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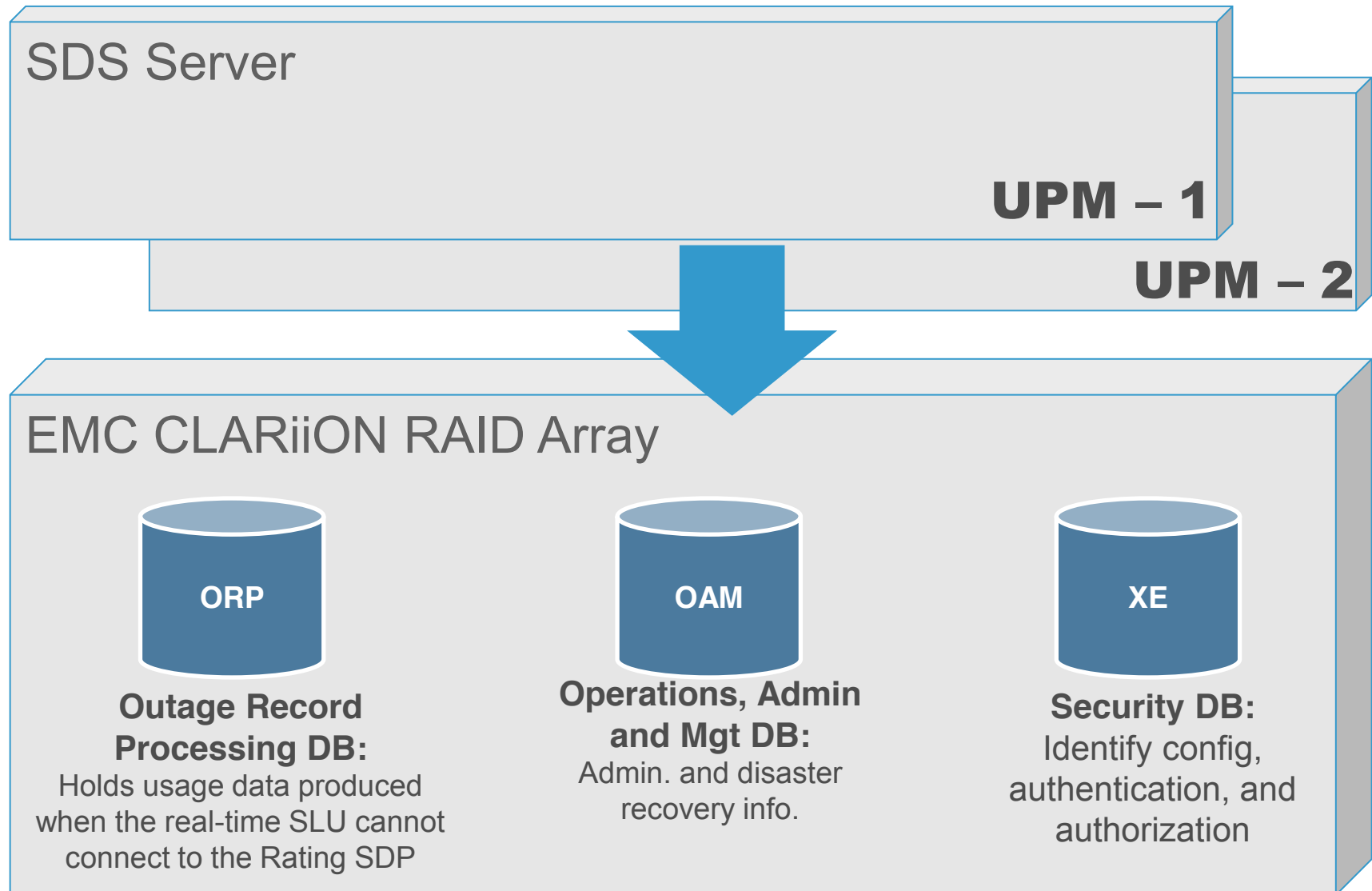
UPM – Preventive Maintenance

# Lesson Objectives

By the end of this lesson you will be able to validate the health of your UPM components.



# UPM Architecture



# Agenda

## Linux

**UPM and UPM Cluster**

**UPM Manager**

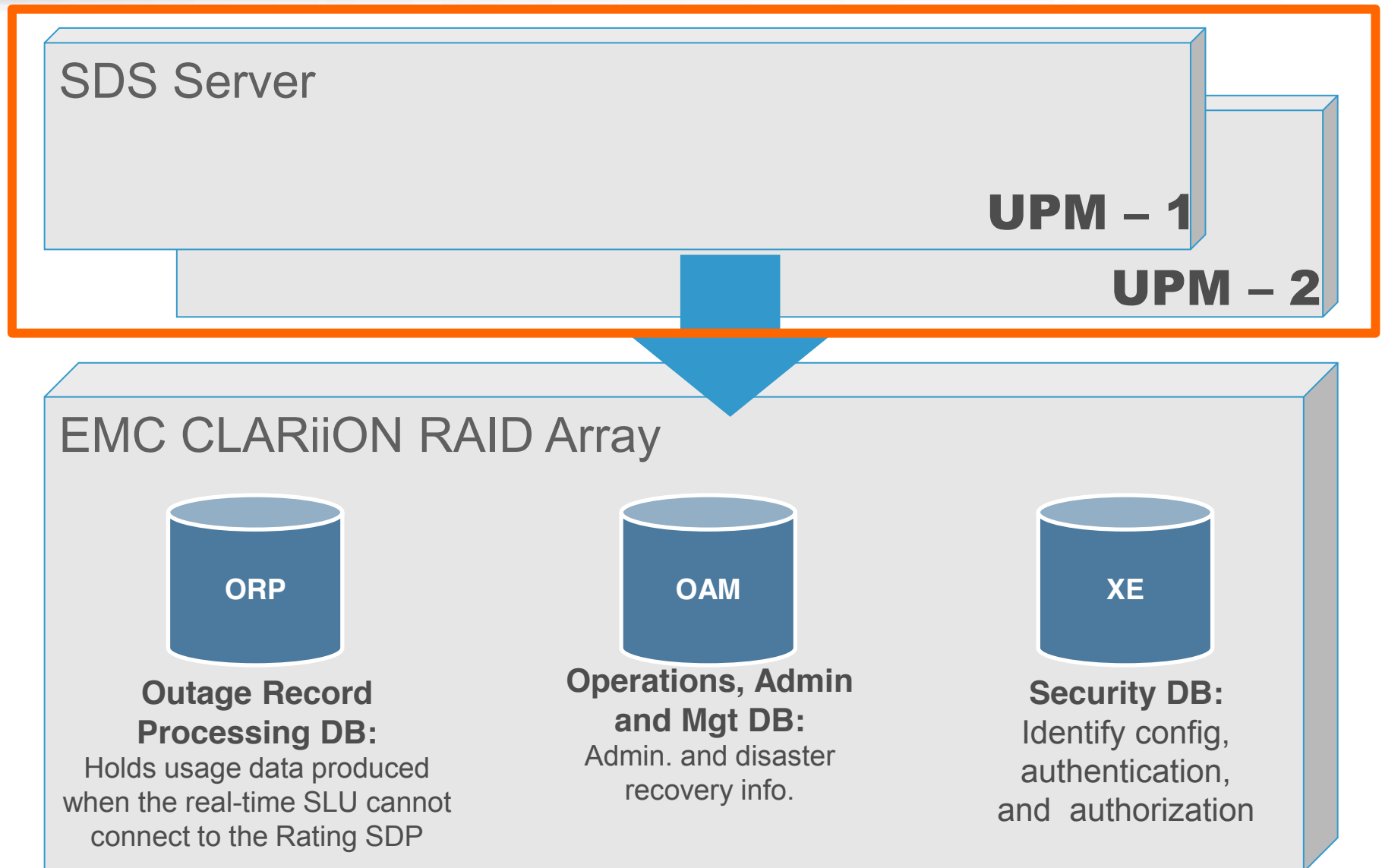
**EMC**

**Databases: XE, ORP and OAM**

**Propagation**

**SDP**

# Checking the Health of the Linux Servers



# Checking Hosts

## Check hostname – **Hostname**

```
=> upm1: hostname  
upm1  
=> upm2: hostname  
upm2
```

node1 is upm1  
node2 is upm2

## Validate /etc/hosts file entries for remote hosts

```
=> upm1: grep -vE "^$|^#|`hostname`" /etc/hosts|awk  
'{print $1" "$2" "$3" "$4}'|sort
```

## Validate /etc/hosts file entries for host itself

```
=> upm1: grep -v '^#' /etc/hosts|grep `hostname`|awk  
'{print $1" "$2" "$3}'|sort  
172.17.108.6 upm1 #  
172.17.108.79 upm1_admin  
192.168.1.1 upm1_cross
```

