Oracle9*i*AS Web Cache

Release Notes

Release 2 (9.0.2) for Windows

May 2002

Part No. A97397-01

This document summarizes the differences between Oracle9*i*AS Web Cache and its documented functionality.

> **See Also:** *Oracle9i Application Server Release Notes*

1 General Issues and Workarounds

This section describes general issues and their workarounds for Oracle9*i*AS Web Cache. It contains the following sections:

- Section 1.1, "Default Buffer Sizes"

- Section 1.2, "Insufficient Input Checking in Oracle9iAS Web Cache Manager"

- Section 1.3, "Oracle Application Server Limitations"

- Section 1.4, "TCP/IP Tuning"

1.1 Default Buffer Sizes

Oracle9*i*AS Web Cache uses 2 KB for the access log buffer size and the following for cached documents:

- 4 KB for the sum of all HTTP header fields

  To change the default value, add the DOCHEADERBUFFERSIZE attribute with the new default size as its value to the <CACHE> element in the internal.xml file. For example:

  ```
  <CACHE DOCHEADERBUFFERSIZE="20480"... />
  ```

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- 3 KB for a single HTTP header field

  To change the default value, add the `MAXRESPONSEHEADERSIZE` attribute with the new default size as its value to the `<MISCELLANEOUS>` element in the `internal.xml` file. For example:

  ```
  <MISCELLANEOUS MAXRESPONSEHEADERSIZE="8192" ... />
  ```

- 32 KB for the HTTP response body

  To change the default value, add the `DOCBUFFERSIZE` attribute with the new default size as its value to the `<CACHE>` element in the `internal.xml` file. For example:

  ```
  <CACHE DOCBUFFERSIZE="65536"... />
  ```

  If the HTTP response body is less than 4 KB, then Oracle9*i*AS Web Cache uses a 4 KB buffer size.

The `internal.xml` file is located in the *ORACLE_HOME*\webcache directory on Windows.

1.2 Insufficient Input Checking in Oracle9*i*AS Web Cache Manager

Oracle9*i*AS Web Cache Manager does not enforce the same level of consistency checking upon receiving configuration input that Oracle9*i*AS Web Cache does upon starting up. Therefore, there may be instances where configuration changes are accepted by the Oracle9*i*AS Web Cache Manager, but Oracle9*i*AS Web Cache does not start up with the resulting configuration.

This is especially a problem when the `admin` server process is shut down (with the `webcachectl stop` or `webcachectl stopadm` command) after applying invalid configuration changes. In that case, the `admin` server process will not be able to start up, and the Oracle9*i*AS Web Cache Manager will become inaccessible.

To remedy this problem:

- If you want to retain the configuration changes you made, then send the `webcache.xml` file to Oracle Support Services to troubleshoot the invalid configuration entry. The `webcache.xml` file is located in the *ORACLE_HOME*\webcache directory on Windows.

- If you want to restore configuration to a previous configuration, then run the `webcachectl reset` command to restore to the previous version of the configuration. `webcachectl` is located in the *ORACLE_HOME*\bin on Windows.

1.3 Oracle Application Server Limitations

> **Note:** This limitation applies to Oracle Application Server using the Oracle Web Listener only. This does not apply to other listeners used with Oracle Application Server. It also does not apply to Oracle9*i* Application Server.

Oracle Application Server, when used specifically with the Oracle Web Listener, strictly enforces virtual-host checking using the `Host` request header, that is sent by almost all browsers. The `Host` header contains the string "*hostname:port*" where *hostname* and *port* are as entered in the location bar of the browser, even if the *hostname* in the location bar is an IP address. If the Oracle Web Listener receives a `Host` header that does not match an entry in the `Host Name` and `Port` columns of the `Network` section of the configuration (corresponding to the `[Multiport]` section in the `sv*.cfg` configuration file for the listener), it returns an HTTP error code 400 indicating that the request did not specify a valid virtual host.

1.3.1 Deployments

This limitation applies to the following deployments:

1. In Oracle Application Server 4.*x*, this is strictly enforced for HTTP/1.1 requests only. For HTTP/1.0 requests, only the host name has to match an entry in the `Network` section. The port number in the `Host` header does not matter.

2. Oracle Web Listener, as shipped with Oracle Web Application Server 3.0 enforces this strictly for all HTTP requests, that is HTTP/1.0 and HTTP/1.1.

1.3.2 Entries for Network

To make an Oracle Web Listener recognize and accept a `Host` header, a corresponding entry must be added to the `Network` section for that listener. When you add an entry with host name h1 and port p1, h1 is only used to match incoming `Host` headers and does not otherwise effect the operation of the listener. h1 does not need to be a DNS host name of the computer. However, p1 is used as a port that the Oracle Web Listener tries to listen on. Hence there should be no other process on the computer listening on port p1.

