

ORACLE ENTERPRISE MANAGER 10^g SYSTEM MONITORING PLUG-IN FOR EMC CLARiiON SYSTEM

SYSTEM MONITORING PLUG-IN FOR EMC CLARiiON SYSTEM

ENTERPRISE MANAGER
DELIVERS COMPREHENSIVE
INTEGRATED MONITORING FOR
ENTERPRISE STORAGE
SYSTEMS

- Navigate from data file to host volume to storage device
- Drill down into device-specific performance problems rapidly
- Proactively receive notifications on problems based on metrics and thresholds.
- Optimize storage allocation by tracking storage usage by databases across the array.

Oracle Enterprise Manager System Monitoring Plug-in for EMC CLARiiON System delivers a comprehensive solution for storage administrators and database administrators to monitor EMC CLARiiON CX series and CX3 UltraScale series storage systems. Enterprise Manager Grid Control provides an integrated view of storage systems in conjunction with databases to allow administrators to pinpoint performance problems, track storage usage and configure their enterprise storage for optimum database performance.

Monitoring your EMC CLARiiON System

Enterprises use EMC CLARiiON systems as their mid-range storage for its price-performance benefits while maintaining enterprise-class scalability for their mission-critical applications. Monitoring the health and performance of EMC CLARiiON storage in conjunction with enterprise database applications is therefore an absolute requirement for administrators. The System Monitoring Plug-in for EMC CLARiiON system monitors the availability, performance and usage of EMC CLARiiON Systems, including LUN, metaLUN, disk and port configurations. With out-of-the-box metrics that track LUN, disk and storage processor performance, Enterprise Manager Grid Control makes it easy for administrators to get alerted when key performance thresholds for the EMC CLARiiON system are exceeded.

The System Monitoring plug-in uses EMC Navisphere Secure CLI as its interface to the storage array, ensuring that all errors or warning conditions, reported on the EMC CLARiiON System, can be elevated to administrators in the easy-to-use Enterprise Manager web user interface.

Optimizing Oracle Databases for EMC CLARiiON

Administrators that manage databases and storage systems have traditionally relied on separate tools to perform domain-specific tasks. However, these management tools are limited in that they are not able to provide information or perform tasks that cross over administrative domains. For example, the System Monitoring Plug-in for EMC CLARiiON can help storage administrators and database administrators collaborate on tasks such as capacity planning by tracking storage usage by databases. When troubleshooting performance problems, administrators can drill down from database metrics into storage metrics to identify or eliminate storage hot spots as the root cause. By keeping track of configurations of EMC CLARiiON storage arrays, the System Monitoring Plug-in allows administrators to identify configuration changes that may be affecting performance or compare configurations across systems to ensure compliance with established standards.

Mapping Databases to Storage Devices

Oracle databases offer tremendous flexibility in storage configurations – administrators may choose from Oracle’s Automatic Storage Management disk groups to file systems to raw devices to configure storage for their databases. The challenge for administrators when they encounter I/O-related performance problems is to locate the relevant storage devices corresponding to the database files and then drill down into the performance of those devices to identify possible hotspots.

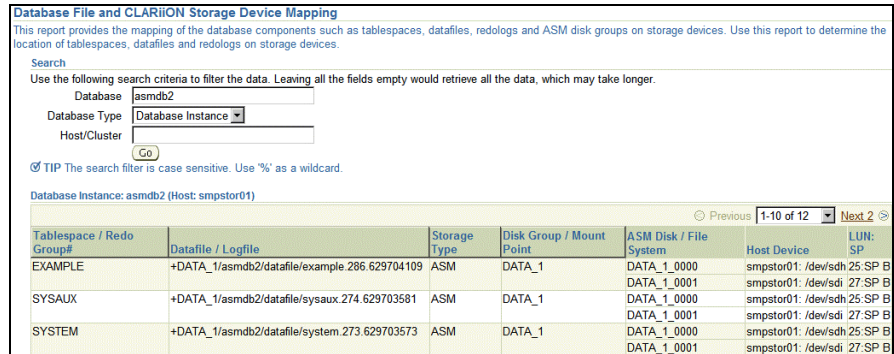


Figure 1: Database file to storage device mapping

The Database and CLARiiON Storage Device Mapping report provides the mapping information from data file to storage device for each database. Administrators can then view the performance of the relevant devices in the LUN, metaLUN and Disk Performance Statistics reports to examine if there are device hot spots.

