Improve Performance & Comply with Sarbanes-Oxley

Meeting Compliance Requirements While Delivering Performance & Service

Presented by:

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www.teleran.com

Agenda

- Compliance and Performance Demands
- Combining Oracle 10G Automatic Workload Repository and Teleran Usage Management to Meet Demands
- Case Studies

Compliance Challenge

- Requires changes to business process & IT systems to comply to multiple US and international regulations
- Companies must “attest” or document their compliance
- Fewer than half of US companies have or automated their compliance to any extent*
- IT plays critical role in implementing internal control frameworks that maintain integrity & confidentiality

*** Note: Resources Audit Solutions Survey, DMReview, June 2005**

Compliance Regulations

Sarbanes-Oxley (SOX)

- Intended to ensure integrity of financial reporting in publicly traded companies
- Section 404 requires implementing, assessing effectiveness, & reporting on “adequate internal controls” to ensure compliance
- Controls include auditing and enforcing policies associated with accessing data from which financial reporting is derived

Compliance Regulations

Gramm-Leach Bliley (GLBA)

- Regulates the use & distribution of personal financial data in financial services organizations

BASEL II

- Sets explicit standards for auditing and protecting financial data for corporations doing business in the European Market

Compliance Regulations

HIPAA

- Applies to medical providers and insurers to ensure privacy & integrity of patient medical data

Corporate Governance

- Internal corporate policies established to maintain the integrity & security of corporate data

Database Professional's Challenge

- All these regulations have key data audit and data protection requirements
- Increases demand on database professionals
- And, performance and service level management requirements aren't going away
- Business Mandate: Protect the application and data while maintaining expected performance and service

We Wish Users Acted Like This…

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They Really Act Like This…

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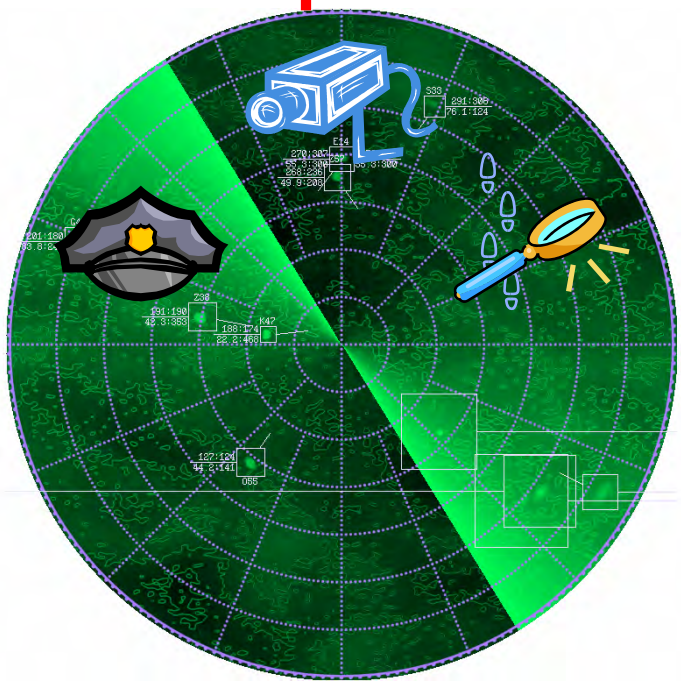
Compliance / Performance Imperative

Business expectations…

Compliance

Governance



Security

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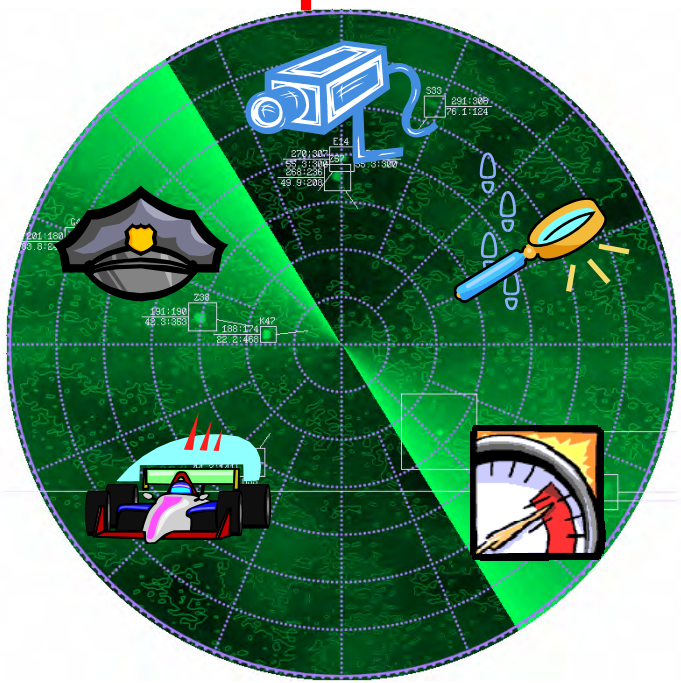
Compliance / Performance Imperative

Business expectations…

Compliance

Governance



Security

Performance

Service Mgmt

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Compliance and Performance Mgmt

A combination of tools can be used to ensure compliance and protection as well as performance and service

- Oracle 10G Automatic Workload Repository (AWR) for database performance management
- Teleran Application Usage Management audit and enforcement

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Compliance and Performance Mgmt

- AWR sits inside the database
- Teleran audit and enforcement sits outside the database
- AWR is database focused
- Teleran is user focused

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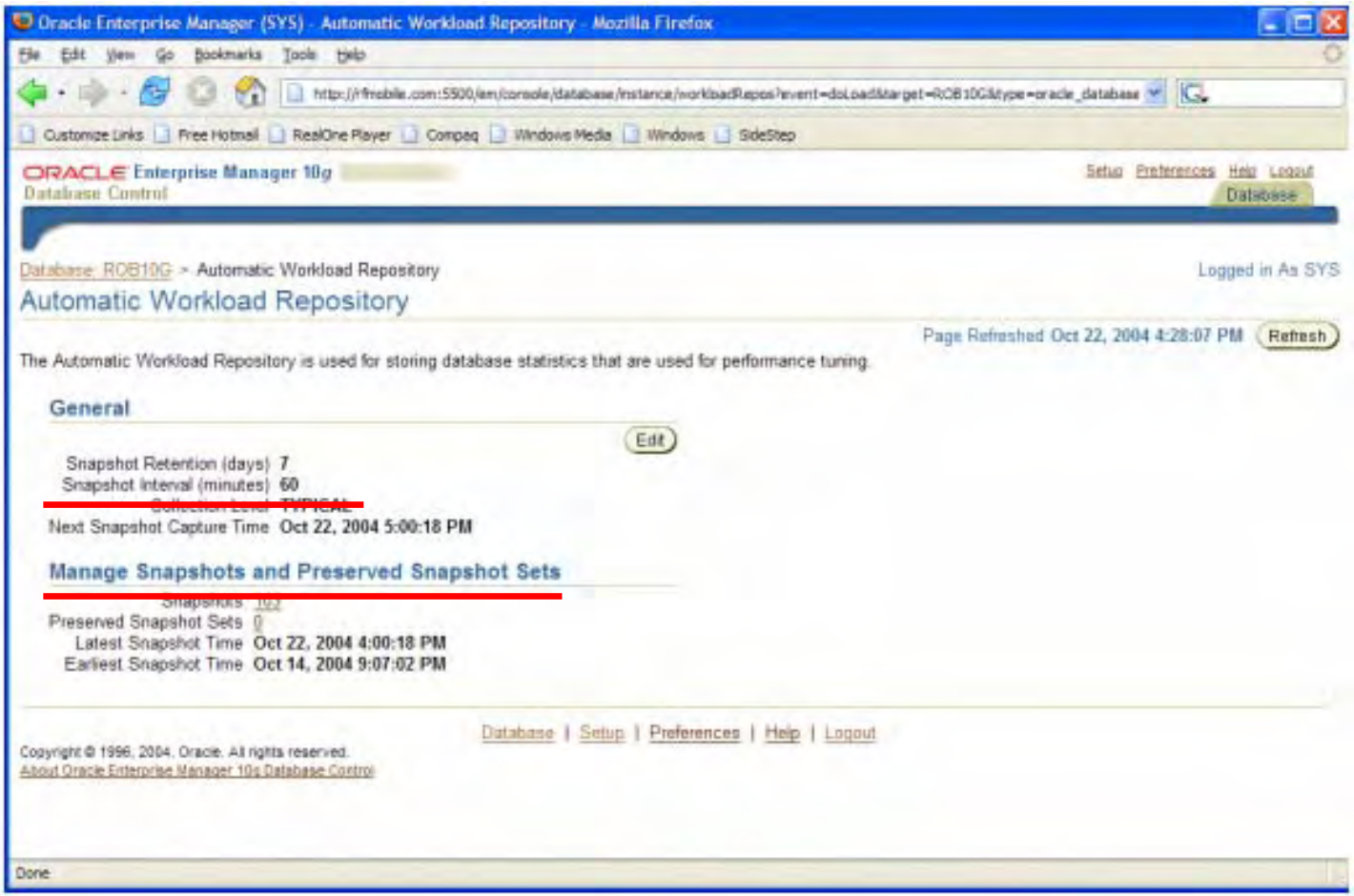
Automatic Workload Repository