# Checking the Status

## Status – **hagrp -state**

```
root@upm1 ~]# hagrp -state
```

#Group	Attribute	System	Value
database_rg	State	upm1	ONLINE
database_rg	State	upm2	OFFLINE

One of the UPM should be ONLINE (other will be in OFFLINE)

```
[root@upm1 ~]# hastatus -sum
```

```
-- SYSTEM STATE
```

--	System	State	Frozen
A	upm1	RUNNING	0
A	upm2	RUNNING	0

State should be "RUNNING"

```
-- GROUP STATE
```

--	Group	System	Probed	AutoDisabled	State
B	database_rg	upm1	Y	N	ONLINE
B	database_rg	upm2	Y	N	OFFLINE

# Verifying Linux

Verify that it is Linux

=> upm1: `uname -a`

```
Linux upm1 2.6.18-8.el5PAE #1 SMP Fri Jan 26 14:28:43 EST  
2007 i686 i686 i386 GNU/Linux
```

=> upm2: `uname -a`

```
Linux upm2 2.6.18-8.el5PAE #1 SMP Fri Jan 26 14:28:43 EST  
2007 i686 i686 i386 GNU/Linux
```



# Resource Utilization

## Disk Space Utilization – **df -k**

```
[root@upml ~]# df -k
```

Filesystem	1K-blocks	Used	Available	Use%	Mounted on
/dev/vx/dsk/rootdg/rootvol	20315812	11890916	7376256	62%	/
tmpfs	4	0	4	0%	/dev/vx
/dev/vx/dsk/rootdg/oravol	10485760	4342525	5759286	43%	/oracle

## Memory Utilization – **free -m**

```
[root@upml ~]# free -m
```

	total	used	free	shared	buffers	cached
Mem:	8105	7212	893	0	67	5832
-/+ buffers/cache:		1312	6793			
Swap:	2047	205	1841			

## CPU Utilization – **sar 3 3**

```
Linux 2.6.18-8.el5PAE (asu12) 07/13/2009
```

	CPU	%user	%nice	%system	%iowait	%steal	%idle
07:41:46 AM	all	0.00	0.00	0.17	1.33	0.00	98.50
07:41:49 AM	all	0.50	0.00	0.00	0.00	0.00	99.50
07:41:52 AM	all	1.00	0.00	0.67	0.17	0.00	98.17
Average:	all	0.50	0.00	0.28	0.50	0.00	98.72

# Which Processes Are Using the Most Memory

## Checking 5 processes using the most memory

```
=> upm1: ps -eo user,pid,size,rss,args | sort -k 4nr | cut -c1-100 | head -5
root      14859 2026800 897808 /usr/java/jdk1.5.0_14/bin/java -Dprogram.name=run.sh
-Dmy.hostname=upm
root      15770 1837408 606536 /usr/java/jdk1.5.0_14/bin/java -Dprogram.name=run.sh
-Dmy.hostname=upm
oracle8   15546   1796 585208 oracleorp (LOCAL=NO)
oracle8   17213   3440 533228 ora_dbw0_orp
oracle8   17493   3440 469840 ora_dbw0_XE
```

# Finding Load and Uptime Average

## Load Average – **w**

```
root@upm1 ~]# w
 06:42:09 up 131 days,  9:16,  5 users,  load average: 2.03, 1.90, 1.16
USER      TTY      FROM          LOGIN@      IDLE        JCPU        PCPU   WHAT
root      pts/0    172.30.9.139   05:28      17.00s     0.06s      0.05s  ssh cbsuser@sdp2b
root      pts/1    172.30.9.139   05:42     58:08      0.01s      0.00s  ssh sapi4
root      pts/2    172.30.9.142   06:06        0.00s     0.02s      0.02s  -bash
root      pts/3    172.30.9.139   05:44     51:14      0.03s      0.02s  ssh sapi5
root      pts/4    172.30.9.139   05:51     21:15      0.07s      0.06s  ssh sapi1
```

## Uptime

```
=> upm1: uptime
17:10:24 up 55 days,  7:52, 20 users,  load average: 2.60, 1.56, 1.30
=> upm2: uptime
17:10:24 up 55 days,  7:34,  2 users,  load average: 0.32, 0.09, 0.02
```

# Locating Core dumps

```
[root@ure1 root]# find / -name core*  
/root/core.9469  
[root@ure1 root]#
```

# Verifying No Loss of Packets

```
=> upm1: ping -c 20 -f localhost
PING localhost.localdomain (127.0.0.1) 56(84) bytes of data.
. . .
--- localhost.localdomain ping statistics ---
20 packets transmitted, 20 received, 0% packet loss, time 1ms
rtt min/avg/max/mdev = 0.006/0.007/0.021/0.004 ms,
ipg/ewma 0.088/0.008 ms
```

# Checking LAN Interfaces

## Checking LAN Interfaces

```
=> upm1: ifconfig -a
```

```
bond0      Link encap:Ethernet  HWaddr 00:15:17:CE:B5:6C
            inet addr:172.17.108.6  Bcast:172.17.108.255  Mask:255.255.255.192
            inet6 addr: fe80::215:17ff:fece:b56c/64 Scope:Link
            UP BROADCAST RUNNING MASTER MULTICAST  MTU:1500  Metric:1
            RX packets:317684146 errors:0 dropped:0 overruns:0 frame:0
            TX packets:345515024 errors:0 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:0
            RX bytes:270517924 (257.9 MiB)  TX bytes:855874975 (816.2 MiB)

bond0:0    Link encap:Ethernet  HWaddr 00:15:17:CE:B5:6C
            inet addr:172.17.108.8  Bcast:172.17.108.63  Mask:255.255.255.192
            UP BROADCAST RUNNING MASTER MULTICAST  MTU:1500  Metric:1
```

# Checking LAN Routing

```
=> upm1: netstat -nr
```

```
Kernel IP routing table
```

Destination	Gateway	Genmask	Flags	MSS	Window	irtt	Iface
172.17.108.0	0.0.0.0	255.255.255.192	U	0	0	0	bond0
172.17.108.64	0.0.0.0	255.255.255.192	U	0	0	0	bond1
172.17.107.128	172.17.108.1	255.255.255.192	UG	0	0	0	bond0
172.17.107.192	172.17.108.1	255.255.255.192	UG	0	0	0	bond0
172.17.107.0	172.17.108.1	255.255.255.192	UG	0	0	0	bond0
192.168.1.0	0.0.0.0	255.255.255.0	U	0	0	0	bond2
0.0.0.0	172.17.108.1	0.0.0.0	UG	0	0	0	bond0

# Checking NTP Settings

## NTP configuration ntpq

```
=> upm1: /usr/sbin/ntpq -p
```

remote	refid	st	t	when	poll	reach	delay	offset	jitter
*10.50.1.6	.GPS.	1	u	599	1024	377	0.515	-0.135	0.029
10.50.1.7	.INIT.	16	u	-	1024	0	0.000	0.000	0.000
upm2_cross	10.50.1.6	2	u	95	512	373	0.226	-0.108	0.505

## Compare zone and date

```
=> upm1: grep -v '^#' /etc/sysconfig/clock;date +"%a %b %d %H:%M %Z %Y"  
ZONE="UTC5"  
UTC=false  
ARC=false
```

```
Wed Aug 31 17:10 EST 2011
```

```
=> upm2: grep -v '^#' /etc/sysconfig/clock;date +"%a %b %d %H:%M %Z %Y"  
ZONE="UTC5"  
UTC=false  
ARC=false
```

```
Wed Aug 31 17:10 EST 2011
```



# Checking Local Time

Check that **/etc/localtime** is linked to a proper file, but not a copy of the same file (that is, not linked to itself).

```
=> upm1: ls -l /etc/localtime
lrwxrwxrwx 1 root root 24 Apr 30 13:20 /etc/localtime -> /usr/share/zoneinfo/UTC5
=> upm2: ls -l /etc/localtime
lrwxrwxrwx 1 root root 24 Aug 16 11:32 /etc/localtime -> /usr/share/zoneinfo/UTC5
```

