Scalability Benchmark for
IBM Host On Demand Redirector V11.0
On Windows for SSL connection

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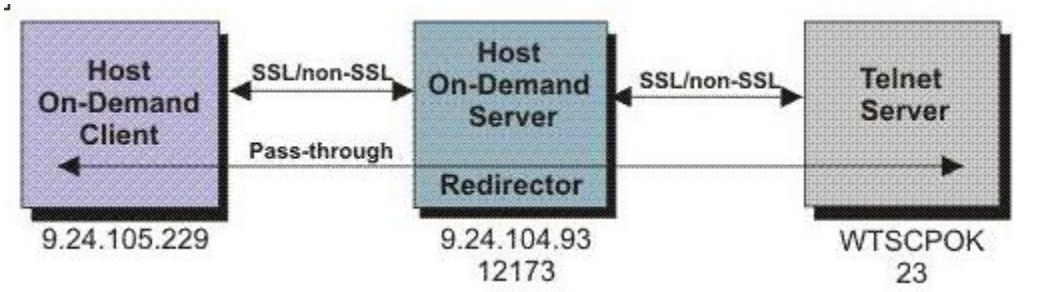
1. INTRODUCTION

The Redirector is a Telnet proxy that is able to accept connections from clients and pass them on, through a different port, to the next stage in the link. The Redirector can serve as a barrier between clients and the target Telnet server. If you do not want a large number of clients connecting directly to your host system and creating a security risk, you can have the clients connect to one or more redirectors. The redirectors pass the connection on to the host, allowing you to hide the address of the host from the client users. On Windows, AIX, and Linux platforms, the Redirector provides the support for Transport Layer Security (TLS) or Secure Sockets Layer (SSL) security between clients and the server

The Figure below shows the working of the redirector.



Secure connections are also possible between the client and the Host on Demand Server.

This is an IBM Host on demand (HOD) Redirector version 11.0 Performance publication.

This document covers the results of the scalability test conducted in a HOD Redirector deployment on Windows. We cover the details of our findings by varying the HOD server JVM heap (default, 512 MB, 1024 MB) and the number of ports (1 and 7). The results are depicted in terms of the maximum number of concurrent users allowed by each configuration.

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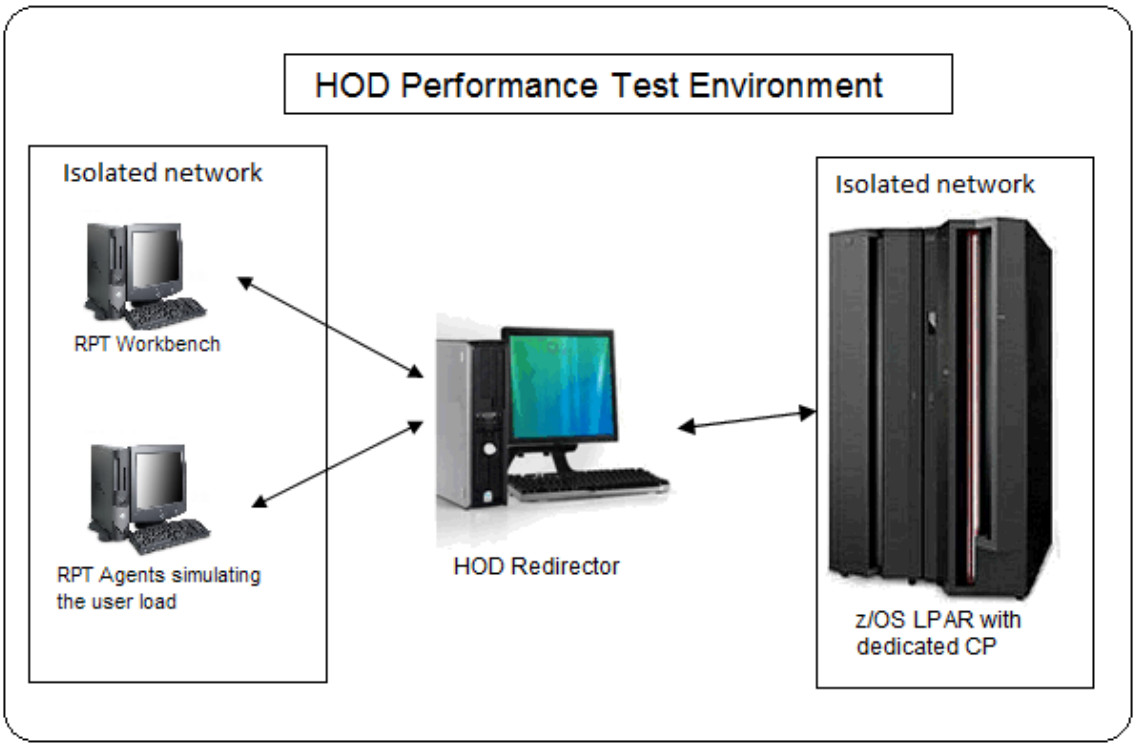
2. TEST ENVIRONMENT

The scalability tests were conducted in our in-house lab considering different settings for Server JVM heaps and the number of ports. The scalability test environment consisted of an application running on a 3270 Host and interacting with DB2, HOD redirector, a load generator workbench and load generator clients

The load generator workbench sends test scripts and run commands to the load generator clients. The load generator clients create equal load on all the ports on the HOD redirector and drive the application, which is running on a CICS transaction server in an LPAR in z/OS and needs access to a DB2 database.