Automatic Workload Repository in Oracle 10*g*

- In the past statistics in internal DB tables were reset on instance startup
- AWR automatically stores cumulative and delta values for a wide range of statistics
- AWR Snapshot - Collection of a data set
- Defaults: one snapshot per hour; data saved for 7 days
- AWR is automatically installed and configured

Automatic Workload Repository



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AWR Metrics

Used for diagnosis and performance tuning

- Object Statistics - Object access and usage statistics of application data segments including read and write activity and data waits
- Time-Model Statistics - Connection management, SQL statement parse, PL/SQL compilation and SQL and PL/SQL execution
- OS Statistics - CPU and memory utilization
- Wait Classes - I/O, CPU concurrency, COMMIT, and scheduler waits

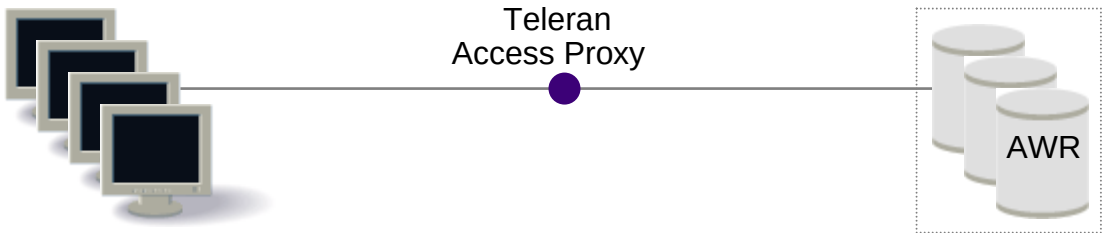
AWR Metrics

Used for diagnosis and performance tuning

- SQL Statistics - CPU and elapsed SQL execution times, wait-class times, and PL/SQL Java times
- System and Session Statistics - Collected and stored in the V$SYSSTAT and V$SESSTAT dynamic performance views
- Current Session Activity - The Active Session History component of the Automatic Database Diagnostic Monitor samples recent session activity

Teleran Usage Management

- Continuously audits, manages and guides how people use applications and data
- Operates as logical mid-tier access proxy between SQL generating applications and databases
- Can reside on the same physical server as the database or on a mid-tier web or application server



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Teleran Application Usage Mgmt

- What data are users looking at?
- What applications are they using?
- What inappropriate user behavior is occurring?
- How can I prevent this behavior?
- Are we in compliance?
- How can I better service business users?

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Teleran Usage Auditing

iSight™ continuously audits user activity query by query

- Captures SQL and result set metrics on the network
- Logs to any relational database on the network
- Includes out-of-the-box reports and analyses
- Audit for compliance and security

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Teleran Usage Management

iGuard™ prevents inappropriate, unauthorized, inefficient queries before they reach the database

- Rule-based policy engine enforces compliance & privacy policies at the database object level
- Prevents user errors that decrease performance, availability & productivity
- Reduces IT support staff demands

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Teleran User Guidance

Automated Helpdesk™ guides & alerts application users with real-time messages

- Advises users in real-time how to interact with data/application correctly & efficiently
- Automates end-user support, reducing help desk calls & minimizing training costs
- Increases end user productivity & performance

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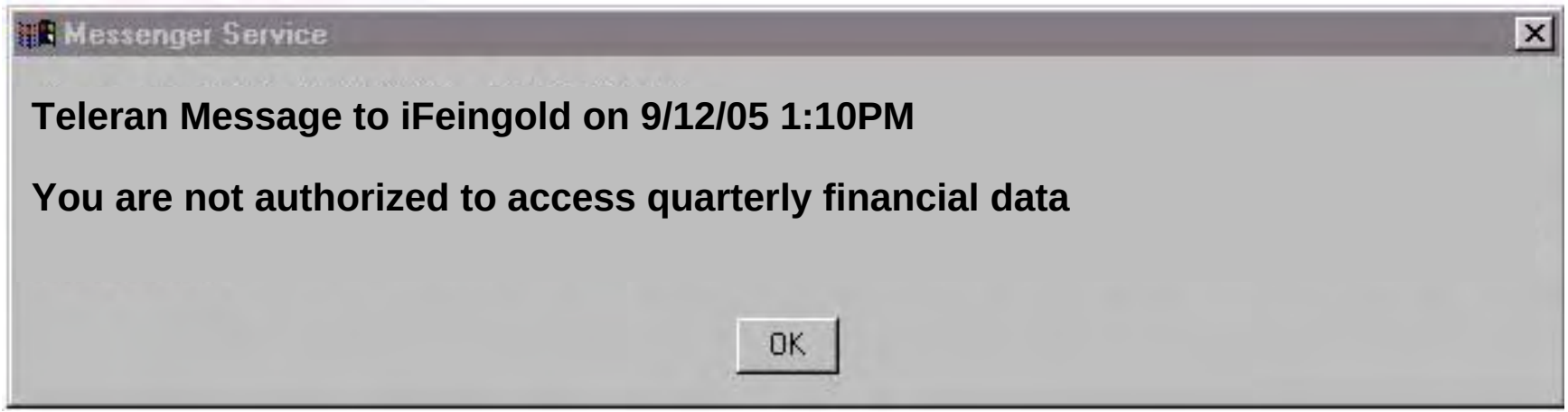
Teleran User Guidance

Automated Helpdesk message to user



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Teleran User Guidance

Trains users, protects resources, increases user productivity

Enforcement	"You do not have authorization to access employee salary data."
Performance	"This query will run for more than 180 minutes. Please schedule your query overnight."
Accuracy	"Joining tables A and B will produce incorrect results. Try again using tables A and C."
Alerts	"A data security policy has been activated 3 times by user x. Check audit report for more details."

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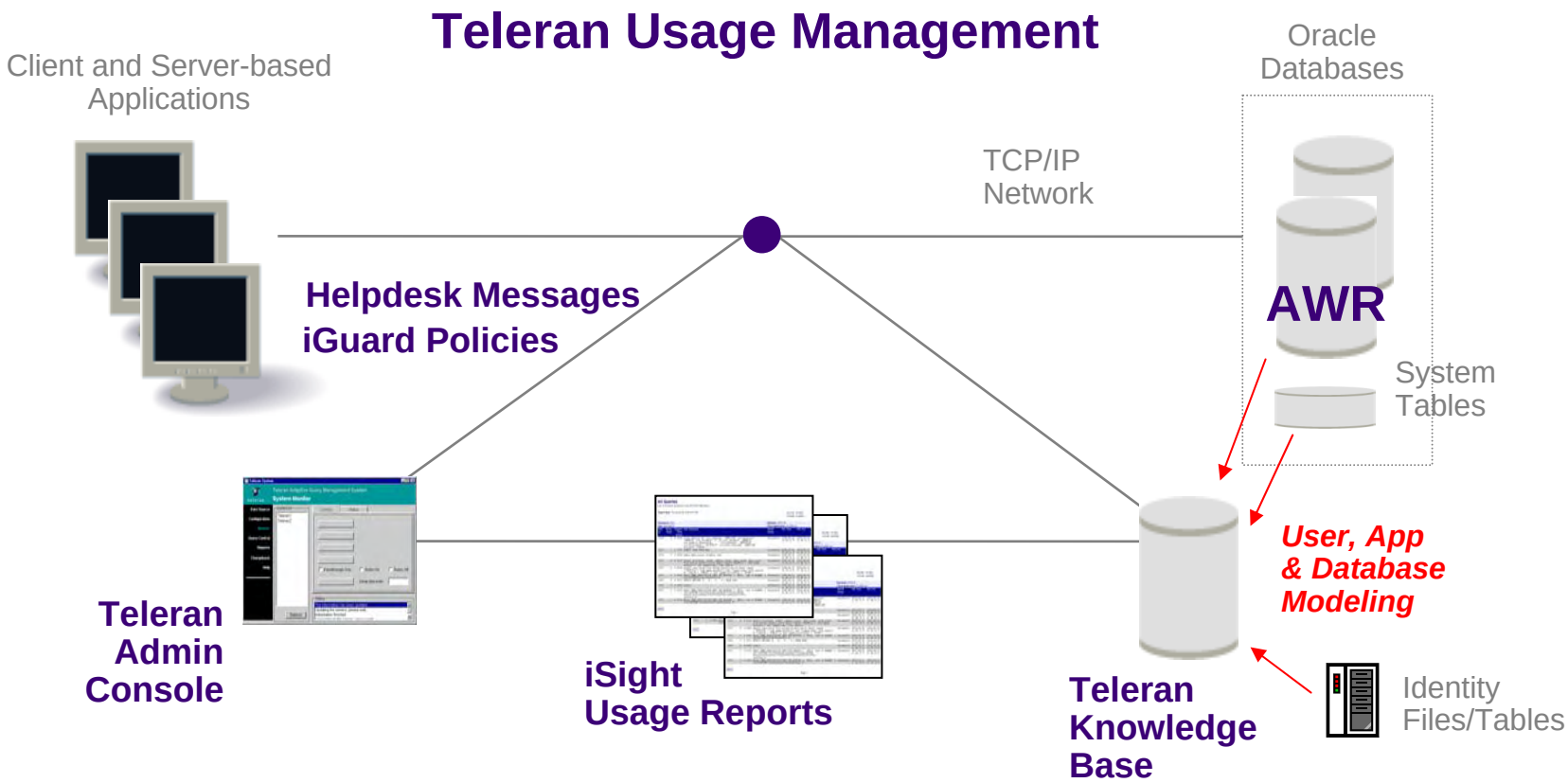
Components & Process



