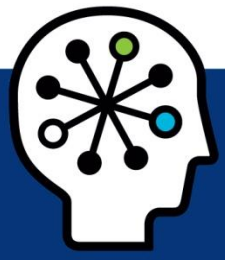
Service Manager 9.30 Deployment Sizing Guide



Introduction

The reference configuration data supplied in this document is based solely on the usage of the Service Manager (SM) 9.30 Out of the Box (OOTB) environment, including the Web Tier, SRC, Mobility and the Knowledge Management Search Engine running on top of the Service Manager 9.30 Runtime Environment (RTE).

Individual implementations will most likely see an increase in the amount of resources that are utilized or needed by the application to perform in an acceptable manner. This would include running on an earlier version of the RTE.

Failure to test the application with the concurrent user load and transaction rate that is expected at the height of the daily system usage and utilizing the tailored application may result in an undersized environment to support the requirements.

The recommendations described in this document should be considered the minimum requirement to run Service Manager effectively.

Service Manager 9.30 Sizing Questions

The following list of questions is designed to gather the necessary information required to make a recommendation on the overall system architecture for the Service Manager environment.

Note: Although not all of the information requested here is required for sizing of the environment it is very useful information to obtain for a thorough architecture recommendation.

1. What kind of environment will you use?
    a. In house solution administered by internal IT
    b. In house solution administered by HP
    c. Software as a Service
2. Expected Hardware (HW) / Software (SW) environment
    a. Do you plan to operate in separate Development / Test / Production environments in order to assure quality?
    b. ITSCM/Disaster Recovery (DR) or High Availability (HA) requirements?
    c. Do you plan to operate in a virtualized environment or on physical machines?
3. Do you have existing hardware that you want to reuse?
    a. What Operating Systems (OS) are you using, is the OS 32 or 64 bit?
    b. Number of CPU's per machine?
    c. Amount of RAM per machine?
    d. What RDBMS?
4. Can you provide a diagram of your network with minimum latency and bandwidth values?
    a. Can you provide a Microsoft Visio™ diagram of your intended deployment? (See Sample Diagram)
5. Which integrations do you plan to employ with HP Service Manager?
    a. Inbound/Outbound Email, SMTP/POP3 requirements?
    b. Active directory (LDAP) integration or Single Sign-on?
    c. Data import of persons/organizations from an HR or other environment?
    d. Integration to Universal Configuration Management Database (UCMDB)/CMS?
    e. Integration to other HP Software solutions?
    f. Import of Configuration Items (CI's)?
    g. other
6. Licensing requirements?
    a. Is Service Catalog to be part of the configuration?
    b. Is Knowledge Management (KM) to be part of the configuration?

c. What is the expected number of KM users? (Authors, Editors, Administrators)

d. Which languages do you expect to operate?

e. What is the overall number of IT specialists? (Technicians, Administrators, Helpdesk)

f. How many of them should have guaranteed access to Service Manager?(Named Users)

g. What are your module level user requirements for Service Manager?

7. The Web Tier is the recommended client for accessing Service Manager.

    a. How many Self Service users will have access to the software?
    Use the calculation in the Rules of thumb section to translate the number of possible Self Service users to the number of concurrent users.

