



Top 10 Reasons why Oracle Forms Server Scales

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INTRODUCTION

An important component of the Oracle Internet Platform is Oracle Forms Server. This application server is optimized to deploy Oracle Forms applications in a multi-tiered environment. It delivers the application infrastructure and the event model to ensure that Internet-based Forms applications automatically scale and perform over any network.

Oracle Forms Server is optimized to reduce network traffic for Internet, intranet, and extranet deployments. This paper provides a brief look at the top 10 traffic optimization and scalability features of Oracle Forms Server. These include:

- Load management
- Memory optimization
- Single applet
- Standard listener integration
- Message diff-ing
- Message sending order
- String buffering
- Event bundling
- Image retrieval
- JAR usage

LOAD MANAGEMENT

Oracle Forms Server load management enables system administrators to dynamically balance server load across multiple machines and allocate resources based on a configurable least-loaded-host algorithm. Load management supports a distributed environment, with no single point of failure, and promotes the most efficient use of hardware and system resources.

MEMORY OPTIMIZATION

Oracle Forms Server uses memory mapping to reduce each user's total memory footprint. When multiple users access the same .fmx file, the read-only portions of that file are shared across processes. Shared elements include encoded program units, boilerplate objects, and images. Data segments are not shared.

SINGLE APPLET

Oracle Forms Server uses the same applet to access multiple applications, irrespective of size or complexity. Compare this to multiple applications written in Java that would each require a JAR download. Forms Server's single-applet approach is possible due to its use of meta-data transmission.

STANDARD LISTENER INTEGRATION

Oracle Forms Server is now shipped with a standard open interface CGI. This enables you to deploy your applications with any CGI-capable Web listener, to manage your middle-tier load, and to dynamically generate the HTML used by Oracle JInitiator and native JDK's. You can use the new CGI deployment method with Oracle Application Server, Oracle WebDB Listener, or any CGI-capable third-party Web listener.

MESSAGE DIFF-ING

With Message Diff-ing, when sets of similar messages (collections of name-value pairs) are sent, the second and subsequent messages include only the differences from the previous message. This results in significant reductions in network traffic.

MESSAGE SENDING ORDER

To promote Message Diff-ing, Oracle Forms Server works out the most efficient method for transmitting similar objects, regardless of how they are positioned within the block in the builder.

STRING BUFFERING

When the same string is to be repeated on the client display (for example, when displaying multiple rows of data with the same company name), Oracle Forms Server sends the string only once, and then references the string in subsequent messages. Passing strings by reference increases bandwidth efficiency.

EVENT BUNDLING

When a user navigates from item A to item B (such as when tabbing from one entry field to another), a range of pre- and post-triggers may fire, each of which requires processing on the application server. Event bundling "gathers" all of the events triggered while navigating between objects, and delivers them as a single packet to the Oracle Forms Server for processing. When navigation involves traversing many objects (such as when a mouse click is on a distant object), event bundling gathers all events from all of the objects that were traversed, and delivers the group to the Oracle Forms Server as a single network message.

IMAGE RETRIEVAL

The most recent release of Oracle Forms Server introduced improvements to image transmission. Now images are transmitted in a highly compressed format via the Oracle Forms Server (no longer through the HTTP listener). This removes the need to write temporary files onto the middle tier, and consequently reduces administrative overhead.

USE OF JAR TECHNOLOGY

Oracle Forms Server uses Java Archive files (JAR's) to reduce download times. Both Oracle JInitiator and the Oracle-supplied JDK use JAR caching and deferred load-on-demand. You also have the option of creating your own custom JAR files containing a custom subset of classes, icons, or JavaBeans.

ADDITIONAL SOURCES OF INFORMATION

The following white papers provide additional, in-depth reading on the 10 discussion points raised in this paper. These and other white papers are available from the Oracle Technology Network (<http://technet.oracle.com>) or the Oracle Web site (<http://www.oracle.com>).

- Oracle Forms Server—How to Tune for the Deployment of Internet Applications
- Oracle Forms Server —A Capacity Planning Guide

- Scalable Web Deployment with Oracle Developer Server—A Benchmark Comparison of Client/Server and Web Deployment by Retek Information Systems
- Oracle JInitiator—A Technical FAQ
- Deploying Applications on the Web with Oracle Forms Server: Intranet, Extranet, Internet



Oracle Corporation
World Headquarters
500 Oracle Parkway
Redwood Shores, CA 94065
U.S.A.

Worldwide Inquiries:
+1.650.506.7000
Fax +1.650.506.7200
<http://www.oracle.com/>

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