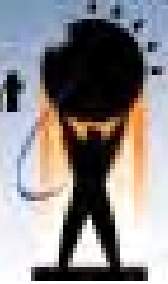




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# Open Source Tools for Oracle DBAs

**Heavyweight  
Internet  
Group**



# Introduction

- 
- ❖ New technology and possibilities
  - ❖ Community
  - ❖ Exchange of ideas
  - ❖ Freedom from licensing issues



# A Short History

- ❖ 1992 – First Linux Distro, Oracle v7
- ❖ 1997 – SCO Comp Lib + Oracle 7.3
- ❖ 1997 – Oracle releases v8 on Linux
- ❖ 2001 - Mod\_plsql, Apache – Oracle AS
- ❖ 2003 – All Oracle products run on Linux

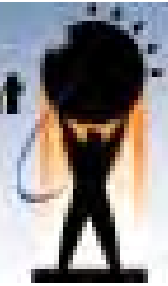
The logo for Heavyweight Internet Group features the text 'Heavyweight Internet Group' in a bold, black, sans-serif font. To the right of the text is a stylized black silhouette of a person carrying a large, glowing orange and yellow sphere on their back, with several small black dots floating above it. The entire logo is set against a light blue background.

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# System Monitoring with Nagios

- 
- ❖ various interfaces – browser, pda
  - ❖ \*nix platforms
  - ❖ uses Apache
  - ❖ authorization + security
  - ❖ Customizable
  - ❖ historical data
  - ❖ <http://nagios.org>

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# System Monitoring with Nagios

**Nagios**

**General**

- Home
- Documentation

**Monitoring**

- Tactical Overview
- Status Detail
- Status Overview
- Status Summary
- Status Grid
- Status Map
- 3-D Status Map
- Service Problems
- Network Outages
- Trends
- Availability
- Alert History
- Notifications
- Log File
- Comments
- Downtime
- Process Info
- Performance Info

**Configuration**

- View Config

**Current Network Status**  
Last Updated: Sun Jul 15 14:06:09 CDT 2001  
Updated every 75 seconds  
Nagios™ - [www.nagios.org](http://www.nagios.org)  
Logged in as guest  
- Monitoring process is running  
- Notifications cannot be sent out!  
- Service checks are being executed

[View History For all hosts](#)  
[View Notifications For All Hosts](#)

**Host Status Totals**

Up	Down	Unreachable	Pending
33	3	4	0

[All Problems](#) [All Types](#)

7 35

**Service Status Totals**

OK	Warning	Unknown	Critical	Pending
103	2	0	14	18

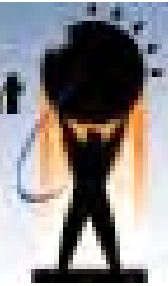
[All Problems](#) [All Types](#)

16 137

**Service Details For All Hosts**

Host	Service	Status	Last Check	Duration	Attempt	Service Information
app99	PING	OK	07-15-2001 14:04:09	4d 4h 7m 13s	1/3	PING ok - Packet loss = 0%, RTA = 0.60 ms
bogus00	PING	CRITICAL	07-15-2001 14:04:39	4d 3h 46m 13s	1/3	CRITICAL - Plugin timed out after 10 seconds
bogus1	Something ...	CRITICAL	07-15-2001 14:00:38	4d 4h 1m 45s	1/3	(Service Check Timed Out)
bogus1	PING	CRITICAL	07-15-2001 14:02:36	4d 4h 1m 45s	1/3	CRITICAL - Plugin timed out after 10 seconds
bogus2	PING	CRITICAL	07-15-2001 14:04:09	4d 3h 47m 23s	1/3	CRITICAL - Plugin timed out after 10 seconds
bogus2	Something ...	CRITICAL	07-15-2001 14:04:39	4d 3h 45m 22s	1/3	(Service Check Timed Out)
bogus3	PING	CRITICAL	07-15-2001 14:05:38	4d 3h 45m 3s	1/3	CRITICAL - Plugin timed out after 10 seconds
bogus3	Something ...	CRITICAL	07-15-2001 14:02:36	4d 3h 33m 31s	1/3	(Service Check Timed Out)
bogus4	PING	CRITICAL	07-15-2001 14:04:09	4d 3h 46m 31s	1/3	CRITICAL - Plugin timed out after 10 seconds
bogus4	Something ...	CRITICAL	07-15-2001 14:04:39	4d 3h 45m 22s	1/3	(Service Check Timed Out)
bogus5	PING	CRITICAL	07-15-2001 14:05:43	4d 3h 44m 3s	1/3	CRITICAL - Plugin timed out after 10 seconds
bogus5	Something ...	CRITICAL	07-15-2001 14:02:36	4d 3h 33m 21s	1/3	(Service Check Timed Out)
linux1	Log Anomalies	PENDING	N/A	4d 3h 38m 2s	0/1	Service check is not scheduled for execution...
linux1	TCP Wrappers	PENDING	N/A	4d 3h 38m 2s	0/1	Service check is not scheduled for execution...
linux1	Security Alerts	PENDING	N/A	4d 3h 38m 2s	0/1	Service check is not scheduled for execution...
linux1	PING	OK	07-15-2001 14:02:35	4d 4h 6m 14s	1/3	PING ok - Packet loss = 0%, RTA = 0.50 ms
linux2	PING	OK	07-15-2001 14:04:01	4d 3h 47m 34s	1/3	PING ok - Packet loss = 0%, RTA = 0.00 ms
linux2	Security Alerts	PENDING	N/A	4d 3h 38m 2s	0/1	Service check is not scheduled for execution...
linux2	TCP Wrappers	PENDING	N/A	4d 3h 38m 2s	0/1	Service check is not scheduled for execution...
linux2	Log Anomalies	PENDING	N/A	4d 3h 38m 2s	0/1	Service check is not scheduled for execution...