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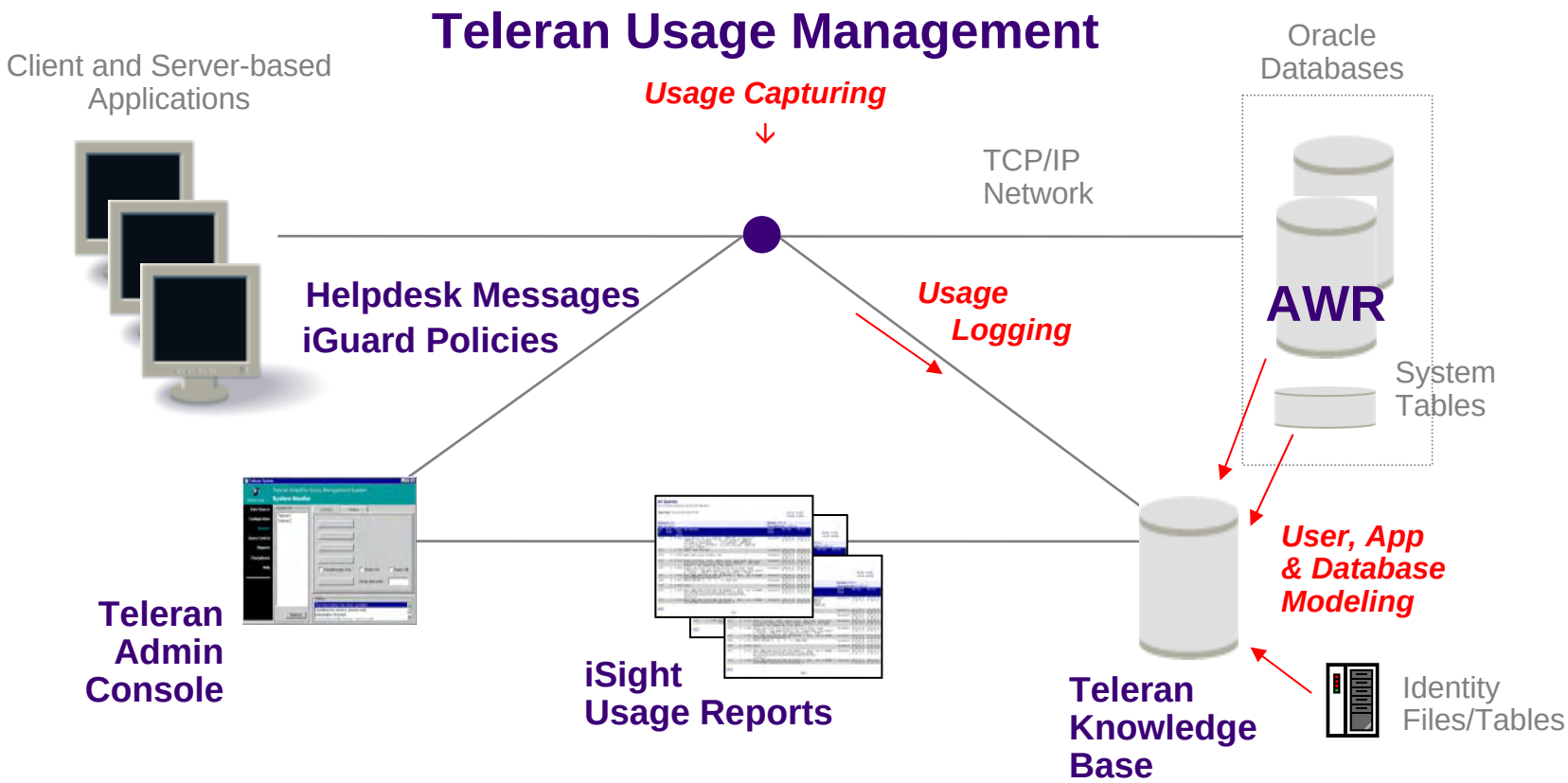
Components & Process



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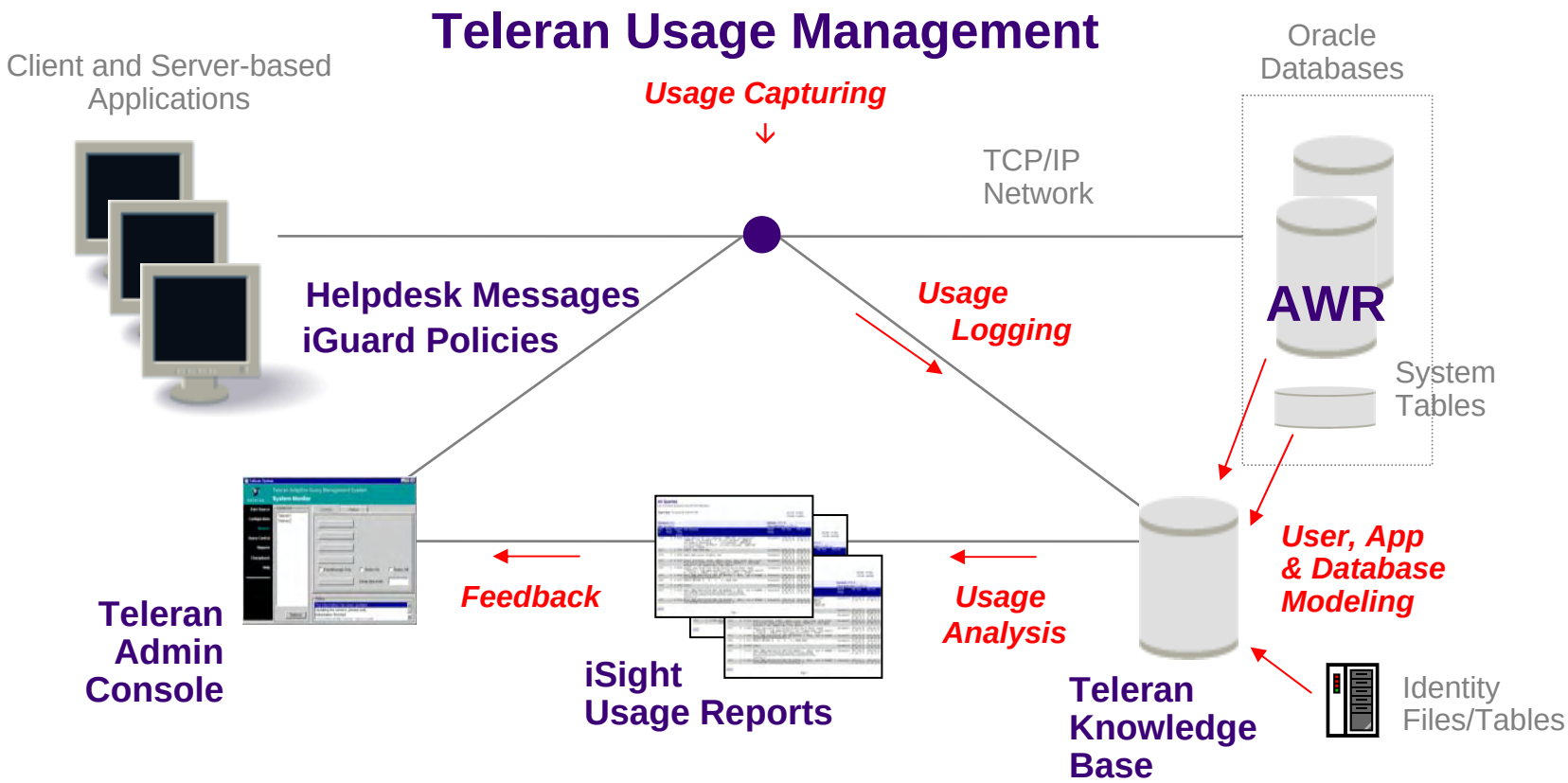
Components & Process



