

Legacy Slides: Analyzer Report (Walk-Through)

OSW Analyzer: Report format

- Analyzer output divided into the sections for easy readability

Section 1: Overall Status

Section 2: System Slowdown Summary Ordered By Impact

Section 3: Other General Findings

Section 4: CPU Detailed Findings

Section 5: Memory Detailed Findings

Section 6: Disk Detailed Findings

Section 7: Network Detailed Findings

- These sections are explained in the following slides

Section 1: Overall Status

- Quick heads up status of each major subsystem
- Currently status of CPU, Memory, Network and I/O subsystems
- Status values are
 - OK No problem detected
 - Warning Attention is required
 - Critical Attention is critical
 - Unknown Status could not be determined
 - ✓ Missing metrics. Not all OS versions contain necessary metric. Memory scan rate is an example
 - ✓ HP-UX iostat does not support extended disk statistics
 - ✓ AIX does not use top (topas not controllable in Unix shell)

Section 1: Overall Status

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Subsystem	Status
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CPU	CRITICAL
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MEMORY	WARNING
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I/O	OK
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NET	OK
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Section 2: System Slowdown Summary Ordered By Impact

- OSWbb contains heartbeat timestamps in log files
- Heartbeats that do not happen at expected intervals indicate OS is slowing down or experiencing hangs
- The following columns are identified in this section
 - Snaptime -timestamp when slowdown occurred
 - Variance – the amount of difference between the expected heartbeat time and the actual heartbeat time
 - Secs – the time in seconds between heartbeats
 - Flags – bitmapped indicators for cpu, memory and io problems
 - Cause – most likely cause of slowdown identified

Section 2: System Slowdown Summary Ordered By Impact

Section 2: System Slowdown RCA Ordered By Impact

SnapTime	Variance	Secs	Flags	Cause(Most Likely)

Fri May 27 22:36:04	1.1	34	0002-00-00	1: Root Processes High CPU
				2: System low on Memory

>>>Cause 1: Root Processes High CPU

Checking top processes...

SnapTime	Pid	CPU	Command

Fri May 27 22:36:04 GMT 2011	797	74.6	[kswapd0]

Slowdown time and duration

First the analyzer identifies slowdown and most likely causes

Next the analyzer identifies most likely process impacting the slowdown

Section 3: Other General Findings

Any additional findings will be listed in this section

Section 3: Other General Findings:

CRITICAL: CPU Run Queue observed very high spikes.

CRITICAL: Memory severe swapping observed.

Section 4: CPU Detailed Findings

- Provides summary of cpu metrics collected in the archive
- The following metrics are reported:
 - CPU Run Queue
 - CPU Utilization (Percent Busy)
 - Root processes > 50%
 - Oracle Background processes > 50%
 - CPU Percent System

Section 4: CPU Detailed Findings

CPU Detailed Findings:

CPU RUN QUEUE:	NUMBER	PERCENT	

Snaps captured in archive	14413	100.00	There were 14413 snapshots contained in the oswbb archive
High (>3)	41	0.28	Of these 14413 snapshots, 41 snapshots had high run queue
Very High (>6)	6	0.04	Of these 14413 snapshots, 6 snapshots had very high run queue
High spanning multiple snaps	0	0	Of these 14413 snapshots, 0 snapshots spanned more than 1 snap

The following snaps recorded very high run queues:

SnapTime	Value	Value/#CPU	

Thu May 26 00:43:57 GMT 2011	12	6	Times where run queue was reported high
Thu May 26 01:42:00 GMT 2011	15	7	Run queue value
Thu May 26 08:40:12 GMT 2011	17	8	The effective run queue: Run Queue/# CPU
Thu May 26 20:40:34 GMT 2011	18	9	
Sat May 28 00:41:34 GMT 2011	13	6	

Section 4: CPU Detailed Findings

CPU UTILIZATION: PERCENT SYS

	NUMBER	PERCENT

Snaps captured in archive	14413	100.00
High (>30%)	0	0
Very High (50%)	0	0
High spanning multiple snaps	0	0

CPU UTILIZATION: The following snaps recorded ROOT processes using high percent cpu:

SnapTime	Pid	CPU	Command

Tue May 24 19:12:24 GMT 2011	13982	70.5	/usr/bin/python
Fri May 27 06:12:24 GMT 2011	30597	62.6	/usr/bin/python
Fri May 27 22:36:04 GMT 2011	797	54.6	[kswapd0]

Root processes consuming high CPU
are identified

CPU UTILIZATION: The following snaps recorded ORACLE Background processes using high percent cpu:

SnapTime	Pid	CPU	Command
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Oracle background processes consuming
high CPU are quickly identified



Section 5: Memory Detailed Findings

- Provides summary of memory metrics collected in the OSWbb archive
- The following metrics are reported for those OS's that report these metrics in vmstat
 - CPU Process Queue
 - Memory Scan Rate
- If these metrics are not available then memory status will be UNKNOWN in Section 1.