8. What is the geographical breakdown of your Web user base?

9. What are your expected data volumes by module including attachments?

    a. Service Desk

    b. Incident Management

    c. Change Management

    d. Problem Management

    e. Knowledge Management

    f. Request Management

    g. Configuration Management

    h. Service Level Management

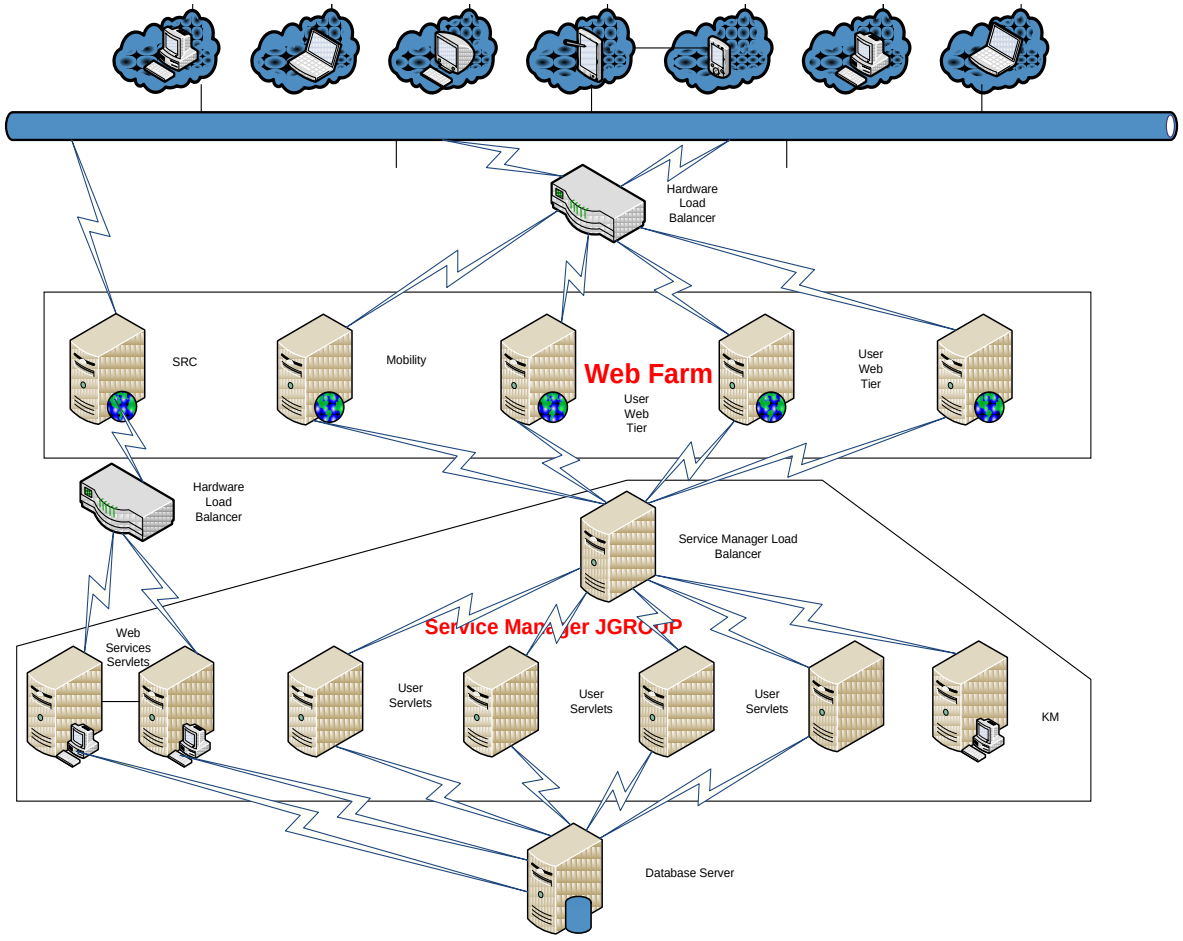
10. What are your reporting requirements?

    a. Will you use the bundled Crystal Reports solution?

    b. Or an external reporting solution?

    c. Or will you use data replication into a Data Warehouse for reporting?

Sample Service Manager 9.30 Deployment Diagram



Service Manager 9.30 Application Server

Minimum required reference configurations – the hardware indicated below was used to obtain the Memory and CPU minimums. The hardware is not intended to be a specific recommendation but rather a guideline.

