK
  – Pat O'Rourke
    • Briefing Center (sic), Austin,TX
  – Jay Kruemcke
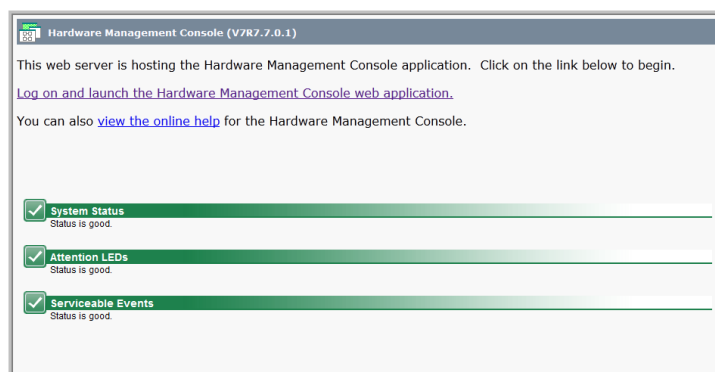   • Mr AIX, Austin,TX

  – And many others – too many to mention

A few questions

- Who uses a Web Browser to access/manage Power Servers and HMCs?
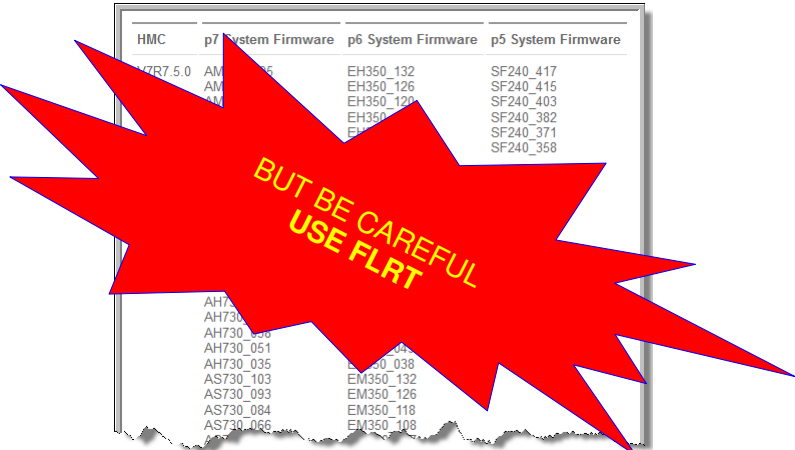 – Internet explorer
  – Firefox
  – Chrome
  – Other

- Who uses:
  – AIX V7.1
  – AIX V6.1
  – AIX V5.3
  – AIX V5.2
  – AIX V5.1
  – AIX V4.3
    • Earlier
  – WPARs
  – vWPARs
  – IBM Systems Director V6.3
  – IBM Systems Director V6.2
  – IBM Systems Director V6.1
    • Earlier

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HMC

Hardware Management Console (V7R7.7.0.1)

This web server is hosting the Hardware Management Console application. Click on the link below to begin.

Log on and launch the Hardware Management Console web application.

You can also view the online help for the Hardware Management Console.

✓ **System Status**
Status is good.

✓ **Attention LEDs**
Status is good.

✓ **Serviceable Events**
Status is good.

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HMC / Firmware Supported Combinations

- http://www-933.ibm.com/support/fixcentral/firmware/supportedCombinations

HMC	p7 System Firmware	p6 System Firmware	p5 System Firmware
7R7.5.0	AM	EH350_132	SF240_417
	AM	EH350_126	SF240_415
	AM	EH350_120	SF240_403
		EH350	SF240_382
		EH	SF240_371
			SF240_358
	AH7		
	AH730		
	AH730_		
	AH730_051		
	AH730_035	350_038	
	AS730_103	EM350_132	
	AS730_093	EM350_126	
	AS730_084	EM350_118	
	AS730_066	EM350_108	

**BUT BE CAREFUL
USE FLRT**

---

monhmc - memory

```
monhmc –r mem –n 0
Mem:  1028512k total,  1009432k used,   19080k free,   142628k buffers


monhmc –r mem –n 0
Mem:  4096084k total,  3854460k used,  241624k free,  429908k buffers
```

- That top HMC only manages one POWER7 750, but even so the amount of free memory is low.

- The bottom HMC has 4GB RAM but even so, there's still not much free.

Richard Wale/UK/IBM

monhmc - disk

```
monhmc -r disk -n 0
Filesystem            1K-blocks       Used Available Use% Mounted
  on
/dev/sda2            16121184    8591256   6711016  57% /
tmpfs                 2048432        244   2048188   1% /dev
tmpfs                 2048432          0   2048432   0% /dev/shm
/dev/sda3             6040320    2998696   2734784  53% /var
/dev/sda7             8056524    1330396   6316876  18% /dump
/dev/sda8           250104468     191732 237208136   1% /extra
```

monhmc – proc & swap

```
monhmc -r proc -n 0
Cpu0 : 0.0%us,  0.0%sy,  0.0%ni,100.0%id,  0.0%wa,  0.0%hi,  0.0%si,  0.0%st
Cpu1 : 0.0%us,  0.0%sy,  0.0%ni,100.0%id,  0.0%wa,  0.0%hi,  0.0%si,  0.0%st
Cpu2 : 0.3%us,  0.0%sy,  0.0%ni, 99.7%id,  0.0%wa,  0.0%hi,  0.0%si,  0.0%st
Cpu3 : 0.0%us,  0.0%sy,  0.0%ni,100.0%id,  0.0%wa,  0.0%hi,  0.0%si,  0.0%st
```

```
monhmc -r swap -n 0
Swap:  2040244k total,        0k used,  2040244k
  free,  2354760k cached
```

HMC

- Scenario:

- Managed Server is connected to an HMC
- HMC is "disconnected"
- HMC is reconnected
- HMC does not see the Managed Server

- If you reconnect the managed system to the HMC after you remove the connection, you must use the `mksysconn –o auto` HMC command to clear the connection history on the HMC before reconnecting the managed system.
- If you reconnect the managed system to the HMC without first using the

`mksysconn –o auto` command, the HMC does not recognize the managed system.

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What servers are connected?

```
hmc11:~ # lssyscfg –r sys –F name
bronze-8203-E4A-SN10E0A21
172.17.254.248
pink-9115-505-SN65080EA
silver-8203-SN10E0A31
172.17.255.246
purple-9117-MMB-SN100525P
plum-8204-E8A-SN105C0B0
oldlace-65BD12E
orange-8203-E4A-SN10E0A51
brown-9115-505-SN6509E5A
grey-9117-MMA-p570-8F
hmc11:~ #
```

My favourite HMC one-liner

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HMC Password policies

- **All as** `hscroot`, **no need for** `root`.

- **Make a new password policy**
```
mkpwdpolicy -i            \
"name=gaz4,               \
description=,             \
min_pwage=1,              \
pwage=180,                \
min_length=4,             \
hist_size=10,             \
warn_pwage=7,             \
min_digits=0,             \
min_uppercase_chars=0,    \
min_lowercase_chars=0,    \
min_special_chars=0"
```

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HMC Password policies

- **All as** `hscroot`, **no need for** `root`.

- **Activate it**
  - `chpwdpolicy -o a -n gaz4`

- **change the password**
  - `chhmcusr -u gaz -t passwd`

- **disable the policy**
  - `chpwdpolicy -o d`

- **remove the policy**
  - `rmpwdpolicy -n gaz4`

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VIOS

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Which VIOS provides your vSCSI

• Run this as root in a client LPAR

```
# print "cvai" | kdb | grep vscsi | grep -v read
vscsi0    0x000007 0x0000000000 0x0 plum-vio1->vhost0
vscsi1    0x000007 0x0000000000 0x0 plum-vio1->vhost1
#
```

• shows the VIOS and vhost for a client vscsi adapter.

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Security

- Consider the padmin password to be very sensitive
- padmin can gain root privileges
- can then read data from backing devices for all of its clients

Don't use smit

- padmin cannot use smit
- smit is available in the oem_setup_env environment

smitty

Slide 19

Don't use smit

- padmin cannot use smit
- smit is available in the oem_setup_env environment

- # DO NOT USE IT !!!

smitty

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Slide 20

Create System Plan Failure (mksysplan)

- https://www-304.ibm.com/support/docview.wss?uid=isg3T1010961

If the ldc query command fails on the VIO server when run as padmin then there will be additional information about the failures in the `/home/ios/logs/ioscli_ldc.trace` file. However, before you start looking at that file you should first be prepared to **honestly** answer the following questions.

d. Has configuration been performed on the VIO server outside the padmin command line interface (CLI) after exiting the CLI using oem_setup_env?