Database Storage Usage

To make storage allocation decisions, administrators need to have visibility into the current usage and growth of Oracle databases. The CLARiiON Usage Summary report provides detailed storage allocation and usage information for all databases that use the EMC CLARiiON system as their storage. The Plug-in, allows administrators to get a single view of storage usage for all databases, single instance or Real Application Cluster databases, regardless of the operating system of the host on which the Oracle databases are running. In addition, the plug-in gives you an at-a-glance view of the top five databases consuming the most storage space in the EMC CLARiiON system.

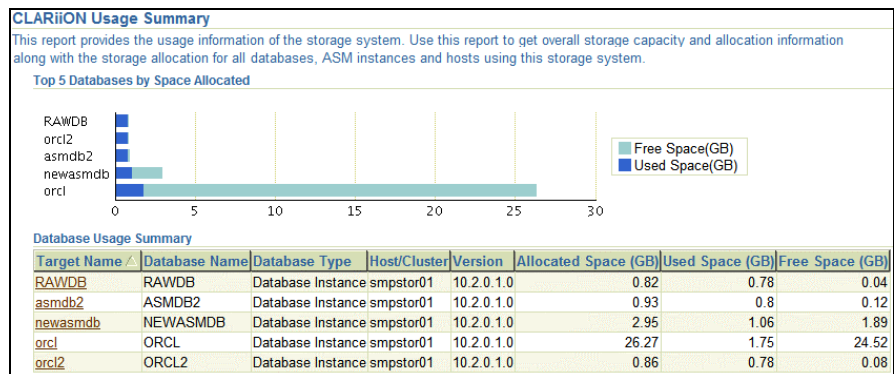


Figure 2: Database storage usage summary

Monitoring storage performance

The System Monitoring Plug-in delivers detailed out-of-the-box performance reports with LUN, metaLUN, disk as well as storage processor performance statistics. Coupled with summary level performance reports, the System Monitoring Plug-in allows administrators to rapidly navigate from the host volume or the database to the EMC CLARiiON system components to identify the device-level metrics that indicate storage performance issues.

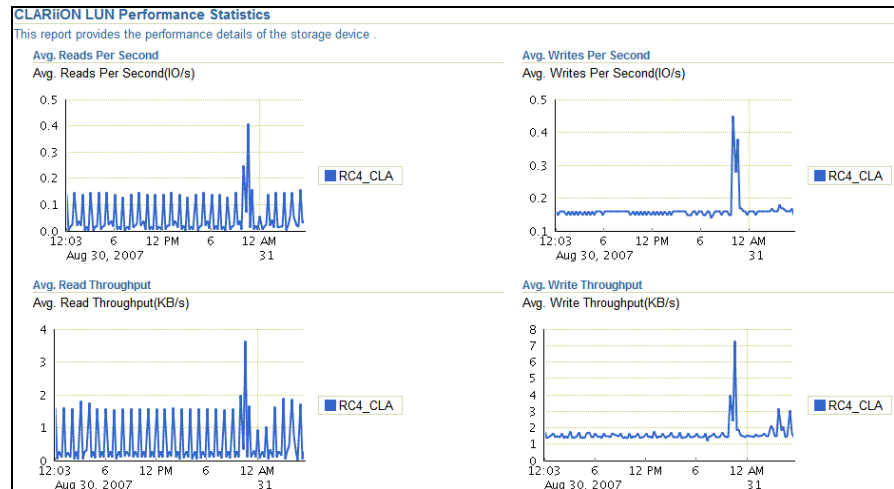


Figure 3: EMC CLARiiON LUN Performance Statistics

Administrators can also configure thresholds for various performance metrics for LUNs, disks and storage processors and can be alerted when these thresholds are exceeded. The thresholds for these metrics can be set for warning and critical thresholds so that administrators can proactively respond at the first sign of problems reported by the System Monitoring Plug-in.