# Agenda

Linux

**UPM and UPM Cluster**

UPM Manager

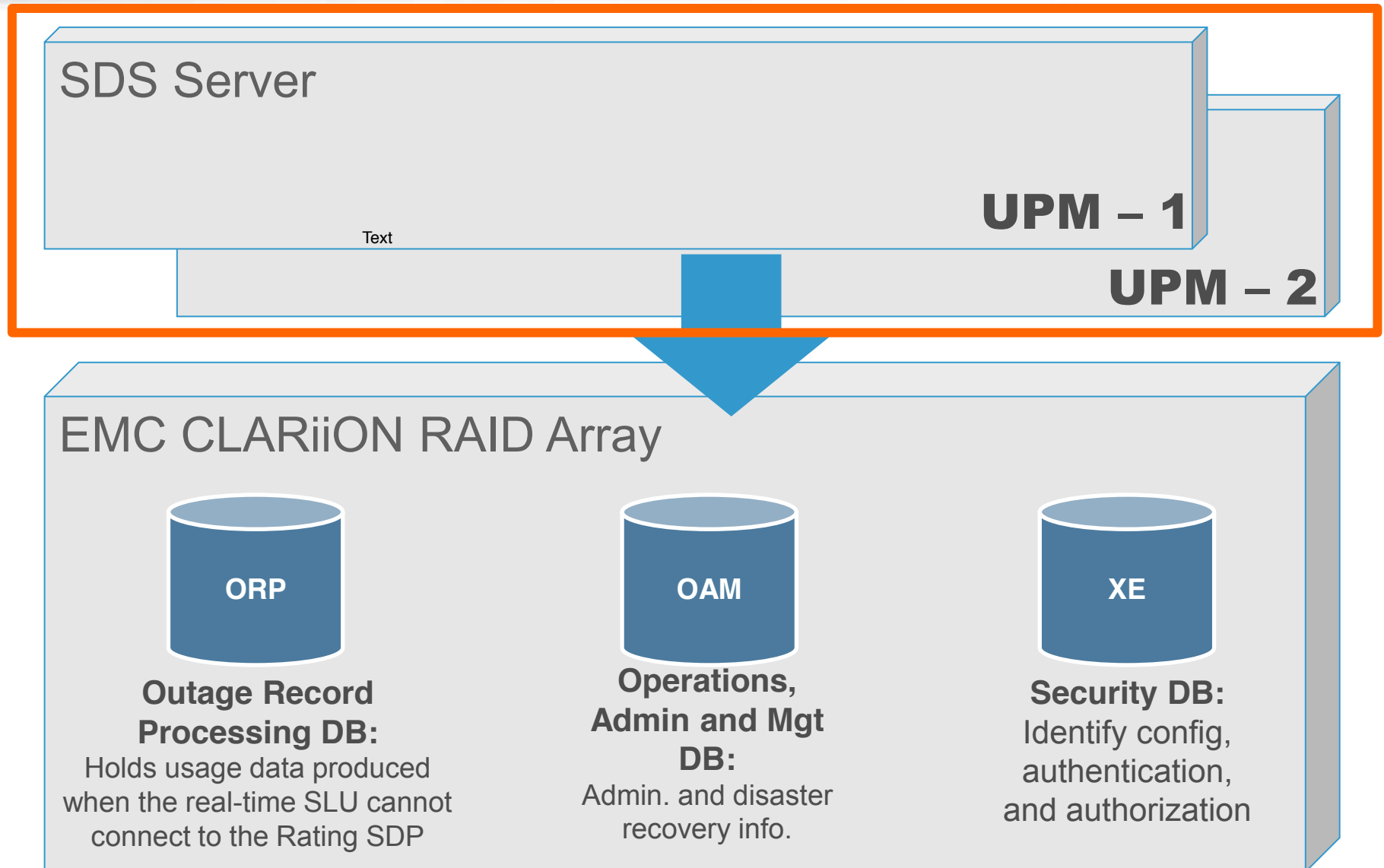
EMC

Databases: XE, ORP and OAM

Propagation

SDP

# Checking the Health of the Linux Servers



# Checking UPM Root Environment

```
upm1: env | grep -Ei 'JBOSS'
```

```
PERL5LIB=/home/jboss/lib/perl
```

```
JBOSS_HOME=/home/jboss
```

```
LD_LIBRARY_PATH=/home/jboss/lib:/home/jboss/server/default/lib::
```

```
/usr/X/desktop:/usr/lib/X11:/usr/local/lib:/home:
```

```
/oracle/oracle8/lib:/usr/lib:/lib
```

```
PATH=/oracle/product/10.2.0/bin:/oracle/product/10.2.0/bin:
```

```
/usr/java/jdk1.5.0_14/bin:/bin:/bin:/usr/java/jdk1.5.0_14/bin:
```

```
/home/jboss/bin:/usr/local/sbin:/usr/local/bin:/sbin:/bin:/usr/sbin:
```

```
/usr/bin:/home/ant/bin:/home/jboss/bin:/usr/java/jdk1.5.0_14/bin:
```

```
/home/jboss/lib/perl/bin:/root/bin:/home/secserv/bin:
```

```
/root/bin:/home/ant/bin:/home/secserv/bin:/opt/Navisphere/bin:
```

```
/opt/VRTS/bin:/opt/VRTSvxfs/sbin:/opt/VRTSdbed/bin:/opt/VRTSdb2ed/bin:
```

```
/opt/VRTSsybed/bin:/opt/VRTSob/bin:/etc/vx/bin:
```

```
/oracle/product/10.2.0/bin:/home/ant/bin:/home/secserv/bin
```

```
ARBORBIN=/home/jboss/cbs_workflow/propagation
```

```
LOGDIR=/home/jboss/cbs_workflow/propagation/LOG
```

# Checking Installed UPM Packages

```
=> upml: rpm -qa --last|grep -Ei 'CMV|RTB|CBS|comverse'
```

CBS_DB-3.5.50.0-1.11.0_2.0.0_1	Fri 12 Aug 2011 08:55:55 PM EST
CBS_INSTALL-3.5.50.0-1.11.0_1.0.0_2	Tue 09 Aug 2011 09:12:29 AM EST
CBS_UPM-3.5.50.0-1.11.0_1.0.0_2	Tue 09 Aug 2011 09:09:12 AM EST
RTB-TermReadKey-2.30-1.el5	Mon 01 Aug 2011 09:27:10 PM EST
RTB-File-Remote-1.17-1.el5	Mon 01 Aug 2011 09:27:10 PM EST
RTB-Text-Parsewords-3.1-1.el5	Mon 01 Aug 2011 09:27:09 PM EST
RTB-Text-Shellwords-1.07-1.el5	Mon 01 Aug 2011 09:27:08 PM EST
RTB-Term-ReadLine-GNU-1.5-1.el5	Mon 01 Aug 2011 09:27:07 PM EST
RTB-Term-Size-0.2-1.el5	Mon 01 Aug 2011 09:27:06 PM EST
RTB-Tie-File-0.96-1.el5	Mon 01 Aug 2011 09:27:05 PM EST
CBS_DBC_TKS-3.5.50.0-0.0.0_9.0.0_1	Sat 09 Apr 2011 05:56:12 PM EST
CBS_DBUPGRADE-3.5.50.0-0.0.0_1.0.0_1	Sat 09 Apr 2011 05:56:10 PM EST
CBS_PERL-587-build01.2	Sat 09 Apr 2011 05:55:59 PM EST
CBS-Networker-1.0-2	Fri 25 Mar 2011 03:18:39 PM EST
CMV-Oracle-Server-10G-2.0-1	Wed 23 Mar 2011 02:13:23 PM EST
CBS_CUT-3.5.50.0-0.0.0_1.0.0_1	Fri 11 Feb 2011 03:13:56 PM EST
CBS_RIP-4.0.0.0-200.1	Fri 11 Feb 2011 03:13:55 PM EST
CBS_VAL-3.5.50.0-0.0.0_1.0.0_1	Fri 11 Feb 2011 03:13:54 PM EST
...	