(1) **This tech-note cannot begin to outline the extent of damage well meaning system administrations have inflicted on themselves by performing configuration steps outside of the VIOS CLI command shell.** If the answer is yes to the above question then the least of your worries is system plan and ldc query. You can check the ioscli_ldc.trace file to see if you can correct some errors, but the track record other users have had dealing with misuse of oem_setup_env is not very promising.

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Slide 21

When to use oem_setup_env

- So, what is oem_setup_env used for?

- It is an environment to setup OEM device drivers

- ONLY use it to install these device drivers as directed in the release notes and installation guides.

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What AIX command did that VIO command actually run?

```
$ export CLI_DEBUG=33
$ lsmap –vadapter vhost0
 AIX: "lsdev –c adapter –t IBM,v-scsi-host –s vdevice –F "name" | wc –l –c"
 AIX: "lsdev –c adapter –t IBM,v-scsi-host –s vdevice –F "name""
 AIX: "lsdev –C –l vhost0 –F "physloc""
 AIX: "lsdev –p vhost0 –F "name" | wc –l –c"
 AIX: "lsdev –p vhost0 –F "name""
 SVSA Physloc Client Partition ID
 --------------- -------------------------------------------- ------------------
 vhost0 U8233.E8B.100271P-V2–C11 0x00000001

 VTD NO VIRTUAL TARGET DEVICE FOUND

 $
```

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Hardware

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list all the WWPN on a system

- `lshwres -r io --rsubtype slotchildren -m Server-9117-MMB-SN101509A -F phys_loc,description,mac_address,wwpn,microcode_version |grep Fibre`

```
U78C0.001.DBJJ568-P2-C1-T1,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9b7cbf0,null
U78C0.001.DBJJ568-P2-C1-T2,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9b7cbf1,null
U78C0.001.DBJJ568-P2-C3-T1,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9c6aa32,null
U78C0.001.DBJJ568-P2-C3-T2,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9c6aa33,null
U78C0.001.DBJJ568-P2-C4-T2,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9b65cc3,null
U78C0.001.DBJJ568-P2-C4-T1,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9b65cc2,null
U78C0.001.DBJJ568-P2-C6-T1,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9b7ca38,null
U78C0.001.DBJJ568-P2-C6-T2,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9b7ca39,null
U78C0.001.DBJJ675-P2-C1-T1,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9b65c40,null
U78C0.001.DBJJ675-P2-C1-T2,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9b65c41,null
U78C0.001.DBJJ675-P2-C3-T1,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9c6ac0e,null
U78C0.001.DBJJ675-P2-C3-T2,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9c6ac0f,null
U78C0.001.DBJJ675-P2-C4-T1,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9b65f78,null
U78C0.001.DBJJ675-P2-C4-T2,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9b65f79,null
U78C0.001.DBJJ675-P2-C6-T1,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9b65e00,null
U78C0.001.DBJJ675-P2-C6-T2,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9b65e01,null
U78C0.001.DBJJ696-P2-C1-T1,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9b7d724,null
U78C0.001.DBJJ696-P2-C1-T2,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9b7d725,null
U78C0.001.DBJJ696-P2-C3-T1,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9c6abf0,null
U78C0.001.DBJJ696-P2-C3-T2,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9c6abf1,null
U78C0.001.DBJJ696-P2-C4-T1,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9c6ae1c,null
U78C0.001.DBJJ696-P2-C4-T2,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9c6ae1d,null
U78C0.001.DBJJ696-P2-C6-T1,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9b7d652,null
U78C0.001.DBJJ696-P2-C6-T2,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9b7d653,null
U78C0.001.DBJJ704-P2-C1-T1,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9b
U78C0.001.DBJJ704-P2-C1-T2,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9b
U78C0.001.DBJJ704-P2-C3-T1,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9c
U78C0.001.DBJJ704-P2-C3-T2,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9c
U78C0.001.DBJJ704-P2-C4-T1,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9c
U78C0.001.DBJJ704-P2-C4-T2,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9c
U78C0.001.DBJJ704-P2-C6-T1,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9b
U78C0.001.DBJJ704-P2-C6-T2,8 Gigabit PCI-E Dual Port Fibre Channel Adapter,null,10000000c9b
```

Thanks to Nigel Griffiths and Chris Gibson

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https://www.ibm.com/developerworks/mydeveloperworks/blogs/cgaix
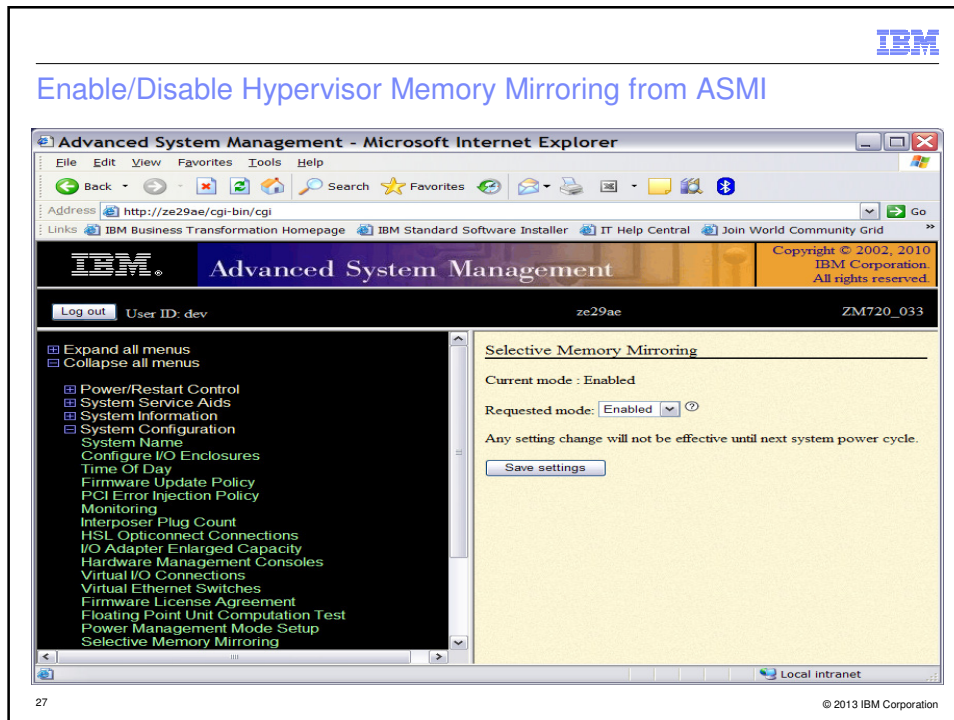
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LMB size

- In order to carry out LPM (Live Partition Mobility)

- Many pre-requisites

- LMB (Logical memory Block) size must be the same

- Changing (effective) LMB size requires a power cycle – OF THE ENTIRE SYSTEM

- Choose a size and set all systems to it – now
  - It will become effective at the next power cycle.

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LMB size

- Check/change it in asmi

- Check it on the command line

```
hmc11:~ # lshwres –r mem –m plum-8204-E8A-
 SN105C0B0 --level sys -F mem_region_size
128
hmc11:~ #
```

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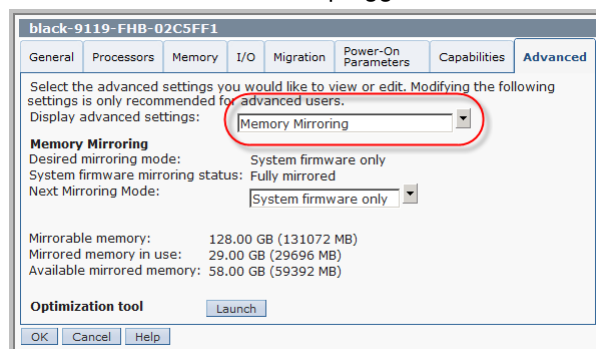© 2013 IBM Corporation

Enable/Disable Hypervisor Memory Mirroring from ASMI

HMC Mirroring Status

- Advanced Tab on CEC properties
- Desired Mirroring mode
  - Off or System Firmware only
- Option to enable/disable firmware mirroring
- Mirrorable memory
  - Total amount of physical memory that can be mirrored
  - based on the DIMMs that are plugged

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DPO - Dynamic platform optimiser

- EMEA ATS received a Power 760
  - on loan from Austin, Texas in November 2012.