Leverage the Enterprise Manager Grid Control Management Framework

Oracle Enterprise Manager Grid Control provides administrators with a consolidated view of the enterprise systems, including databases, hosts and storage systems. The System Monitoring Plug-in for EMC CLARiiON leverages Enterprise Manager Grid Control's powerful management capabilities to provide robust monitoring, rapid fault diagnostic and manage-many-as-one automation capabilities. Key features include:

- **Roles, Notification Rules, Methods and Schedules:** Defines which, when and how administrators should be notified about critical problems with their systems ensure quicker problem resolution by the appropriate administrators.
- **Blackout Periods:** Eliminates unnecessary alerts from being raised during scheduled maintenance period, e.g. patching the microcode.
- **Groups and Systems:** Significantly reduce the burden of managing a large number of components, whether they are storage systems, databases or application servers, using groups and systems. By combining EMC CLARiiON storage systems in groups or associating them with other data center components, such as hosts, databases, etc., administrators can proactively monitor availability and alerts using the dashboard.
- **Topology View:** By mapping relationships between databases, hosts or clusters and

**SYSTEM MONITORING
PLUG-IN FOR EMC
CLARiiON SYSTEM**

**RELATED PRODUCTS
AND SERVICES:**

The System Monitoring plug-in for EMC CLARiiON Systems is integrated with the following capabilities of Oracle Enterprise Manager Management Packs

- Database Diagnostic Pack
- Database Tuning Pack
- System Monitoring Plug-in for Hosts

Oracle Enterprise Manager also provides System Monitoring Plug-in for the following storage systems

- EMC Symmetrix DMX
- EMC Celerra

storage systems, administrators can get a whole system view of the entire application infrastructure and can zoom in on problem components.

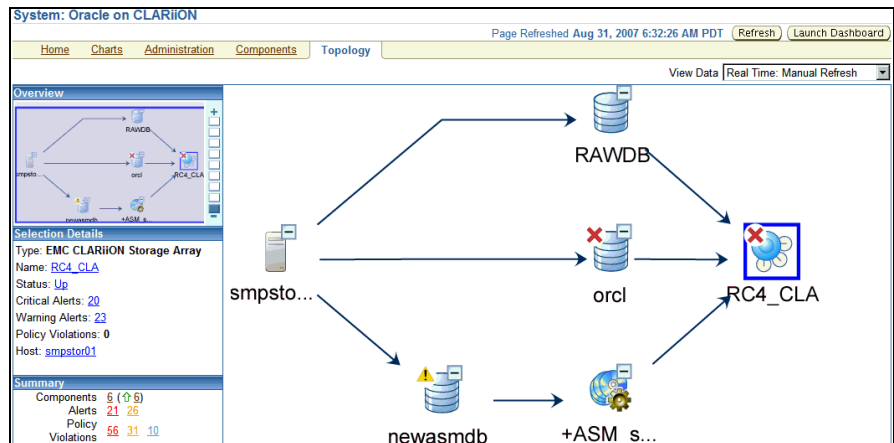


Figure 4: Topology view of databases on EMC CLARiiON storage systems

- **Monitoring Templates:** Simplifies and standardizes the monitoring settings for EMC CLARiiON systems by allowing the administrators to set the monitoring settings once and applying them across the enterprise.

Complete Monitoring of Enterprise Components using Enterprise Manager

Oracle Enterprise Manager Grid Control is very simply the most complete management solution for Oracle and non-Oracle components in enterprise data centers. The System Monitoring Plug-in for EMC CLARiiON is an integral piece of the monitoring capabilities of Enterprise Manager Grid Control. By leveraging the management capabilities of Enterprise Manager, administrators can simplify the tasks of managing storage systems that support enterprise database applications, optimize the storage usage and deliver higher uptime and performance for end users.

Copyright 2007, Oracle. All Rights Reserved.

This document is provided for information purposes only, and the contents hereof are subject to change without notice. This document is not warranted to be error-free, nor is it subject to any other warranties or conditions, whether expressed orally or implied in law, including implied warranties and conditions of merchantability or fitness for a particular purpose. We specifically disclaim any liability with respect to this document, and no contractual obligations are formed either directly or indirectly by this document. This document may not be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without our prior written permission.

Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.