Section 5: Memory Detailed Findings

Memory Detailed Findings:

MEMORY: PROCESS SWAP QUEUE

	NUMBER	PERCENT

Snaps captured in archive	232	100.00
High (>0%)	0	0
High spanning multiple snaps	0	0

Scan Rate is the most important indicator for memory issues on Solaris

MEMORY: SCAN RATE

	NUMBER	PERCENT

Snaps captured in archive	232	100.00
High (>0)	3	1.29
Very High (>200)	3	1.29
High spanning multiple snaps	2	0.86

Scan rate that is high and spans multiple snapshots is indicator
free memory was low

Section 6: Disk Detailed Findings

- There may be hundreds of devices on a system
- Analyzer looks only at those devices which may be problematic, ignoring all others
- Only devices that are busy more than 50% or have high service times are reported
- Storage arrays have cache which skew metrics being reported
- Throughput is only reliable metric for storage arrays
- For debugging storage arrays a throughput analysis of those devices are listed in the report

Section 6: Disk Detailed Findings

- Provides summary of device metrics collected in the archive
- The following metrics are reported
 - Device Percent Busy for devices with percent busy > 50%
 - Device Service Time for devices with service time > 10 msec
 - Device Throughput for devices with percent busy > 50%

Section 6: Disk Detailed Findings

Section 6: Disk Detailed Findings

Section 6.1: Device Percent Busy Findings:

(Only Devices With Percent Busy > 50% Reported:)

Only devices with percent busy > 50% listed

DEVICE: hdisk0 PERCENT BUSY

	NUMBER	PERCENT

Snaps captured in archive	111	100.00
High (>50%)	111	100.00
Very High (>95%)	0	0
High spanning multiple snaps	110	90.91

Notice this device is always busy and requires further investigation

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Section 6.2: Device Service Times Findings:

(Only Devices With Average Service Time > 10msec Reported:)

Section 6: Disk Detailed Findings

Section 6.3: Device Throughput Findings:

(Only Devices With Percent Busy > 50% Reported:)

DEVICE: hbb00

%BUSY	NUMBER	MIN_KR/S	MAX_KR/S	AVG_KR/S	MIN_KW/S	MAX_KW/S	AVG_KW/S
50-59	0	0.0	0.0	0.0	0.0	0.0	0.0
60-69	90	0.0	330.0	36.7	0.0	0.0	0.0
70-79	200	0.0	460.0	48.0	0.0	0.0	0.0
80-89	16	0.0	356.0	37.0	0.0	0.0	0.0
90-99	22	0.0	201.0	29.0	0.0	0.0	0.0
100	0.0	0.0	0.0	0.0	0.0	0.0	0.0

- Metrics can look good coming back for storage arrays but throughput can identify problem
- In this example percent busy looked ok. Throughput on the storage array showed something different

Section 7: Network Detailed Findings

- All data link interfaces, IP , UDP and TCP protocols are analyzed
- Only those interfaces/protocols which have errors are reported
- TCP packet retransmission rate is calculated and warning issue if this value exceeds 15%
- The analyzer reports on what these errors mean if any significant errors are reported. This information is listed in Section 3: Other General Findings.

Example:

Network IP errors observed.

Section 7: Network Detailed Findings

Section 7.1: Network Data Link Findings

(Only Data Links With Errors Reported:)

LINK	IERRS	OERRS	COLLIS
ge0	441692	0	0

Could have many data links but input errors occurring only on link ge2

Data Link Error Times:

Jun 8 19:32:54 2012

More importantly all these input errors happened around a specific time

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Section 7.2: Network IP Findings

PARAMETER	VALUE

requests sent out	27883
total packets received	32861



Section 7: Network Detailed Findings

Section 7.3: Network UDP Findings

PARAMETER	VALUE

datagrams received	499
datagrams output	355
dropped due to no socket	144
broadcast dropped due to no socket	144

Want to avoid any dropped UDP packets especially for RAC

UDP Error Times:

May 18 17:18:01 2012

May 18 17:18:31 2012

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Section 7.4: Network TCP Findings

TCP Errors > 14.62% Packet Retransmitted:

TCP retransmission rate calculated by
oswbba. Retransmission rates > 15%