- The product was not announced till 5th February 2013

- I was really keen to test DPO

- I gave feedback to the developers and the following slide shows my headline comments.

- The presentation I sent, (pre-announce) was of course, IBM Confidential, but this one is not.

- It was internal IBM communication, so I could be blunt!

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DPO - Observations

- Working on DPO has been like reading one of those books that you can't put down!

- Shuffling the VMs (LPARs) by hand, checking the affinity and then watching the optimiser fix it all; has been great.
  - I have certainly consolidated my understanding of POWER7 and POWER7+ LPAR placement and affinity implications

    Now released so no longer confidential!

- As the system used for testing is not yet announced, this document is IBM Confidential.
  - And that's the only reason that I haven't been tweeting hard about this technology too – **it is really great!**

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DPO - motivation

- Partition placement can become sub-optimal
  - Dynamic creation and deletion of partitions
  - DLPAR operations
  - Partition Mobility
  - Hibernation

- Platform will provide a mechanism to optimize partition placement dynamically

- Benefits include
  - Improved performance in a cloud environment
  - Dynamically adjust topology after mobility
  - Simple to use and predicted "score"

Think of it as 52 card pickup - and sort

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DPO – HMC commands

```
# lssyscfg –r sys –F name
zg23ae
zg24he

# lsmemopt –m zg24he –o currscore
curr_sys_score=84

# lsmemopt –m zg24he –o calcscore
curr_sys_score=84,predicted_sys_score=93,"requested_lpar_ids=1,2
 ,17,105,106,107,108,109,110,111",protected_lpar_ids=none

# optmem –m zg24he –t affinity –o start

# lsmemopt –m zg24he
in_progress=0,status=Finished,type=affinity,opt_id=2,progress=0,
 requested_lpar_ids=none,protected_lpar_ids=none,"impacted_lpar
 _ids=106,110"

# lsmemopt –m zg24he –o currscore
curr_sys_score=95
```

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More information

- http://www.redbooks.ibm.com/redpieces/abstracts/sg247590.html

- RedBook
- March 2013 update

Draft Document for Review March 1, 2013 3:35 pm
SG24-7590-04

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IBM PowerVM Virtualization Managing and Monitoring

Provides managing and monitoring best practices

Consolidated sources for PowerVM publications

Includes Virtual I/O Server 2.2.2 enhancements

And see my webinar

Sergio Guilherme Bueno
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KyoungHun Min
Stephen Tremain
Steve Wallace

Redbooks

ibm.com/redbooks

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POWER7+ (and beyond) Accelerators

- The command to enable crypto to use the accelerator is:

- acfo -t nx_enabled=0   (disable accelerator)
- acfo -t nx_enabled=1   (re-enable it)

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POWER7+ (and beyond) Accelerators - HMC commands

- The following are the HMC commands to disable use of the compression/encryption coprocessors for a partition.

  The disable commands are:

  ```
  chhwres –m <managed system> –r mem –a "hardware_mem_encryption=0" -o s --id <partition id>
  ```
  •
  ```
  chhwres –m <managed system –r mem –a "hardware_mem_expansion=0" -o s --id <partition id>
  ```

  Expansion used to be called compression, so on an older 760 HMC:

  ```
  chhwres –m <managed system> –r mem –a "hardware_mem_encryption=0" -o s --id <partition id>
  chhwres –m <managed system> –r mem –a "hardware_mem_compression=0" -o s --id <partition id>
  ```

- Replacing the 0 with a 1 will enable the accelerator usage.

- For the change to take affect, the partition needs to be IPL'ed.

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IBM Systems Energy Estimator

- http://www-912.ibm.com/see/EnergyEstimator

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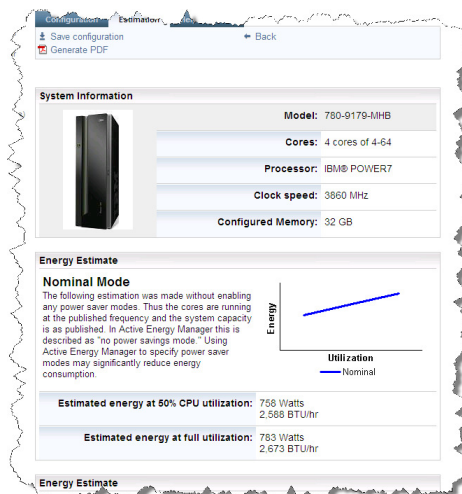
Power saving mode

- POWER6 and POWER7 can go static Power saving mode – configure this in ASMI

```
# lparstat –E 1 2

System configuration: type=Shared mode=Uncapped smt=On lcpu=4
mem=4096MB ent=0.40 Power=Static

Physical Processor Utilisation:

--------Actual-------- ------Normalised------
user  sys   wait  idle  freq         user sys  wait  idle
----  ----  ----  ----  ---------    ---- ---- ----  ----
0.002 0.005 0.000 0.393 3.6GHz[ 86%] 0.002 0.004 0.000 0.394
0.003 0.005 0.000 0.392 3.6GHz[ 86%] 0.003 0.004 0.000 0.393
or Power=Disabled
```

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Power saving mode

```
# lparstat –h 1 2

System configuration: type=Shared mode=Uncapped smt=On lcpu=4 mem=4096MB
psize=4 ent=0.40

%user %sys %wait %idle physc %entc lbusy vcsw phint %hypv hcalls %nsp
----- ---- ----- ----- ----- ----- ----- ---- ----- ----- ------ ----
0.6   4.0   0.0  95.4  0.02  5.1   0.0   181  1     30.3  297    86
0.3   0.9   0.0  98.8  0.01  1.7   0.0   187  1     94.4  333    85
```

Running at 86% clock speed

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Power saving mode

- %nsp

- Indicates the current average processor speed as a percentage of nominal speeed

- ASMI -> System Configuration -> Power Management Mode Setup Enable|Disable

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POWER7 Power saving

- How fast are my processors actually running?
- pmcycles
- pmcycles –m

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POWER7 Power saving

```
black1:/# pmcycles
This machine runs at 4004 MHz
black1:/#
black1:/# pmcycles -m
CPU 0 runs at 4004 MHz
CPU 1 runs at 4004 MHz
CPU 2 runs at 4004 MHz
CPU 3 runs at 4004 MHz
CPU 4 runs at 4004 MHz
CPU 5 runs at 4004 MHz
CPU 6 runs at 4004 MHz
CPU 7 runs at 4004 MHz
CPU 8 runs at 4004 MHz
CPU 9 runs at 4004 MHz
CPU 10 runs at 4004 MHz
CPU 11 runs at 4004 MHz
CPU 12 runs at 4004 MHz
CPU 13 runs at 4004 MHz
CPU 14 runs at 4004 MHz
CPU 15 runs at 4004 MHz
black1:/#
```

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How do I know how many Virtual Processors are active?

