SRC 1.40 Performance Benchmark Report

Description of the test environment and test results on Windows-based servers

Executive Summary

The integrated system that comprises the SRC 1.40 release and the SM 9.31 release has passed the final performance tests with a full load of 400 current users in a 1 million dataset environment.

Problems and Issues

None

Performance Test Environment

Hardware

The servers that were used for this testing are all physical machines located in the Moffett Towers laboratory.

The following table describes the configurations of these servers.

ID	Usage	Operating System	CPU	Memory
1	SRC Server	Windows Server 2008 Enterprise, 64-bit operating system	Intel® Xeon® CPU X5355 @2.66 GHz 2.67 GHz (two processors), eight cores	16 GB
2	SM Server-1	Windows Server 2008 R2 Enterprise, 64-bit operating system	Intel® Xeon® CPU X5365 @3.00 GHz 3.00 GHz (two processors), eight cores	16 GB
3	SM Server-2	Windows Server 2008 Enterprise, 64-bit operating system	Intel® Xeon® CPU X5355 @2.66 GHz 2.67 GHz (two processors), eight cores	16 GB
4	SM Server-3	Windows Server 2003 Enterprise Edition SP2, 32-bit operating system	Intel® Xeon® CPU L5430 @2.66 GHz 2.67 GHz, eight cores	64 GB
5	Database server	Windows Server 2008 Enterprise, 64-bit operating system	Intel® Xeon® CPU L5430 @2.66 GHz 2.67 GHz (two processors), eight cores	64 GB
6	LoadRunner/VU Controller	Windows Server 2003 Enterprise Edition SP2, 32-bit operating system	Intel® Xeon® CPU 5160 @3.00 GHz 3.00 GHz (two processors), four cores	16 GB
7	Hardware Load Balancer	Cisco Application Control Engine 4710		

Software

All tests were run on the following software set:

- Oracle Database 11g Enterprise Edition Release 11.2.0.1.0 , 64-bit Production
- HP LoadRunner 11.1.0
- Apache Tomcat 7.0.26, 64-bit
- JDK 1.6.0_31, 64-bit

Performance Test Information

Setup and Tuning

The test environment was configured as follows:

1. SRC and Service Manager were deployed on separate servers.

2. SRC was configured to work correctly with Service Manager.

3. The applicationContext.properties property was configured to support a maximum of 60 connections, as follows:

   src.sm.defaultMaxConnectionsPerHost = 60
   src.sm.maxTotalConnections = 60

4. Sm.ini was configured as follows:

```
# ServiceManager Initialization file

# (c) Copyright 2008 Hewlett-Packard Development Company, L.P.

# Configuration Modified Date:7/9/12 9:39 PM

shared_memory:128000000

log:../logs/sm.log

system:13080

httpPort:13080

sslConnector:0

httpsPort:13443

sqldictionary:oracle10

[oracle10]

sqldb: schema_name

*sqllogin:B2455D48ED17969188A094AD5BF0C6936D774AC85D28D07F08FD40538881F879

sqllibrary:sqoracle.oci10.DLL

plugin0:kmplugin.dll


## ###uncomment this part if using sm horizontal scaling environment ###

#grouplicenseip:10.10.200.100

#groupname:srcmobility

#groupmcastaddress:224.0.0.225

#groupsubnetaddress:255.255.255.0

#groupport:62273

#groupbindaddress: 10.10.200.100


webservices_sessiontimeout:180

Threadsperprocess:100
```

```
Sessiontimeout:10

Heartbeatinterval:5

maxKeepAliveRequests:100

JVMOption0:-Xms512M

JVMOption1:-Xmx512M

dbcachequery:extaccess
```

Test Scripts

This testing used test scripts that are modeled on typical user transactions in a 1 million dataset system. The scripts cover the three main areas of operation in the SRC system: dashboard, service, and support.

Performance Benchmarks

The goal of this testing was to identify performance bottlenecks in the SRC system, and to determine the overall performance status of the SRC system with a full load of 400 concurrent users in a 1 million dataset system. During testing, each user was randomly assigned a think time between 5 and 15 seconds.

Success Criteria

The benchmark tests are considered successful when the following conditions are true:

- The specified users are logged in simultaneously and able to complete the recorded tests.
- The typical transaction response times are 5 seconds or faster.
- The login transaction response time is 10 seconds or faster.

LoadRunner Benchmark Test Scenario Settings

User Scenario	User Count	Start Time	Ramp-up Rate
Service Catalog Search_Submit_Request	100	+0:00:00	1 user/15secs
Service Catalog View Request Inbox	100	+0:00:00	1 user/15secs
Service Catalog Submit Bundle	100	+0:00:00	1 user/15secs
SST_submit_update_close_ticket_final	100	+0:00:00	1 user/15secs

Test Results

This performance benchmark test was run on a 1 million dataset system that comprised of 1,000,000 interactions, 6,000 service catalog categories, more than 20,000 catalog items, 100,000 changes, 100,000 quotes, 800,000 incidents, and 310,000 users who have different roles (such as operator, ESA, and ESS).

The results are displayed in the following chart and table.

When the results are displayed as a chart, it is clear that the average response time of almost all the transactions is less than 5 seconds. The average response times of two transactions (T03_Search and T03_Searchitem) are between 10 and 15 seconds.

The following table specifies the average response time for each transaction.

Transactions	Average	90 Percent	Pass	Fail
T02_Login	5.297	7.609	1,101	1
T03_OpenPendingInbox	1.775	1.938	299	0
T03_Search	10.613	16.139	272	3
T03_SearchItem	13.413	20.563	279	1
T03_SupportTab	0.012	0.016	247	0
T04_FillSupportInfo	0.001	0	247	0
T04_OpenPendingItem	3.364	4.531	299	0
T04_SearchBundle	6.785	10.029	279	0
T04_SearchLastPage	0.001	0	272	0
T05_ClickServiceItem	3.329	4.969	271	1
T05_OpenApprovalInbox	1.187	1.625	299	0
T05_SelectBundle	3.195	4.922	276	3
T05_UploadFile	0.1	0.219	247	0
T06_RequestBundle	5.403	7.766	272	4
T06_SubmitSupport	1.79	2.254	247	0
T07_OpenDenyInbox	1.1	1.313	299	0
T07_ViewStatus	2.707	4.308	517	0
T08_AddComment	2.501	3.016	245	0
T08_Logout	1.828	1.891	272	0
T08_Submit	3.971	5.796	266	5
T09_Logout	1.532	1.656	299	0
T09_Status	3.122	4.359	266	0
T09_UpdateSupport	1.89	2.488	245	0
T10_Logout	1.459	1.641	266	0
T10_SubmitUpdate	4.444	6.375	245	0
T11_CloseSupport	2.074	2.145	244	1

T12_Back	1.26	1.688	244	0
T13_Logout	1.766	1.984	244	0

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