# Check Score and Upscore Version

```
=> upml: version
```

```
MASTER_DISK_RELEASE: RTB-CBS LNX SCORE
```

```
MD_VERSION: 2.0.7
```

```
INSTALLATION_TYPE: CBS UPM
```

```
SIZING: NORMAL
```

```
KICKSTART_FILE: ksUPscore.cfg
```

```
RTB_MD_BUILD_DATE: 30-Sep-2008
```

```
RTB_LNX_SCORE: 2.0.7.2
```

```
HW_TYPE: BALLENGER
```

```
KERNEL_VERSION: 2.6.18-8.el5
```

```
INSTALL_DATE: 04-Aug-2010 at 10:51:42
```

```
RED_HAT: Red Hat Enterprise Linux Server 5 update 0
```

```
RTB-ENV: 2.0.7
```

```
LNX_SCORE_UPDATE: 2 (installed Wed Aug 4 20:59:08 EDT 2010)
```

```
UPSCORE 1.5 DISK #1 (Fri Aug 6 00:36:02 EDT 2010)
```

```
UPSCORE 1.5.1 UPDATE ( Fri Aug 6 00:36:36 EDT 2010 )
```

```
UPSCORE 1.5.2 ORACLE 10.2.0.5 Upgrade (Wed Mar 23 14:19:03 EST 2011)
```

# Cluster Status

```
=> upm1: hagr -state
```

#Group	Attribute	System	Value
database_rg	State	upm1	ONLINE
database_rg	State	upm2	OFFLINE

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:cluster]: hastatus -summary
```

```
-- SYSTEM STATE
```

--	System	State	Frozen
----	--------	-------	--------

A	upm1	RUNNING	0
---	------	---------	---

A	upm2	RUNNING	0
---	------	---------	---

```
-- GROUP STATE
```

--	Group	System	Probed	AutoDisabled	State
----	-------	--------	--------	--------------	-------

B	database_rg	upm1	Y	N	ONLINE
---	-------------	------	---	---	--------

B	database_rg	upm2	Y	N	OFFLINE
---	-------------	------	---	---	---------

Verify  
Database\_RG  
is online

For UPMLite, hagr will not be found

# Cluster Resources and Licenses

Verify resources are listed – listener\_listener1, IP\_VIP, NIC\_bond0

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:cluster]:  
hares -state|grep upm1
```

Verify 6 license files are installed

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:cluster]:  
vxlicrep
```



# Cluster Interfaces and Bond Interface

Verify correct cluster interfaces are listed

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:online]: ifconfig
bond0:0;ifconfig bond1:0;ifconfig bond2:0
bond0:0    Link encap:Ethernet  HWaddr 00:15:17:CE:B5:6C
           inet addr:172.17.108.8  Bcast:172.17.108.63  Mask:255.255.255.192
           UP BROADCAST RUNNING MASTER MULTICAST  MTU:1500  Metric:1

bond1:0    Link encap:Ethernet  HWaddr 00:04:23:E7:CD:13
           inet addr:172.17.108.81  Bcast:172.17.108.127  Mask:255.255.255.192
           UP BROADCAST RUNNING MASTER MULTICAST  MTU:1500  Metric:1

bond2:0    Link encap:Ethernet  HWaddr 00:04:23:E7:CD:12
           UP BROADCAST RUNNING MASTER MULTICAST  MTU:1500  Metric:1
```

Verify correct IPs, netmasks, and that all bonds are listed

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:cluster]: ifconfig
bond0;ifconfig bond1;ifconfig bond2
```

# Cluster Hosts

Validate following IPs are defined:

- upm1\_admin
- upm2\_admin
- upm1\_cross
- upm2\_cross

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:cluster]:  
grep -i upm /etc/hosts |grep -v '^#' |awk '{print $1" "$2"  
"$3}' |sort  
172.17.108.6 upm1 #  
172.17.108.79 upm1_admin  
172.17.108.7 upm2  
172.17.108.80 upm2_admin  
172.17.108.81 upm_admin  
172.17.108.8 upm secserv  
192.168.1.1 upm1_cross  
192.168.1.2 upm2_cross
```

# Ping

```
upm1: ping -c 20 -f upm
upm2: ping -c 20 -f upm

upm1: ping -c 20 -f upm1
upm2: ping -c 20 -f upm1

upm1: ping -c 20 -f upm2
upm2: ping -c 20 -f upm2

upm1: ping -c 20 -f upm1_cross
upm2: ping -c 20 -f upm1_cross

upm1: ping -c 20 -f upm2_cross
upm2: ping -c 20 -f upm2_cross

upm1: ping -c 20 -f upm1_admin
upm2: ping -c 20 -f upm1_admin

upm1: ping -c 20 -f upm2_admin
upm2: ping -c 20 -f upm2_admin
```

**Verify ping succeeds  
with no loss of  
packets**

# Disk Group

Check that volume groups (rootdg, arcdg, logdg, bkpdg, datadg, oradg, orpdg, workdg) are listed

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:online]: vxdg list
```

NAME	STATE	ID
<b>rootdg</b>	enabled	1281093566.34.upm1
<b>arcdg</b>	enabled	1281097205.64.upm1
ardg	enabled	1281097205.54.upm1
<b>bkpdg</b>	enabled	1281097205.60.upm1
cdrdg	enabled	1281097204.46.upm1
<b>datadg</b>	enabled	1281097205.56.upm1
<b>logdg</b>	enabled	1281097205.58.upm1
<b>oradg</b>	enabled	1281097205.62.upm1
<b>orpdg</b>	enabled	1281097204.48.upm1
upm1dg	enabled	1281097205.50.upm1
upm2dg	enabled	1281097205.52.upm1
<b>workdg</b>	enabled	1281097205.66.upm1

# More Disk Group Tests

Verify each volume is in ENABLED and ACTIVE state

Disk group log

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:online]: vxprint -vg logdg
```

Disk group backup

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:online]: vxprint -vg bkpdg
```

Disk group ORA

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:online]: vxprint -vg oradg
```

Disk group work

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:online]: vxprint -vg workdg
```

# Checking the /etc/motd File

```
=> upm1: cat /etc/motd
```

```
*****  
*                                           *  
*           Site: Customer                 *  
*                   UPM1A                   *  
*                                           *  
*****
```

# Checking Prompts

- Oracle prompt:
  - Command: `env|grep PS1; grep PS1 .profile`
  - Expected result:  
`PS1=SITE_ID-UPM_ID:hostname:$PWD>`
- Root prompt:
  - Command: `env|grep PS1; grep PS1 .bash_profile`
  - Expected result:  
`PS1=SITE_ID-UPM_ID:hostname:$PWD#`

# NTP Configuration

```
upm1: grep -vE "#|peer" /etc/ntp.conf;grep -i "peer" /etc/ntp.conf  
---
```

→ upm1<

```
restrict 127.0.0.1  
restrict -6 ::1
```

```
server 10.50.1.6  
server 10.50.1.7
```

```
driftfile /var/lib/ntp/drift
```

```
keys /etc/ntp/keys
```

```
restrict default kod nomodify notrap nopeer noquery  
restrict -6 default kod nomodify notrap nopeer noquery
```

```
peer upm2_cross version 3 => upm2: grep -vE "#|peer"  
/etc/ntp.conf;grep -i "peer" /etc/ntp.conf
```

Configuration  
should be the same  
for 2 UPM nodes

Last line should differ:  
upm1 peer = upm2\_cross  
upm2 peer =upm1\_cross



# Agenda

Linux

UPM and UPM Cluster

**UPM Manager**

EMC

Databases: XE, ORP and OAM

Propagation

SDP

# Checking Installed UPM Packages

Execute for:

- upm1, upm2
- upm1&sdp1a, upm1&sdp1b,
- upm1&sdp2a, upm1&sdp2b,
- upm1&sdp3a, upm1&sdp3b

```
=> upm1: cat /home/jboss/conf/version.properties | grep -v '^#'
base.package=4.0.1.0
command.package=4.0.1.0
configuration.package=4.0.1.0
inventory.package=4.0.1.0
job.package=4.0.1.0
monitor.package=4.0.1.0
process.package=4.0.1.0
rules.package=4.0.1.0
sysaudit.package=4.0.1.0
workflow.package=4.0.1.0
report.package=4.0.1.0
```

# Checking UPM Version

```
=> upm1: mshell secadmin/***** version
```

NodeClass	NodeName	NodeInstance	Platform	OS Version	
OS Model	OS Arch	App Version	TC	Build Count	Build Date
MANAGER	MANAGER1	172.17.108.6	Linux	2.6.18-8.el5PAE	
i686	i386	4.0.1	1.0.0	1	06/14/2011 01:35

Use command also to check UPA version on SDP

```
upm1&sdp1a: mshell secadmin/***** version
upm1&sdp1b: mshell secadmin/***** version
upm1&sdp2a: mshell secadmin/***** version
upm1&sdp2b: mshell secadmin/***** version
upm1&sdp3a: mshell secadmin/***** version
upm1&sdp3b: mshell secadmin/***** version
```

# Checking SDP Hostname

hostname of

- node1 should be sdp1
- node2 should be sdp2

```
=> sdp1a: hostname  
sdp1  
=> sdp1b: hostname  
sdp2  
=> sdp2a: hostname  
sdp1  
=> sdp2b: hostname  
sdp2  
=> sdp3a: hostname  
sdp1  
=> sdp3b: hostname  
sdp2
```

# SDP Node Checks

- Perform test for all SDP nodes
- Machine Module should be IBM

```
sdp1a: uname -M
```

- Cluster status
  - Verify Database\_RG is non-concurrent and online on sdp1.
  - Verify that Priority Override is not set