- It is a common question
  - There is no tool or metric that shows active Virtual Processor count

  - There are ways to guess this, and looking a physical consumption (if folding is activated), physc count should roughly equal active VPs

  - nmon Analyser makes a somewhat accurate representation, but over long intervals (with a default of 5 minutes), it does not provide much resolution

  - For an idea at a given instant, you can use: `echo vpm | kdb`

    Be VERY careful with kdb

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`# echo vpm | kdb`

```
(0)> vpm
VPM Tunables
vpm_interval............... 000003E8   schedp.vpm_fold_threshold.. 00000050
vpm_fold_limit............. 00000008   vpm_unfold_limit........... 00000002
vpm_be_threshold........... 0000000A

VPM Data
........................vpm_mgmt :01
........................vpm_flags :00
....................vpm_prev_time :1350612958965291578 ns
....................vpm_interval :1000636881 ns
....................vpm_prev_intr :6571448426312 ns
........................vpm_intr :1408406 ns

VPM Core Buckets
INDX  ID    TYPE  SR  CORE  LAST  ACTI  HEAD  UTIL              STATE
  0    0    SYST   1    4     2     2     4        1004877499

VPM Core State
 POS   CORE  NEXT  PRIO  BEST  C  STATE
  0     6    NONE    0     0   0  GP
  1     4     6      0     0   0  GP
  2     2     6      0     0   0  GP ACTIVE
  3     0     2      0     0   0  GP ACTIVE
```

Be VERY careful with kdb

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`# echo vpm | kdb`

Be VERY careful with kdb

```
VPM Sleep Data.
........................vsd_state :01  SLEEP_INITIALIZED
..............vsd_sleep_specifier :00000000
...............vsd_sleep_latency :0000000000000000 sec 00000000 nsec
...................vsd_min_sleep :0000000000000000 sec 1DCD6500 nsec
...................vsd_prod_lock :@F1000A00002E4E00
...................vsd_prod_head :00000000024A9DD0

VSD Thread State.
 CPU VP_STATE    SLEEP_STATE  PROD_TIME: SECS    NSECS     CEDE_LAT

   0  ACTIVE     AWAKE        0000000000000000   00000000   00
   1  ACTIVE     AWAKE        0000000000000000   00000000   00
   2  ACTIVE     AWAKE        0000000000000000   00000000   00
   3  ACTIVE     AWAKE        00000000508069D0   26F6B8F6   00
   4  DISABLED   SLEEPING     000000005080B7E1   0AD9D9B5   00
   5  DISABLED   SLEEPING     000000005080B7E1   0ADAE51C   00
   6  DISABLED   SLEEPING     000000005080B7E1   0ADC2A67   00
   7  DISABLED   AWAKE        0000000000000000   00000000   00


(0)> plum-gaz:/#
```

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Network

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How fast

- To find out the network bandwidth start an FTP session
- then do:

```
put "|dd if=/dev/zero bs=32k count=10000" /dev/null
```

- should get throughput which is almost 95% of the wire-speed

- This works OK for 1Gb/s
- For vEthernet and 10Gb/s FTP may have too much overhead to give valid data

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RMC

- On AIX

- To stop the daemons:
  `/usr/sbin/rsct/bin/rmcctrl –z`

- To start the daemons:
  `/usr/sbin/rsct/bin/rmcctrl –A`

- To enable the daemons for remote client connections (HMC to LPAR and vice versa):
  `/usr/sbin/rsct/bin/rmcctrl –p`

- On HMC

  `hmcshutdown –rt now`

RMC

- The whole system can be reinitialized.

- Stops RMC processes and resource managers.
  All ACL files deleted.
  New files are copied from templates.

- Fastest way to fix a broken configuration or to clear out files after cloning.

  `/usr/sbin/rsct/install/bin/recfgct`

- Also useful if you disconnect an HMC and connect a new one

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WLM (Workload Manager)

- A great tip from Peter Nutt (via Andy Thomas)

- Set up WLM on AIX with default in tier 1 and System in tier 0

- If user process runs away you still get a response on the root prompt to sort it out.

- Also, a very handy WLM command is

- `#  wlmassign myclass $$`

- Assigns my process and all my children to "myclass" - handy to put this in the first line of a startup script for job you want controlled by WLM

smitty mktcpip

```
                        Minimum Configuration & Startup

           To Delete existing configuration data, please use Further Configuration menus

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

                                                   [Entry Fields]
* HOSTNAME                                         [plum-gaz.aixncc.uk.ibm.com]
* Internet ADDRESS (dotted decimal)                [9.137.62.161]
  Network MASK (dotted decimal)                    [255.255.255.0]
* Network INTERFACE                                 en1
  NAMESERVER
           Internet ADDRESS (dotted decimal)       [9.137.62.2]
           DOMAIN Name                             [aixncc.uk.ibm.com]
  Default Gateway
        Address (dotted decimal or symbolic name)  [9.137.62.1]
        Cost                                        [0]                        #
        Do Active Dead Gateway Detection?           no                         +
  Your CABLE Type                                   N/A                        +
  START Now                                         no                         +



F1=Help                 F2=Refresh           F3=Cancel           F4=List
F5=Reset                F6=Command           F7=Edit             F8=Image
F9=Shell                F10=Exit             Enter=Do
```

F1

HOSTNAME means FQDN

```
                        Minimum Configuration & Startup


          +-----------------------------------------------------------------+s
          |                     CONTEXTUAL HELP                             |
Type or s|                                                                 |
Press Ent| Press Enter or Cancel to return to the application.             |
         |                                                                 |
         | [TOP]                                                           |
* HOSTNAM|  Specify the host name you want to assign to the current machine.|
* Interne|  Enter the host name in the following format:                   |
  Network|                                                                 |
* Network|  host name                                                      |
  NAMESER|                                                                 |
         |  When specifying the host name, use ASCII characters, preferably |
         |  alpha-numeric only. Do not use a period in the host name. Avoid |
  Default|  using hexadecimal or decimal values as the first character (for |
      Ad|  example "3Comm," where "3C" might be interpreted as a hexadecimal|
      Co|  character). The unqualified host name should be less than 32     |        #
      Do|  characters, for compatibility with older hosts.                 |        +
  Your CA|                                                                 |        +
  START N|  If the host uses a domain name server for name resolution, the host|    +
         |  name must contain the full domain name.                        |
         | [MORE...22]                                                     |
         |                                                                 |
F1=Help  | F1=Help              F2=Refresh           F3=Cancel             |
F5=Reset | F8=Image             Enter=Do                                   |
F9=Shell +-----------------------------------------------------------------+
```
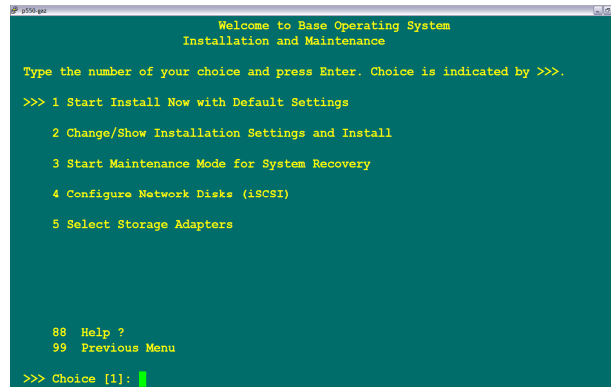
911 install

- Boot from Media/NIM etc as normal
- Select console
- Select Language

```
Welcome to Base Operating System
Installation and Maintenance

Type the number of your choice and press Enter. Choice is indicated by >>>.

>>> 1 Start Install Now with Default Settings

      2 Change/Show Installation Settings and Install

      3 Start Maintenance Mode for System Recovery

      4 Configure Network Disks (iSCSI)

      5 Select Storage Adapters




   88  Help ?
   99  Previous Menu

>>> Choice [1]:
```
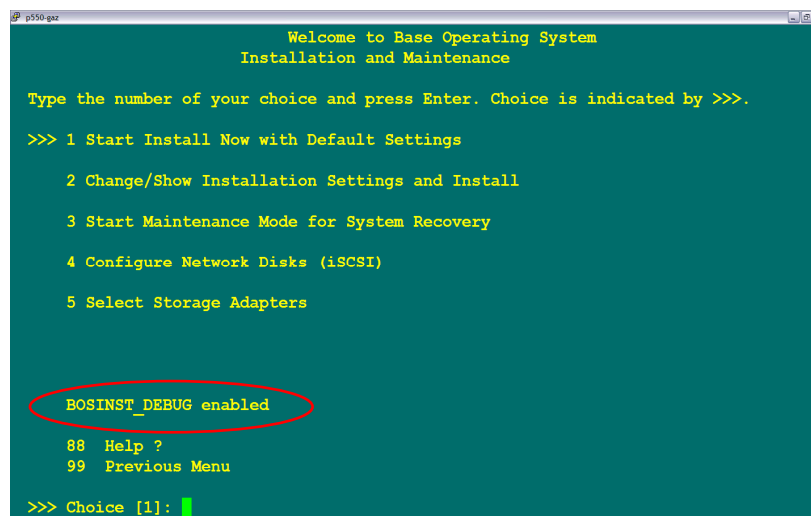
- Enter 911 at this screen. This will enable the install debugging for this session. The screen will refresh, and continue with option 1.

