

ORACLE TRAFFIC DIRECTOR

KEY FEATURES AND BENEFITS

FAST, RELIABLE, EASY-TO-USE, SECURE, AND SCALABLE LOAD BALANCER

- Easy to install, configure, and administer
- High availability for the load balancer and for the back-end servers
- High performance through SSL/TLS termination, content caching, and HTTP compression
- High throughput with low latency
- Integration with Oracle WebLogic Server instances in the back end
- Flexible routing and load control on the back end servers
- Request-rate limiting and QoS tuning
- Flexible and fine-grained monitoring
- Plug-in for building virtual appliances
- WebSocket Load Balancing support
- Web application firewall support

*Oracle Traffic Director is a fast, reliable, and scalable layer-7 software load balancer that you can deploy as **the** reliable entry point for all TCP, HTTP and HTTPS traffic to application servers and web servers in your network.*

- Oracle Traffic Director can **handle large volumes of application traffic with low latency**. The product is optimized for use in Oracle Exalogic Elastic Cloud. It can communicate with servers in the back end over Exalogic's InfiniBand fabric.
- To ensure high availability of the load balancing services, you can **group pairs of Oracle Traffic Director instances for active-passive or active-active failover**.
- As the volume of traffic to your network grows, you can easily **scale the environment** by reconfiguring Oracle Traffic Director with additional back-end servers.
- Depending on the needs of your IT environment, you can configure Oracle Traffic Director to **apply multiple, declarative rules when distributing requests to the back-end servers and when forwarding responses to clients**.
- Oracle Traffic Director is **easy to install, configure, and use**. It includes a simple, wizard-driven graphical interface as well as a robust command-line interface to help you administer Oracle Traffic Director instances.

High Availability

Health checks for the back end. If a server in the back end is no longer available or is fully loaded, Oracle Traffic Director detects this automatically through periodic health checks and stops sending client requests to that server. When the failed server becomes available again, Oracle Traffic Director detects this automatically and resumes sending requests to the server.

Backup servers in the back end. When setting up server pools for an Oracle Traffic Director instance, you can designate a few servers in the back end as backup servers. Oracle Traffic Director sends requests to the backup servers only when none of the primary servers is available, ensuring continued availability even when some servers in the back end fail.

Failover for load balancing. To ensure high availability of the load balanced services, you can deploy Oracle Traffic Director instances in an active-passive or active-active failover configuration.

Dynamic reconfiguration. Most configuration changes to Oracle Traffic Director instances can be deployed dynamically, without restarting the instances.

High Performance

SSL/TLS offloading. Oracle Traffic Director can be configured as the SSL/TLS termination point for HTTPS requests, reducing the processing overhead on the servers in the back end.

Content caching. Oracle Traffic Director can be configured to cache (in its process memory) content that it receives from origin servers. By caching content, Oracle Traffic Director helps reduce the load on servers in the back end and helps improve performance for clients.

HTTP compression. You can configure Oracle Traffic Director instances to compress data received from servers in the back end and forward the compressed content to the requesting

clients. This feature improves the response time for clients connected on slow connections.

Flexible Routing and Load Control on Back-End Servers

Request-based routing. Oracle Traffic Director can be configured to route HTTP/S and TCP requests to specific servers in the back end based on information in the request URI: pattern, query string, domain, source and destination IP addresses, and so on.

Content-based routing. Oracle Traffic Director can be configured to route HTTP/S and TCP requests to specific servers in the back end based on content within a request. This way, web service requests such as XML or JSON can be easily routed to specific origin servers based on specific elements within the body content.

Request rate acceleration. You can configure the rate at which Oracle Traffic Director ramp up the load on specific back end servers, so that servers that have just been added to the pool or restarted, to perform startup tasks such as loading data and allocating system resources.

Connection limiting. Oracle Traffic Director can be configured to limit the number of concurrent connections to a server in the back end. When the configured connection limit for a server is reached, further requests that require new connections are not sent to that server.