```
sdp1a [SDP_IBM:MACHINE_MODEL:ibm]: clRGinfo -s|grep Database_RG
```

# UPM Tests (1)

Maintenance mode should be disabled

```
upm1: mshell secadmin/***** maintenance_mode
Site name NodeClass NodeName      NodeInstance      Message
Voila      MANAGER    MANAGER1          172.17.108.6      Maintenance
Mode is disabled
```

Verify that inittab contains agentStartup entry

```
upm1: cat /etc/rc.d/rc.local|grep agent
/home/secserv/bin/agentStartup
/home/jboss/bin/agentStartup
```

UPM status – Verify Manager running on node

```
upm1: mshell secadmin/***** status
```

# UPM Tests (2)

Verify RSM is registered with Manager

```
upm1: mshell secadmin/***** list_manager -g ap
```

Verify SNMP is registered with Manager

```
upm1: mshell secadmin/***** list_manager -g snmp
```

# Verifying UPM Components Are Running

## Verify bearerbox is running

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:online]: ps -ef|grep bearerbox|  
grep -v grep
```

## Verify smsbox is running

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:online]: ps -ef|grep smsbox|  
grep -v grep
```

## SMS Configuration

- Verify host specified in configuration

```
upm1: cat /home/jboss/conf/smsgw/smsc_default.conf  
group = smsc  
smsc-id = default  
smsc = smpp  
host = 10.230.13.146  
port = 5018  
receive-port = 5018  
smsc-username = "STT"  
smsc-password = foo  
system-type = "VMA"  
address-range = ""
```



# Troubleshooting

## Verify active Events

```
upm2: mshell secadmin/***** list_active_events
critical [major]: Critical Events detected. Please take care of.
alert_wkf [major]: Workflow Alert detected. Please take care of.
alert_job [major]: Job Alert detected. Please take care of.
```

## Verify if any core files were generated

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:online]: for i in `find
/home/jboss -name 'core*' | grep -v jar`; do ls -l $i; done | sort -n
core [major]: Core files detected
```

# Verifying Jobs are Online and Running

## Jobs and Tasks

```
Upm1: mshell secadmin/***** list_jobs
```

## Monitors

```
upm1: mshell secadmin/***** list_monitors
```

## Workflows

```
Upm1: mshell secadmin/***** list_workflows
```

## UPM\_PROCESSES

```
upm1: mshell secadmin/***** list_processes
```

# UPM Security Server

- UPM hosts Security Server for authenticating any application request/call (both internal/external).
- Log in to the following URL as **secadmin** user and see if the home page opens successfully.

[http:// xxx.xxx.xxx.xxx:8888/security/home.seam](http://xxx.xxx.xxx.xxx:8888/security/home.seam)

# UPM Wrapper

## Verify defined UPM parameters

```
upm1: grep wrapper.java.additional /home/jboss/conf/wrapper.conf |  
grep -v '^#'
```

# Agenda

Linux

UPM and UPM Cluster

UPM Manager

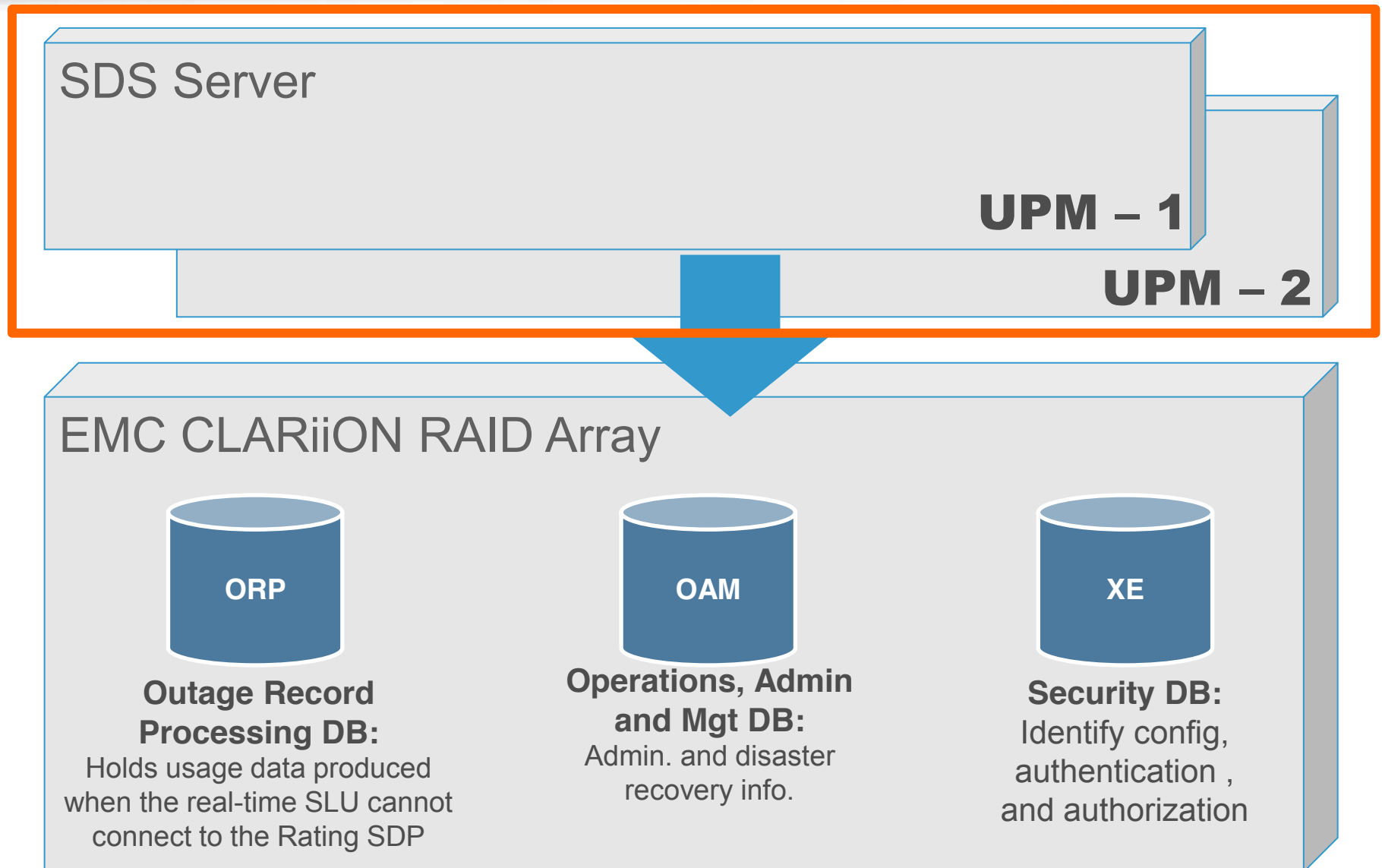
**EMC**

Databases: XE, ORP and OAM

Propagation

SDP

# Checking the Health of the Linux Servers



# EMC Hosts

Validate that IPs are defined

```
=> upm1: grep emc /etc/hosts | grep -v ^#  
172.17.108.82 emc1  
172.17.108.83 emc2  
=> upm2: grep emc /etc/hosts | grep -v ^#  
172.17.108.82 emc1  
172.17.108.83 emc2
```

# Verifying that Correct Packages Are Installed

```
upm1: rpm -qa | grep -iE 'emc|navi'  
EMCpower.LINUX-5.0.1-019  
naviagentcli-6.24.0.6.13-1  
navicli-6.24.0.6.13-1
```



# Pinging EMC

Verify ping succeeds with no loss of packets

```
upm1: ping -c 20 -f emc1
```

```
upm2: ping -c 20 -f emc1
```

```
upm1: ping -c 20 -f emc2
```

```
upm2: ping -c 20 -f emc2
```

# Navisecli Introduction

- Command line interface for storage-system management
- Need to provide valid user account on the storage system
  - Username and password are case sensitive

**For help:**

`navisecli -help`

or

`Navisecli`

**Example:**

`navisecli -scope 0 -user root -password ***** -h emc1`

*CMD*

Local(1) or  
global (0) user

Username and  
password to storage  
system

navisecli  
Command

IP address or network name of  
the targeted SP on the desired  
storage system

# Checking EMC Users

Check specified security user

```
upm1: naviseccli -scope 0 -user root -password *****  
-h emc1 security -list  
upm2: naviseccli -scope 0 -user root -password *****  
-h emc1 security -list
```

```
upm1: naviseccli -scope 0 -user root -password *****  
-h emc2 security -list  
upm2: naviseccli -scope 0 -user root -password *****  
-h emc2 security -list
```

```
Username:  comverse  
Role:      administrator  
Scope:     global
```

```
Username:  root  
Role:      administrator  
Scope:     global
```