- Small (<200 concurrent users)

  Windows / Linux:

  Service Manager: HP DL360 – 2 CPU cores, 8GB RAM, 36GB HD

  RDBMS: HP DL360 – 2 CPU cores, 8GB RAM, 2 x 36GB RAID

- Medium (201 – 600 concurrent users)

  Windows / Linux:

  Service Manager: HP BL460c – 4 CPU cores, 24GB RAM, 36GB HD

  RDBMS: HP DL585 – 2-4 CPU cores, 12GB RAM, 3 x 36GB RAID

  Unix:

  Service Manager: HP rx6600 – HP-UX 11i, 4 CPU cores, 24GB RAM, 36GB HD

  RDBMS: HP rx6600 – HP-UX 11i, 2-4 CPU cores, 12GB RAM, 3 x 36GB RAID

- Large (601 – 1,000 concurrent users)

  Windows / Linux:

  Service Manager: HP BL460c – 8 CPU cores, 48GB RAM, 36GB HD

  RDBMS: HP DL585 – 4-8 CPU cores, 16GB RAM, 3 x 36GB RAID

  Unix:

  Service Manager: HP rx6600 – HP-UX 11i, 8 CPU cores, 48GB RAM, 36GB HD

  RDBMS: HP rx6600 – HP-UX 11i, 4-8 CPU cores, 16GB RAM, 5 x 36GB RAID

- Extra Large (1000 – 2,500 concurrent users)

  At this size it is recommended to run SM on multiple machines in Vertical/Horizontal Scaling mode.

  Please see appendix C for references

Service Manager 9.30 Web Tier

Web Tier (400 concurrent users) ***see Rules of Thumb***

Windows / Linux:

HP DL360 – 2 CPU cores, 6GB RAM, 36GB HD

Unix:

HP rx2600 – HP-UX 11i, 2 CPU cores, 6GB RAM, 36GB HD

Service Manager 9.30 Help Server

HP DL360 – 2 CPU cores, 2GB RAM, 36GB HD ***see Rules of Thumb***

Service Manager Load Balancer Server

HP DL360 – 2 CPU cores, 2GB RAM, 36GB HD ***see Rules of Thumb***

Service Manager Knowledge Search Engine Server

- Small (<200 concurrent users)

  Windows / Linux:

  HP DL360 –1 CPU cores, 2GB RAM, 36GB HD

  Unix:

  HP rx2600 – HP-UX 11i, 1 CPU cores, 2GB RAM, 36GB HD

- Medium and Large (>200 concurrent users) ***see Rules of Thumb***

  Windows / Linux:

  HP DL360 – 2 CPU cores, 4GB RAM, 36GB HD

  Unix:

  HP rx2600 – HP-UX 11i, 2 CPU cores, 4GB RAM, 36GB HD

Mobility

see Rules of Thumb

- Small (<200 concurrent users)

  Windows / Linux:

  HP DL360 – 2 CPU cores, 6GB RAM, 36GB HD

  Unix:

  HP rx2600 – HP-UX 11i, 2 CPU cores, 6GB RAM, 36GB HD

- Medium and Large (200~500 concurrent users)

  Windows / Linux:

  HP BL460c – 8 CPU cores, 32GB RAM, 36GB HD

  Unix:

  HP rx6600 – HP-UX 11i, 8 CPU cores, 32GB RAM, 36GB HD

SRC

- 600 concurrent users ***see Rules of Thumb***

  Windows / Linux:

  Service Manager: HP BL460c – 4 CPU cores, 16GB RAM, 36GB HD

  Unix:

  Service Manager: HP rx6600 – HP-UX 11i, 4 CPU cores, 16GB RAM, 36GB HD

Rules of Thumb

Service Manager Application Server (servlet container)

A servlet container requires approximately 2 GB of Ram

- 500 MB JVM requirement including the 256MB of Default JAVA heap
- 50 MB for the process overhead
- 10 MB – 20 MB per users session (thread) (see Note * below)
- Plus shared_memory setting value = 128,000,000 in the sm.ini file. (counted only once for all Servlet containers on a single machine)

On a 32 bit Operating system we recommend starting with ***50 threads*** (users) per process (servlet container) in the ***UNIX*** environment and then change based on process memory usage being experienced in your environment.

On a 32 bit ***Windows*** Operating systems we recommend starting with ***30 threads*** (users) per process (servlet container) and then change based on process memory usage being experienced in your environment.