Controlling the Request Load and Quality of Service

Request rate limiting. Oracle Traffic Director can be set up to limit the rate of requests from specific clients and request types, enabling optimal utilization of available bandwidth, guaranteeing a certain level of quality of service, and preventing denial-of-service attacks.

Quality of service tuning. To ensure equitable utilization of the available network resources, you can configure Oracle Traffic Director virtual servers to limit the number of concurrent connections to clients and the maximum speed at which data can be transferred to clients.

Security

Reverse proxy. By serving as an intermediary between clients outside the network and servers in the back end, Oracle Traffic Director masks the names of servers in the back end and provides a single point for tracking client access to multiple servers in the back end.

Support for SSL 3.0 and TLS 1.0. You can configure SSL/TLS-enabled listeners for Oracle Traffic Director instances, using either certificates issued by commercial CAs such as VeriSign or RSA- and ECC-type self-signed certificates with key sizes of up to 4096 bits.

Web application firewall. Oracle Traffic Director supports web application firewalls. A web application firewall (WAF) is a filter or server plugin that applies a set of rules, called rule sets, to an HTTP request. Using a web application firewall, users can inspect traffic and deny requests to protect back-end applications from CSRF vulnerabilities and common attacks such as cross-site scripting.

Monitoring

Oracle Traffic Director records statistics about server activity at different levels—instances, virtual servers, listeners, connections, and origin servers. For example, for each server instance, Oracle Traffic Director collects statistics about the duration for which the instance has been running, number of requests processed, average load, and so on. You can monitor statistics pertaining to the performance of Oracle Traffic Director instances through several methods: the administration console, the command-line interface, and a report in XML format.

WebSocket Connections

Oracle Traffic Director handles WebSocket connections by default. WebSocket connections are long-lived and allow support for live content, games in real-time, video chatting, and so on.

Integration with Oracle WebLogic Server

Oracle Traffic Director is designed to recognize and handle headers that are part of requests to, and responses from, Oracle WebLogic Server instances in the back end. Oracle Traffic Director can dynamically discover changes in the Oracle WebLogic Server cluster—such as the removal or addition of managed servers, and consider such changes while routing requests.

Typical Deployment

A typical multi-tier deployment of an application using Oracle Traffic Director is shown in the Figure 1 illustrating how highly available traffic management can be done in the context of a large pool of application servers and Web servers.