# Checking EMC Domain

Check specified domain attributes

```
upm1: naviseccli -scope 0 -user root -password ***** -h emc1  
domain -list
```

```
upm2: naviseccli -scope 0 -user root -password ***** -h emc1  
domain -list
```

```
upm1: naviseccli -scope 0 -user root -password ***** -h emc2  
domain -list
```

```
upm2: naviseccli -scope 0 -user root -password ***** -h emc2  
domain -list
```

Node:	UPM
-------	-----

IP Address:	172.17.108.83
-------------	---------------

Name:	DAEOS1-B
-------	----------

Port:	80
-------	----

Secure Port:	443
--------------	-----

IP Address:	172.17.108.82 (Master)
-------------	------------------------

Name:	DAEOS1-A
-------	----------

Port:	80
-------	----

Secure Port:	443
--------------	-----

# EMC Log

Check last events in log

```
upm1: naviseccli -scope 0 -user root -password ***** -h emc1  
getlog -100
```

```
upm2: naviseccli -scope 0 -user root -password ***** -h emc1  
getlog -100
```

```
upm1: naviseccli -scope 0 -user root -password ***** -h emc2  
getlog -100
```

```
upm2: naviseccli -scope 0 -user root -password ***** -h emc2  
getlog -100
```

# Verifying Agent Status

```
=> upml: naviseccli -scope 0 -user root -password *****  
-h emcl getagent
```

<b>Agent Rev:</b>	6.28.20 (1.40)
Name:	K10
Desc:	
Node:	A-CKM00094600313
Physical Node:	K10
Signature:	2543795
Peer Signature:	2543772
<b>Revision:</b>	04.28.000.5.706
SCSI Id:	0
<b>Model:</b>	CX4-120
Model Type:	Rackmount
Prom Rev:	4.60.00
<b>SP Memory:</b>	3040
Serial No:	CKM00094600313
SP Identifier:	A
Cabinet:	SPE5

# EMC Agent Status

Check last events in log

```
upm1: naviseccli -scope 0 -user root -password ***** -h emc1  
getlog -100  
upm2: naviseccli -scope 0 -user root -password ***** -h emc1  
getlog -100  
  
upm1: naviseccli -scope 0 -user root -password ***** -h emc2  
getlog -100  
upm2: naviseccli -scope 0 -user root -password ***** -h emc2  
getlog -100
```

# Additional Useful Naviseccli Commands

Test all commands from both UPMs to both EMCs

Verifying state of cache (all enabled) and size.

- Read cache should be 50 or 120

```
upm1: naviseccli -scope 0 -user root -password ***** -h emc1 getcache
```

Verify installed is NavisphereManager, AccessLogix, FLARE-Operating-Environment

- Verify no commit required, state active, and completely installed.

```
upm1: naviseccli -scope 0 -user root -password ***** -h emc1 ndu -list
```

Verify disk capacity, visible through both emc

```
upm1: naviseccli -scope 0 -user root -password ***** -h emc1 getdisk  
-capacity -state
```



# CX4-120\_RAID5\_15 – Powerpath Paths

- Verify both adapters are listed
- Number of I/O paths should be 11

## upm1: powermt display

Symmetrix logical device count=0

CLARiiON logical device count=11

Hitachi logical device count=0

Invista logical device count=0

HP xpl logical device count=0

Ess logical device count=0

HP HSx logical device count=0

```
=====
----- Host Bus Adapters ----- I/O Paths -----
Stats -----
### HW Path Summary Total Dead IO/Sec Q-IOs Errors
=====
  2 qla2xxx optimal 11 0 - 0 0
  3 qla2xxx optimal 11 0 - 0 0
```

# CX4-120\_RAID5\_15 – Powerpath Ports

Verify ports for interface A0 or A1, B0 or B1 have 11 I/O paths each.

```
upm1: powermt display ports
```

```
Storage class = CLARiiON
```

```
=====
```

----- Storage System -----			-- I/O Paths --		--- Stats ---	
ID	Interface	Wt_Q	Total	Dead	Q-IOs	Errors
CKM00094600313	SP A0	256	11	0	0	0
CKM00094600313	SP B0	256	11	0	0	0

```
=====
```

# Agenda

Linux

UPM and UPM Cluster

UPM Manager

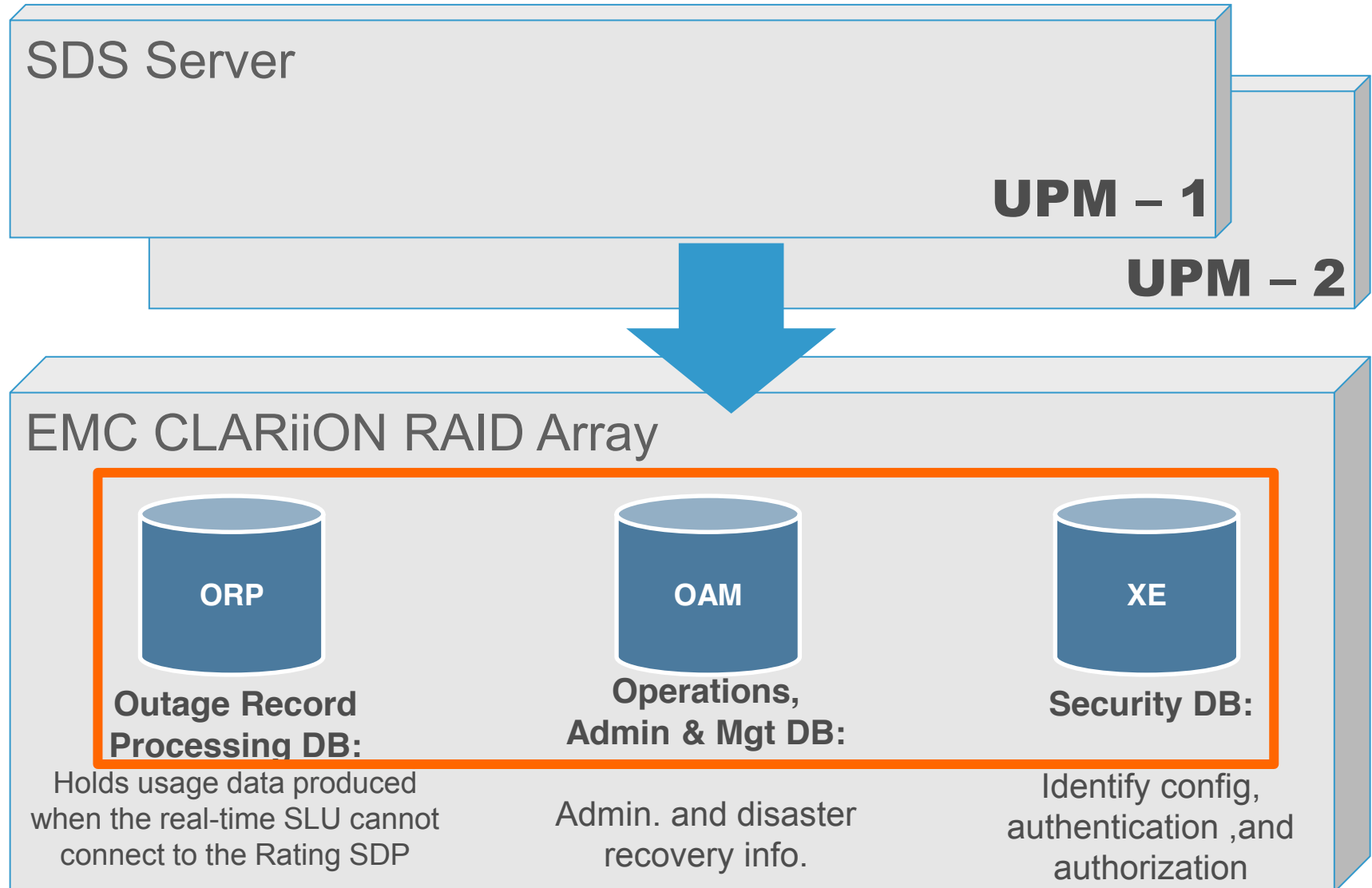
EMC

**Databases: XE, ORP and OAM**

Propagation

SDP

# Checking the Health of the Databases



# Database Status

Database health – **ps -ef | grep -i ora\_pmon | grep -v grep**

```
[root@upm1 ~]# ps -ef | grep -i ora_pmon | grep -v grep
oracle8      3792          1   0  Mar10   ?                00:00:07  ora_pmon_orp
oracle8      3794          1   0  Mar10   ?                00:00:18  ora_pmon_XE
oracle8     23200          1   0  00:10   ?                00:00:00  ora_pmon_rcat
```