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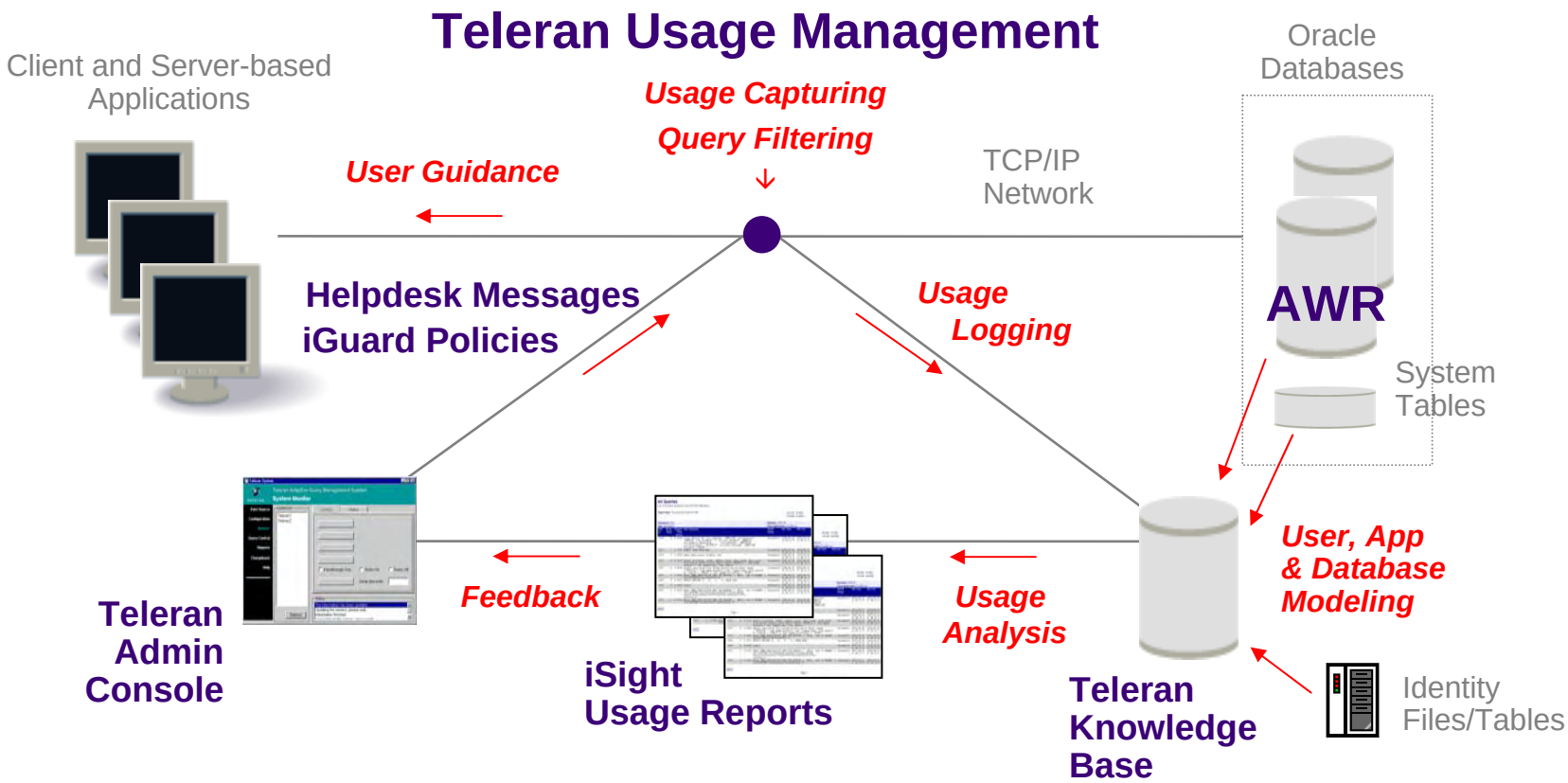
Components & Process



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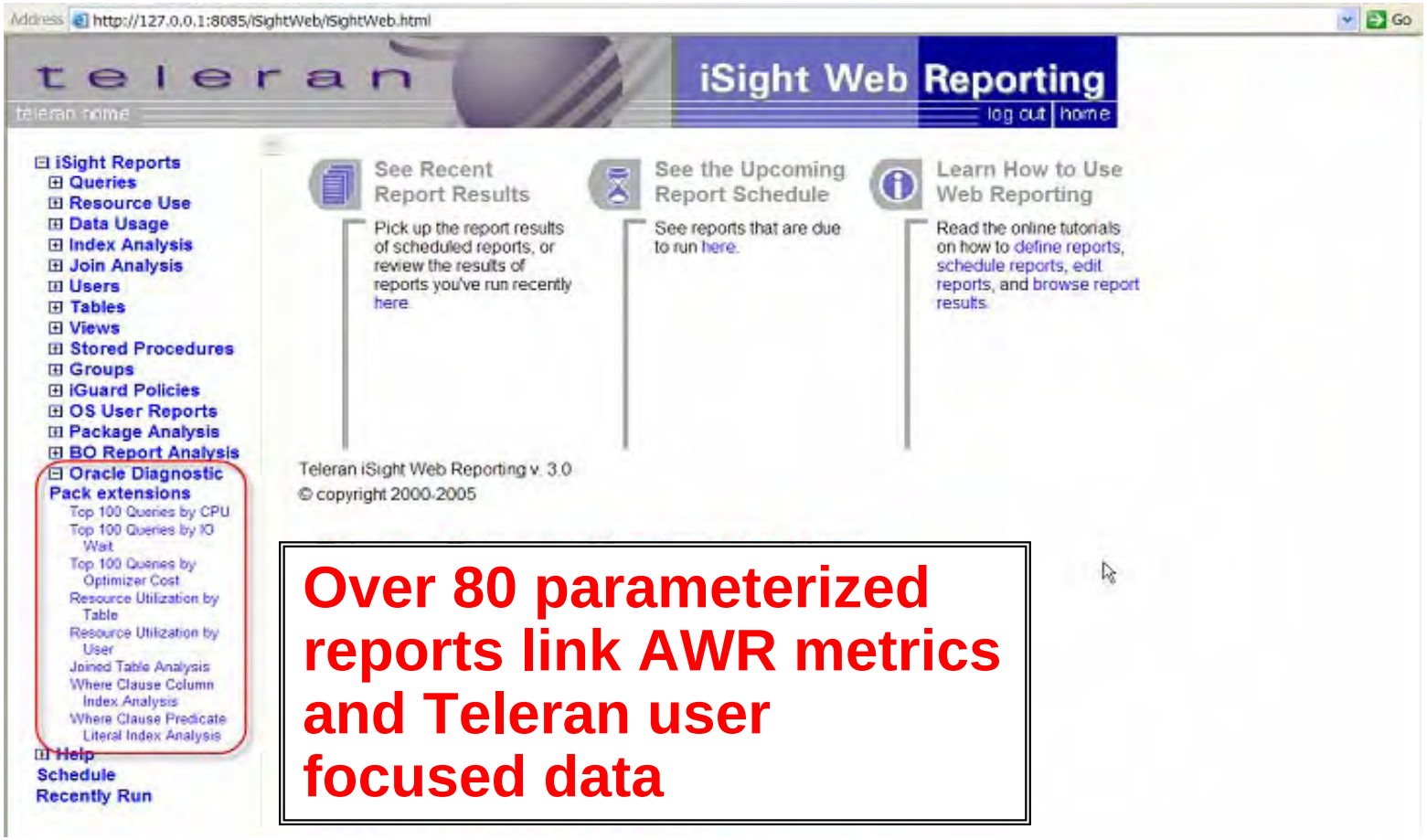
iSight Usage Reporting



Over 80 parameterized reports link AWR metrics and Teleran user focused data

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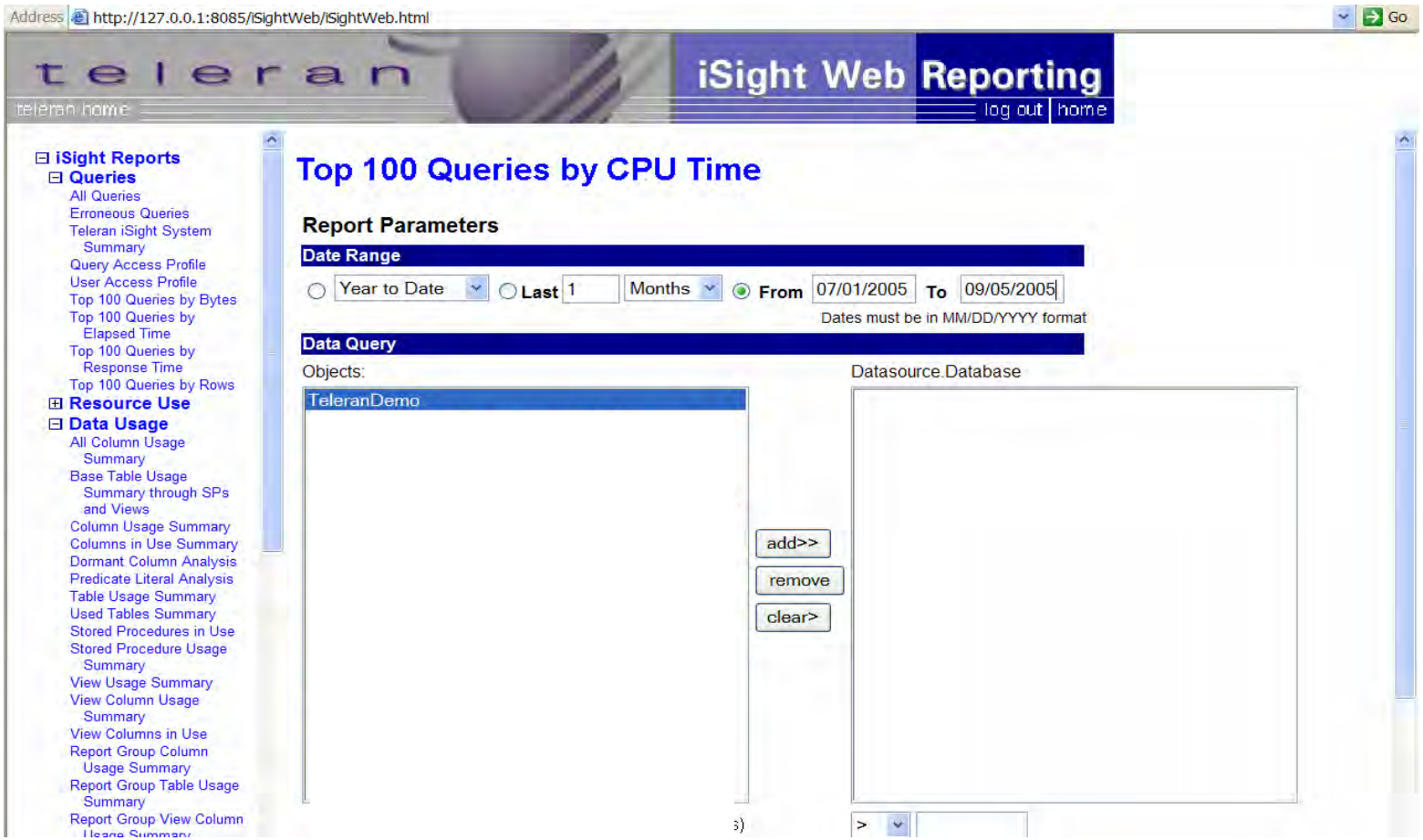
Combines AWR & User Metrics



