Designed to manage data center and cloud environments, Oracle Enterprise Manager has consistently focused on business-driven IT management. The latest release, Oracle Enterprise Manager 12c, continues this focus and expands its cloud management capabilities to deliver a complete solution for setting up, managing, provisioning, and charging back for Oracle technology–based enterprise clouds.

Organizations using Oracle Enterprise Manager 11g are already seeing the benefits of Oracle Enterprise Manager’s commitment to applications–to–disk management, and are looking forward to even better control in the cloud with Oracle Enterprise Manager 12c.
Anton Topurov, an IT professional on the database and middleware administration team at CERN, says CERN’s IT specialists rely on Oracle Enterprise Manager to monitor CERN’s Oracle infrastructure, which includes single-instance databases, Oracle Real Application Clusters databases, Oracle VM, and Oracle WebLogic Server.

MANAGING AS A SCIENCE

Since the 1990s, some of the world’s leading physicists have converged at the European Organization for Nuclear Research (CERN) to study the properties of subatomic particles. Today these researchers are located throughout the world—processing a staggering amount of information. All told, CERN’s four big-particle detectors produce more than 15 million gigabytes of data per year.

In addition to obvious business functions, Oracle databases are essential for management of these particle detectors, as well as for the Large Hadron Collider accelerator. For years CERN’s IT specialists have used Oracle Enterprise Manager to monitor the associated database infrastructure, which includes Oracle WebLogic Server and Oracle VM.

“We rely on Oracle Enterprise Manager 11g as a monitoring tool for our Oracle infrastructure, including single-instance databases and Oracle Real Application Clusters databases,” says Anton Topurov, an IT professional on the database and middleware administration team at CERN. “The core value of Oracle Enterprise Manager is proactive monitoring.”

Oracle Enterprise Manager 11g lets Topurov and his colleagues monitor the physical hardware and software assets, as well as the quality and availability of the associated services that rely on those assets. His team has grouped databases, hosts, listeners, and application servers together so they can monitor them as a unit. This lets them gauge the performance and availability of complete business services rather than individual IT components.

During 2011, CERN evaluated a beta version of Oracle Enterprise Manager 12c. IT professionals there determined that the new software will make it easier to maintain database and middleware services in a virtualized environment for several hundred developers in the E.U., France, Russia, Switzerland, and other locations.

Overall, CERN’s IT professionals found Oracle Enterprise Manager 12c to be more developer friendly because it lets them handle many debugging, performance testing, and tuning exercises on their own.

“Improving Automatic Workload Repository features with its Active Session History.statistics, is a good example of this enhanced usability,” Topurov says. “In addition, the new named credentials are a real game changer because they provide more flexibility for authorizing access to hardware and software resources and provide a clean separation between security officers and operators.”

Topurov also likes Oracle Enterprise Manager’s new functionality for consolidation management, which analyzes usage patterns and loads on a hardware infrastructure and makes recommendations for consolidating databases. As in most large IT shops, some of CERN’s servers are underutilized and others are maxed out. “The consolidation management functionality of Oracle Enterprise Manager 12c looks quite attractive to us, because it also addresses our electricity and cooling shortage,” he explains. “We plan to continue to virtualize more resources in the computer center, and this functionality of Oracle Enterprise Manager will accelerate the rollout. We can select a set of production machines on the one hand, and propose a set of new machines as a destination. Oracle Enterprise Manager analyzes the existing usage levels and proposes a consolidation plan.”

The result of the collected new features and improvements is not an incremental product release. “We see Oracle Enterprise Manager 12c as a major step forward,” concludes Topurov.

MANAGING BUSINESS SERVICES

According to Richard Samwel, senior vice president of product development at Oracle, consolidating and virtualizing an IT infrastructure are important activities, but they are just the starting point for creating an enterprise cloud environment. “The long-term goal is to manage cloud resources as business services rather than just a collection of technical components,” he explains. “This lets you relate those resources to users and monitor the performance of their applications to make sure they are receiving adequate service levels.”

Such was the motivation for Cerner, one of the world’s largest healthcare IT companies. The Kansas City, Missouri–based company currently depends on Oracle Enterprise Manager 11g to manage more than 1,000 client databases associated with its Millennium healthcare applications—about 18 petabytes of healthcare data in all. Customers can install Millennium at their own premises or access the functionality on demand through the CernerWorks hosting facility.

Cerner solutions are licensed by approximately 9,000 facilities around the world, including more than 2,600 hospitals, 3,500 physician practices covering more than 30,000 physicians; 500 ambulatory facilities, such as laboratories, ambulatory centers, cardiac facilities, radiology clinics, and surgery centers, 800 home health facilities, and 1,600 retail pharmacies.

“Our data center hosts applications that support more than 150,000 beds, which equates to 17 percent of U.S. hospital capacity,” says Tony Myers, Oracle strategist for the CernerWorks hosting facility. “Oracle Enterprise Manager plays an important role by helping us keep an eye on that vital data.”

By providing integrated applications that deliver-on-demand management capabilities for its public and private clouds, Oracle Enterprise Manager has enabled Cerner to increase its return on investment and pursue new business opportunities without incurring incremental IT costs. This success is partly what motivated Cerner to offer a new cloud-based service supported by Oracle Enterprise Manager. Cerner had already created a multi-tenant version of Oracle Enterprise Manager for use internally within its private cloud. It simply extended that architecture to enable a serverless database layer for external clients as well. The database-as-a-service offering is now part of an on-demand software suite called SkyBox that includes cloud-based messaging, storage, and virtual desktop functionality.

