Pools & Zones

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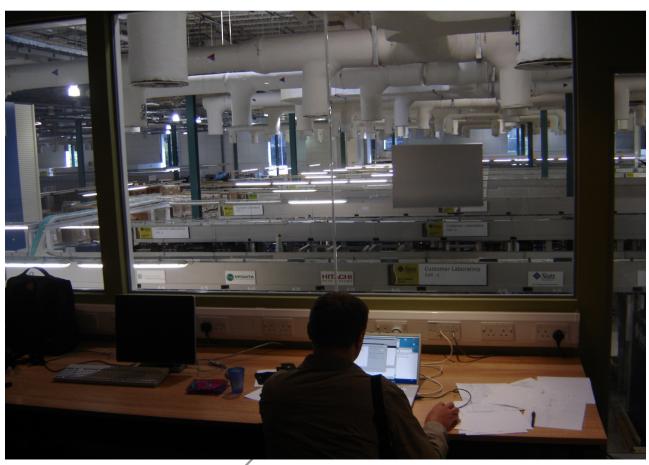# Before we start...

- Few words about SSC :-)
- Paris <=== 10Mbit, 20ms latency ===> LLG

SSC Locations

- North America
  - > USA: Hillsboro, Broomfield, McLean, Menlo Park

- Latin America
  - > Sao Paulo, Brazil; Ft. Lauderdale, Florida; Mexico City, Mexico

- Europe
  - > Edinburgh, Frankfurt, Madrid, Manchester, Milan, Munich, Paris, Walldorf

- Asia
  - > Bangalore, India; Beijing, China; Hong Kong; Seoul, Korea; Singapore; Taïpei, Taiwan; Tokyo, Japan;

- Pacific
  - > Sydney, Australia

Sun Solution Center Is Near You

ASSCs in BLUE
SSCs in BLACK

go to www.sun.com/ssc for contact information

United States
- San Francisco Bay Area, CA
- Hillsboro, OR
- Broomfield, CO
- Mc Lean, VA
- Chicago, IL – Diamond Management
- Plano, TX - EDS
- College Park, MD - Univ of Maryland
- Pittsburgh, PA – Deloitte Consulting

Latin America
Ft. Lauderdale, FL, USA
Mexico City, Mexico
Sao Paulo, Brazil

Europe / Middle East / Africa
Edinburgh, Scotland, UK
Manchester, UK
Warrington, UK - Avnet
Paris, France
Frankfurt, Germany
Munich, Germany
Walldorf, Germany
Milan, Italy
Madrid, Spain
Götegorg, Sweden – Inserve Technology
Helsinki, Finland – ArrowECS
Tallin, Estonia - Microlink
UAE - Tech Access

Asia Pacific
Bangalore, India
Bangalore, India - Wipro
Beijing, China
Hong Kong, China
Shenyang, China - Neusoft
Seoul, Korea
Singapore
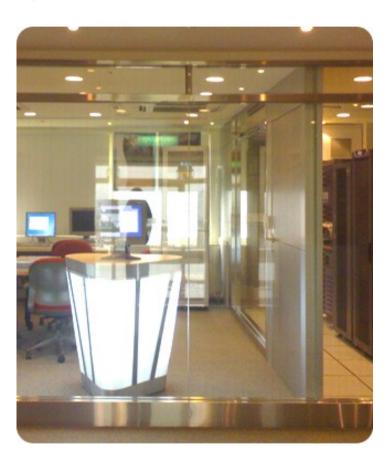Singapore - Ingram Micro
Sydney, Australia
Sydney, Australia – Express Data
Tokyo, Japan

Sun Solution Center

- Architecture design
- High-end performance and scalability
(servers, storage)
- Performance characterization
- Competitive benchmarks
- Internal product BU benchmarks
- Performance tuning
- Customer/Partner benchmarks
- Customer briefings

Sun Solution Center

- Architecture design and validation
- Portfolio management and solutions offerings
- Customer/Partner Proof-of-Concepts
- End-to-end software development for live customers
- Industry solutions development and showcase
- Building of horizontal/biz solutions (eg: IdM, Security ... etc.)
- Business innovation and compliance (SOX, HIPA ... etc.)
- Demos, solution showcase

To know more

http://www.sun.com/solutioncenters

Test for success.

We assembled the best team in the industry to assess unique business solutions.

Overview | Services | Locations | Get Started

At a Glance | Welcome Letter | FAQs

"Most of our customers share two characteristics; they believe in the power of the community to solve challenging problems, and they believe that technology is a competitive differentiator for their business. The Sun Solution Centers bring together state-of-the-art technology and expertise in simulated environments where our clients can envision, build, and test innovative business solutions." Jonathan Schwartz, President and CEO.

This Month's Top 5 Requested Services

- Finance Industry POC
- Telco POC
- SAP Sizing
- Customer Workshop
- HPC Performance Consulting

» See all Services

What can Sun Solution Centers do for you?

