



Instrumentation of the CERN Accelerator Logging Service Ensuring Performance, Scalability, Maintenance & Diagnostics

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Everybody lies



Big difference between how:

You think users will read/write data

Users tell you they intend to read/write data

Users actually read/write data

Lots of Data!



System misuse can have severe negative impact on stability

Instrument everything.

What is Instrumentation?

Capturing information about system activity in real time (& over time) Who? What? Where? How? How Long?

We know what the system is doing

We know how the system is performing

Throughput & Response times

Instrumentation is everywhere within logging service

Logging Service - Archikecture Overview



MDB Data Loading



MDB Data Loading Instrumentation



Measurements to Logging Transfer



MDB to LDB Transfer Instrumentation

Capture details of every process execution: # records read, # records transferred, time spent, etc.

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Keep details during 7 days

ces: LDB (PRO.>TEST) > MDB (PRO.>DEV) ▼ Time Zone: UTC_TIME 💊 Query Qutput 😡 Query 🕆 Variable Hierarchies 🔗 Variable Search 🕼 Variable Lists 🚳 Settings 💿 About ADE Name: SYS.PVSS% Type: % ATLAS • CMS Search Results SYS PVSS PIC REQ_CNT_FAILED_WR CRYO No. of data loading ... Re Average XML file siz... KE Total size of XML fil... KE CTF3 SYS PVSS PIC REQ FILE SIZE AVC Eundar LEIR LHC HW
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Logging Service - Archikecture Overview



PVSS Data Loading



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Logging user: CIETLogging @172.18.201.238

Logging user: CIETLogging @172.18.202.142

Logging user: OPSLogging @172.18.219.21

Logging user: OPSLogging @172.18.219.20

Logging user: AliceMCS @172.18.201.252

Additional Monitoring Links

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Who / Where: Real end-user in a 3-tier environment

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ORACLE Enterprise Manager Grid Control 11g Hosts Databases Middleware Web Applications Services Systems Groups All Targets								
How is time being spent within a Module?								
Module: DataWriter								
Actions <u>Activity Statistics</u>								
Top Actions								
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Copyright © 1996, 2010, Oracle and/or i Oracle is a registered trademark of Oracl Other names may be trademarks of thei	ts affiliates. All rights reserved. e Corporation and/or its affiliates. r respective owners.	ļ	<u>Home</u> <u>Targ</u>	<u>ets</u> <u>D</u>	<u>eplo</u>			

About Oracle Enterprise Manager

RACLE Enterprise Manager id Centrol 11g		Home Targets Deploym	ents Alerts Compliance Jobs Reports My Oracle Sup
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ORACLE Enterprise Manager 10g

Cluster Topology > Application Server: csccroas6.cs-ccr-oas6.cern.ch > OC4J: oc4j_logging_loaders_pro > Application: xml-data-loaders >

Application MBeans

For an introduction to the capabilities of the MBean Browser, see About the MBean Browser.

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- Monitoring			RequestsMinute	RequestsMinut	e	R	68
- Scheduler			Statistics	Statistics		R	javax.management.openmbean.Com
Timor			Total_Minutes_Processing	Total_Minutes_	Processing	R	3144
			Total Requests	Total_Request	5	R	67288
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Setup Logs Help

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Logging Service - Architecture Overview

NOT a write-only system!

Data Extraction

Data Extraction Instrumentation

ORACLE Enterprise Manager 10g Application Server Control								
Cluster Topology > Application Server:	<u>cern.ch</u> > (OC4J: oc4j_logging_data_access	s_20110809_1 > Application: logging-data-ex	<u>(</u>				
Application MBeans								
Search MBean Name +	Attributes (9)	Operations (4)						
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⇔— Logger	FinishedRequestsCount	FinishedRequestsCount	3785401					
JMXLogger	LastAddedRequest	LastAddedRequest	javax.management.openmbean.Com					
E Requests	LastCanceledRequest	LastCanceledRequest	null					
	LastFinishedRequest	LastFinishedRequest	javax.management.openmbean.Com					
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	requestId	4	661220					
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	sessionId	4	445422					
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+> STATS_EXTRACTION								

Data Extraction Instrumentation

Summary

Instrumentation is a key factor in the success of the Logging Service

NOT an Overhead!

Instrumentation...

Facilitates Performance Tuning, Scalability planning & Diagnostics Enhances system stability Enables rapid reactive & proactive user support

Questions?