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Identifying High Cost Queries

Top 100 Queries by CPU Time - Oracle Diagnostic Pack Edition

Report Date: Fri Aug 12 11:01:16 EDT 2005

Start Date: 7/12/2005
End Date: 8/12/2005

Download CSV

Datasource	Database	Number of Executions	CPU Time (Seconds)	Response Time (Seconds)	SQL Statement	SQL Start
TeleranDemo	ORACLE	69	360.06	423.6	select cu.customername, cu.eveningphonenumber, co.shipmentdaterequested, co.totalamount, o.shipmentdate, o.backorderflag, sm.shipmentname, s.insuredamount, s.insuredvalue from orders.customer cu, orders.customerorder co, orders.orderfact o,orders.shipment s, orders.shipmentmethod sm where cu.customerid = co.customerid and co.orderid = o.orderid and o.shipmentid = s.shipmentid and s.shipmentmethodid = sm.shipmentmethodid and s.insuredvalue = (select max (insuredvalue) from orders.shipment)	
TeleranDemo	ORACLE	4387	359.21	422.6	select cu.state, co.discount, ot.day_of_week, ot.month, ot.quarter_name from orders.ordertime ot, orders.customer cu, orders.customerorder co, orders.orderfact o where cu.customerid = co.customerid and co.orderid = o.orderid and o.orderdate = ot.timeid and ot.quarter_name = 'Quarter 3'	
TeleranDemo	ORACLE	116	268.09	315.4	s	
TeleranDemo	ORACLE	244	231.54	272.4	s f o o	
TeleranDemo	ORACLE	119	227.29	267.4	select distinct shipmentdate from orders.shipment	
TeleranDemo	ORACLE	116	226.44	266.4	select distinct cu.zipcode from finance.customer cu, finance.transactionfact tf, finance.transactiontime tt where cu.customerid = tf.customerid and tf.timeid = tt.timeid and tt.day_of_week = 'Wednesday'	

Note that queries with a high response time have a correspondingly high CPU time

Identifies each discrete SQL statement that took more than 200 CPU seconds

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Users Who Generate High IO

Top 100 Queries by IOWait - Oracle Diagnostic Pack Edition

Report Date: Fri Aug 12 11:03:04 EDT 2005

Identify what users and queries are generating high IO waits

Start Date: 7/12/2005
End Date: 8/12/2005

Download CSV

Datasource	Database	User	IO Wait (seconds)	SQL Statement	SQL Start
TeleranDemo	ORACLE	GCURIOUS	510.05	select distinct(cu.customername) Customer, count(co.taxexemptflag) Tax_Exempt_Orders from orders.customer cu, orders.customerorder co where co.customerid = cu.customerid and co.taxexemptflag= 1 group by cu.customername	2005-08-10 23:31:27.0
TeleranDemo	ORACLE	MRICHTER	177.83	select cu.firstname, cu.lastname, cu.streetaddress, cu.city, cu.state, cu.zipcode, t.quantity, a.assetsymbol, a.assetname from finance.customer cu, finance. and a.as	2005-08-10 23:27:26.0
TeleranDemo	ORACLE	MWILSON	156.35	select d orders.c p where o.produc	2005-08-10 23:25:29.0
TeleranDemo	ORACLE	DHENDERSON	156.34	select c orders.o orders.o o.orderid and o.orderdate = ot.timeid and ot.quarter_name like 'Quarter_2' order by ot.month, co.discount	2005-08-10 23:24:06.0
TeleranDemo	ORACLE	GCURIOUS	147.05	select count(*) from orders.orderfact where quantityintransit < (select avg (quantityintransit) from orders.orderfact)	2005-08-10 23:29:34.0
TeleranDemo	ORACLE	HR	147.01	select firstname, lastname, streetaddress, city, state, zipcode, incomecategory from finance.customer where age > 50 and propertyowner like 'YES' and state in ('CA','NY','NJ','NM') and education in ('Doctorate','Masters Degree') order by incomecategory	2005-08-10 23:20:21.0
TeleranDemo	ORACLE	GCURIOUS	115.91	select count(*) from orders.orderfact where quantityintransit < (select min (quantityintransit) from orders.orderfact)	2005-08-10 23:29:33.0

IOWait column identifies average IOWait for a SQL statement by user GCurious

Detailed Usage Metrics by User

Top 100 Queries by Optimizer Cost - Oracle Diagnostic Pack Edition

Report Date: Fri Aug 12 11:05:10 EDT 2005

Start Date: 7/12/2005
End Date: 8/12/2005

Download CSV

Datasource	Database	User	Optimizer Cost	Optimizer Mode	SQL Statement	SQL Start
TeleranDemo	ORACLE	WJONES	2609	CHOOSE	select firstname, lastname, streetaddress, city, state, zipcode, incomecategory, profession from finance.customer where profession like 'Wedding Coordinator' and maritalstatus = 'Single'	2005-08-10 23:31:29.0
TeleranDemo	ORACLE	DHENDERSON	2320	CHOOSE	select sm.shipmentname Shipper, sm.freight Shipping_Cost, sh.shipmentdate Date_Shipped, sh.deliverydate Date_Delivered from orders.shipmentmethod sm, orders.shipment sh where sm.shipmentmethodid = sh.shipmentmethodid and sm.shipmentname like 'Fedex' and sm.freight = (select max(freight) from	2005-08-10 23:25:00.0
TeleranDemo	ORACLE	DHENDERSON	841	CHOOSE	se	005-08-10 3:21:49.0
TeleranDemo	ORACLE	MWILSON	841	CHOOSE	se	005-08-10 3:25:52.0
TeleranDemo	ORACLE	MWILSON	841	CHOOSE	select distinct(v.vendorname) Manufacturer, count(o.returnedflag) Orders_Returned from orders.orderfact o, orders.product p, orders.vendor v where o.productid = p.productid and p.vendorid = v.vendorid and o.returnedflag = 1 group by v.vendorname order by count(o.returnedflag)	2005-08-10 23:25:57.0
TeleranDemo	ORACLE	GCURIOUS	841	CHOOSE	select distinct(cu.customername), p.productrecallflag, count (o.orderid) from orders.customer cu, orders.customerorder co, orders.orderfact o, orders.product p where cu.customerid = co.customerid and co.orderid = o.orderid and o.productid = p.productid group by cu.customername, p.productrecallflag	2005-08-10 23:30:09.0

"WJones ran a high cost query on August 10"

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Summary Usage Reporting by Object

Resource Utilization Summary by Table - Oracle Diagnostic Pack Edition

(Summary of Table activities grouped by database)

