

WebNMS 5.2

Performance Guide

ZOHO Corp.
4900 Hopyard Rd., Suite 310
Pleasanton, CA 94588, USA
<http://www.zohocorp.com>
info@zohocorp.com

ZOHO Corp Confidential

Table of Contents

1. Introduction	2
2. Scope	2
3. Metrics Definitions.....	3
3.1 Data collection rate	3
3.2. Trap Rate.....	3
3.3 Event Rate	3
3.4. Alert Rate	3
3.5. Discovery rate	3
3.6. Status polling rate	3
3.7. CPU utilization.....	3
3.8. Memory utilization.....	3
4. Test Results.....	5
4.0 Solaris – ExaData Test Results.....	5
4.1. Windows-Oracle Test Results	6
4.2. Windows-MySQL Test Results	7
4.3. Linux-MySQL Test Results	8
4.4. Solaris-MySQL Test Results	9

1. Introduction

This document provides a quick insight into the high performance capabilities and scalability aspects of WebNMS 5 platform. This guide requires basic knowledge of the WebNMS server architecture and the basic management functionalities of it. The target audience for this guide is system architects working on WebNMS development.

2. Scope

This document presents the performance test results of WebNMS 5.2. The following interpretation about WebNMS system performance could be relevant from this document.

The following are the performance metrics that are taken into consideration.

- Data Collection Rate
- Trap Rate
- Event Rate
- Alert Rate
- Discovery Rate
- Status Polling Rate

The following are the hardware metrics that are taken into consideration.

- CPU utilization
- Memory utilization

3. Metrics Definitions

Following are the definitions of the performance and resource metrics that are calculated in the performance tests:

3.1 Data collection rate

The data collection rate is the rate at which SNMP data collection is carried out for all the objects with varying data poll interval.

3.2. Trap Rate

The Trap rate is the rate at which traps received by WebNMS are getting converted in to events.

3.3 Event Rate

The Event rate is the rate at which the incoming events are processed and added to the database.

3.4. Alert Rate

The Alert rate is the rate at which the alerts added to the database after it is correlated and processed from its corresponding events.

3.5. Discovery rate

The rate at which the nodes in the network are discovered in the SNMP and ICMP discovery modes.

3.6. Status polling rate

The status-polling rate is the rate at which managed objects are polled for their current status. The type of the managed object that is polled for status is SnmpNode.

3.7. CPU utilization

The average percentage values of CPU utilization of the NMS server and database server under consideration.

3.8. Memory utilization

The average memory consumption of NMS server and database server under consideration.

WebNMS – Best Possible Performance Metrics

Sl.No.	Test	Results
1	Topo Addition Rate	14285 MO's per Second
2	Discovery Rate	5320 per second
3	Status Polling Rate	1523 per second
4	Data Collection Rate	10694 per second
5	Fault Processing Rate	11373 per second

The Performance Test was carried out on WebNMS 5.2 using Oracle ExaData Database. For a Managed Object Size of 1,00,000 objects – The Topology Object Addition Rate was 7 Seconds - i.e. ~14,285 Managed Objects per second. Status Polling Rate was 1523 per second, Data Collection Rate was 10,694 per second and the Fault Processing Rate (Trap Rate) was 11,373 per second.

4. Test Results

The following tables present the performance data for WebNMS 5.2

Note: All the tests have been done with 1,00,000 managed objects.

4.0 Solaris – ExaData Test Results

Setup: OS: Solaris, Database: Oracle ExaData

Hardware Configuration: 8 Quad Core - Xeon E5540 2.53GHz (32 Cores Total),

Memory : 144GB RAM : Half Rack ExaData V2 System

Network Size: 100,000 ManagedObjects

Discovery Rate:

WebNMS Version	No. of MO	Time taken	Server CPU Util (%)	Server Mem Util (%)	DB CPU Util (%)	DB Mem Util (%)
5.2	100000	7	6	1	1	2

Status Polling Rate:

WebNMS Version	No. of objects	Status Polling Rate	Server CPU Util (%)	Server Mem Util (%)	DB CPU Util (%)	DB Mem Util (%)
5.2	100K	1523	26	28	0	0.9

Data Collection Rate:

WebNMS Version	Period (seconds)	Data Polling Rate	Data Collection Rate	Server CPU Util (%)	Server Mem Util (%)	DB CPU Util (%)	DB Mem Util (%)
5.2	10	10799	10694	140	6	11	24