---

911 Install

```
Welcome to Base Operating System
Installation and Maintenance

Type the number of your choice and press Enter. Choice is indicated by >>>.

>>> 1 Start Install Now with Default Settings

      2 Change/Show Installation Settings and Install

      3 Start Maintenance Mode for System Recovery

      4 Configure Network Disks (iSCSI)

      5 Select Storage Adapters



   BOSINST_DEBUG enabled

   88  Help ?
   99  Previous Menu

>>> Choice [1]:
```

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911 install

```
p550-gaz
+ /../usr/lib/methods/showled 0xA52
+ Log Initialize_Disk_Environment
+ dspmsg /../usr/lib/nls/msg/C/BosMenus.cat -s 10 37 Initializing disk environme
nt.\n
+ Change_Status 0 Initializing disk environment.
Initializing disk environment.
+ LIBPATH=/SPOT/usr/ccs/lib:/SPOT/usr/lib:/mnt/usr/ccs/lib:/mnt/usr/lib:/SPOT/us
r/lpp/xlC/lib:
+ PATH=/SPOT/usr/bin:/SPOT/usr/sbin:/SPOT/usr/lpp/bosinst:/mnt/usr/bin:/mnt/usr/
sbin:/mnt/usr/lpp/bosinst:
+ export PATH LIBPATH
+ [ -n  ]
+ + /../SPOT/usr/lpp/bosinst/bidata -i -g image_data -f PRODUCT_TAPE
PT=yes
+ [ yes = no ]
+ [ yes = no ]
+ [ yes = no ]
+ [ yes = yes ]
+ ETC=usr/lpp/bos/inst_root/etc
+ DEV=usr/lpp/bos/inst_root/dev
+ VAR=usr/lpp/bos/inst_root/var
+ [ -n  ]
+ ln -sf /mnt/usr/bin/pwd /usr/bin/pwd
+ 1> /dev/null 2>& 1
```

- You will get more debug than you could possibly want

- You will be able to get the text from your PuTTY log ☺

---

dfvg

```
p550-gaz:/usr/local/bin# cat dfvg
#
# a noddy script to do dfs for each volume groups
#
lsvg | while read VG
do
echo "disk usage in $VG filesystems: "
lsvg -l $VG| awk ' !/N\/A|LV|$VG/ { print $7 }' | xargs df -gP
echo
done
```

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dfvg

```
p550-gaz:/usr/local/bin# time dfvg
disk usage in rootvg filesystems:
Filesystem      GB blocks     Used Available Capacity Mounted on
/dev/hd4           19.75      16.98     2.77      86% /
/dev/hd2            3.25       1.47     1.78      46% /usr
/dev/hd9var         1.00       0.24     0.76      24% /var
/dev/hd3            6.00       4.05     1.95      68% /tmp
/dev/hd1           24.00      16.07     7.93      67% /home
/dev/hd10opt        3.00       0.31     2.69      11% /opt
/dev/hd11admin      1.00       0.00     1.00       1% /admin
/dev/livedump       0.25       0.00     0.25       1% /var/adm/ras/livedump
/dev/lv00           1.00       0.03     0.97       4% /export/installios

disk usage in nimvg filesystems:
Filesystem      GB blocks     Used Available Capacity Mounted on
/dev/export       367.12     357.17    9.96      98% /export
nfs:/export       187.50     185.65    1.85     100% /nfs/export

real    0m0.10s
user    0m0.05s
sys     0m0.01s
p550-gaz:/usr/local/bin#
```

---

duvg

```
p550-gaz:/usr/local/bin# cat duvg
#
# a noddy script to estimate disk usage in filesystems in all volume groups
#
lsvg | while read VG
do
GIGS=$(lsvg -l $VG| awk ' !/N\/A|LV|$VG/ { print $7 }' | xargs df -gP  | sumcol 3)

echo "
        Estimated disk usage in $VG filesystems is $GIGS GB
"
done
```

duvg

```
p550-gaz:/usr/local/bin# time duvg

        Estimated disk usage in rootvg filesystems is 39.15 GB


        Estimated disk usage in nimvg filesystems is 542.82 GB



real    0m0.14s
user    0m0.04s
sys     0m0.02s
```

sumcol

```
#  SumCol - sum of a column
#
#SYNOPSIS
#  SumCol N <data
#
#DESCRIPTION
#  Add up column N1 of stdin.  If you pipe the output of "ls  -l"  to
#  this,  it  will  add  up  the  sizes,  which  are in column 4, our
#  default.  You can specify the column for other kinds of files.
#
#BUGS
#  There's a better version available in perl; awk is obsolete.
#
#AUTHOR
#  John Chambers <jc@trillian.mit.edu>

if [ $# -lt 1 ];then set 4;fi
awk '{s += $'$1'} END {print s}'
```

IBM

Mounting an ISO image in AIX

- Have you ever used loop devices eg: in Linux?

- Do you wish you could do the same in AIX?

- Well, why don't you?

IBM

Mounting an ISO image in AIX

- Firstly, we can see that nothing is mounted on /mnt
```
/# mount | grep mnt
```

- Then we mount an ISO image
```
/# loopmount -i /tmp/AIX616_dvd1.iso -m /mnt -o "-V cdrfs -o ro"
```

- And we can now see that it is mounted
```
/# mount | grep mnt
        /dev/loop0       /mnt             cdrfs  02 Nov 17:54 ro
/# ls /mnt
6100-06      image.data  OSLEVEL  README.aix  RPMS .Version
bosinst.data installp    ppc      root        usr
```

- Then we can unmount it
```
/# loopumount -l loop0 -m /mnt
/# ls /mnt
/# mount | grep mnt
/# ls mnt
/#
```

IBM

Mounting an ISO image in AIX

- The commands are in the devices.loopback.rte fileset

```
/# type loopmount
loopmount is /usr/sbin/loopmount
/# lslpp -w /usr/sbin/loopmount
  File                              Fileset           Type
  ----------------------------------------------------------------
  /usr/sbin/loopmount               devices.loopback.rte    File
/# lslpp -w /usr/sbin/loopumount
  File                              Fileset           Type
  ----------------------------------------------------------------
  /usr/sbin/loopumount              devices.loopback.rte    File
/#
```

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Mounting an ISO image in AIX

- So, with loopmount and virtual optical devices,

- You hardly ever need to write media and can do installations, upgrades etc remotely.

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Linux
(and AIX)

---

rpm

- How to install a new package, or upgrade it if it already exists?

```
rpm -Uvh <package.rpm>
```

- If you have a directory containing updated packages, and you wish to upgrade only the packages currently on your system, run:

```
rpm -Fvh *.rpm
```

- To delete an installed package, run:

```
rpm -e <package>
```

- To list all installed packages in your system, run:

```
rpm -qa
```

rpm

- You have installed a package, but don't know what it does, run the following command to find out more about the package:

  ```
  rpm -qi <package>
  ```

- To list files installed by a package, run:

  ```
  rpm -ql <package>
  ```

- How to get a-yet-to-be-installed package to give you information about itself and the files it would install:

  ```
  rpm -qilp <package.rpm>
  ```

- To find out what package a particular file/binary is part of, run:

  ```
  rpm -qf <full path to file and filename>
  ```

---

rpm

- To find out which files are missing from the RPM database, run:

  ```
  rpm -Va
  ```

- To verify a package, run:

  ```
  rpm -Vv <package>
  ```

  > Thanks to Aniket Patel
  > Technical Computing
  > (HPC) Services Europe,
  > CEE & MEA
  > Ex: Sequent Support

- To compress and rebuild the RPM database, run:

  ```
  rpm --rebuilddb
  ```

IBM

Architecting

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CHARM architecting

- System:

- Power 770 with one 5802 I/O drawer
  - CEC
    - Split backplane
    - Full of disks
  - 5802
    - also full of disks
    - Lots of adapters

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CHARM architecting
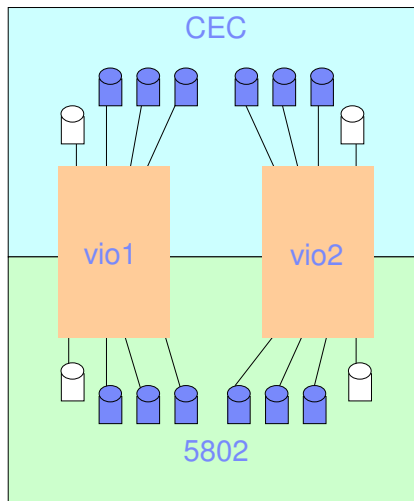
- Should we use dual VIO servers?

CHARM architecting

Derrr – YES!