Oracle Enterprise Manager allows Myers and his team to monitor and manage the experience of their clients—including all business functions.
transactions and application interactions—from one manage-
ment console. By adopting a proactive philosophy of prevention
rather than constantly reacting to incidents, the team has reduced
database incidents by 50 percent, 17 percent of problems are now
identified without DBA intervention. According to Myers, fine-tuning
Cerner’s database assets to maximize server utilization has saved the
company US$9.5 million in capital expense.

“Our service-level agreements [SLAs] call for 99.9 percent uptime,
but we’ve been able to surpass that and achieve 99.99 percent as a
direct result of Oracle Enterprise Manager,” says Myers. “Our DBAs are
more efficient, which has allowed us to increase our client base
without increasing our head count. Oracle Enterprise Manager auto-
mates many mundane tasks, which enables us to be more proactive
and to focus on new technologies that improve client services.”

CernerWorks has 350 Oracle Enterprise Manager users—50
of whom are external and access the management software as a
cloud service. According to Myers, many of these users are intrigued
by Oracle Enterprise Manager 12c, which he says will allow them “to
analyze the data more closely and conduct deeper analysis” than
they can do with Oracle Enterprise Manager 11g. “If the database hangs,
previously you couldn’t connect to it, but Oracle Enterprise Manager
12c lets you go around the database and access the data that’s necessary
to continue the analysis,” he adds. “That’s phenomenal.”

AN EVOLVING STANDARD

As vice president, technology, Strategic Database Services, at
Epsilon, Jeff White values Oracle Enterprise Manager for its standard
processes, procedures, and consolidated interface. “We looked at other
solutions, but for integrated moni-
toring, configuration, and manage-
ment, Oracle Enterprise Manager was
the best,” he states. “The majority
of DBAs are familiar with Oracle
Enterprise Manager, and we heavily
utilize templates to standardize
common tasks and actions. This
standardization allows us to spend
time that we would have spent writing,
maintaining, and deploying scripts,
so we can focus on higher-value tasks
that provide ROI such as application
system performance and tuning that
e nhances the customer experience.”

Epsilon offers a broad array of
data-driven, multichannel marketing
solutions that help brands deepen
t heir relationships with customers.
White’s group develops and manages
customer loyalty programs, which
generate large amounts of data that require transaction processing,
tracking, configuring, offer/content targeting, personalization,
logging, and campaign execution. With many of its information
systems seeing 40 percent growth year over year and increased
demand for real-time reporting and conversation with end users,
Epsilon decided to deploy an Oracle Exadata Database Machine to
meet strict performance and availability requirements for some of its
client programs.

“Cost is one of the biggest challenges when it comes to real-time and
near-real-time reports being available in a true real-time manner,”
says White. “We deliver highly available and performing solutions that adhere to strict SLAs that govern the customer experience.”

White and his team used to spend considerable time architecting,
configuring, and deploying high-performance computing systems.
“We decided to purchase Oracle Exadata because we wanted an inte-
grated server, storage, and network solution, so we would not have
to manually select, configure, and validate hardware and software
configurations,” he notes.

Today Epsilon uses Oracle Enterprise Manager and Oracle Exadata
to support a large U.S. retailer, including providing real-time support
for tens of thousands of point-of-sale terminals, resulting in peak loads
exceeding 500 Web service calls per second and reaching 200,000
IOPS (input/output operations per second). Each Web service call
can include tens of hundreds of transactions, yet these transactions
average between 10 and 150 milliseconds, meeting the stringent
expectations of true real-time data processing. White’s team closely
monitors these information systems to ensure that they are online,
up-to-date, and meeting customer requirements.

Oracle Enterprise Manager 12g gives Epsilon a cohesive
t view of all Oracle Exadata components, either individually or
in a consolidated snapshot. System administrators rely on this
centralized management insight to monitor many database
systems and attributes, eliminating “shadow management
consoles” for independent database servers. Administrators
throughout the company now have a common management
interface for the entire Oracle-based infrastructure.

According to Tim Grieser, program vice president, enter-
prise system management software, at International Data
Corporation (IDC), the latest Oracle Enterprise Manager
release is optimized to support highly integrated “full stack”
Oracle environments and engineered systems. “While
Oracle Enterprise Manager 12c can be used to coordinate the
 provisioning of third-party infrastructure and hypervisors
supporting Oracle databases, applications, and middle-
ware, customers can anticipate the greatest cost savings,
performance improvements, and productivity increases by
implementing Oracle Enterprise Manager 12c to manage
full-stack Oracle environments,” he says.

Epsilon’s IT team is looking forward to implementing
Oracle Enterprise Manager 12c in this context. White is
particularly interested in the product’s enhanced manage-
ment capabilities for Oracle engineered systems. “Oracle
Enterprise Manager 12c monitors an entire Oracle Exadata or
Oracle Exalogic system, with performance and monitoring views for
all hardware and software components,” he says. “For example, built-
in schematics let us visualize all the ports in the InfiniBand switches.
That makes it easier to monitor the load and isolate throughput or
latency issues.” He also looks forward to using Oracle Enterprise
Manager’s Active Session History analytics capabilities to slice and
dice tuning metrics via a GUI.

According to Oracle’s Sarwal, Active Session History analytics
is just one of more than 200 new features and SDO enhancements
in Oracle Enterprise Manager 12c, many of which Oracle created in
response to specific requests from customers. “Oracle Enterprise
Manager 12c is a transformative product,” he says. “It helps you
do everything, from creating a cloud to deploying it and charging
back for usage, along with capacity planning, self-service provisioning,
and management and monitoring of all the underlying compo-
nents. Oracle Enterprise Manager 12c enables organizations to view
cloud resources as meaningful business services rather than iso-
ilated IT components.”

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NEXT STEPS LEARN more about Oracle Enterprise Manager
oracle.com/us/products/enterprise-manager