Report Date: Fri Aug 12 11:06:57 EDT 2005

Start Date: 7/12/2005
End Date: 8/12/2005

Download CSV

Datasource: TeleranDemo **Database:** ORACLE

Table	Avg Sharable Memory(kb)	Avg CPU Time(sec)	Avg IO Wait (sec)	Avg Optimizer Cost	Total Accesses	First Time Accessed	Last Time Accessed
ORDERS.VENDOR	28.9	22.42	0.11	41.96	29	2005-08-10 23:21:09.0	2005-08-10 23:30:07.0
ORDERS.PRODUCT	26.53	14.77	5.68	47.31	48	2005-08-10 23:21:09.0	2005-08-10 23:32:07.0
ORDERS.CUSTOMER	26.03	12.94					5-08-10 32:16.0
ORDERS.SHIPMENT	25.39	12.58					5-08-10 32:10.0
ORDERS.INVENTORY	21.34	1.42					5-08-10 29:17.0
ORDERS.ORDERFACT	24.67	13.19	6.31	71.75	129	2005-08-10 23:20:14.0	2005-08-10 23:32:07.0
ORDERS.ORDERTIME	23.01	5.29	6.93	111.75	44	2005-08-10 23:21:11.0	2005-08-10 23:32:02.0
ORDERS.PRICELIST	17.41	93.31	0.01	1.16	6	2005-08-10 23:21:10.0	2005-08-10 23:31:49.0
ORDERS.TERRITORY	19.58	177.31	2.38	209.0	1	2005-08-10 23:20:36.0	2005-08-10 23:20:36.0
ORDERS.RETURNCODE	25.8	1.48	0.04	5.28	7	2005-08-10 23:21:09.0	2005-08-10 23:28:51.0
ORDERS.CUSTOMERORDER	26.08	12.47	12.69	90.24	86	2005-08-10	2005-08-10

"We have some high resource use tables"

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User Resource Consumption

Resource Utilization Summary by User - Oracle Diagnostic Pack Edition

(Summary of User activities grouped by database)

Report Date: Fri Aug 12 11:07:39 EDT 2005

Identify user activity along with what resources are being used. Each report can easily be resorted to identify 'heaviest users'.

Start Date: 7/12/2005
End Date: 8/12/2005

Download CSV

Datasource: TeleranDemo **Database:** ORACLE

User	Avg Optimizer Cost	Avg CPU Time (sec)	Avg Sharable Memory(kb)	Avg IO Wait (sec)	Total Queries	First Accessed	Last Accessed
DHENDERSON	57.9	9.07	22.42	1.9	85	2005-08-10 23:21:05.0	2005-08-10 23:25:28.0
GCURIOUS	56.7	17.35	23.41	15.26	60	2005-08-10 23:29:32.0	2005-08-10 23:32:10.0
HR	32.15	26.56					
MRICHTER	16.22	20.32					
MWILSON	92.97	14.83					
ORDERS	67.56	9.88	25.81	4.07	64	2005-08-10 23:17:36.0	2005-08-11 09:48:07.0
WJONES	130.18	23.02	27.76	5.49	22	2005-08-10 23:30:12.0	2005-08-10 23:31:40.0

"User WJones has been running more high cost queries"

Database Summary

Number of Users	Avg Kbytes	Avg Rows	Avg Elapsed Time (sec)	Avg Response Time (sec)	Total Accesses
7	15.05	66	6.37	24.38	361

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Common Join Patterns by Object

Joined Table Analysis - Oracle Diagnostics Pack Edition

(Summary of the number of accesses for each joined table pair)

Report Date: Fri Aug 12 11:10:36 EDT 2005

Start Date: 7/12/2005
End Date: 8/12/2005

Download CSV

Datasource: TeleranDemo **Database:** ORACLE

Primary Table	Joined Table	Times Joined	Avg CPU Time (sec)	Avg Response Time (sec)	First Joined	Last Joined
ORDERS.CUSTOMER	ORDERS.CUSTOMERORDER	81	12.86	97.26	2005-08-10 23:20:14.0	2005-08-10 23:32:16.0
ORDERS.CUSTOMERORDER	ORDERS.CUSTOMER	81	12.86	97.26	2005-08-10	2005-08-10
ORDERS.CUSTOMER	ORDERS.ORDERFACT	66	14.74			
ORDERS.ORDERFACT	ORDERS.CUSTOMERORDER	66	14.74			
ORDERS.CUSTOMERORDER	ORDERS.ORDERFACT	66	14.74			
ORDERS.ORDERFACT	ORDERS.CUSTOMER	66	14.74			
ORDERS.PRODUCT	ORDERS.ORDERFACT	47	15.86	50.18	2005-08-10 23:21:09.0	2005-08-10 23:32:07.0
ORDERS.ORDERFACT	ORDERS.PRODUCT	47	15.86	50.18	2005-08-10 23:21:09.0	2005-08-10 23:32:07.0
FINANCE.CUSTOMER	FINANCE.TRANSACTIONFACT	44	26.87	60.86	2005-08-10 23:17:37.0	2005-08-11 09:48:07.0
FINANCE.TRANSACTIONFACT	FINANCE.CUSTOMER	44	26.87	60.86	2005-08-10	2005-08-11
ORDERS.ORDERFACT	ORDERS.ORDERTIME	41	5.46	87.88	2005-08-10	2005-08-10

"Some of these join patterns may be driving up resource costs"

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Common Predicate Literals Used

Where Clause with Predicate Literal Analysis - Oracle Diagnostic Pack Edition

(Analysis of columns used in WHERE clause with reference to the predicates associated with literals and whether the column is indexed)

Report Date: Fri Aug 12 11:11:45 EDT 2005

Start Date: 7/12/2005
End Date: 8/12/2005

Download CSV

Datasource: TeleranDemo **Database:** ORACLE
Schema: ORDERS **Table/View:** PRODUCT

Column	Predicate Literal	Times Used	Predicate Usage %	First Used	Last Used	Indexed?	Avg IO Wait(sec)
AVAILABILITYFLAG	= 0	10	63%	2005-08-10 23:21:44.0	2005-08-10 23:32:07.0	NO	4.015
AVAILABILITYFLAG	= 1	6	38%	2005-08-10 23:24:31.0	2005-08-10 23:29:15.0	NO	0.05

Datasource: TeleranDemo **Database:** ORACLE
Schema: ORDERS **Table/View:** PRODUCT

Column	Predicate Literal	Times Used	Predicate Usage %	First Used	Last Used	Indexed?	Avg IO Wait(sec)
PRODUCTRECALLFLAG	= 1	2	100%	2005-08-10	2005-08-10	NO	10.215

Datasource: TeleranDemo
Schema: ORDERS

Column	Predicate Literal	Times Used	Predicate Usage %				
STATE	IN 'CA'	4	18%				
				23:25:18.0	23:30:11.0		

"Tracking predicates use can assist with both compliance and data usage"

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SOX Compliance

"This financial data has direct impact on our financial reporting.

Sarbanes Oxley Section 404 requires that its use must be audited."

Column Usage Summary

(Summary of the column usage grouped by table and column includ

Report Date: Tue Jan 06 15:47:04 EST 2004

1 2 3 4 5 6 7 8 9 10 11

Datasource	Database	Schema	Table	Colum					
Demo_DW	ORACLE	FINANCE	ASSET	ASSETID	1507	2003-07-07 08:36:11.0	2003-12-22 11:58:15.0	NUMBER	YES
Demo_DW	ORACLE	FINANCE	ASSET	ASSETNAME	1453	2003-07-07 08:36:11.0	2003-10-05 15:10:09.0	VARCHAR2	NO
Demo_DW	ORACLE	FINANCE	ASSET	ASSETSYMBOL	545	2003-07-07 09:59:01.0	2003-10-05 15:06:07.0	VARCHAR2	NO
Demo_DW	ORACLE	FINANCE	ASSET	ASSETTYPE	245	2003-07-07 08:48:07.0	2003-11-19 23:27:03.0	VARCHAR2	NO
Demo_DW	ORACLE	FINANCE	ASSET	ISSUERNAME	120	2003-07-10 08:29:43.0	2003-09-11 09:41:07.0	VARCHAR2	NO
Demo_DW	ORACLE	FINANCE	ASSET	ASSETRISKWEIGHT	26	2003-07-07 12:32:40.0	2003-10-04 17:28:08.0	NUMBER	NO
Demo_DW	ORACLE	FINANCE	ASSET	ISSUERTYPE	13	2003-08-18 08:00:16.0	2003-09-09 13:48:18.0	VARCHAR2	NO
Demo_DW	ORACLE	FINANCE	ASSET	ROWID	1	2003-08-26 14:15:06.0	2003-08-26 14:15:06.0	ROWID	NO
Demo_DW	ORACLE	FINANCE	ASSET	LEVEL	Not Accessed			NUMBER	NO
Demo_DW	ORACLE	FINANCE	ASSET	ROWNUM	Not Accessed			NUMBER	NO
Demo_DW	ORACLE	FINANCE	CREDITLINE	LOANID	833	2003-07-07 08:36:02.0	2003-09-12 14:03:31.0	NUMBER	YES
Demo_DW	ORACLE	FINANCE	CREDITLINE	LOANTYPE	781	2003-07-07 08:36:02.0	2003-09-12 14:03:31.0	VARCHAR2	NO
Demo_DW	ORACLE	FINANCE	CREDITLINE	OUTSTANDINGAMOUNT	678	2003-07-07 08:36:02.0	2003-09-12 14:03:31.0	NUMBER	NO
Demo_DW	ORACLE	FINANCE	CREDITLINE	INITIALCREDITAMOUNT	273	2003-07-07 08:41:17.0	2003-09-12 14:03:31.0	NUMBER	NO
Demo_DW	ORACLE	FINANCE	CREDITLINE	INTERESTRATE	235	2003-07-07 12:45:58.0	2003-09-12 09:11:12.0	NUMBER	NO

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Corporate Governance

"These employees are authorized to view social security information."