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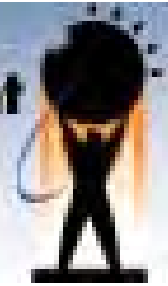
# System Monitoring with Nagios

The screenshot displays the Nagios web interface within a Netscape browser window. The browser's address bar shows the URL <http://www.nagios.org>. The interface is divided into several sections:

- Left Navigation Panel:** Contains menu items for General (Home, Documentation), Monitoring (Tactical Overview, Service Detail, Host Detail, Status Overview, Status Summary, Status Grid, Status Map, 3-D Status Map), Service Problems (Host Problems, Network Outages), Comments, Downtime, Process Info (Performance Info, Scheduling Queue), Reporting (Trends, Availability, Histogram, Alert History, Notifications, Event Log), and Configuration (View Config).
- Network Map For All Hosts:** A central circular diagram showing the status of various hosts. The map is color-coded: green for 'Up' and red for 'Down'. Hosts are labeled with names like 'nagios', 'nagios1', 'nagios2', 'nagios3', 'nagios4', 'nagios5', 'nagios6', 'nagios7', 'nagios8', 'nagios9', 'nagios10', 'nagios11', 'nagios12', 'nagios13', 'nagios14', 'nagios15', 'nagios16', 'nagios17', 'nagios18', 'nagios19', 'nagios20', 'nagios21', 'nagios22', 'nagios23', 'nagios24', 'nagios25', 'nagios26', 'nagios27', 'nagios28', 'nagios29', 'nagios30', 'nagios31', 'nagios32', 'nagios33', 'nagios34', 'nagios35', 'nagios36', 'nagios37', 'nagios38', 'nagios39', 'nagios40', 'nagios41', 'nagios42', 'nagios43', 'nagios44', 'nagios45', 'nagios46', 'nagios47', 'nagios48', 'nagios49', 'nagios50'. Some hosts are marked as 'Down' in red, while others are 'Up' in green.
- Top Right Controls:** Includes a 'Layout Method' dropdown set to 'Circular (Marked Up)', a 'Scaling factor' input field set to '0.7', a 'Drawing Layers' list with 'Win9x Workstations', 'Bogus Servers', 'Linux Servers', and 'Mail Servers', and a 'Layer mode' radio button set to 'Include'. There is also a 'Suppress popups' checkbox and an 'Update' button.
- Bottom Status Bar:** Shows 'Document: Done' and the system tray.