On any 64 bit Operating system listed in the Service Manager compatibility matrix we recommend starting with **50 threads** (users) per process (servlet container) and change based upon process memory usage being experienced in your environment to a maximum of **100 threads**.

Note Increases in user session memory usage may be caused by inappropriately large global lists, usage of global variables that are not cleaned up and multiple application threads being opened simultaneously. This will have a direct effect on the number of user threads that can be supported per servlet container.

Service Manager Web Tier

The Service Manager Web Tier configuration used to determine sizing recommendations is based upon Tomcat web application server with **4** JVM's running **1.0 GB** of RAM Java Heap each per JVM, and an Apache Web Server for connection distribution to these JVM's. Create a Web Farm by adding machines as required with additional Tomcat JVM's to support additional user load.

Self Service / Catalog User considerations:

It is important to include and consider the Self Service / Catalog user base when calculating the hardware requirements for supporting the environment. As a rule of thumb calculate the number of concurrent users to support by adding 2 – 3% of the total number of expected self-service users to the number of licensed module users. For example: 200,000 total user base * .03 = 6, 000 total number of projected Concurrent Self Service/Catalog users.

Service Manager Help Server

With Service Manager 9.30, the Service Manager Help Server must be deployed on Apache Web Server or Internet Information Server (IIS) and can be configured to run on one of the machines configured for the Web Tier and it should be accessible through the Service Manager clients. It can also be configured to be on a standalone machine using a small machine configuration.

Service Manager Load Balancer

The Service Manager Load Balancer should be located on a separate machine and should always be sized as a small machine since it performs no other function than connection redirection to an available servlet. It also must run using the same Operating System as the Service Manager Application Servers.

Since this is the one component of the configuration that can be considered a single point of failure, it should be replicated and placed in a clustered environment for high availability. Failure of this component will only affect new user connections that are attempting to initially connect into the environment until such time as the Load Balancer is

restarted or failed over. All currently active users connected to the environment will be unaffected by the loss of the Load Balancer.

Load balanced machines and servlet machines should use the server sizing given in this document and the number of nodes would depend on the size of the machine chosen and total number of concurrent production users.

RDBMS server

The RDBMS server sizing specified above represent the configurations that were used during the benchmarking runs for the Service Manager out-of-box product. The actual servers that will be used in a production environment should plan their storage needs based upon expected data volumes including attachments, etc. The CPU and memory requirements for the selected database should be based upon the recommendations of the Database vendor for supporting the expected transaction volumes.

Virtualized Environment (VMware)

An addition of approximately 30% above the recommended Service Manager Sizing must be made in order to efficiently run that Service Manager component in a Virtual environment.

Mobility

Startup options below are recommended for Mobility application in the Java Virtual Machine (JVM) instance:

-Xms1024m -Xmx1024m -XX:MaxPermSize=256m

The mobility application uses an in-memory lazily loaded cache (i.e. a record is only loaded into cache when accessed) to optimize performance. Objects loaded in the cache are shared by all users connected to the same mobility application. Therefore, the cache size will grow as users log in, navigate to view incident tickets and change requests, and enter activities (or journal entries). It is possible performance will degrade if the cache grows too large, or if insufficient resources are allocated to the Java Virtual Machine (JVM) instance.

Multiple Mobility application servers are recommended for 200-500 users. Please see Appendix A for deployment examples and sample response times.

SRC

Startup options below are recommended for SRC application in Java Virtual Machine (JVM) instance:

-Xms1024m -Xmx1024m -XX:MaxPermSize=128m

Modify the following lines in the applicationContext.properties file in SRC_HOME\src-1.20\WEB-INF\classes

src.sm.userInboxBatchSize=500

src.sm.defaultMaxConnectionsPerHost=40

src.sm.maxTotalConnections=40

Search Engine

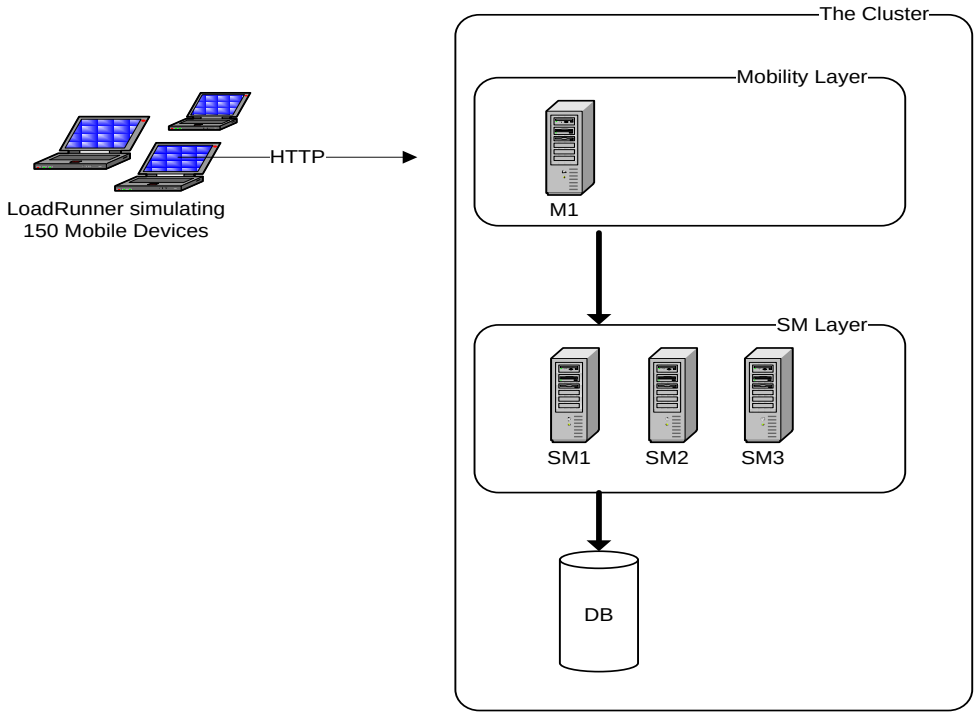
The startup options below are recommended for SRC application in Java Virtual Machine (JVM) instance:

-Xms512m -Xmx1024m -XX:PermSize=256m

Please see Appendix B for deployment examples and sample response times.

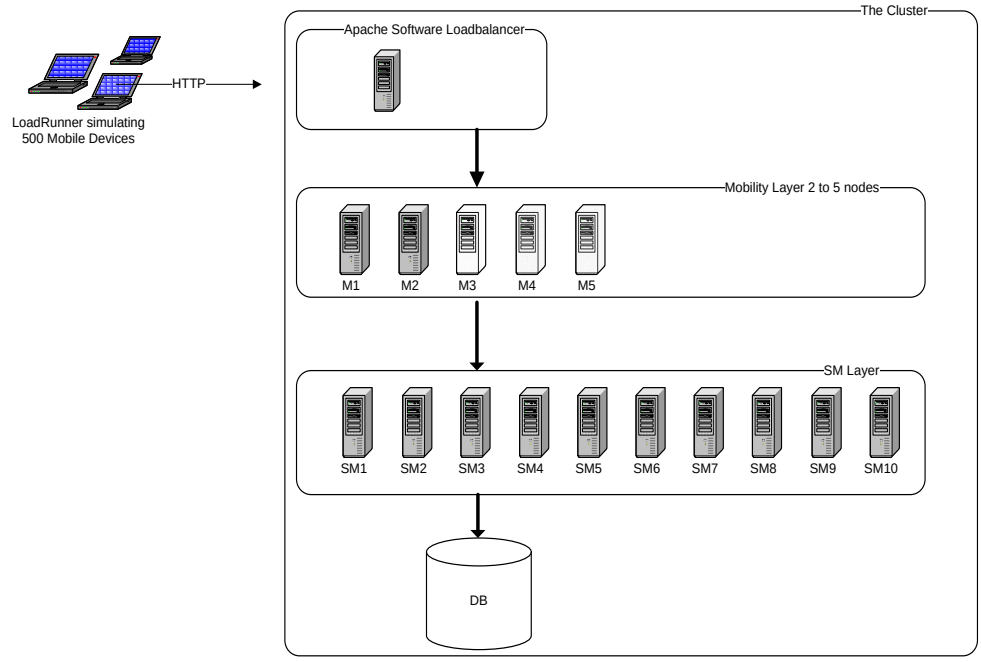
Appendix A: Mobility Deployment Example and Response Times

