



# Oracle® Enterprise Manager, Release 2.0

*Features Overview*

*November 1998*

## **INTRODUCTION**

Now more than ever, businesses face the challenge of simplifying and lowering the cost of managing the systems that run on their corporate, interconnected networks. Effective systems management for the Oracle environment requires that teams of administrators have the ability to centrally view their managed topology; associate and organize disparate-but-linked services, such as databases and applications; and effectively monitor and respond to the health of these systems 24 hours a day.

With the right set of tools, administrators can ensure the highest level of system performance and availability, allowing users to be more productive and businesses to lower operational costs. Oracle Enterprise Manager is the comprehensive management framework for the Internet environment, providing a robust console, a rich set of tools, and the extensibility to detect, solve, and simplify the problems of any managed environment.

## **PRODUCT SUMMARY**

The Oracle Enterprise Manager base product includes a centralized, light-weight console, a powerful Management Server that provides all framework services, and distributed, non-intrusive agents that execute tasks and monitor conditions on each managed system. The base product also includes an additional set of administration applications for performing day-to-day tasks for databases and other services.

### **Console**

The Oracle Enterprise Manager Console is the primary interface for performing all management tasks. The Console's graphical display includes menus, toolbars, and four customizable panes which are extensible throughout the framework. These panes include: the Navigator, Groups, Event System, and Job System. All Oracle management applications can be launched from within the Console.

### **Management Server**

The Management Server processes all system management tasks, administers the distribution of these tasks across the enterprise, and provides scalability across the system. The Management Server uses the Enterprise Manager Repository as its persistent back-end store. This Repository maintains system data, application data, and the state of managed entities distributed throughout the environment.

## **Intelligent Agent**

The Intelligent Agent is a process that runs independently on managed nodes. The Agent is responsible for service discovery, event monitoring, and job execution. The Intelligent Agent also supports the Simple Network Management Protocol (SNMP), enabling third-party applications to communicate with the Agent. SNMP traps can be sent to SNMP consoles, such as HP OpenView. The Agent also provides direct access to Oracle's database Management Information Base variables.

## **Architecture**

Oracle Enterprise Manager's lightweight, three-tier architecture offers flexible deployment options and unparalleled scalability. Built on a network computing model, Enterprise Manager clients, Consoles, and other management applications, communicate with the middle-tier Management Servers primarily over IIOP using standard CORBA. Depending on the number of targets managed (Intelligent Agents) and notifications processed, users can increase scalability by seamlessly adding additional Management Servers to the environment. The Management Servers offer transparent workload balancing and failover, guaranteeing the assurance of constant and consistent availability.

## **MANAGEMENT ANYWHERE**

The Enterprise Manager Console and front-end management applications are fully accessible through thin clients or Web browsers. This provides extraordinary flexibility to administrators in any environment. Because the Console requires no installation, administrators can perform their most critical management tasks from virtually anywhere. As simple as connecting to a well-known URL, the browser-based Console provides the same user interface, all the same functionality, and a consistent set of task-based tools normally available from the installed Console.

## **THE STANDARD FOR ORACLE MANAGEMENT**

In order for administrators to be most effective, they must be able to identify and clearly organize the complete set of managed systems such as databases, nodes, application servers, and applications. Oracle Enterprise Manager extends the administrators reach beyond the dataserver, providing a centralized management foundation for the complete set of Oracle products. Oracle Parallel Server, Oracle Application (Web) Server, Oracle Interoffice, Oracle Video Server and even complex features such as Oracle Replication all take advantage of Oracle Enterprise Manager as their base management environment. Oracle Enterprise Manager offers a comprehensive set of management services that can be run on hosts, databases, and applications to monitor the health of your environment and to check for specific conditions.

## **Automated Discovery**

Oracle Enterprise Manager automatically discovers all services across the network. A hierarchical view of this information is displayed within the Navigator, providing administrators with a high-level view of their environment and allowing simple and efficient management of those services. Each of the discovered services is then available to other applications for targeted management, and for grouping, job scheduling, and event monitoring from within the Console.

## **Simplifying and Securing Access through Preferred Credentials**

After discovering the services in their managed network, administrators need easy, secure access to them for efficient management. Each console user defines credentials for the managed services for which they are responsible. These credentials are used whenever the administrator needs secure access to a managed service, such as a database or application. Preferred Credentials are used throughout the Console—for management within the Navigator, for jobs, and if necessary, for events. By using these stored Preferred Credentials, users are not troubled with continuous login requests for the various systems they are managing. The Console also offers the ability to override Preferred Credentials if the user wishes to do that.

## **Associating Managed Services**

When administrators are responsible for a set of services or a group of applications, they need to be able to logically organize those systems as a unit for efficiency. For example, a single application may access numerous databases which can reside on various nodes throughout the network. Despite this complexity administrators need to manage all of these disparate systems as a single entity.