CHARM architecting

- Derrr – YES!

- But where should they be?

- How about:
  - Each VIO server has mirrored rootvg
  - One disk in the CEC and one in the 5802

- Multiple client LPARs
  - get hdisk0 from vio1
 - get hdisk1 from vio2
  - Mirror rootvg

CEC

vio1   vio2

5802

CHARM architecting

- This is good

- We are protected against many types of failure
  - VIOS rootvg disk
  - VIOS rootvg adapter
  - VIOS clientsvg disk
  - VIOS clientsvg adapter
  - 5802 drawer, GX adapter etc

CEC

vio1   vio2
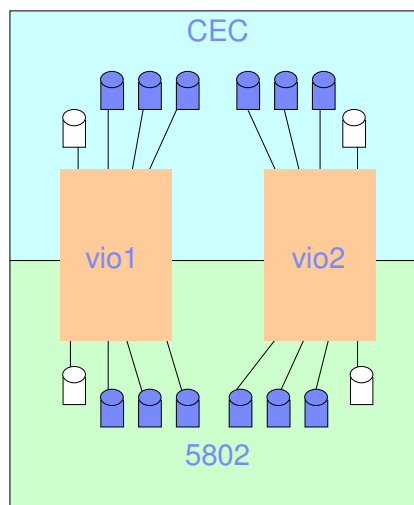
5802

CHARM architecting

- But
- If we wanted to do CHARM on the 5802
- We would need to do a lot of AIX admin
  - Break the mirrors
  - rmdev the adapters and disks
  - etc
  - In BOTH VIOS
  - And ALL the CLIENTS
  - OUCH that will take ages

CEC

vio1   vio2
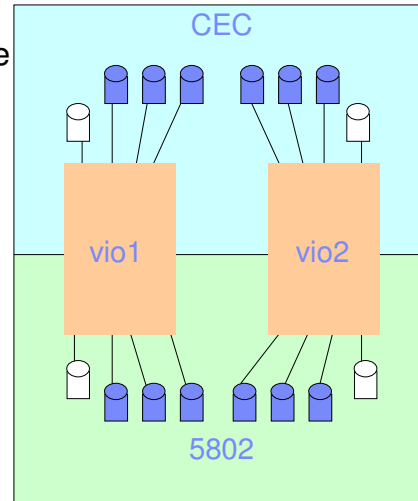
5802

CHARM architecting

- How about this configuration?
- We still have a very good degree of protection
- If we wanted to do CHARM on the 5802
- We could shutdown VIO2
  - All the client LPARs get stale mirrors
  - Carry out the CHARM action
  - Reboot VIO2
  - Remirror the client LPARs
    - varyonvg
- That would take far less admin work at the time of the CHARM
  - And is less prone to error
- We did this in the European ATS
  - CHARM – GX Adapter replacement
  - **It worked perfectly**

CEC

vio1

vio2

5802
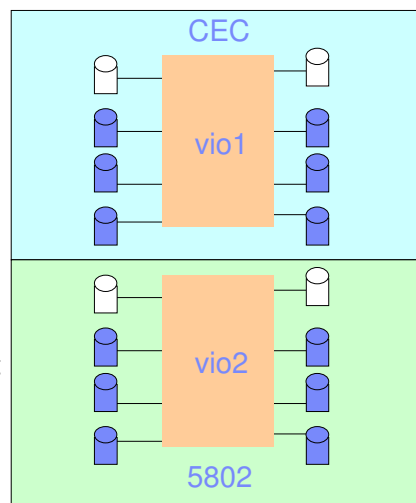
CHARM architecting

▪It all comes down to planning

for Business

netstat

- On the command line, type in Netstat <CR>

    1. Work with TCP/IP interface status
    2. Display TCP/IP route information
    3. Work with TCP/IP connection status
    4. Work with IPv6 interface status
    5. Display IPv6 route information
    6. Work with IPv6 connection status

    options 1, 2 and 3 are the ones used most

- If TCP/IP is up and running, you will get a menu of options.

- If netstat command fails,
    - TCP/IP isn`t running
    - need to do a strtcp <CR>, get a message saying tcp/ip starting.

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netstat

- The "trick" is everything you ever wanted to know about tcp/ip on an os/400 is here.

- Another "trick", some applications and firewalls use tcp/ip port numbers, how do you now which ports are active?

- so , netstat <enter> , option 3, shows local port as a name, then F24 for more keys, the F14 display port numbers, if the port number you want isn`t listed then its not started.
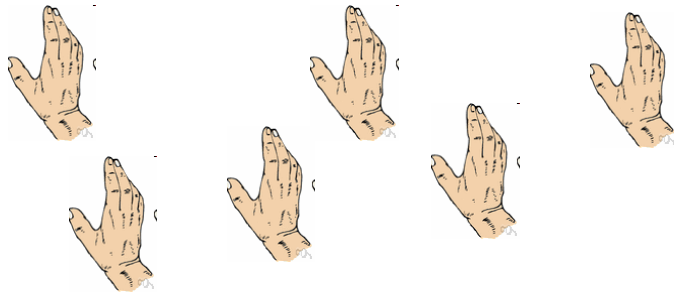
    Alun P Davies/UK/IBM

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Scripting

Scripting

Hands up if you write shell scripts

JPG2jpg_all

```
plum-gaz:/tmp/demo# ls -l
total 0
-rw-r--r--    1 root     system            0 21 Oct 04:12 a.JPG
-rw-r--r--    1 root     system            0 21 Oct 04:12 A.JPG
-rw-r--r--    1 root     system            0 21 Oct 04:12 b.JPG
-rw-r--r--    1 root     system            0 21 Oct 04:12 B.JPG
-rw-r--r--    1 root     system            0 21 Oct 04:12 c.JPG
-rw-r--r--    1 root     system            0 21 Oct 04:12 C.JPG
plum-gaz:/tmp/demo# JPG2jpg_all
plum-gaz:/tmp/demo# ls -l
total 0
-rw-r--r--    1 root     system            0 21 Oct 04:12 a.jpg
-rw-r--r--    1 root     system            0 21 Oct 04:12 A.jpg
-rw-r--r--    1 root     system            0 21 Oct 04:12 b.jpg
-rw-r--r--    1 root     system            0 21 Oct 04:12 B.jpg
-rw-r--r--    1 root     system            0 21 Oct 04:12 c.jpg
-rw-r--r--    1 root     system            0 21 Oct 04:12 C.jpg
plum-gaz:/tmp/demo#
```

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JPG2jpg_all

```
for i in $(ls | grep .JPG$ )
do
mv $i ${i%.JPG}.jpg
Done
```

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to remove a suffix

```
tom:~ # NAME=name.ext
tom:~ # echo $NAME
name.ext
tom:~ # echo ${NAME%.ext}
name
tom:~ #
```

If the pattern matches a trailing portion of the expanded value of
parameter, then the result of the expansion is the expanded value of
parameter with
  – the shortest matching pattern (the ``%'' case)
  – the longest matching pattern (the ``%%'' case)
  deleted.

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to strip a prefix

```
tom:~ # NAME=name.ext
tom:~ # echo $NAME
name.ext
tom:~ # echo ${NAME#name.}
ext
tom:~ #
```

If the pattern matches the beginning of the value of parameter, then the
result of the expansion is the expanded value of parameter with
  – the shortest matching pattern (the ``#'' case) or
  – the longest matching pattern (the ``##'' case)
  deleted.

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gtouch ... useful for ...　find . -newer x

```
plum-gaz:/tmp# gtouch x
YEAR:    (2012)   11
MONTH:   (10)     10
DAY:     (20)     9
HOUR:    (13)     8
MIN:     (55)     7
SEC:     (50)     6
plum-gaz:/tmp# ls -l x
-rw-r--r--   1 root     system          0 09 Oct 2011  x
plum-gaz:/tmp#
```

gtouch

```
[ -z $1 ] && exit
FILE=$1

YEAR=$(date +%Y)
echo  "YEAR:"\\t"("${YEAR}")"\\t\\c
read Y
Y=${Y:=$YEAR}
Y=$(printf %02d $Y)

MONTH=$(date +%m)
echo  "MONTH:"\\t"("${MONTH}")"\\t\\c
read M
m=${M:=$MONTH}
m=$(printf %02d $m)

DAY=$(date +%d)
echo  "DAY:"\\t"("${DAY}")"\\t\\c
read D
D=${D:=$DAY}
D=$(printf %02d $D)
```

```
HOUR=$(date +%H)
echo  "HOUR:"\\t"("${HOUR}")"\\t\\c
read H
H=${H:=$HOUR}
H=$(printf %02d $H)

MIN=$(date +%M)
echo  "MIN:"\\t"("${MIN}")"\\t\\c
read M
M=${M:=$MIN}
M=$(printf %02d $M)

SEC=$(date +%S)
echo  "SEC:"\\t"("${SEC}")"\\t\\c
read S
S=${S:=$SEC}
S=$(printf %02d $S)

touch  -t $Y$m$D$H${M}.${S} $FILE
```

Scripting

Do you use arrays?