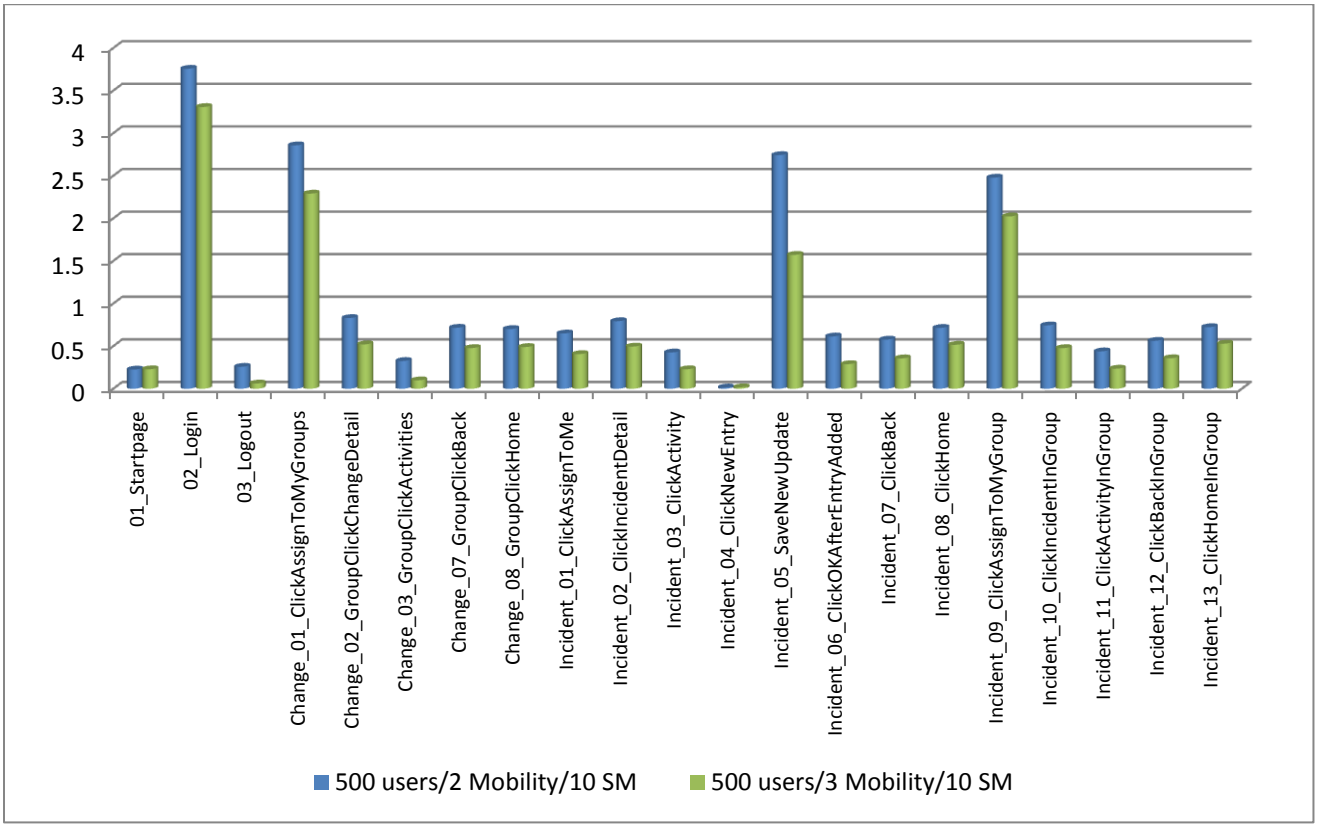
Small(<200 users)