The Group System allows administrators to create logical associations between similar or disparate managed services by grouping them into a single unit using a simple drag-and-drop action. Groups are displayed within the Navigator and graphically in the Groups pane. The Groups pane can be customized with a background which best visually represents its components. For example, if an administrator is responsible for several systems on different floors of a building, she can use a background which has a picture of the building, and place each system on the floor where it resides. Then, because Groups are available to the Event system, if something occurs on any of those systems, she will know where and what has occurred through the visual alert displayed on the system inside the Groups pane.

## **END-TO-END MONITORING AND PROBLEM RESPONSE**

The most critical responsibility for all administrators is monitoring and ensuring the health of the systems they manage. Early indication and rapid response to problems is key to maintaining system performance and availability. Using the Intelligent Agent as its back-end, the Event and Job systems provide the ability to identify and respond to conditions that indicate problems or potential problems on any managed service or group.

### **Event Monitoring**

The Event system offers a base set of event tests that can be run on managed services to check for specific conditions, such as a database down, 24-hours a day. The intuitive interface allows users to register events on multiple services with a customizable polling interval. Depending on the event test being run, users can also set thresholds for when they want to be notified. When these thresholds are met or other test conditions exist, they are visually displayed as warnings or alerts on the console. Additionally, on-call administrators are proactively notified via e-mail and paging—allowing around-the-clock monitoring.

Tightly integrated with the Job system, the Event system also allows for automatic problem correction. By choosing a “fixit job”—a task to be performed on the appropriate service to fix a problem as soon as it happens—administrators can resolve problems without intervening.

## **Job Execution and Scheduling**

The Job system provides the ability to automate redundant and repetitive tasks, such as running a regularly planned database backup or executing a SQL script across multiple databases, while also offering the power to perform complex operations on distributed services at varied intervals.

Administrators can use any of the pre-defined job tasks offered with the base system or define their own tasks, such as using SQL or writing an OS command. Any tasks can be grouped to create a job which can then be scheduled to run on any managed service.

The powerful job dependency functionality allows administrators to execute tasks based on the success or failure of previous tasks. For example, if an administrator wants to notify users before shutting down a system—but the notification fails—she can delay the system shutdown to avoid unnecessary negative impact on the uninformed users. She may choose to perform different tasks depending on the success or failure of a previous task, or choose to halt a job midway depending upon the outcome of specific tasks.

The flexible scheduling mechanism within the Job system allows administrators to submit jobs immediately on a regular or repeated schedule, on a specific date or day of the month, or upon event occurrence.

## **COOPERATIVE MANAGEMENT**

In large organizations it is common for several administrators to share responsibilities across a distributed set of managed services. It is also common for administrators to have varying degrees of responsibility. Regardless of responsibility level, all administrators must have appropriate, consistent, and timely access to critical management information. They also need the ability to share key information with other team members. With a centralized repository which stores all management data for any given environment, Oracle Enterprise Manager is designed to support teams of administrators responsible for collaboratively managing distributed systems.

### **Defining Administrator Responsibilities and Schedules**

Upon first using Enterprise Manager, or when a new administrator joins the group, someone designated as a “Superuser” can define the appropriate responsibilities and schedule for that administrator. Depending on the level of responsibility of the new administrator, the Superuser may want to control access to certain Console systems, such as the Job and Event systems.

Each administrator is given a console password which provides access to the Console systems required to perform management tasks. With access to the Console, administrators can set up their environment by defining Administrator Preferences such as Preferred Credentials, including the level of access they wish other administrators to have on the groups, jobs, and events they create, and when and how they wish to be notified of problems on the systems for which they are responsible.

Viewing the administrator schedule within an object, such as a job or event, administrators can also ensure that they have adequate coverage for handling notifications for the jobs and events they create.

## Assigning Permissions and Sharing Jobs, Events and Groups

Because each administrator has specific responsibilities, Enterprise Manager allows them to define permission levels for other administrators for the jobs, events, and groups they create. Permission levels include:

- *None* — No object permissions
- *View* — View, inspect, and receipt of notifications on objects
- *Modify* — Edit permissions on the object's properties, except certain properties reserved for Full permissions
- *Full* — Delete, modify permissions for other administrators, and change the ownership of the object

After defining default permissions when creating a new job, group, or event, the other administrators will automatically have access to it based on their permissions. For example, if one administrator has given Administrator Kelly "Full" permission on the objects she creates, and she creates a database Up/Down event, Kelly's console will display that event, any alerts associated with it, and any other information that may be pertinent to ensuring the problem is adequately addressed.

## ORACLE ENTERPRISE MANAGER PRODUCT FAMILY

Also part of the Oracle Enterprise Manager product family are the Diagnostics Pack, Tuning Pack, Change Management Pack, Workgroup Management Pack and the Application Management Pack; all are fully integrated into the OEM Console and framework and provide a unified system management framework for end-to-end management of your Oracle environment. Built upon open Internet standards such as Java, Corba, and IIOP - these products provide the first management framework designed to support Internet computing - all applications can be accessed from anywhere a browser is available. A reliable and scalable multi-administrator repository allows leverages your administrative staff by providing cooperative management. Using the OEM product family, administrators and IT managers can insure higher-productivity, deliver better services, and reduce the overall cost of their information systems.



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