Trap/Event/Alert Rate:

WebNMS Version	Traps sent (traps/sec)	Trap Rate (traps/sec)	Event Rate (traps/sec)	Alert Rate (traps/sec)	MO Rate (traps/sec)	Server CPU Util (%)	Server Mem Util (%)	DB CPU Util (%)	DB Mem Util (%)
5.2	12000	11373	11373	10490	3114	26	28	26	15

4.1. Windows-Oracle Test Results

Setup: OS: Windows XP, Database: Oracle 11g

Hardware Configuration: Both WebNMS and Oracle running in Windows machine(4GB RAM,8*2.33GHZ CPU)

Network Size: 100,000 ManagedObjects

Discovery Rate:

<i>WebNMS Version</i>	<i>No.of networks</i>	<i>Discovery Rate(nodes/min)</i>	<i>Server CPU Util (%)</i>	<i>Server Mem Util (MB)</i>	<i>DB CPU Util (%)</i>	<i>DB Mem Util (MB)</i>
5.0	10	5214	42-67	166.4	9-45	1064.96

Status Polling Rate:

<i>WebNMS Version</i>	<i>No.of objects</i>	<i>Status Polling Rate(Polls/sec)</i>	<i>Server CPU Util (%)</i>	<i>Server Mem Util (MB)</i>	<i>DB CPU Util (%)</i>	<i>DB Mem Util (MB)</i>
5.0	100k	1360	55-134	133.12	91-135	1098.24

Data Collection Rate:

<i>WebNMS Version</i>	<i>Period (seconds)</i>	<i>No.of Polled Data</i>	<i>Data Collection Rate(Polls/sec)</i>	<i>Server CPU Util (%)</i>	<i>Server Mem Util (MB)</i>	<i>DB CPU Util (%)</i>	<i>DB Mem Util (MB)</i>
5.0	20	100k	4487	109-214	260	45-329	665.6

Trap/Event/Alert Rate:

<i>WebNMS Version</i>	<i>Traps sent (traps/sec)</i>	<i>Trap Rate (traps/sec)</i>	<i>Event Rate (traps/sec)</i>	<i>Alert Rate (traps/sec)</i>	<i>Server CPU Util (%)</i>	<i>Mem Util (MB)</i>	<i>DB CPU Util (%)</i>	<i>DB Mem Util (MB)</i>
5.0	2100	1878	1874 187	3	117-218	270.32	53-250	1064.96

4.2. Windows-MySQL Test Results

Setup: OS: Windows XP , Database: MySQL 5.0.44

Hardware Configuration: Both WebNMS and MySQL running in Windows machine(4GB RAM,8*2.33GHZ CPU)

Network Size: 100,000 ManagedObjects

Discovery Rate :

<i>WebNMS Version</i>	<i>No.of networks</i>	<i>DiscoveryRate (nodes/min)</i>	<i>Server CPU Util (%)</i>	<i>Server Mem Util (MB)</i>	<i>DB CPU Util (%)</i>	<i>DB Mem Util (MB)</i>
5.0	10	5320	42-55	143.36	7-41	532.48

Status Polling Rate :

<i>WebNMS Version</i>	<i>No. of objects</i>	<i>Status Polling Rate(Polls/sec)</i>	<i>Server CPU Util (%)</i>	<i>Server Mem Util (MB)</i>	<i>DB CPU Util (%)</i>	<i>DB Mem Util (MB)</i>
5.0	100k	1391	79-145	122.88	83-124	573.44

Data Collection Rate :

<i>WebNMS Version</i>	<i>Period (seconds)</i>	<i>No.of Polled Data</i>	<i>Data Collection Rate (Polls/sec)</i>	<i>Server CPUUtil (%)</i>	<i>Server MemUtil(MB)</i>	<i>DB CPUUtil (%)</i>	<i>DB MemUtil(MB)</i>
5.0	20	100k	4263	105-184	286.72	68-349	614.4

Trap/Event/Alert Rate :

<i>WebNMS Version</i>	<i>Traps sent (traps/sec)</i>	<i>Trap Rate (traps/sec)</i>	<i>Event Rate (traps/sec)</i>	<i>Alert Rate (traps/sec)</i>	<i>Server CPU Util (%)</i>	<i>Server Mem Util (MB)</i>	<i>DB CPU Util</i>	<i>DB Mem Util (MB)</i>
5.0	2000	1714 171	6	1782	111-198	245.76	60-210	573.44