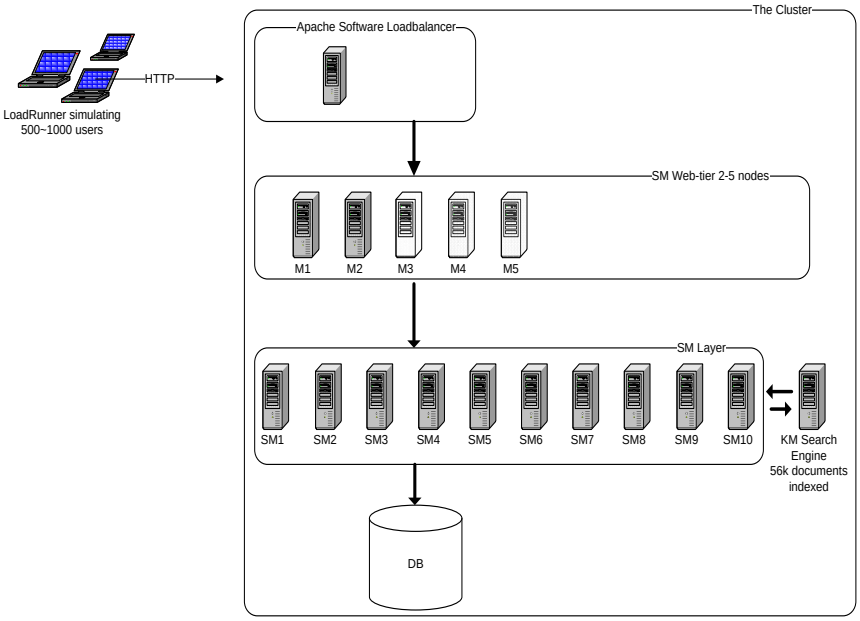
Transaction Name	Average Response Time
01_Startpage	0.257
02_Login	2.933
03_Logout	0.04
Change_01_ClickAssignToMyGroups	4.555
Change_02_GroupClickChangeDetail	0.564
Change_03_GroupClickActivities	1.31
Change_07_GroupClickBack	0.507
Change_08_GroupClickHome	0.41
Incident_01_ClickAssignToMe	0.485
Incident_02_ClickIncidentDetail	0.504
Incident_03_ClickActivity	0.558
Incident_07_ClickBack	0.418
Incident_08_ClickHome	0.434
Incident_09_ClickAssignToMyGroup	4.666
Incident_10_ClickIncidentInGroup	0.509
Incident_11_ClickActivityInGroup	0.552
Incident_12_ClickBackInGroup	0.399
Incident_13_ClickHomeInGroup	0.435

Medium and Large (200~500 users)