Social Security Column Use

(Details of column usage grouped by table and column)

Report Date: Fri Jan 05 11:02:42 EST [illegible]

Datasource: QADB **Database:** ORACLE

Table: TTQA.DELIVERYINFO **Column:** SS#

User	SQL Id	Elapsed time(secs)	Response time(secs)	Rows Returned	Bytes Returned	SQL Start
FBURKE	114	0.1010	0.0070	0	297	2000-08-16 12:34:22.0
FBURKE	140	0.0950	0.0020	0	297	2000-08-16 12:36:03.0
FBURKE	179	0.0960	0.0020	0	297	2000-08-16 12:43:37.0
FBURKE	357	0.1040	0.0020	0	297	2000-08-16 12:48:19.0
FBURKE	533	0.1190	0.0040	0	299	2000-08-16 13:29:14.0
FBURKE	900	0.1090	0.0020	0	299	2000-08-17 11:14:36.0
FBURKE	1261	0.1080	0.0010	0	299	2000-08-18 10:53:41.0
FBURKE	1445	0.10	0.0020	0	299	2000-08-18 11:28:36.0
JPHILLIPS	214	0.1030	0.0060	0	321	2000-08-16 12:44:34.0
JPHILLIPS	312	0.15	0.0030	0	321	2000-08-16 12:47:30.0

NEXT

Page 1

Application Auditing

"A very large number of queries were run using PLUS80.

Business Objects is now our authorized BI tool."

Client Application Usage Summary

(Summary of users grouped by client application)

Report Date: Wed Jan 07 14:53:35 EST 2004

Client Application	Datasource	Database	U
VAW.EXE	Demo_DW	ORACLE	C

Client Application ORACLE_DB has been used by 2 users

Client Application	Datasource	Database	User	Total Queries	First Time Accessed	Last Time Accessed
ORACLE_DB	Demo_DW	ORACLE	JMURRY	3	2003-07-23 10:52:16.0	2003-07-23 10:53:16.0
ORACLE_DB	Demo_DW	ORACLE	JRUSSO	23	2003-07-23 10:25:28.0	2003-07-23 10:49:58.0

Client Application ORACLE_DB has been used by 2 users

Client Application	Datasource	Database	User	Total Queries	First Time Accessed	Last Time Accessed
PLUS80.EXE	Demo_DW	ORACLE	DBALES	4183	2003-07-07 08:34:41.0	2003-07-31 18:22:18.0
PLUS80.EXE	Demo_DW	ORACLE	JMURRY	1940	2003-07-07 08:41:16.0	2003-07-31 16:19:42.0
PLUS80.EXE	Demo_DW	ORACLE	JRUSSO	1933	2003-07-07 12:10:35.0	2003-07-31 13:26:15.0
PLUS80.EXE	Demo_DW	ORACLE	PLADIN	1187	2003-07-07 08:48:02.0	2003-07-31 16:44:47.0
PLUS80.EXE	Demo_DW	ORACLE	BWILLIS	359	2003-07-22 13:32:45.0	2003-07-30 15:49:38.0
PLUS80.EXE	Demo_DW	ORACLE	QBROOKS	4422	2003-07-08 07:43:07.0	2003-07-31 10:32:42.0
PLUS80.EXE	Demo_DW	ORACLE	ABRACKER	364	2003-07-11 13:05:04.0	2003-07-30 17:12:47.0
PLUS80.EXE	Demo_DW	ORACLE	DRAISMAN	84	2003-07-07 05:12:51.0	2003-07-07 07:07:13.0
PLUS80.EXE	Demo_DW	ORACLE	GCURIOUS	1266	2003-07-07 08:40:48.0	2003-07-23 17:52:34.0
PLUS80.EXE	Demo_DW	ORACLE	ANINFOSURFER	408	2003-07-11 13:34:43.0	2003-07-31 17:04:42.0

Client Application PLUS80.EXE has been used by 10 users

Service Level Reporting

Resource Utilization Summary by User Group

(Summary of user activities grouped by datasource for selected groups)

Report Date: Wed Jan 07 15:59:51 EST 2004

Start Date: 01/01/2003
End Date: 07/31/2003

Datasource: Demo_DW

Group: Claims — Group Level: Datasource - Demo_DW

User	Avg Kbytes	Avg Rows	Avg Elapsed Time (sec)	Avg Response Time (sec)	Total Accesses	First Accessed	Last Accessed
DBALES	0.19	1	0.77	0.72	261	2003-07-07 08:34:42.0	2003-07-31 18:21:41.0

Group Summary

Number of Users	Avg Kbytes	Avg Rows	Avg Elapsed Time (sec)	Avg Response Time (sec)	Total Accesses
1	0.19	1	0.77	0.72	261

Group: Accounting — Group Level: Datasource - Demo_DW

User	Avg Kbytes	Avg Rows	Avg Elapsed Time (sec)	Avg Response Time (sec)	Total Accesses	First Accessed	Last Accessed
BWILLIS	154.79	4969					7.0
ABRACKER	0.19	0					3.0
ANINFOSURFER	0.19	1					9.0

Group Summary

Number of Users	Avg Kbytes	Avg Rows	Avg Elap
3	56.79	1820	

"Both response time and elapsed time are within the Claims Department SLA."

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Data Use

"These tables have not been accessed this month.

Let's archive this data to reduce storage and data maintenance."

Table Usage Summary

(Summary of table usage including those not accessed)

Report Date: Tue Dec 30 14:28:15 EST 2003

Generating CSV...

Datasource	Database	Schema	Table	Total Accesses	First Accessed	Last Accessed	Last Analyzed
Demo_DW	ORACLE	SALES	SALESTRANSACTION	127	2003-07-07 09:43:46.0	2003-07-31 15:47:16.0	2003-11-17 12:39:00.0
Demo_DW	ORACLE	SALES	CONTACT	38	2003-07-07 15:44:08.0	2003-07-31 09:32:05.0	2003-11-17 12:38:59.0
Demo_DW	ORACLE	SALES	ACCOUNT	19	2003-07-07 15:07:47.0	2003-07-09 11:17:53.0	2003-11-17 12:38:58.0
Demo_DW	ORACLE	SALES	COMPETEPRODUCT	17	2003-07-07 15:45:04.0	2003-07-30 13:02:30.0	2003-11-17 12:38:59.0
Demo_DW	ORACLE	SALES	TERRITORY	14	2003-07-07 15:44:42.0	2003-07-30 17:12:47.0	2003-11-17 12:39:01.0
Demo_DW	ORACLE	SALES	DISCOUNT	9	2003-07-07 15:50:55.0	2003-07-07 16:26:54.0	2003-11-17 12:39:00.0
Demo_DW	ORACLE	SALES	AGREEMENT	5	2003-07-07 16:33:15.0	2003-07-16 15:27:24.0	2003-11-17 12:38:59.0
Demo_DW	ORACLE	SALES	SALESREP	4	2003-07-07 15:44:42.0	2003-07-07 16:33:34.0	2003-11-17 12:39:00.0
Demo_DW	ORACLE	SALES	CONTACTDETAIL	1	2003-07-07 16:32:13.0	2003-07-07 16:32:13.0	2003-11-17 12:39:00.0
Demo_DW	ORACLE	SALES	PRICELIST	1	2003-07-07 16:33:15.0	2003-07-07 16:33:15.0	2003-11-17 12:39:00.0
Demo_DW	ORACLE	SALES	ACTIVITY	Not Accessed			2003-11-17 12:38:58.0
Demo_DW	ORACLE	SALES	CUSTOMERSURVEY	Not Accessed			2003-11-17 12:39:00.0
Demo_DW	ORACLE	SALES	OPPORTUNITY	Not Accessed			2003-11-17 12:39:00.0

User Management

All Queries

(List of all queries grouped by user and client application.)

Report Date: Wed Jan 07 14:39:39 EST 2004

“This user made 2 errors.

An iGuard policy will prevent his errors and improve service levels for all use.”