4.3. Linux-MySQL Test Results

Setup: OS: Linux 2.6.18-53.el5PAE , Database: MySQL 5.0.44

Hardware Configuration: Both WebNMS and MySQL running in Linux machine(4GB RAM, 8*2.33GHZ CPU)

Network Size: 100,000 ManagedObjects

Discovery Rate:

<i>WebNMS Version</i>	<i>No. of networks</i>	<i>Discovery Rate (nodes/min)</i>	<i>Server CPU Util (%)</i>	<i>Server Mem Util (MB)</i>	<i>DB CPU Util(%)</i>	<i>DB Mem Util (MB)</i>
5.0	10	5212	70-80	170	50-60	532.48

Status Polling Rate:

<i>WebNMS Version</i>	<i>No. of objects</i>	<i>Status Polling Rate(Polls/sec)</i>	<i>Server CPU Util (%)</i>	<i>Server Mem Util (MB)</i>	<i>DB CPU Util (%)</i>	<i>DB Mem Util (MB)</i>
5.0	100k	1397	80-110	122.88	70-120	532.48

Data Collection Rate:

<i>WebNMS Version</i>	<i>Period (Seconds)</i>	<i>No.of Polled Data</i>	<i>Data Collection Rate(Polls/sec)</i>	<i>Server CPU Util (%)</i>	<i>Server Mem Util (MB)</i>	<i>DB CPU Util (%)</i>	<i>DB Mem Util (MB)</i>
5.0	20	100k	4365	125-143	286.72	70-330	532.48

Trap/Event/Alert Rate

<i>WebNMS Version</i>	<i>Traps sent (traps/sec)</i>	<i>Trap Rate (traps/sec)</i>	<i>Event Rate (traps/sec)</i>	<i>Alert Rate (traps/sec)</i>	<i>Server CPU Util (%)</i>	<i>Server Mem Util (MB)</i>	<i>DB CPU Util (%)</i>	<i>DB Mem Util (MB)</i>
5.0	2000	1736	1726	1720	110-180	286.72	55-190	532.48

4.4. Solaris-MySQL Test Results

Setup: OS: SunOS5.10, Database: MySQL 5.0.44

Hardware Configuration: WebNMS running in solaris machine(8GB RAM,
32*1000MHZ CPU)

MySQL running in linux machine(4GB RAM,4*1.6GHZ CPU)

Network Size: 100,000 ManagedObjects

Discovery Rate :

<i>WebNMS Version</i>	<i>No. of networks</i>	<i>Discovery Rate(nodes/min)</i>	<i>Server CPU Util (%)</i>	<i>Server Mem Util (MB)</i>	<i>DB CPU Util (%)</i>	<i>DB Mem Util (MB)</i>
5.0	10	2784	2-24	163.84	10	450.56

Status Polling Rate :

<i>WebNMS Version</i>	<i>No. of objects</i>	<i>Status Polling Rate(Polls/sec)</i>	<i>Server CPU Util (%)</i>	<i>Server Mem Util (MB)</i>	<i>DB CPU Util (%)</i>	<i>DB Mem Util (MB)</i>
5.0	100k	840	6	163.84	1	450.56

Data Collection Rate :

<i>WebNMS Version</i>	<i>Period (seconds)</i>	<i>No. of PolledData</i>	<i>Data Collection Rate (Polls/sec)</i>	<i>Server CPU Util (%)</i>	<i>Server Mem Util (MB)</i>	<i>DB CPU Util (%)</i>	<i>DB Mem Util(MB)</i>
5.0	50	100k	1500	5.2	286.72	43	450.56

Trap/Event/Alert Rate :

<i>WebNMS Version</i>	<i>Traps sent (traps/sec)</i>	<i>Trap Rate (traps/sec)</i>	<i>Event Rate (traps/sec)</i>	<i>Alert Rate (traps/sec)</i>	<i>Server CPU Util (%)</i>	<i>Server Mem Util (MB)</i>	<i>DB CPU Util (%)</i>	<i>DB Mem Util (MB)</i>
5.0	500	466	466	450	6	245.76	4	450.56