# Verify Listener Instances

Look for XE, ORP, or  
OAM

```
=> upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:online]:  
lsnrctl status|grep -i XE  
(DESCRIPTION=(ADDRESS=(PROTOCOL=ipc) (KEY=XE)))  
Service "XE" has 1 instance(s).  
  Instance "XE", status READY, has 1 handler(s) for this service...  
Service "XE_XPT" has 1 instance(s).  
  Instance "XE", status READY, has 1 handler(s) for this service...
```

Status should be  
READY

# Checking Database Name

```
=> upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:online]: echo -e  
'set heading off\nset line 256\nset feedback off\nselect  
name from v$database; '|sqlplus -S cbs_owner/*****@xe  
XE
```

**Returned  
database name**

**Look for XE, ORP, or  
OAM**

# TNSNAMES

```
⇒upm1: cat $ORACLE_HOME/network/admin/tnsnames.ora|grep -v '^#\`  
⇒upm1>  
pcat=  
  (DESCRIPTION =  
    (ADDRESS = (PROTOCOL= TCP) (Host= 172.17.107.132) (Port= 1521))  
    (ADDRESS = (PROTOCOL= TCP) (Host= 172.17.107.133) (Port= 1521))  
    (CONNECT_DATA = (SERVICE_NAME = pcat))  
    (FAILOVER_MODE = (TYPE=SELECT)(METHOD=BASIC))  
  )
```

**Tnsnames.ora should be the  
same on both UPM nodes**



# Invalid Database Objects

- Log in to each of ORP, PCAT database **cbs\_owner** user
- Execute the following command to find any invalid objects

```
SELECT OBJECT_NAME,OBJECT_TYPE FROM USER_OBJECTS WHERE  
STATUS='INVALID';
```

```
SELECT CONSTRAINT_NAME,TABLE_NAME,STATUS FROM  
USER_CONSTRAINTS WHERE STATUS NOT LIKE 'ENABLED';
```

```
SELECT TRIGGER_NAME,TABLE_NAME,STATUS FROM USER_TRIGGERS  
WHERE STATUS!='ENABLED' ORDER BY TABLE_NAME,TRIGGER_NAME;
```

# Table-Space in Database

- Log in as **cbs\_owner** user.
- Run the following command on the MAIN, HIST, PCAT, ORP and XE databases to check table-space.

```
SELECT D.TABLESPACE_NAME "TABLESPACE",  
       ROUND(D.USED_SZ/1024/1024,0) "SIZE  
MB", ROUND(D.MAX_SZ/1024/1024,0) "MAX SIZE MB",  
       ROUND((D.USED_SZ-F.FREE_SZ)/1024/1024,0) "USED  
MB", ROUND(100*(D.USED_SZ-F.FREE_SZ)/D.MAX_SZ,2) "USED %"  
FROM (SELECT TABLESPACE_NAME,  
SUM(DECODE(MAXBYTES,0,BYTES,MAXBYTES)) MAX_SZ, SUM(BYTES) USED_SZ  
FROM DBA_DATA_FILES GROUP BY TABLESPACE_NAME) D, (SELECT  
TABLESPACE_NAME, SUM(BYTES) FREE_SZ  
FROM DBA_FREE_SPACE GROUP BY TABLESPACE_NAME) F  
WHERE D.TABLESPACE_NAME = F.TABLESPACE_NAME (+)  
ORDER BY 5 DESC;
```

# Database Tests (1)

Verifying that no invalid objects are present

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:online]: echo -e "set heading  
off\nset line 256\nset feedback off\n  
select object_name,object_type from user_objects  
where status='INVALID';"|sqlplus -S cbs_owner/*****@xe
```

Database  
name: XE,  
ORP or OAM

Verifying that no disabled constraints are present

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:online]: echo -e "set heading  
off\nset line 256\nset feedback off\n  
select constraint_name,table_name from user_constraints  
where status not like 'ENABLED';"|sqlplus -S cbs_owner/*****@xe
```

Verifying that all data files are ONLINE

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:online]: echo -e 'set heading  
off\nset line 256\nset feedback off\ncolumn file_name format a40\n  
select file_name, status, online_status, tablespace_name, bytes from  
dba_data_files order by file_name;\n'|sqlplus -S cbs_owner/*****@xe
```

# Database Tests (2)

## Verifying that no user was locked

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:online]: echo -e "set heading  
off\nset line 256\nset feedback off\n  
select 'User: '||user_id||' locked' from secuser.sec_idm_user t where  
iu_lock='Y';"|sqlplus -S cbs_owner/*****@xe
```

## Verifying all parameters

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:online]: echo -e 'set heading  
off\nset line 256\nset feedback off\n  
show parameter;\n'|sqlplus -S system/*****@xe
```

## Checking that table local\_server\_id is filled correctly

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:online]: echo -e 'set heading  
off\nset line 256\nset feedback off\n  
column file_name format a40\n  
select file_name, status, online_status, tablespace_name, bytes from  
dba_data_files order by file_name;\n'|sqlplus -S cbs_owner/*****@xe
```

# DatabasesTests (3)

Checking that table server\_definition is filled in correctly

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:online]: echo -e "set heading  
off\nset line 256\nset feedback off\n  
select 'Server ID: '||SERVER_ID||', Hostname: '||HOSTNAME||', DSQUERY:  
'||DSQUERY from server_definition;"|sqlplus -S cbs_owner/*****@orp
```

# Cluster Resources and Backup

Verify that instance\_XE, instance\_OAM, or instance\_ORP is listed

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:cluster]: hares -state|grep instance_XE
instance_XE          State          upm1          ONLINE
instance_XE          State          upm2          OFFLINE
```

Verify last backup level0 status

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:online]: cat
/backup_vol/current/XE/backup2tape/backup_10.status
```

```
2011-08-31
BACKUP_STARTED=2011-08-31 05:00:05
BACKUP_COMPLETED=2011-08-31 05:02:10
RESTORE_TIMESTAMP=2011-08-31 05:00:42
STATUS=0
```

Database name XE,  
ORP or OMA

# Verifying HOST\_CONTACT in the ORP Database

HOST\_CONTACTS rows **MUST** be configured the same in both the ORP and the UNSCALED databases

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:online]: echo -e "set heading
off\nset line 256\nset feedback off\n
select 'Contact Id: '||HOST_CONTACT_ID||', Host: '||HOST||', Host
Module: '||HOST_MODULE||', Failover: '||FAILOVER_HOST from
host_contacts;"|sqlplus -S cbs_owner/*****@orp
```

# Checking ORP (1)

## Checking ORP Packages Installed a Host

```
upm2: rpm -qa|grep -Ei 'ORP|SEC_API'  
CBS_ORP-3.5.50.0-0.0.0_9.0.0_1  
SEC_API-3.5.50.0-0.0.0_1.0.28_2
```

## Verifying parameters settings

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:online]: cat  
/staging/billing/envSetting.env|grep -v '^#'  
arbor_catalog_database [major]: ARBOR_CATALOG_DATABASE should be specified  
arbor_catalog_query [major]: ARBOR_CATALOG_QUERY should be specified  
arbordbu [major]: ARBORDBU should be specified  
oracle_sid [major]: ORACLE_SID should be specified  
arbordir [major]: ARBORDIR should be specified  
oracle_home [major]: ORACLE_HOME should be specified  
tz [major]: Timezone should be specified the same as system
```



# Checking ORP (2)

Verify tnsping to specified database succeeds

```
upm1 [LNK_UPM_Cluster:CLUSTER_STATUS:online]: tnsping NULL
```

Verify ping succeeds with no loss of packets

```
upm1: ping -c 20 -f secserv
```

# ORP Batch Requests

Check number of total batch request:

- Number of records in Progress state should be decreasing
- Count of completed records should be increasing

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:online]: echo -e 'set heading off\nset line 256\nset feedback off\nselect count(*), a.batch_status_id, b.display_value from batch_request a, batch_status_values b where a.batch_status_id = b.batch_status_id group by a.batch_status_id, b.display_value;' | sqlplus -S cbs_owner/*****@orp
```

Check number of today's batch request:

- Number of records in Progress state should be decreasing
- Count of completed records should be increasing