2.1 HARDWARE CONFIGURATION

The table lists the hardware used in the testing performed:

Role	Model	Hardware Architecture	Number of Processors (Total Cores)	Processor Speed	Memory (GB)
HOD Redirector	xSeries x3100 M3-[4253D2X]	Intel® Xeon® X350	8	2.67 GHz	4
Host	System z	Z9 EC -2094	4	2286 MIPS	8
RPT	X series_226 [8648PBE]	Intel® Xeon™	8	3 GHz	4

2.2 SOFTWARE

The table lists the operating system used in the testing performed:

Role	Operating System
HOST	z/OS V1.12
HOD redirector	Windows server 2008 R2 Datacenter
Load generator workbench (RPT)	Windows Server 2003 Standard
Load generator clients	Windows Server 2003 Standard

3. WORKLOAD CHARACTERIZATION

Rational Performance Tester (RPT) was used to simulate the workload. Each user performs the same use case described below. The users are ramped up one in every second. Each test runs for 10 minutes after all of the users are in the system.

UseCase	Description
Login	Connect to the server using server credentials
	Connect to the Global Auto Mall Application
Query for Toyota cars	Select the Toyota Camry car out of the list
Display Camry models	Browse through all the models fo Camry that run through 10 screens
Query for Chevrolet cars	Select the Chevrolet Silverado car out of the list
Display Silverado models	Browse through all the models of Silverado that run though 2 screens
Query for Honda cars	Select the Honda Accord car out of the list
Display Accord models	Browse through all the models of Accord that run through 5 screens
Logoff	User will logout

4. TEST SCENARIOS

The following scenarios were tested:

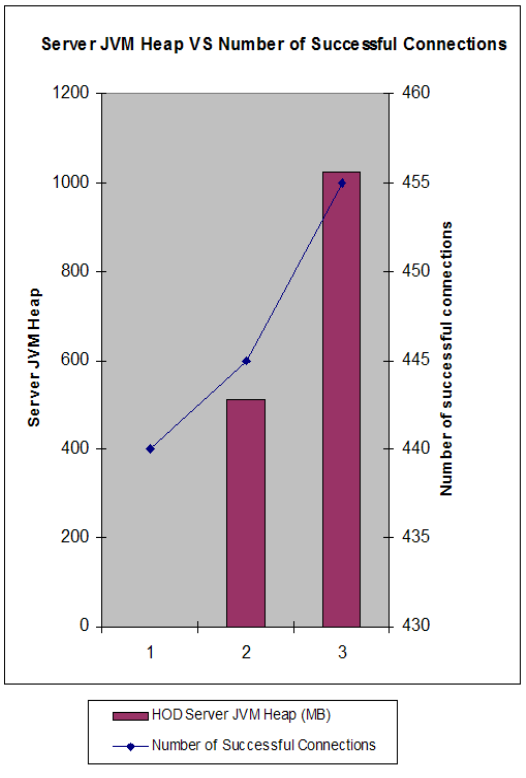
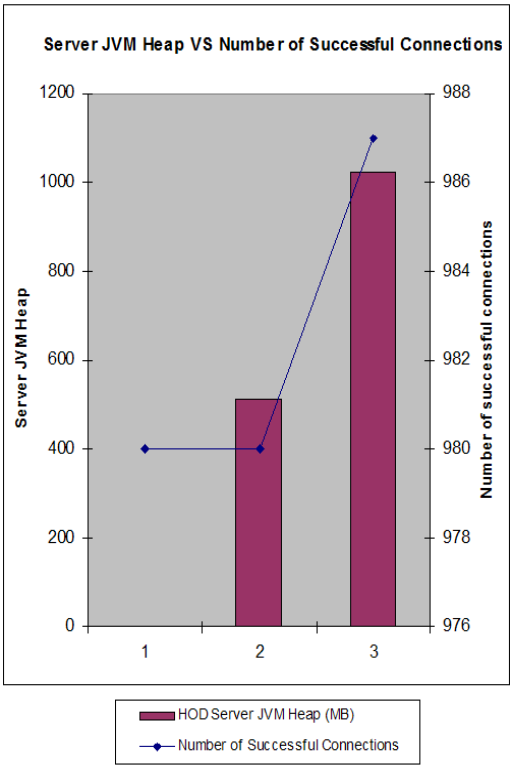
- HOD redirector with one port and default JVM heap
- HOD redirector with one port and 512 MB JVM heap
- HOD redirector with one port and 1024 MB JVM heap
- HOD redirector with seven ports and default JVM heap
- HOD redirector with seven ports and 512 MB JVM heap
- HOD redirector with seven ports and 1024 MB JVM heap

The various Server JVM heaps stated above are controlled by modifying the registry key “AppParameters” value under :
\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\services\IBMServiceManager\Parameters\AppParameters

5. TEST RESULTS

The table below lists the number of successful connections that can be established by varying the Server JVM heap and the number of ports.

Type of Connection	No. of Ports	HOD Server JVM Heap (MB)	Maximum No of Concurrent Users	Maximum No of Successful Connections
SSL	1	Default	440	440
		512	445	445
		1024	455	455
	7	Default	980	980
		512	980	980
		1024	987	987

Number of Ports = 1	Number of Ports =7
	

6. CONCLUSION

The number of concurrent connections that can be accommodated on a HOD Redirector server deployed on Windows machine (with the specifications stated earlier in the document) increases gradually with the increase in the JVM heap. However, with the increase in the number of ports to 7 the number of concurrent connections were doubled.