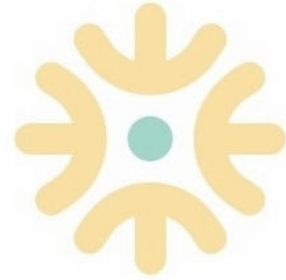




White Paper



***Performance Tuning
Recommendations***

***For
Oracle Identity Federation***

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Executive Summary

This paper describes parameters and configuration to improve the Federated SSO implemented using Oracle Identity Federation. The recommendations in this paper are based on our experience in deploying the product for our customers. The information provided in this paper can serve as a starter towards achieving performance enhancement.

Introduction

Oracle Identity Federation, formerly known as Oblix ShareId, is a federation solution providing a self-contained and flexible multi-protocol federation server deployable with existing identity and access management systems. Federation enables organizations to create virtual communities for their employees as well as customers and partners with SSO capabilities. Federation delegates the management of users' information to their respective owners, preserving privacy and data ownership, while enabling users to securely communicate and conduct business within their virtual communities. Oracle Identity Federation is Liberty Alliance certified for Liberty ID-FF and SAML 2.0. Like any application deployed in demanding, real-time environments, proper server sizing and configuration is critical for acceptable performance. The challenge, however, is in setting different parameters to fit the needs of particular deployment. This problem is complicated by a number of factors, including:

- No commonly agreed-upon standards for performance benchmarking.
- The sensitivity of a given deployment to factors such as tuning.
- The performance of supporting services, such as directories and databases.
- A lack of comparable performance data figures which can be applied to real-world deployments.

This white paper proposes performance and tuning parameters for Oracle Identity Federation implementations, the OIF Benchmark. The goal of the OIF Benchmark is to provide a benchmark that will be meaningful for a wide variety of real-world Oracle Identity Federation deployments. This paper describes the tuning and performance parameters of the OIF benchmark and some of the different tests that may be defined to run with this benchmark.

Test Runs

Several different tests can be performed to explore different aspects of performance, scalability and reliability. For purposes of the OIF Benchmark, four types of tests were defined. These are:

- Baseline Testing
- Capacity Testing
- Longevity Testing
- Failover Testing

Each of these is described in details below:

➤ **Baseline Testing**

This test is performed for concurrent users. Baseline testing is a range of measurements that represent acceptable performance under typical operating conditions. Baseline provides a reference point that makes it easier to spot problems when they occur.

➤ **Capacity Testing**

This test is performed for concurrent users. This test measures the overall capacity of the system and determines at what point response time and throughput become unacceptable. In this test, we have also tested the application to determine at what point the application fails. The goal is to show how far a given application can scale under a specific set of circumstances.

➤ **Longevity Testing**

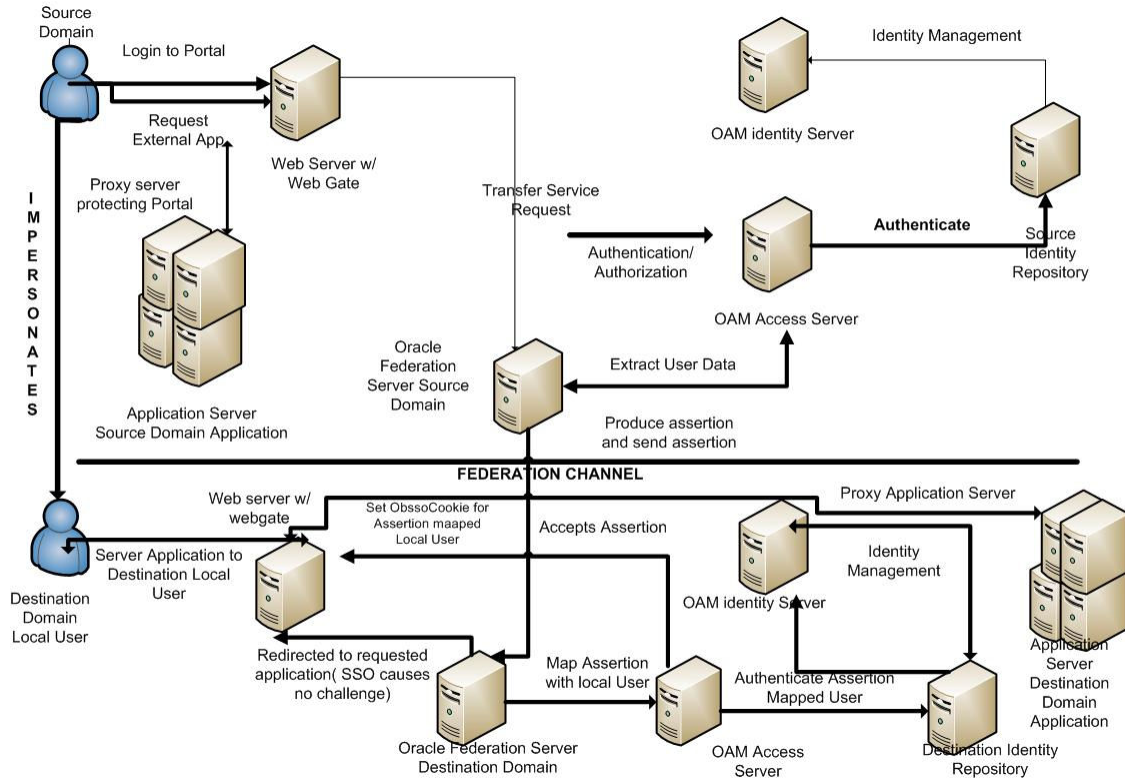
The purpose of the longevity test is to evaluate the stability of the system under load over a longer period of time. In this test, 2,000 virtual users configured with think-times are used to load the servers to between 50% and 80% of CPU capacity. The test is run and monitored over a defined period of time. Results reported are throughput and average response time, as well as systems-level and process-level metrics such as CPU utilization and maximum memory footprint. (Note: These tests are generally carried out for 12, 24, and 36 hours)

➤ **Failover Testing**

In failover testing, we have closed down the components while running load testing continuously to see if the load can be handled by other components.

Testing Scenario

The Test Environment is depicted in this figure:



Performance and Tuning Parameters for Oracle Identity Federation

Following are some of the parameter values that can be used for performance tuning.

- **Oracle HTTP Server**

```
Timeout = 300
KeepAlive =Off
MaxKeepAliveRequests =100
KeepAlive TimeOut =15
MinSpareServers =50
MaxSpareServers=250
StartServers=250
MaxClients=1600
MaxRequestPerChild=0
Dms.conf=commented
```

- **OC4J Tuning**

```
OC4JCacheSize = 0
OC4JConn Timeout = 120
OC4JAJPBufferSize = 8192
OC4J Processes default_island=6
Java Options
Dfed.http.host=100
Dfed.http.max.conn=200
-Xms1024m -Xmx1024m
Xss128k
XX: +AggressiveHeap
XX: +UseParallelGC
XX: PermSize=128m
Doracle.ajp.responseheader.size=8192
DHTTPClient.disableKeepAlives=true
Djava.net.preferIPv4Stack=true
Dajp.keepalive=true
Dfed.jdbc.min.conn=50
Dfed.jdbc.max.conn=300
<global-thread-pool min="100" max="300" queue="30" keepAlive="-1" cx-min="100" cx-
max="300" cx-queue="30" cx-keepAlive="-1" debug="false"/>
```

Conclusion

If these parameters and others not mentioned in this white paper are set with the proper combinations suiting your deployment, then substantial performance improvement can be achieved.

References

- *Oracle Metalink id : 294749.1*
- *Oracle Metalink id : 435641.1*