Korn shell arrays in AIX

```
set –A MACHINES $(ssh hscroot@${HMC} '  lssyscfg –r sys –F name ' )
```

It really is that easy

Korn shell arrays in Linux (Suse)

```
MACHINES=$(ssh hscroot@${HMC} '  lssyscfg -r sys -F name ' )
```

That is even easier

```
tom:~ # bash --version
GNU bash, version 3.1.17(1)-release (i586-suse-linux)
Copyright (C) 2005 Free Software Foundation, Inc.
tom:~ #
```

Korn shell arrays in AIX

Using the array

```
ELEMENT=0
while [ ${ELEMENT} -lt ${#MACHINES[*]} ]
do
        echo ${ELEMENT} \\t ${MACHINES[${ELEMENT}]}
        ELEMENT=$(( ELEMENT + 1 ))
Done

0       bronze-8203-E4A-SN10E0A21
1       172.17.254.248
2       pink-9115-505-SN65080EA
3       silver-8203-SN10E0A31
4       172.17.255.246
5       purple-9117-MMB-SN100525P
6       plum-8204-E8A-SN105C0B0
7       oldlace-65BD12E
8       orange-8203-E4A-SN10E0A51
9       brown-9115-505-SN6509E5A
10      grey-9117-MMA-p570-8F
```

So what?

```
 POWER Server And LPAR Menu          Version: 0.56beta


0        9.137.62.145    hmc10.aixncc.uk.ibm.com
1        9.137.62.146    hmc11.aixncc.uk.ibm.com
2        9.137.62.210    alex00.aixncc.uk.ibm.com
3        9.137.62.148    hmc8.aixncc.uk.ibm.com

Please select an HMC by number: 1


0        Select a Managed Server
1        Get information about the HMC

Please make a selection: 0
```

So what ..... ?

```
0        bronze-8203-E4A-SN10E0A21
1        172.17.254.248
2        pink-9115-505-SN65080EA
3        silver-8203-SN10E0A31
4        172.17.255.246
5        purple-9117-MMB-SN100525P
6        plum-8204-E8A-SN105C0B0
7        oldlace-65BD12E
8        orange-8203-E4A-SN10E0A51
9        brown-9115-505-SN6509E5A
10       grey-9117-MMA-p570-8F

Please select a machine by number: 5
```

So what ..... ?

```
0       Select an LPAR on this Managed Server
1       Get information about this Managed Server

Please make a selection: 0


  0 purple11-AIX7sp1  21        aixlinux        Not_Activated
  1 purple10_RH55     20        aixlinux        Not_Activated
  2 purple9_fresh     19        aixlinux        Not_Activated
  3 purple8_fresh     18        aixlinux        Not_Activated
  4 purple7-AIX7_TL1  17        aixlinux        Running
  5 purple6           16        aixlinux        Not_Activated
  6 purple5-AIX5      15        aixlinux        Not_Activated
  7 purple4-nag-ISD63 14        aixlinux        Running
  8 purple3-hpc       13        aixlinux        Not_Activated
  9 purple2-nag-ISD63 12        aixlinux        Running
 10 purple1-SRAD-test 11        aixlinux        Running
 11 mmafull            6        aixlinux        Not_Activated
 12 purplevio3         5        vioserver       Not_Activated
 13 purplevio2         4        vioserver       Running
 14 purplevio1         3        vioserver       Running
 15 purple12_IBMi     24        os400           Not_Activated

Please select an LPAR by number: 4
```

You get the idea …..

So what ..... ?

```
purple7-AIX7_TL1,17,aixlinux,Running

1) List resources
2) Activate Normal
3) Activate SMS
4) Open vterm
5) Close vterm
6) Shutdown immediate
7) Shutdown OS

Please make a selection:
```

You get the idea …..
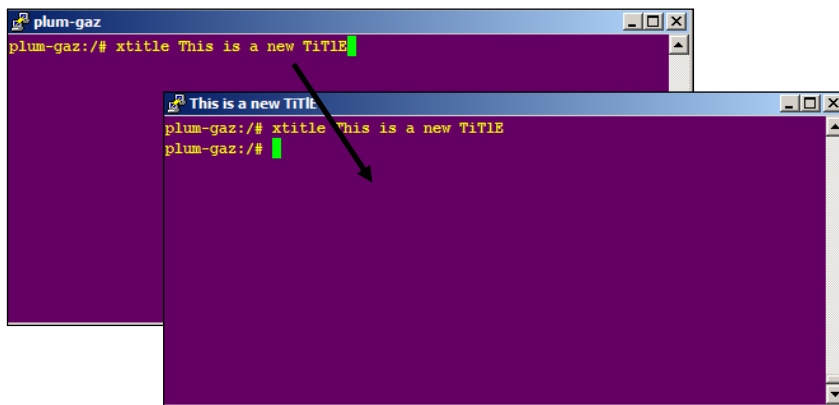
IBM

So, here is the *only* configuration file:

```
plum-gaz:/usr/local/lib# cat psalm
9.137.62.145    hmc10           # an HMC 7042-CR5
9.137.62.146    hmc11           # an HMC 7042-CR5
9.137.62.210    alex00          # Alex Abderrazag
9.137.62.148    hmc8            # an old HMC
9.137.62.12     hmc12           # an HMC 7042-CR7

plum-gaz:/usr/local/lib#
```

---

xtitle

- # Change title in an xterm window

- exec echo   "\033]1;$@\007\033]2;$@\007\c"

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Resources

---

www.perzl.org

Index of ftp://www.oss4aix.org/latest/aix71/

Up to higher level directory

Name

a2ps-4.14-1.aix5.1.ppc.rpm			
a52dec-0.7.4-1.aix5.1.ppc.rpm			
a52dec-devel-0.7.4-1.aix5.1.ppc.rpm			
aalib-1.4.0-0.1.rc5.aix5.1.ppc.rpm			
aalib-devel-1.4.0-0.1.rc5.aix5.1.ppc.rpm	58 KB	17/09/2008	00:00:00
aalib-libs-1.4.0-0.1.rc5.aix5.1.ppc.rpm	146 KB	17/09/2008	00:00:00
adns-1.4-1.aix5.1.ppc.rpm	108 KB	19/05/2010	00:00:00
adns-devel-1.4-1.aix5.1.ppc.rpm	14 KB	19/05/2010	00:00:00
adns-progs-1.4-1.aix5.1.ppc.rpm	23 KB	19/05/2010	00:00:00
aget-0.4.1-1.aix5.1.ppc.rpm	14 KB	26/03/2013	12:48:00
agg-2.5-1.aix5.1.ppc.rpm	778 KB	10/03/2011	00:00:00
agg-devel-2.5-1.aix5.1.ppc.rpm	449 KB	10/03/2011	00:00:00
agrep-0.8.0-2.aix5.1.ppc.rpm	11 KB	03/09/2010	00:00:00
analog-6.0-1.aix5.1.ppc.rpm	668 KB	05/05/2011	00:00:00
ansifilter-1.7-1.aix5.1.ppc.rpm	207 KB	30/04/2013	07:17:00
apachetop-0.12.6-1.aix5.1.ppc.rpm	33 KB	16/02/2011	00:00:00
apr-1.4.8-1.aix5.2.ppc.rpm	265 KB	27/06/2013	11:57:00
apr-devel-1.4.8-1.aix5.2.ppc.rpm	490 KB	27/06/2013	11:57:00
apr-util-1.5.2-1.aix5.1.ppc.rpm	227 KB	18/06/2013	21:14:00
apr-util-db4-1.5.2-1.aix5.1.ppc.rpm	12 KB	18/06/2013	21:14:00
apr-util-devel-1.5.2-1.aix5.1.ppc.rpm	260 KB	18/06/2013	21:14:00
apr-util-freetds-1.5.2-1.aix5.1.ppc.rpm	32 KB	18/06/2013	21:14:00
apr-util-gdbm-1.5.2-1.aix5.1.ppc.rpm	12 KB	18/06/2013	21:14:00
apr-util-ldap-1.5.2-1.aix5.1.ppc.rpm	15 KB	18/06/2013	21:14:00
apr-util-odbc-1.5.2-1.aix5.1.ppc.rpm	59 KB	18/06/2013	21:14:00
apr-util-sqlite-1.5.2-1.aix5.1.ppc.rpm	27 KB	18/06/2013	21:14:00
archimedes-2.0.0-1.aix5.1.ppc.rpm	92 KB	08/01/2013	00:00:00
argtable2-13-1.aix5.1.ppc.rpm	2980 KB	09/08/2011	00:00:00