1.3.3 Oracle9*i*AS Web Cache Behavior

Oracle9*i*AS Web Cache does not change the Host header that it receives as part of a request when relaying that request to the application Web server.

If you set up Oracle9*i*AS Web Cache to listen on port 1100 on a computer with DNS host name m1 and the Application Web Server is on computer m2 on port 80, and you use a browser to access `http://m1:1100/`, the `Host` header received by Oracle9*i*AS Web Cache is "`Host: m1:1100`". This is exactly the `Host` header that will be received by the application Web server.

1.3.4 What Restrictions Does This Imply?

If you are using Oracle Application Server with the Oracle Web Listener as your application Web server, this means that the `Host` header sent to Oracle9*i*AS Web Cache must be recognized by the Oracle Web Listener, that is, there must be a corresponding entry in the `Network` section.

If you are using Oracle9*i*AS Web Cache's host name and port directly in your browser, and if Oracle9*i*AS Web Cache and the Oracle Web Listener are on the same computer, the Oracle Web Listener will need to accept Oracle9*i*AS Web Cache's host name and port number in the `Host` header, and for that to occur Oracle9*i*AS Web Cache's port number needs to be in the `Network` section of the Listener's configuration. This would mean that both Oracle9*i*AS Web Cache and the Oracle Web Listener will try to listen on that port, which is not possible. See Section 1.3.2, "Entries for Network".

When you are using your browser to connect directly to Oracle9*i*AS Web Cache, ensure that Oracle9*i*AS Web Cache and the Oracle Web Listener are not on the same computer.

To deploy Oracle9*i*AS Web Cache and the Oracle Web Listener on the same computer, there has to be a port-translating switch between the browser and Oracle9*i*AS Web Cache that translates the port number to which the browser connects to Oracle9*i*AS Web Cache's listening port.

For example, assume that Oracle9*i*AS Web Cache is listening on port 7777 on computer `m1.aaa.com`, and Oracle Web Listener is the application Web server listening on port 80 on the same computer `m1.aaa.com`. In this example, the user enters `http://www.aaa.com/` in the browser. The browser will attempt to connect to port 80 on `www.aaa.com`. `www.aaa.com` should be resolved through DNS to the switch, which should redirect requests for `www.aaa.com` on port 80 to computer m1 on port 1100. Note that the Host header will be: "`Host: www.aaa.com:80`". Oracle9*i*AS Web Cache will forward requests as needed to computer m1 port 80, that is, the Oracle Web Listener. For the Oracle Web Listener to accept this `Host` header, you will need to have added an entry to `Network` containing host name `www.aaa.com` and port 80. See Section 1.3.2, "Entries for Network" for how this can done on computer m1.

1.4 TCP/IP Tuning

If you want Oracle9*i*AS Web Cache to handle a large number of concurrent HTTP requests, you may need to tune TCP/IP settings for your operating system, such as the maximum TCP/IP connection queue length.

In particular, if you run stress tests against Oracle9*i*AS Web Cache and continuously open more TCP/IP connections from one client computer to Oracle9*i*AS Web Cache, you may experience periodic oscillation of throughput. This is usually caused by the TCP/IP `TIMED_WAIT` state of the operation system. In real world deployments, this is not an issue since it is unlikely that a single client will generate a huge number of connections. You can adjust the setting of the `TIMED_WAIT` state by modifying the value of the `TcpTimedWaitDelay` parameter in the registry at `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters`.

In case of denial of service attack, availability problems usually arise in the network layer in your operating system. For example, if one client generates large number of connections, TCP/IP connection problems generally arise in your operating system.

2 Configuration Issues and Workarounds

This section describes configuration issues and their workarounds for Oracle9*i*AS Web Cache. It contains the following sections:

- Section 2.1, "Oracle9iAS Web Cache Configuration Basics"

- Section 2.2, "Configuration File Upgrades"

- Section 2.3, "Oracle9iAS Web Cache Default Ports"

- Section 2.4, "Mismatched Oracle Home Definitions Causes Web Cache to Fail to Start"

- Section 2.5, "Peer-to Peer-Logging"

- Section 2.6, "DAVOraWebCacheReadOnly Parameter Does Not Work"

2.1 Oracle9*i*AS Web Cache Configuration Basics

To start initial Oracle9*i*AS Web Cache configuration:

1. If not currently logged on to the Oracle9*i*AS Web Cache computer, log in with the user ID of the user that performed the installation.