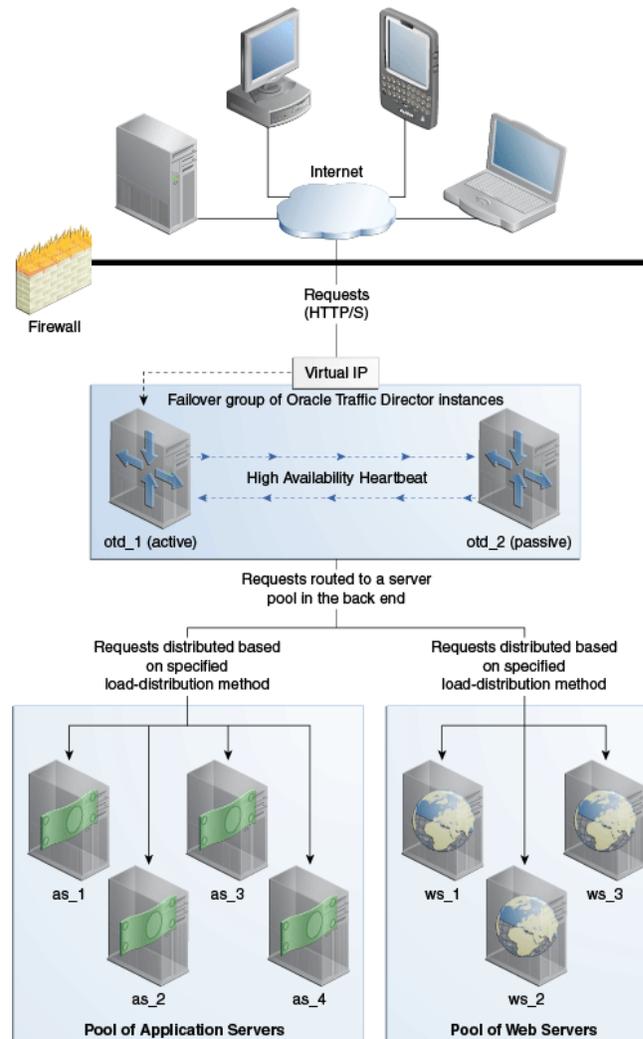


Figure 1: Oracle Traffic Director in a Larger Scale, High Availability Deployment

Easy-to-Use Administration Interfaces

Administrators can use either a graphical user interface—administration console—or a command-line interface to administer Oracle Traffic Director instances.

- The administration console is a web-based graphical interface consisting of a set of screens and wizards that you can use to create, monitor, and manage Oracle Traffic Director instances. The administration console allows users to configure ‘Traffic Rules’ through a

wizard to route incoming HTTP and TCP traffic based on headers and entity data.

- The scriptable command-line interface (CLI) supports a wide range of administrative operations. You can run the commands either in standalone mode directly from the operating system's shell prompt or from within the CLI's shell. The syntax of the command-line interface is easy to understand and use. While you use the interface, you can look up help for specific commands and options.

The administration console as well as error messages are available in English and eight other languages: French, German, Spanish, Italian, Korean, Portuguese, Chinese, and Japanese.

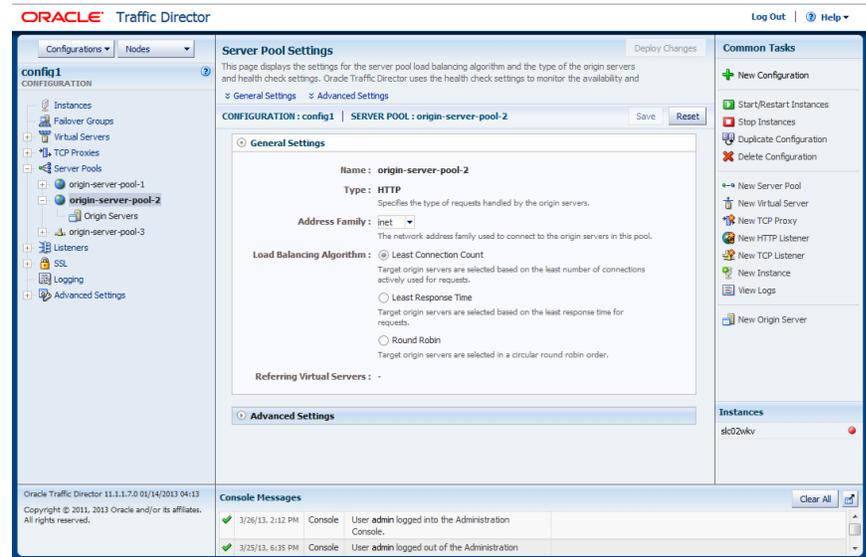


Figure 2 : Oracle Traffic Director administration console

```
$ ./bin/tadm --user=admin --port=1894
Enter admin-user-password>
Connected to the administration server localhost:1894
Oracle Traffic Director 11.1.1.6.0 B11/07/2011 09:08
tadm> create-config
Usage: create-config --help|-?
      or create-config [--echo] [--no-prompt] [--verbose] [--server-user=user-id] [--ip=ip] --http-port=port --server-name=server-name --origin-server=host:port[,host:port,...] config-name
OTD-70014 origin-server is a required option.
```

Figure 3: Oracle Traffic Director command-line interface

More Information

- Documentation: <http://www.oracle.com/technetwork/java/webtier/documentation/index.html>
- Supported platforms: <http://www.oracle.com/technetwork/middleware/ias/downloads/fusion-certification-100350.html>

Contact Us

For more information about Oracle Traffic Director, visit oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.



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