

Oracle HTTP Server (OHS) provides a web and application server with the necessary infrastructure to create and deploy web-based applications. It incorporates a cluster infrastructure that provides scalability, high availability, fail over and restart capability for a wide range of enterprise solutions.

Based on the proven Apache Infrastructure, OHS adds significant punch by allowing developers to program their site in a variety of languages and technologies—Perl (via mod\_perl and CGI), C (via CGI, and FastCGI), C++ (FastCGI), PHP, and of course the popular Oracle language – PL/SQL. It can also be a proxy server—both forward and reverse. In addition the features of single sign on, clustered deployment and high availability, make the operations using OHS that much easier.

This document gives features overview of Oracle Application Server 10g Release 2 (10.1.2.0.2) version of Oracle HTTP Server (OHS) and is broken into the following sections:

[OHS: The Web Server](#)

[OHS: The 'Supporting' Application Server](#)

[Key Features](#)

## OHS: The Web Server

### Based on Apache – HTTP 1.1 Support

Oracle HTTP Server has two versions both based on Apache HTTP Servers (<http://www.apache.org>). The first and OHS default is based on Apache 1.3 and includes both a version deployed by the integrated Oracle Application Server install and a version which can be installed as a standalone product. With a proven code base and years in production, the Oracle HTTP Server based on Apache 1.3 provides Oracle Application Server 10g customers with the stability, flexibility, and scalability required of a web server.

A second version of OHS is based on Apache 2.0 Servers. It can only be deployed in a standalone manner. This Standalone version of OHS based on Apache 2.0 provides versions of all modules supported by the OHS version based on Apache 1.3 except mod\_oradav, mod\_plsql and mod\_dms.

Some customers will want to use OHS based on Apache 1.3 and others will want to use OHS based on Apache 2.0. Apache 1.3 has had many more years of production service than Apache 2.0 and also there are more than four times as many Apache 1.3 version HTTP servers attached to the Internet as Apache 2.0 ([www.securityspace.com](http://www.securityspace.com) - December 2004). Consequently, many users will want to use OHS based on Apache 1.3 for reliability reasons. Also, the Apache 1.3 modules are incompatible with Apache 2.0 and many customers may want to use OHS based on Apache 1.3 because their modules are of the Apache 1.3 type. Finally, others may want to use OHS based on Apache 1.3 because they depend on mod\_oradav, mod\_plsql or mod\_dms that are not available on OHS based on Apache 2.0 at this time.

Apache 2.0 is newer. Its main benefits when compared to Apache 1.3 are faster execution on Windows OS machines and its ability to accommodate IPv6. IPv6 is the new standard for

communication on the Internet. Its main virtue is that it accommodates a wider address range than the 32 bit addresses of the incumbent Internet Protocol, IPv4. Note that Apache 2.0 can proxy from IPv6 addresses to IPv4 addresses. Many customers will want to use OHS based on Apache 2.0 in preference to OHS based on Apache 1.3 because their modules are Apache 2.0 modules, because they want and/or need faster execution on Windows OS machines or because they need IPv6 capabilities.

### **Security – Encryption with SSL/TLS**

Secure Sockets Layer is required to run any website securely. OHS supports SSL/TLS encryption based on industry standard algorithms. The SSL/TLS works seamlessly with all major browsers including IE, Mozilla and Netscape browsers. In addition, the infrastructure has been upgraded to share the same wallet information as the Oracle Database uses. New features include:

- Support of the TLS protocol. TLS is the IETF standards version of SSL version 3 (SSL version 3 support is still provided).
- Support of Global Server ID certificates. These are certificates such as the Verisign Secure Site Pro that allow certain older browsers to "step-up" to strong levels of encryption.

### **Security – mod\_security**

New for this release is the distribution of mod\_security. mod\_security provides OHS the ability to act as an "application firewall" and filter out traffic that might exploit vulnerabilities in user application code. mod\_security is configurable and can be configured against new or application specific threats. Note that deployment and use of mod\_security is often a good alternative to costly modification of user written applications to detect and block intrusion attempts.

### **Security – Single Sign On**

Oracle HTTP Server supports the standard basic authentication feature of web servers. The source for the username and password used in this scenario is a flat file (with encrypted passwords). In addition, a module—mod\_osso—is included to support single sign on across sites and across applications. This provides for a much better end user experience (they have to login only once), and a much easier development cycle (most of the security is declarative)

### **Virtual Hosts**

A virtual host, as the name suggests, is a web site that may share its web server with other similar sites. Oracle HTTP Server provides a 'container' environment for a virtual host, thus providing a virtual host with its own set of security and other configuration directives, in addition to locations from which the files are served. This allows an ISP to save on hardware and administrative costs, by enabling hundreds to thousands of sites to be served from a single runtime instance of Oracle HTTP Server. Due to technology limitations of the HTTP and SSL/TLS standards, only one virtual host can enable SSL/TLS.

### **Distributed Authoring and Versioning Support**

WebDAV, an IETF standard, is an HTTP based protocol that lets DAV enabled clients (such as MS Office, Windows Explorer) edit files on a server. Apache organization provides a module—mod\_OraDav- that enables this for file based storage on the server—in addition to productizing that OHS enables people to let the server side store be a database or other repository.