Sun Solution Centers

The goal of the Centers is to minimize your risk, justify your expense, and shorten time to deployment of your new business solutions by providing the tools you need to 'test before you invest'. We do this by offering Sun and Sun partner access to in-depth expertise in technologies, industries, and applications in collaborative, state-of-the-art

Working with Sun Solution Centers

» **How to Get Started**

Considering a new business solution? Interested in exploring in-depth what the power of Sun can do for you? Get started by contacting your Sun Account Manager or Systems Engineer. They can initiate the process by discussing your needs with you and then requesting an engagement with the Sun Solution Center.

Authorized Sun Solution Centers

Find out where they are.

Agenda

- Processor sets
- Physical Domains
- Projects / Pools
- Zones
- LDOMs
- Lab:
  - > Zone Creating / Installing / Monitoring
  - > Installing Oracle within a Zone
  - > Performance of Oracle within a Zone
  - > Performance impact: Isof & native device

Manipulations with CPU

- # psrinfo
- # psradm
  - > -n => cpu on
  - > -f => cpu off
  - > -i => interrupts on cpu
- # psrset
  - > -c => create pset
  - > -d => delete pset
  - > -e => execute a command within pset
  - > -b => bind pid to pset
  - > -Q => query pset

Oracle & Processor Set

```
# psrset -c 2 3 6 7 10 11 14 15 18 19 22 23

# psrset

# psrset -q

# echo startup | psrset -e 1 su - oracle -c
"sqlplus \"/ as sysdba\" "
```

Manipulations with Domains

- # cfgadm
  - > -al => list
  - > -c assign / configure / unconfigure => DR
- XCSF>
  - > $ showboards
  - > $ addboard -d DomainID board
  - > $ delboard board
  - > $ console [-f] DomainID

Solaris DR & Oracle

- SHM
  - > ISM / DISM
  - > swap?
- I/O slots
  - > E25K: independent CPU & IO boards
  - > M9000: IO board needs CPU

Solaris Projects & Oracle

- # projmod -s -K "project.max-shm-memory=(priv,32G,deny)" default

- # projmod -s -K "process.max-sem-nsems=(priv,1024,deny)" default

Solaris Pools

- Enable Pools:
  - > # svcadm enable /system/pools
  - > # pooladm -e
  - > # poolcfg -c discover
  - > # more /etc/pooladm.conf
  - > # poolcfg -c info | more

Solaris Pools

- Create Pools & Psets
  - > # poolcfg -c 'create pset ORApset (uint pset.min=1; uint pset.max=12)'

  - > # poolcfg -c 'modify pset ORApset (uint pset.max=32)'

  - > # poolcfg -c 'create pool ORApool'

  - > # poolcfg -c 'associate pool ORApool (pset ORApset)'

  - > # poolcfg -c ; poolcfg -s

  - > # poolbind -p ORApool -i zoneid ORAzone

Solaris Pools & DR

- Attach / Detach CPU
    - > # poolcfg -dc 'transfer to pset ORApset (cpu 2 ; cpu 3; cpu 6; cpu 7; cpu 10)

    - > # poolcfg -dc 'transfer to pset pset_default (cpu 0 ; cpu 1 ; cpu 4 ; cpu 5 ; cpu 8 ; cpu 9)'

    - > # poolcfg -dc 'modify cpu ID (boolean cpu.pinned=true)'

Solaris Zones

- Creation

```
# zonecfg -z ORAzone  <<EOF
create
set zonepath=/export/ORAzone
set autoboot=true

add fs
set dir=/DATA
set special=/dev/vx/dsk/ORAdg/DATAz
set raw=/dev/vx/rdsk/ORAdg/DATAz
set type=ufs
add options logging
end

add fs
set dir=/LOG
set special=/dev/vx/dsk/ORAdg/LOGz
set raw=/dev/vx/rdsk/ORAdg/LOGz
set type=ufs
add options logging
end

add fs
set dir=/oracle
set special=/oracle
set type=lofs
end
...
```

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Solaris Zones (2)

- Creation
- And other..

```
...
add net
set physical=bge0
set address=10.128.3.204
end

add attr
set name=comment
set type=string
set value="Oracle Zone #1"
end

verify
commit
exit
EOF

# zoneadm -z ORAzone install

# zoneadm -z ORAzone boot

# zoneadm list -icv

# zlogin -C ORAzone

# zlogin ORAzone
```

Next for today...

- LDOMs Overview
- LDOMs & Automated Dynamic Reconfiguration (ADR)
  - > Live DEMO from Paris! :-)
- LAB practice:
  - > Stress Oracle database within a physical domain
  - > Stress Oracle database within a zone & native disks
  - > Stress Oracle database within a zone & LOFS filesystems
  - > Compare performance :-)
- Q & A