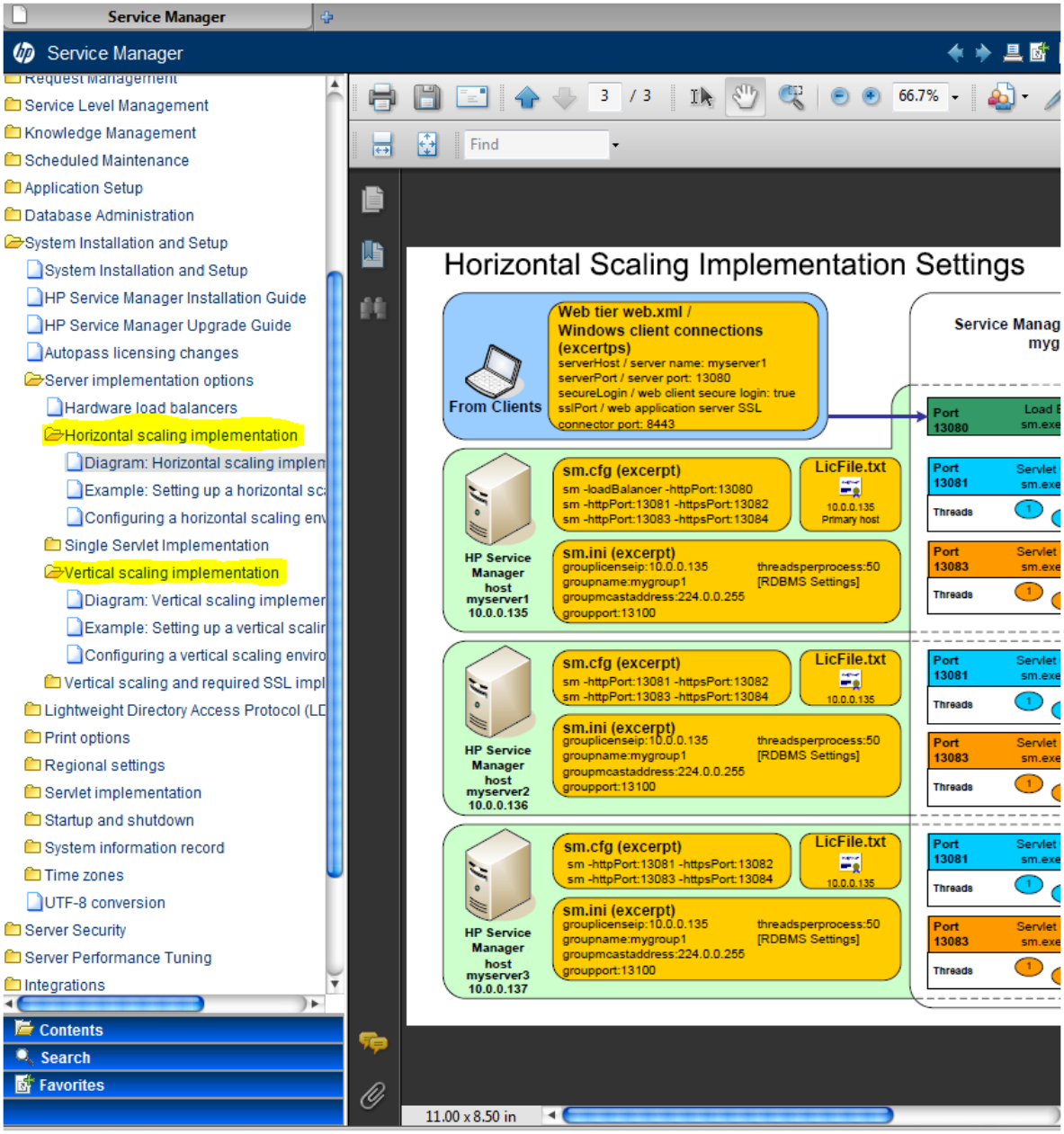
Appendix B: KM Search Engine Deployment Example and Response Times



Test Duration: 2 hours	Average	90%	Successful Searches
500 users	0.243	0.641	113717
1000 users	0.174	0.217	228213

Appendix C: Horizontal and Vertical Scaling

More detailed information can be found in the online help server under **System Installation and Setup** > **Server implementation options**



For more information

Please visit the HP Management Software support Web site at:

http://www.hp.com/managementsoftware/support

This Web site provides contact information and details about the products, services, and support that HP Management Software offers.

HP Management Software online software support provides customer self-solve capabilities. It provides a fast and efficient way to access interactive technical support tools needed to manage your business. As a valued customer, you can benefit by being able to:

- Search for knowledge documents of interest
- Submit and track progress on support cases
- Submit enhancement requests online
- Download software patches
- Manage a support contract
- Look up HP support contacts
- Review information about available services
- Enter discussions with other software customers
- Research and register for software training

Note: Most of the support areas require that you register as an HP Passport user and sign in. Many also require an active support contract.

To find more information about support access levels, go to the following URL:

http://www.hp.com/managementsoftware/access_level

To register for an HP Passport ID, go to the following URL:

http://www.managementsoftware.hp.com/passport-registration.html

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