Datasource: Demo_DW **Da**

Operating System User: Alex Bracker **Client Application:** BusinessObjects

SQL Id	Query Rows	Elapsed Time (Secs)	Response Time(Secs)	SQL Statement	Result Status	IP Address	SQL Start	SQL End
102636	0	1.903	1.903	select O.productid, O.orderid from orders.orderfact O, orders.ordertime OT, orders.shipment S where O.shipmentdate = OT.timeid and S.shipmentdate = OT.day	Successful	10.0.1.56	2003-07-29 13:39:30.0	2003-07-29 13:39:31.0
102768	9000	8.442	0.341	select I.inventoryid, I.inventorylocationid from orders.inventory I, orders.inventorylocation IL where state = 'New Jersey'	Successful	10.0.1.56	2003-07-29 14:02:03.0	2003-07-29 14:02:11.0
102867	0	0.591	0.591	select orderid, sum(totalamount) from orders.customerorder where customerid = 11924	DB Error	10.0.1.56	2003-07-29 14:36:22.0	2003-07-29 14:36:23.0
103610	4141	20.669	3.525	select orderid, shipmentid from orders.shipment S, orders.customerorder CO where CO.totalamount = S.insuredamount and customerid = 7568 order by orderid, shipmentid	Successful	10.0.1.56	2003-07-29 16:06:38.0	2003-07-29 16:06:59.0
104098	3484696	22983.168	51.774	select purchaseid, purchaseamount from sales.salestransaction ST, orders.customerorder CO where ST.discountid = CO.discount	Successful	10.0.1.56	2003-07-29 15:18:21.0	2003-07-29 21:41:24.0
104112	2010391	24305.85	28.841	select purchaseid, purchaseamount from sales.salestransaction ST, orders.customerorder CO where ST.discountid = CO.discount	Successful	10.0.1.56	2003-07-29 14:56:26.0	2003-07-29 21:41:32.0
125217	0	0.03	0.02	select orderid, sum(totalamount) from orders.customerorder where customerid = 11924	DB Error	10.0.1.56	2003-07-09 14:27:10.0	2003-07-09 14:27:10.0
138892	0	10.475	10.475	select O.productid, O.orderid from orders.orderfact O, orders.ordertime OT, orders.shipment S where O.shipmentdate = OT.timeid and S.shipmentdate = OT.day	Successful	10.0.1.56	2003-07-23 09:15:30.0	2003-07-23 09:15:41.0

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Performance Management

Top 100 Queries by Response Time

Report Date: Tue Dec 30 14:26:29 EST 2003

1 2

Download CSV

Datasource	Database	User	Query Rows	Response Time (secs)	SQL Statement	Start
Demo_DW	ORACLE	ANINFOSURFER	139	144953.77	select distinct(cu.incomecategory), a.assetname, tt.transactiontypename, tf.quantity from finance.asset a, finance.transactionfact tf, finance.transactiontype tt, finance.customer cu where a.assetid = tf.assetid and tf.transactiontypeid = tt.transactiontypeid and tf.customerid = cu.customerid and tf.quantity = (select min(tf.quantity) from finance.transactionfact tf, finance.transactiontype tt where tt.transactiontypename like 'Asset' and tf.transactiontypeid = tt.transactiontypeid) and tt.transactiontypename like 'Asset' group by cu.incomecategory, a.assetname, tt.transactiontypename, tf.quantity	2003-07-22 13:57:46.0
Demo_DW	ORACLE	DSTERLING	66505	1021.71	SELECT TRANSACTIONTYPE."TRANSACTIONTYPENAME", TRANSACTIONFACT."QUANTITY", TRANSACTIONFACT."TOTALAMOUNT", MERCHANTADDRESS."MERCHANTNAME", MERCHANTADDRESS."CITY", MERCHANTADDRESS."STATE", MERCHANTADDRESS."ZIPCODE", PROCESSINGPRIORITY."PROCESSINGPRIORITYCODE", RETAILPRODUCT."PRICE" FROM "FINANCE"."TRANSACTIONTYPE" TRANSACTIONTYPE, "FINANCE"."TRANSACTIONFACT" TRANSACTIONFACT, "FINANCE"."MERCHANTADDRESS" MERCHANTADDRESS, "FINANCE"."PROCESSINGPRIORITY" PROCESSINGPRIORITY, "FINANCE"."PRODUCTPURCHASE" PRODUCTPURCHASE, "FINANCE"."RETAILPRODUCT" RETAILPRODUCT WHERE TRANSACTIONTYPE."TRANSACTIONTYPEID" = TRANSACTIONFACT."TRANSACTIONTYPEID" AND TRANSACTIONFACT."MERCHANTID" = MERCHANTADDRESS."MERCHANTID" AND TRANSACTIONFACT."PROCESSINGPRIORITYCODE" = PROCESSINGPRIORITY."PROCESSINGPRIORITYCODE" AND TRANSACTIONFACT."PRODUCTID" = PRODUCTPURCHASE."PRODUCTID" AND TRANSACTIONFACT."MERCHANTID" = PRODUCTPURCHASE."MERCHANTID" AND TRANSACTIONFACT."CUSTOMERID" = PRODUCTPURCHASE."CUSTOMERID" AND TRANSACTIONFACT."TIMEID" = PRODUCTPURCHASE."TIMEID" AND TRANSACTIONFACT."TRANSACTIONMEDIAID" = PRODUCTPURCHASE."TRANSACTIONMEDIAID" AND TRANSACTIONFACT."PROCESSINGPRIORITYCODE" = PRODUCTPURCHASE."PROCESSINGPRIORITYCODE" AND TRANSACTIONFACT."QUANTITY" = PRODUCTPURCHASE."QUANTITY" AND TRANSACTIONFACT."PRICEPERUNIT" = PRODUCTPURCHASE."PRICEPERUNIT" AND TRANSACTIONFACT."TOTALAMOUNT" = PRODUCTPURCHASE."TOTALAMOUNT" AND PRODUCTPURCHASE."PRODUCTID" = RETAILPRODUCT."PRODUCTID"	2003-09-09 13:50:24.0

"The user, ANINFOSURFER, ran a 40 hour query.

An iGuard performance policy needs to be activated."

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Oracle Teleran Compliance Solution

- iSight continuously audits & reports on user activity correlated with data usage
- Oracle AWR integrates reporting on internal database activity/processes
- iGuard protects enterprise data engine, automatically preventing inappropriate, unauthorized queries
- iGuard Messaging instantly alerts security & compliance staff of attempted policy breaches

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Oracle Teleran Performance Solution

- Oracle AWR metrics direct database performance tuning
- iSight reports on AWR collected data
- iGuard protects database & applications from performance degrading queries
- iGuard Messaging guides & trains users in real-time, improving user performance & productivity

Case Study - Insurance

Challenges

- Large insurance company consolidated underwriting, sales & marketing data warehouses into large Oracle enterprise data warehouse
- Chief Compliance Officer required to comply with Sarbanes-Oxley & Gramm-Leach-Bliley
- CEO demanded performance improvements & system efficiencies to enable faster quotes to customers at a lower cost

Case Study - Insurance

Solution

- Met SOX 404 & GLBA requirements company to identify, audit & control user interaction with financial & customer data
- Automated expensive manual process to minimize compliance and operating costs
- Better managed performance & service level in new DW
- Implemented quickly to meet tight implementation plan

Case Study - Pharmaceutical

Challenges

- International pharmaceutical management science division consolidated drug trials field information from physicians, hospitals, HMOs into Oracle DW
- FDA requires meticulous record keeping & reporting across drug trial phases, HIPAA requires proof of patient data confidentiality
- Corporate mandates demanded operating cost containment without sacrificing performance

Case Study - Pharmaceutical

Solution

- Met FDA & HIPPA regulations to track & control who accessed what patient data independent of application
- Auditing facility met multiple compliance audit & reporting requirements at a lower cost
- Explicit access & usage controls enabled company to cost effectively test & prove data confidentiality
- Continued to manage & meet performance service levels

Case Study - Banking

Challenges

- Commercial bank credit card DW supports risk management, marketing, customer profit analysis
- With operations in US & Europe bank must adhere to both SOX & Basel II compliance regulations
- Increased compliance burdens can not impede application & business performance
- Executive directive to minimize costs & disruptions

Case Study - Banking

Solution

- Addressed both SOX control & Basel II audit reporting requirements with single facility
- Rapid implementation and automated compliance processes minimized disruption and lowered operating costs
- Performance management capabilities ensures ongoing business productivity and application value

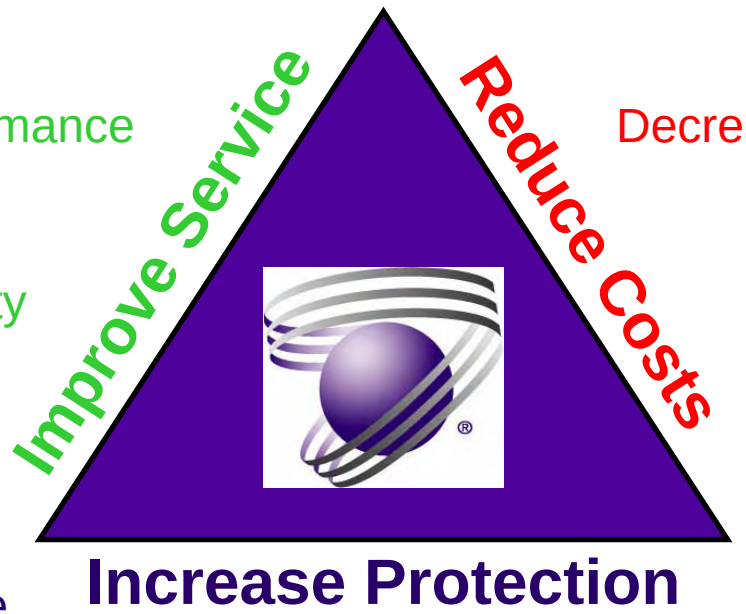
Teleran Benefits

Improves the business value of applications

Increase Performance

Enhance Productivity

Enforce Compliance



Decrease Resource Waste

Minimize Support Costs

Prevent Bad Queries

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