My Open Source packages for AIX and Linux on POWER - Mozilla F
File   Edit   View   History   Bookmarks   Tools   Help
My Open Source packages for AIX and Linux...   +
www.perzl.org
Most Visited   Electrabel   ibmtechu   stgdam2013   IBM

Here you find the following stuff:

- Open Source packages for AIX
- Ganglia packages for AIX and Linux on POWER

PowerVM: Technical Webinar Series

- http://tinyurl.com/newUK-PowerVM-VUG

- A series of technical webinars on Power Systems Virtualisation:
  - Informal
  - Usually about an hour each
  - Many include demos
- Aimed at:
  - Technical audience - operators, systems administrators and technical specialists
  - Those using / planning to use IBM's Power based systems
  - Customers / Business Partners / IBMers
  - UK & Ireland audience primarily, although word spreading to other geographies

PowerVM: Technical Webinar Series

- http://tinyurl.com/newUK-PowerVM-VUG

- Sessions:
  - #1: Exploiting Virtualisation on IBM Power Systems with PowerVM
  - #2: VIOS - how to get going
  - #3: Controlling processor resources in virtualised partitions
  - #4: Deeper dive into Active Memory Sharing
  - #5: Virtualisation Best Practices
  - #6: Deeper dive into Shared Storage Pools and Thin Provisioning
  - #7: Virtualisation and the world of 10Gbit Ethernet
  - #8: Deeper dive into Active Memory Expansion
  - #9: VIOS maintenance
  - #10: Active Memory Deduplication
  - #11: IBM i Suspend/Resume
  - #12: Dual VIOS Upgrade walk-through
  - #13: Shared Storage Pools ... from Experience
  - #14: IBM i Live Partition Mobility
  - #15: Capture and Deploy partitions
  - #16: Virtual Partition Manager for IBM i
  - #17&18: Updating Power Systems, I/O and HMC
  - #19&20: Power7 Affinity and Performance
  - #21: Power Advisors (VIOS, LPAR and Java)
  - #22: PowerSC – What/Why/How
  - #23: Dynamic Platform Optimizer (DPO)
  - And more….

Join the 450+ who have registered already…
Google 'PowerVM technical webinars'
and register

PowerVM: Technical Webinar Series

- http://tinyurl.com/newUK-PowerVM-VUG

- **recent 2013 Sessions**
- **Session 25: Electronic Service Agent**
  - May 22nd 2013, 10:00 - 11:00 (UK time). View the time in your time zone, and optionally add to your calendar --> Event in my timezone
  - Speaker: Steve Harnett, Client Technical Specialist, Power Systems, IBM Systems & Technology Group, UK & Ireland.
  - What is it, and why use it? The session will include demos.
  - Relevant for AIX/IBM i/Linux environments.
- **Session 26: Active and Dynamic Systems Optimizer (ASO/DSO)**
  - June 12th 2013, 10:00 - 11:00 (UK time). View the time in your time zone, and optionally add to your calendar --> Event in my timezone
  - Speaker: Nigel Griffiths - Advanced Technology Support (ATS), IBM Power Systems, Europe.
  - Nigel looks at the new Active System Optimizer (ASO) feature where we can use this "expert system" to autonomically & dynamically tune AIX 7 on POWER7. Then looks at the new ASO extension called Dynamic Systems Optimizer (DSO). Both are 'set and forget' in operation. This is like having a Level 3 AIX Support performance guru tuning your systems all day!
  - Relevant for AIX.

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PowerVM: Technical Webinar Series

- http://tinyurl.com/newUK-PowerVM-VUG

- **Jyoti Dodhia**
- **Email:jyoti_dodhia@uk.ibm.com**

- **Replays of previous sessions on the wiki**

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Snippets

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snippets

- largesend
  - padmin: `$ chdev -dev en10 -attr mtu_bypass=on`
  - root: `# chdev -l en0 -a mtu_bypass=on`

- "PowerVM Virtualization Managing and Monitoring" RedBook (December 2012 update)

mount without logging (speed up a transfer)

- mount –o log=NULL /xxxxx

Twitter

- Follow these twitterers

@power_gaz
@mr_nmon
@JyotiDodhia
@cgibbo
@NicoletteMcF
@robmcnelly
@ibmaix
@chmod666
@chromeaix
@IBMPureSystems
@IBMPowerSystems
@AIXUserGroup

A couple of good videos

- One old

Gareth Coates @power_gaz   8 Mar
What did #UNIX give to computing? Watch youtube.com
/watch?v=tc4ROC... maybe with a beer or coffee. #AIX
#IBMPowersystems #linux Great half hour.
Retweeted by Nigel Griffiths
View media   Reply   Delete   Favorite   More

http://t.co/cljsVrvjUp

- One newer

Nigel Griffiths uploaded a video 1 week ago
POWER7 Performance FAQ - Entitlement, Virtual
Processors, Affinity, rPerf, Spare Capacity
226 views
Nigel answers 7 questions he gets asked regularly about POWER7
Performance Entitlement (E) Virtual Processors (VP) & Affinity and
Memory

http://www.youtube.com/watch?v=1W1M114ppHQ

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FLRT

- http://www14.software.ibm.com/webapp/set2/flrt/
- Google: FLRT IBM

Fix Level Recommendation Tool
For IBM Power Systems administrators

The following consolidated information is for guidance purposes only. This information was
obtained from generally available product support documentation. These combinations of
product levels are supported by IBM.

Date: 2011.04.05
Model: IBM Power 720 Express (8202-E4B)
        Click here for the latest device firmware for this model.
Clock: 3.0 ghz.

Your selected levels

Product	Version/Release	Status
AIX	7100-00-00	ℹ
System Firmware	AL720_082	✔
Virtual I/O Server	2.2.0.10	⚠

Detailed results

ℹ AIX

Note: You selected a level lower than the recommended level. The current
recommended SP level for this AIX TL is 7100-00-02.

⚠ Virtual I/O Server   Get the
                                                              upgrade

Upgrade recommended: 2.2.0.11
VIOS 2.2.0.11-FP-24 SP-01 is the first Service Pack for VIOS 2.2.0.10-FP-24. It is an
optional service pack. Do not apply this service pack to any other level of VIOS except
Fix Pack 24 (VIOS 2.2.0.10-FP-24).

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Writing AIX DVDs on Linux

- A command to write DVDs on Linux:
  ```
  cdrecord –dev=/dev/dvd –dao driveropts=burnfree file.iso
  ```

- How to use mkisofs so that AIX gets the filenames right:
  ```
  mkisofs –o ./ISONAME.iso –L –pad –allow-multidot –rock \
  –untranslated-filenames –joliet –rational-rock –force-rr DIRECTORY
  ```

IBM

FEEDBACK

IS THIS KIND OF SESSION USEFUL?

If so, please send me your tips …

I will always give **you** the credit ☺

Thank you for attending this session!

IBM Power Ask the Experts 2013

09:30 - 10:00	Registration and coffee
10:00 - 11:15	Power Systems Update - Pat O'Rourke: Austin Briefing Centre
11:15 - 12:30	Performance Best Practices with POWER7 - Nigel Griffiths
12:30 - 13:30	Lunch
13:30 - 14:30	Tricks of the Power Masters - Gareth Coates
14:30 - 15:15	Cost Comparison between IBM Power and Intel - David Spurway
15:15 - 15:30	Coffee
15:30 - 16:45	Power Systems Trends and Directions - Pat O'Rourke: Austin Briefing Centre
16:45	Close