2. Start Oracle9*i*AS Web Cache.

   From the command line, enter `webcachectl start`.

3. Point your browser to the URL `http://`*`web_cache_`*
   `hostname``:4000/`

4. When prompted for the administrator user ID and password, enter administrator for the user name and the appropriate password. The first time you log in, the password is `administrator`.

   > **See Also:** *Oracle9iAS Web Cache Administration and Deployment Guide* (available at `http://otn.oracle.com/products/ias/web_` `cache/`) for complete configuration coverage

Oracle9*i*AS Web Cache uses two configuration files: `webcache.xml` and `internal.xml`. The Oracle9*i*AS Web Cache Manager writes its configuration information to the `webcache.xml` file. Oracle9*i*AS Web Cache uses `internal.xml` file. These files are located in the *`ORACLE_`* *`HOME`*`\webcache` directory on Windows. Do not edit these configuration files manually, except in the cases described in these Release Notes, or when directed to do so by Oracle Support Services. Improper editing of these configuration files may cause problems in Oracle9*i*AS Web Cache.

2.2 Configuration File Upgrades

In past releases, the following attributes required manual modification of the `internal.xml` file:

- `KEEPALIVE_TIMEOUT` attribute specifies the time, in seconds, for Oracle9*i*AS Web Cache to keep a connection open to the browser after it has returned a response.

- `OSRECV_TIMEOUT` attribute specifies the time, in seconds, for the origin server to generate a response to Oracle9*i*AS Web Cache.

In this release of Oracle9*i*AS Web Cache, these attributes have been merged into the Oracle9*i*AS Web Cache Manager (`webcache.xml`). During migration, these modifications are not preserved. If you modified these attributes, you have two choices. You can:

- Use the Network Timeouts page (**Cache-Specific Configuration** > **Network Timeouts**) of Oracle9*i*AS Web Cache Manager to reconfigure

- Preserve any change that you made to the old version of `internal.xml`, and copy the changes to the appropriate place in `webcache.xml`.

If you are upgrading an existing Oracle9*i*AS Web Cache installation, the passwords for administration and invalidation are reset. The user name and password for administration is `administrator/administrator` and the user name and password for invalidation is `invalidator/invalidator`. You can change both passwords in the Security page (**General Configuration** > **Security**) of Oracle9*i*AS Web Cache Manager.

2.3 Oracle9*i*AS Web Cache Default Ports

By default, Oracle9*i*AS Web Cache is configured to use the following default TCP ports:

- Listening HTTP Requests: 7777

- Listening HTTPS Requests: 4443

- Administration HTTP Requests: 4000

- Invalidation HTTP Requests: 4001

- Statistics HTTP Requests: 4002

If these ports are in use, then the installation procedure attempts to assign other port numbers from a range of possible port numbers.

> **See Also:** *Oracle9i Application Server Installation Guide*

The Oracle HTTP Server is configured to use the following default ports:

- HTTP Requests: 7778

- HTTPS Requests: 4444

At the end of installation, Oracle9*i*AS Web Cache will attempt to start. If there are port conflicts, then Oracle9*i*AS Web Cache may fail to start.

2.4 Mismatched Oracle Home Definitions Causes Web Cache to Fail to Start

If the definition of Oracle home in the webcache.xml configuration file is different than the definition of Oracle home in your environment, Oracle9iAS Web Cache may fail to start.

For example on Windows, if the Oracle home is configuration as C:\home\oracle_home_ias during the installation, then that configuration is written to the ORACLEHOME attribute in the webcache.xml file. However, if the registry specifies ORACLE_HOME parameter as C:\oracle\oracle_home_ias and you invoke the webcachectl start command to start Oracle9iAS Web Cache, then Oracle9iAS Web Cache will fail to start. In this case, you may see a message similar to the following:

```
The description for Event ID ( 1 ) in Source ( Oracle9iAS-Web-Cache )
cannot be found.The local computer may not have the necessary registry
information or message DLL files to display messages from a remote
computer.The following information is part of the event: Cannot open log
files because NULL socket indicates problem.
```

You can remedy this situation by modifying the webcache.xml file to match the registry settings located in HKEY_LOCAL_MACHINE\SOFTWARE\ORACLE so that the definitions are identical. (In the webcache.xml file, you modify the ORACLEHOME attribute of the CACHE NAME element. In a cluster environment, there is more than one CACHE NAME element, one for each cluster member. Be sure to modify the correct element.)