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# Monitoring Files with Fetchlog

- 
- ❖ Monitor listener.log, alert.log, backup logs, etc
  - ❖ Matches regular expressions
  - ❖ Bookmarks where you were last in file
  - ❖ Specify logfile, bookmarks file, pattern on cmd line
  - ❖ Integrates easily with Nagios



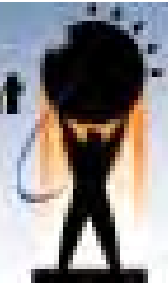
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# Version Control with CVS

- 
- ❖ Win32 or \*nix clients
  - ❖ Source code, config files, docs
  - ❖ Easy setup
  - ❖ Multiple repositories
  - ❖ Branches, commit, checkout etc.
  - ❖ <http://www.cvshome.org>

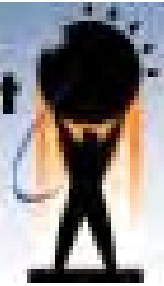




# Security

- ❖ Like backups, sometimes ignored at your own peril
- ❖ File permissions
- ❖ Buffer overflows, vulnerability alerts
- ❖ SQL Injection
- ❖ Passwords
- ❖ Spoofing packets, eavesdropping
- ❖ Ex. Dblink buffer overflow to SYS privileges

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# Security

- ❖ Integrit (<http://integrit.sourceforge.net/>)
  - o creates checksums on files on initial run
  - o monitor ORACLE\_HOME directories
  - o check for changes, patches, relinking, deleted files
  - o great for auditing



# Security

---

- ❖ Burp Intruder (<http://portswigger.net/proxy/>)
  - o Audit applications for SQL Injection
  - o Run various tests against web-based applications
  - o Hijacking
  - o Cross-site scripting

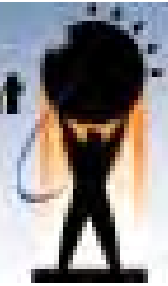


# Security

---

- ❖ NMap  
scan servers for open ports  
Oracle listener, ssh, smtp, http etc

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# Security

- ❖ Pete Finnigan's site
  - o default password checker
  - o password cracker
  - o grants + privs checking
  - o filesystem vulnerabilities
  - o various probes + scanners
  - o listing of other tools – free + commercial

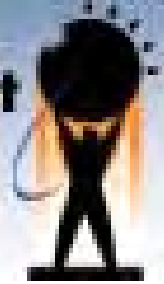
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# Real Application Clusters

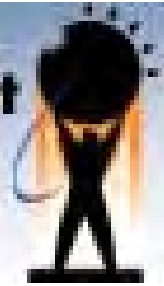
- 
- ❖ RedHat's GFS vs OCFS
  - ❖ CentOS for RedHat Distros w/o Support
  - ❖ XenSource.com – free VMWare

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# Real Application Clusters

- ❖ [oss.oracle.com](http://oss.oracle.com)
  - o endpoint – firewire disk emulation
  - o OCFS test, tools etc
  - o watchdog driver patches
  - o libaio – async I/O
  - o ASMLib – automatic storage manager
  - o compatability – for unsupported Linux distros
  - o NIC failover



# Tuning Tools

- ❖ Orasrp (<http://oracledba.ru/orasrp/>)
  - o session resource profiler, monitoring, tracing sessions
- ❖ DBTop (<http://www.scaleabilities.com/tools.shtml>)
  - o Java tool, provides TOP like interface to the database
  - o resource intensive, but interactive





# Tuning Tools

- ❖ SQLGotcha ([http://www.marcel-jan.nl/oracle/scripts/oracle\\_script\\_sqlgotcha.html](http://www.marcel-jan.nl/oracle/scripts/oracle_script_sqlgotcha.html))
  - o helps you trace a session in Oracle, by tracking down sid & serial# for you
- ❖ Iometer (<http://www.iometer.org/>)
  - o Linux, Win32, Netware, Solaris
  - o stress testing
  - o monitoring



# User Interface Tools

- ❖ rlwrap (<http://utopia.knoware.nl/~hlub/uck/rlwrap/>)
  - o provides command completion, history for applications which use the readline() call
- ❖ gqplus (<http://gqplus.sourceforge.net/>)
  - o SQL\*Plus replacement
- ❖ phporaadmin (<http://phporaadmin.sourceforge.net/>)
  - o based on phpMyAdmin
- ❖ yasql (<http://yasql.sourceforge.net/>)
  - o SQL\*Plus replacement

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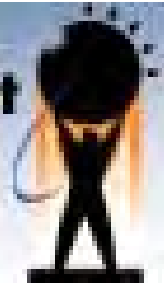
# Developer Tools

- ❖ orace (<http://orace.sourceforge.net/>)
  - o Oracle Code Editor, color editing, debugging
- ❖ hammerora (<http://hammerora.sourceforge.net/>)
  - o stress test your database
  - o perform TPC-C benchmarks
  - o 8i, 9i, 10g



