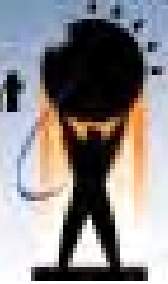# Open Source Tools for Oracle DBAs

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
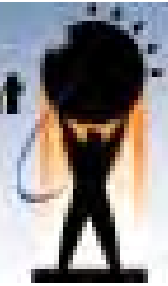- 2003 – All Oracle products run on Linux

System Monitoring with Nagios

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

System Monitoring with Nagios

Heavyweight Internet Group

Nagios - Netscape

File Edit View Go Communicator Help

Back Forward Reload Home Search Netscape Print Security Shop Stop

Bookmarks Go to:

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
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
28	3	4	0

All Problems	All Types
7	35

Service Status Totals

Ok	Warning	Unknown	Critical	Pending
103	2	0	14	18
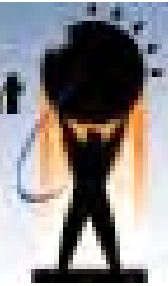
All Problems	All Types
16	137

Service Details For All Hosts

Host	Service	Status	Last Check	Duration	Attempt	Service Information
apps98	PING	OK	07-15-2001 14:04:09	4d 4h 7m 13s	1/3	PING ok - Packet loss = 0%, RTA = 0.60 ms
bogusmouse	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)
	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
	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
	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
	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
	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...
	TCP Wrappers	PENDING	N/A	4d 3h 38m 2s+	0/1	Service check is not scheduled for execution...
	Security Alerts	PENDING	N/A	4d 3h 38m 2s+	0/1	Service check is not scheduled for execution...
	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
	Security Alerts	PENDING	N/A	4d 3h 38m 2s+	0/1	Service check is not scheduled for execution...
	TCP Wrappers	PENDING	N/A	4d 3h 38m 2s+	0/1	Service check is not scheduled for execution...
	Log Anomalies	PENDING	N/A	4d 3h 38m 2s+	0/1	Service check is not scheduled for execution...

Document: Done

System Monitoring with Nagios

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
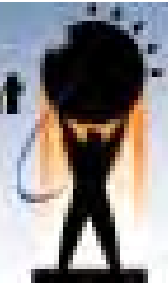- ❖ Integrates easily with Nagios

Version Control with CVS

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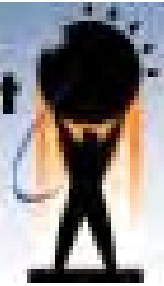- Branches, commit, checkout etc.
- http://www.cvshome.org

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

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

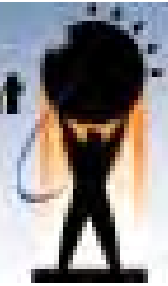- ❖ NMap
  scan servers for open ports
  Oracle listener, ssh, smtp, http etc

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
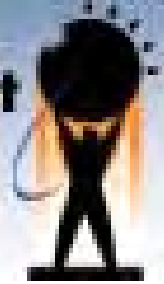
Real Application Clusters
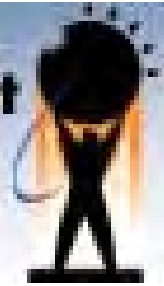
❖ RedHat's GFS vs OCFS

❖ CentOS for RedHat Distros w/o Support

❖ XenSource.com – free VMWare

Real Application Clusters

❖ 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)
  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

- ❖ gqlplus (http://gqlplus.sourceforge.net/)
  o SQL*Plus replacement

- ❖ phporaadmin (http://phporaadmin.sourceforge.net/)
  o based on phpMyAdmin

- ❖ yasql (http://yasql.sourceforge.net/)
  o SQL*Plus replacement

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
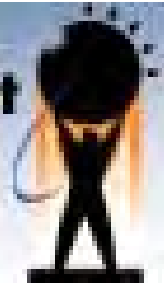
Developer Tools

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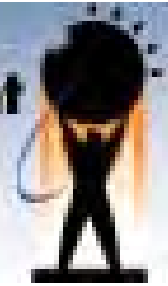 o uses autonomous transaction
  o log debug messages to files
  o no rollback, exception interruption of messages
- ❖ utPLSQL (http://utplsql.sourceforge.net/)
  o Steve Feuerstein's unit testing framework
- ❖ ProDBA (http://prodba.sourceforge.net/)
  o java based color editor, schema browser

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

Open Source Databases

- Postgres (http://www.postgresql.org/) triggers, views, stored procs, ACID
- Ingres (http://opensource.ca.com/projects/ingres)
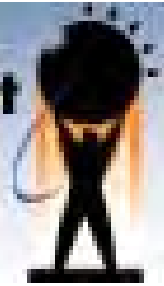
Open Source Databases

- 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

Open Source 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/)

Contact Us

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- ❖ p 646 827 9877