[Reference Bug: 2286732]

2.5 Peer-to Peer-Logging

By default, peer requests between two members of a cache cluster are not logged in the access log. Only client requests to the cluster are logged. Peer request logging can be enabled for individual cache cluster members by adding the ACCESSLOGIGNOREPEERREQUEST attribute to the MISCELLANEOUS element in the internal.xml configuration file.

The valid values for this attribute are:

- YES
- NO

The default value is YES.

The following example shows the MISCELLANEOUS element with peer-to-peer logging enabled:

```
<MISCELLANEOUS
    ERRORLOGFILE="C:/my_oracle_home/webcache/logs/event_log"
    ACCESSLOGIGNOREPEERREQUEST="NO"/>
```

[Reference Bug: 2364139]

2.6 DAVOraWebCacheReadOnly Parameter Does Not Work

The DAVOraWebCacheReadOnly parameter, if specified in the httpd.conf file, does not work in this release.

As a workaround, use the <LimitExcept> directive in the httpd.conf file, as described in the OraDAV module configuration chapter of the *Oracle HTTP Server Administration Guide.* Applying access restrictions to a location for all methods except GET, HEAD, and OPTIONS requests will essentially achieve the goal of using the DAVOraWebCacheReadOnly parameter. However, a caveat is that end users will always be restricted to GET, HEAD, and OPTIONS requests, even when Oracle9*i*AS Web Cache is not being used.

[Reference Bug: 2312620]

3 Issues Specific to Windows

This section describes issues specific to Windows. It contains the following sections:

3.1 Concurrent Users on Windows NT Workstation

Oracle9*i*AS Web Cache permits only five concurrent users on Windows NT Workstation. If you require more than five concurrent users, then consider using a Windows NT Server, such as Windows NT or Windows 2000.

3.2 XML Parsing Errors of webcache.xml Appears in Event Viewer

XML parsing errors related to not being able to read the `webcache.xml` file are displayed to the Event Viewer rather than to the screen in Windows NT.

[Reference Bug: 2277346]

4 Security Issues and Workarounds

This section describes security limitations for Oracle9*i*AS Web Cache. It contains the following sections:

4.1 Single Sign-On

Oracle9*i*AS Web Cache does not cache login requests or authenticated pages that use `mod_sso` static directives. To ensure that responses for those pages using dynamic directives with `mod_sso` are not cached, add the `Surrogate-Control: no-store` response-header field to identify the page as non-cacheable.

When configured with HTTPS listening ports, Oracle9*i*AS Web Cache is unable to forward browser certificates to origin servers. If browsers are using certificate-based single sign-on authentication, do not use Oracle9*i*AS Web Cache. This restriction will be lifted in a future release of Oracle9*i*AS Web Cache.

4.2 User Certificates

If a wallet contains a user certificate as a trustpoint for an origin server, then a core dump will occur when the user connects to the origin server. Oracle Corporation recommends not adding user certificates to trustpoints in the Oracle wallet but instead install the certificate authority (CA) signers' certificate as a trustpoint.

Oracle Corporation plans to resolve this issue in the next release.

[Reference Bugs: 2295542 and 2295884]

5 Documentation Errata

When using the Oracle9*i*AS Web Cache Manager online help, refer to the *Oracle9iAS Web Cache Administrator's Guide* for updated information on the following topics:

❑ Access Log Field Configuration (**Cache-Specific Configuration** > **Access Log**)

  ■ Section "Format of the Access Log Files" in Chapter 8, "Administering Oracle9*i*AS Web Cache"

❑ Hierarchical Caching Concepts and Configuration

  ■ Section "Cache Hierarchies" in Chapter 1, "Introduction to Oracle9*i*AS Web Cache"

  ■ Section "Configuring a Hierarchy of Caches" in Chapter 6, "Initial Setup and Configuration"

❑ Load Balancing Configuration (**General Configuration** > **Application Web Servers** or **Proxy Servers**)

  ■ Section "Load Balancing" in Chapter 1, "Introduction to Oracle9*i*AS Web Cache"

  ■ Section "Configuring Load Balancing and Failover" in Chapter 6, "Initial Setup and Configuration"

❑ Process Identity Configuration (**Cache-Specific Configuration** > **Process Identity**)

  ■ Section "Task 2: Modify Security Settings" in Chapter 6, "Initial Setup and Configuration"

❏ Session Request Usage and Configuration (**General Configuration** > **Cacheability Rules** and **Session Management**)

- Section "Session Binding" in Chapter 1, "Introduction to Oracle9*i*AS Web Cache"

- Section "Session Information" in Chapter 2, "Caching Concepts"

- Chapter 7, "Creating Caching Rules"