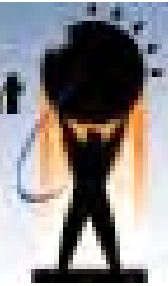
# Developer Tools

- ❖ schemadiff (<http://sourceforge.net/projects/schemadiff/>)
  - o compare two schemas in a database
  - o Perl, DBI, Oracle::DDL library
- ❖ TOra (<http://sourceforge.net/projects/tora/>)
  - o toolkit for Oracle
  - o PL/SQL debugger, editor
  - o color editing
  - o schema browser



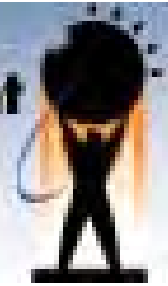
# Developer Tools

- ❖ LOG4PLSQL (<http://log4plsql.sourceforge.net/>)
  - o uses autonomous transaction
  - o log debug messages to files
  - o no rollback, exception interruption of messages
- ❖ utPLSQL (<http://utplsql.sourceforge.net/>)
  - o Steve Feuerstein's unit testing framework
- ❖ ProDBA (<http://prodba.sourceforge.net/>)
  - o java based color editor, schema browser



# Miscellaneous Tools

- ❖ OraRep (<http://www.izzysoft.de/?topic=oracle>)
  - o generate nice HTML formatted reports
  - o HTML reports from statspack
- ❖ m2o.pl  
(<http://www.pythian.com/news/papers/m2o.html>)
  - o script to migrate from MySQL to Oracle



# Open Source Databases

- ❖ MySQL (<http://www.mysql.com/>)  
triggers, stored procs, views, ACID in v5.x
- ❖ MaxDB (<http://www.mysql.com/products/maxdb/>)  
MySQL for SAP implementations
- ❖ Firebird (<http://firebird.sourceforge.net/>)  
based on Interbase, runs on Win32, Linux, HPUX,  
Solaris, FreeBSD  
triggers, stored procs, views, ACID

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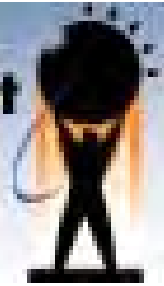
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# Open Source Databases

- 
- ❖ Postgres (<http://www.postgresql.org/>)  
triggers, views, stored procs, ACID
  - ❖ Ingres (<http://opensource.ca.com/projects/ingres>)



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# Open Source Databases

- ❖ Unlikely to follow the Linux path to ubiquity
- ❖ Follow a different history
- ❖ Most clients who are using MySQL want to switch to Oracle
- ❖ VLDB + Data Warehousing features very limited
- ❖ Backup, Standby, HA are non-trivial
- ❖ Will continue to feed the low-end market



# Software Repositories

- ❖ <http://sourceforge.net>
  - o cvs, downloads, homepages, forums etc
- ❖ <http://freshmeat.net>
  - o best repository of Open Source software
  - o search by keywords, categories
  - o sort by popularity, relevance
  - o links to homepage, contact developers
  - o license details



# Misc. Scripts + Tools

---

- ❖ Pete Finnigan (<http://petefinnigan.com>)
- ❖ Tom Kyte (<http://asktom.oracle.com>)
- ❖ Miracle (<http://www.miracleas.dk/>)
- ❖ OakTable (<http://oaktable.net>)
- ❖ <http://www.trivadis.ch/e/knowhow/downloads/index.asp>



# Various Lists

- ❖ Oracle-L (<http://www.freelists.org/webpage/oracle-l>)
- ❖ Lazy DBA (<http://www.lazydba.com/>)
- ❖ usenet: comp.databases.oracle.server
- ❖ usenet: comp.databases.oracle.misc



# Recommended Weblogs

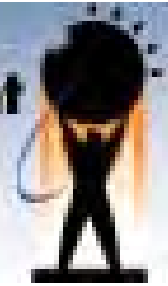
- ❖ AMIS Tech Corner (<http://technology.amis.nl/blog/>)
- ❖ David Aldridge (<http://oraclesponge.blogspot.com/>)
- ❖ Niall Litchfield (<http://www.niall.litchfield.dial.pipex.com/>)
- ❖ Mark Rittman (<http://www.rittman.net/>)



# Recommended Weblogs

- 
- ❖ Oracle + Open Source (<http://oracleopensource.com>)
  - ❖ Pete Finnigan  
(<http://www.petefinnigan.com/weblog/entries/>)

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# Contact Us

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- ❖ p 646 827 9877