### **Proxy Server and URL Rewriting**

Any web site that is "alive" changes often. Along with that, the directory structures and the URLs change. OHS makes it easy to accommodate these changes by including an engine to support URL rewriting (so that the end users do not have to change their bookmarks). It also supports forward and reverse proxy capabilities, thus making it easier to make content served by different servers to

appear from one single server. This feature is also extensively used to segregate modem connections that may otherwise tie up processes from the application server.

### **Proxy Plug-In**

A separately available component that enables IIS and SunOne web servers to route requests to Oracle Application Server 10g. Users can benefit from all of Oracle Application Server 10g features even if their corporate standard requires they use IIS or SunOne web servers. The Proxy Plug-In provides Oracle Application Server features, such as SSO, load balancing and AJP port tunneling, to be accessed when using IIS or SunOne web servers.

### **OSSO Plug-In**

A separately available component that enables IIS and SunOne web servers to be integrated with Oracle's single sign-on (SSO). IIS and SunOne listener applications can now be protected by using the SSO infrastructure. You can now be authenticated to these listeners using only one SSO password. This functionality is similar to what mod\_osso provides to OHS.

### **Oracle Application Server Container for J2EE (OC4J) Plug-In**

A separately available component that enables IIS, SunOne, and Apache 1.3.x web servers to route requests directly to OC4J. This functionality is similar to what mod\_oc4j provides to OHS.



## **OHS: The 'Supporting' Application Server**

### **mod\_plsql: Web access to PL/SQL Stored Procedures**

OHS includes a module that enables making requests to database stored procedures from the browser, which then gets routed to the correct place, and the output is send back to the browser. This, in addition to the performance improvement due to the disk based cache and the associated security, has made this feature one of the most popular in OHS.

### **PL/SQL Server Pages**

Similar in concept to the Java Server Pages, this module allows PL/SQL to be used as the scripting language within an HTML page. It gets translated into a stored procedure, which then uses the module described above (for PL/SQL stored procedures), to send the output to the browser.

### **Server Side Include**

Server Side Includes provide an easy way of adding some dynamic, or uniform static content, across all the site's pages. It is typically used for header/footer information. OHS supports special directives to enable these only for certain types of files or for a given virtual host.

### **Perl**

Perl is one of the most common ways scripts and CGI programs were developed for the web initially. However, the Perl interpreter is large and starting and stopping it is time consuming. Hence, OHS optimizes the execution by keeping the Perl interpreter always running and in memory. It also enables extending the web server functionality by adding new Perl modules that can process a web request.

### **PHP**

mod\_php is the module that allows PHP scripts to be executed in OHS. PHP is the most popular Web scripting language primarily used for generating HTML and mod\_php is the most popular

Apache module. PHP is described at [php.net](http://php.net). mod\_php is a new feature for Oracle Application Server 10g R2 (10.1.2) version of OHS.

### **C / C++ (CGI and FastCGI)**

CGI programs have been commonly used to program web applications. OHS improves on them by providing a mechanism to keep them alive beyond the request lifecycle, thus improving the performance tremendously.

### **Load Balancing**

OHS includes a module—mod\_oc4j—that routes requests to the OC4J instances in a cluster. Oracle Process Manager and Notification Server (OPMN) help ensure that mod\_oc4j knows of all the OC4J in the system without requiring a system administrator to do any configuration. New load balancing algorithms in OHS provide several choices in addition to round robin. Including random routing, routing with local affinity (to favor routing to local machine over routing to remote instances) and metric based routing .



## **KEY FEATURES**

### **Platform**

- All Oracle Platforms supported

### **OHS – The Web Server**

- Based on Apache – Proven code base. Both 2.0 and 1.3 Apache versions of OHS supported.
- Deployment options – Integrated and standalone deployment models supported
- Security – Supports SSL/TLS, mod\_security and Single Sign On across domains and applications
- Virtual Hosts – Enables ISP to host several customers off of a single instance of web server and configure them differently.
- WebDAV Support – Oracle repository possible in addition to file based backing store
- Proxy Server and URL Rewriting – Enables flexibility when changing site structure
- Proxy, OSSO, and OC4J Plug-Ins – Enables IIS, SunOne, and Apache based sites to leverage Oracle Application Server 10g.

### **OHS – Application Server Components**

- PL/SQL Stored Procedure can be accessed easily from a browser.
- PSP [PL/SQL Server Pages] allow PLSQL to be used as a scripting language with HTML.
- Perl Support is provided through mod\_perl, which eliminates the need to restart the Perl interpreter each time.
- PHP Support is provided.
- Server Side Includes provide a standard mechanism to include headers/footers.
- C/C++ Support is now available through FastCGI, which keeps the processes alive, thus avoiding the startup cost.
- Dynamic Monitoring Service to monitor OHS or instrument applications



**ORACLE FUSION MIDDLEWARE**  
**Oracle Application Server 10g:**  
**Oracle HTTP Server Feature Overview**

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