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:online]: echo -e 'set heading off\nset line 256\nset feedback off\nselect count(*), a.batch_status_id, b.display_value from batch_request a, batch_status_values b where a.batch_status_id = b.batch_status_id and trunc(a.SCHEDULED_DATE) = trunc(sysdate) and b.language_code = 1 group by a.batch_status_id, b.display_value;' | sqlplus -S cbs_owner/*****@orp
```

# Agenda

Linux

UPM and UPM Cluster

UPM Manager

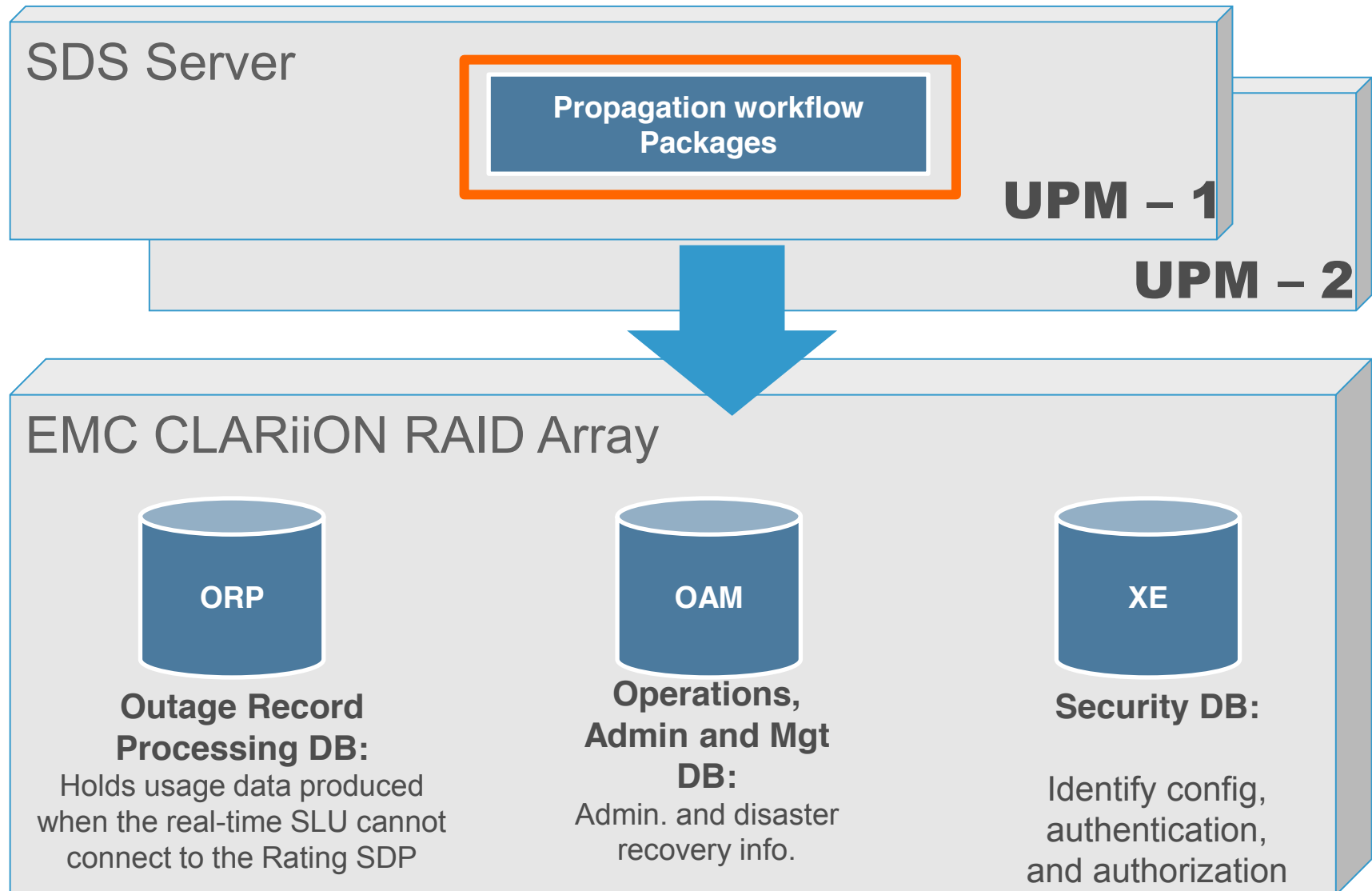
EMC

Databases: XE, ORP and OAM

**Propagation**

SDP

# Checking the Health of the Databases



# Checking Propagation (1)

## Workflow Packages

```
=> upm1 [LNX_UPM:HOSTNAME:upm1]: rpm -qa|grep Workflow  
Workflow-propagation_RT-3.5.50.0-1.10.0_2.0.0
```

## Propagation properties file

```
upm1: cat /home/jboss/cbs_workflow/propagation.properties |grep -v '^#'
```

## Monitors - GeneralMonitor.properties file

```
upm1: cat /home/jboss/cbs_workflow/GeneralMonitor.properties |grep -v '^#'
```

## Propagation log – 10 latest propagations should be successful

```
upm1 [LNX_UPM_Cluster:CLUSTER_STATUS:online]: cd  
/home/jboss/cbs_workflow/propagation/LOG;tail -n4 `ls -rt  
propagate*.log`|tail -10`;cd
```

# Propagation Target

Checking that Propagation's targets are specified in properties

```
upml: echo -e "set heading off\nset line 256\nset feedback off\n select 'Target Id: '||target_db_id||', Hostname: '||hostname||', URL: '||propagation_url||', Target Type: '||target_db_type from dp_target_db;"|sqlplus -S cbs_owner/comverse@pcat
```

# Propagation – Verifying tnsping to PCAT Succeeds

```
upm1: tnsping pcat
```

```
TNS Ping Utility for Linux: Version 10.2.0.5.0 - Production on  
31-AUG-2011 22:12:01
```

```
Copyright (c) 1997, 2010, Oracle. All rights reserved.
```

```
Used parameter files:
```

```
Used TNSNAMES adapter to resolve the alias
```

```
Attempting to contact (DESCRIPTION = (ADDRESS = (PROTOCOL=  
TCP) (Host= 172.17.107.132) (Port= 1521)) (ADDRESS = (PROTOCOL=  
TCP) (Host= 172.17.107.133) (Port= 1521)) (CONNECT_DATA =  
(SERVICE_NAME = pcat)) (FAILOVER_MODE =  
(TYPE=SELECT) (METHOD=BASIC)))
```

# Agenda

Linux

UPM and UPM Cluster

UPM Manager

EMC

Databases: XE, ORP and OAM

Propagation

**SDP**



# SDP Hostname

```
=> sdp1a: hostname  
sdp1  
=> sdp1b: hostname  
sdp2  
=> sdp2a: hostname  
sdp1  
=> sdp2b: hostname  
sdp2  
=> sdp3a: hostname  
sdp1  
=> sdp3b: hostname  
sdp2
```

Check that  
hostname of  
node a is sdp1,  
node b is sdp2

# SDP Machine Module

```
sdp1a: uname -M  
IBM,8203-E4A  
=> sdp1b: uname -M  
IBM,8203-E4A  
=> sdp2a: uname -M  
IBM,8203-E4A  
=> sdp2b: uname -M  
IBM,8203-E4A  
=> sdp3a: uname -M  
IBM,9131-52A  
=> sdp3b: uname -M  
IBM,9131-52A
```

Verify that it is IBM

# Cluster Status

```
=> sdp1a [SDP_IBM:MACHINE_MODEL:ibm]: clRGinfo -s|grep Database_RG
Database_RG: ONLINE:sdp1:non-concurrent:OFAN:FNP:NFB:ignore::: :
:::
Database_RG:OFFLINE:sdp2:non-concurrent:OFAN:FNP:NFB:ignore::: :
:::
```

Run also for:

- sdp1b
- sdp2a
- sdp2b
- sdp3a
- sdp3b

Verify that:

- Database\_RG is non-concurrent
- host sdp is online
- Priority Override is not set

# Checking Installed UPA Packages

```
sdpl1a: cat $JBASS_HOME/conf/version.properties | grep -v '^#'
base.package=4.0.1.0
command.package=4.0.1.0
configuration.package=4.0.1.0
inventory.package=4.0.1.0
job.package=4.0.1.0
monitor.package=4.0.1.0
process.package=4.0.1.0
rules.package=4.0.1.0
sysaudit.package=4.0.1.0
workflow.package=4.0.1.0
```

Run also for:

- sdp1b
- sdp2a
- sdp2b
- sdp3a
- sdp3b

# Checking Installed UPA Version

```
=> sdp1a: mshell secadmin/***** version
```

```
COMMAND :
```

NodeClass	NodeName	NodeInstance	Platform	OS Version	OS Model	OS Arch	App
Version	TC	Build Count	Build Date				
SDP	MAIN1	172.17.107.132	AIX	6.1	E4A	ppc	4.0.1
1.0.0	1		06/14/2011 01:32				

Run also for:

- sdp1b
- sdp2a
- sdp2b
- sdp3a
- sdp3b

# Summary

This lesson has covered preventive maintenance utilities for validating the health of UPM components.