HP Service Manager

for the Windows® and Unix® operating systems

Software Version: 9.20

Installation Guide

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Contents

1 Planning for an HP Service Manager Implementation

This chapter describes the ways in which you can implement HP Service Manager 9.20 in your organization.

Topics in this section include:

Types of installation environments

You can install Service Manager in several types of environments:

- Production environment
- Non-production environments
  - Development environment
  - Test environment
  - Reporting environment

Production environment

Installing Service Manager in a production environment allows you to deploy your customizations and provide services to your intended user base. Most production environments run 24 hours a day and 7 days a week, support many simultaneous users, and process large numbers of transactions and requests. In a production environment, you typically install the various components of Service Manager on dedicated servers to maximize system performance.

Non-production environments

The following sections describe some of the common non-production purposes for which you can install Service Manager.

Development environment

Installing Service Manager in a development environment allows you to evaluate application features and customize your installation prior to deployment in a production environment. In a development environment, you typically install all Service Manager components on one test system with a limited number of users and data.

Test environment

A test environment is an installation that mirrors your production environment where you can test performance, upgrades, and backup and restore procedures. In a test environment, you typically install Service Manager in the same configuration as your production environment.

Reporting environment

A reporting environment is an installation that mirrors the data from your production environment that you can use to generate and view reports. In a reporting environment, you typically install Service Manager to synchronize data with your production environment but limit the number of users that access the system.

Components of a production environment

A production environment consists of the following components:

Table 1 Components of a production environment

Tier	Requirement	Components
Client tier	Mandatory	Web clients (optional) Windows clients
Server tier	Mandatory	Service Manager server
Database tier	Mandatory	RDBMS on separate server (required)
Web tier	Optional	Web application server on separate server Web server on separate server Service Manager `webtier-9.20.war` file deployed
Supporting servers	Optional	Help Server
Additional connections and integrations	Optional	HP products Web services

Client tier

The client tier consists of two components:

- web client
- Windows client

The web client allows users to connect to the Service Manager server by using a web browser. You must install the web tier to support web clients. You do not need to install or download any additional software on the user's desktop.

The Windows client allows users to connect to the Service Manager server through a dedicated client. You must install the Windows client separately on each system that you want to connect to Service Manager.

See Service Manager's online help for a list of differences between the web and Windows clients.

Server tier

The server tier consists of the Service Manager server. The Service Manager server runs the Service Manager applications and manages the connections between the client and web tiers to the database tier.

See the *What's New in HP Service Manager 9.20* online help for information about changes to the Service Manager server. See the *HP Service Manager 9.20 Upgrade Guide* before upgrading your server.

Database tier

The database tier consists of one or more supported RDBMS servers. Your Service Manager application data must reside on an external RDBMS server.

For more information, see Database Preparation on page 21.

Web tier

The web tier is an optional feature that consists of the following components:

- Web application servers
- Web servers
- Service Manager `webtier-9.20.war` file

The web application servers are third-party server software where you deploy the `webtier-9.20.war` file to support connections from Service Manager web clients.

The web servers are third-party server software that provide the HTTP or HTTPS content to Service Manager web clients. Some web application servers also include built-in or bundled web servers.

The Service Manager `webtier-9.20.war` file is a web archive that you must deploy to a compatible web server to support connections from Service Manager web clients.

See the Service Manager Compatibility Matrix for a complete and up-to-date list of HP integrations. To access the HP Support matrices you must register as an HP Passport user and sign in.

To register for an HP Passport ID, go to:
http://h20229.www2.hp.com/passport-registration.html.

If you already have an HP Passport account, go to:
http://support.openview.hp.com/sc/support_matrices.jsp.

Help server

The Service Manager Help Server is a preconfigured web server that enables end users to access documentation from the Windows and web clients as well as directly from a web browser. See Help Server Installation on page 105 for more information about this optional feature.

Additional integrations

The following HP products are integrated with the HP Service Manager server:

- HP Asset Manager (through Connect-It)
- HP UCMDB (through Web Services)
- HP Business Availability Center (through Connect-It)
- HP Configuration Management (through Connect-It)
- HP Operations Manager for Windows (through HP OpenView ServiceCenter Automation, also know as SCAuto)
- HP Operations Manager for Unix (through SCAuto)
- HP Network Node Manager (through SCAuto)
- Release Control (through Web Services)
- HP DecisionCenter, through Connect-It

See the Service Manager Compatibility Matrix for a complete and up-to-date list of HP integrations. To access the HP Support matrices you must register as an HP Passport user and sign in.

To register for an HP Passport ID, go to:
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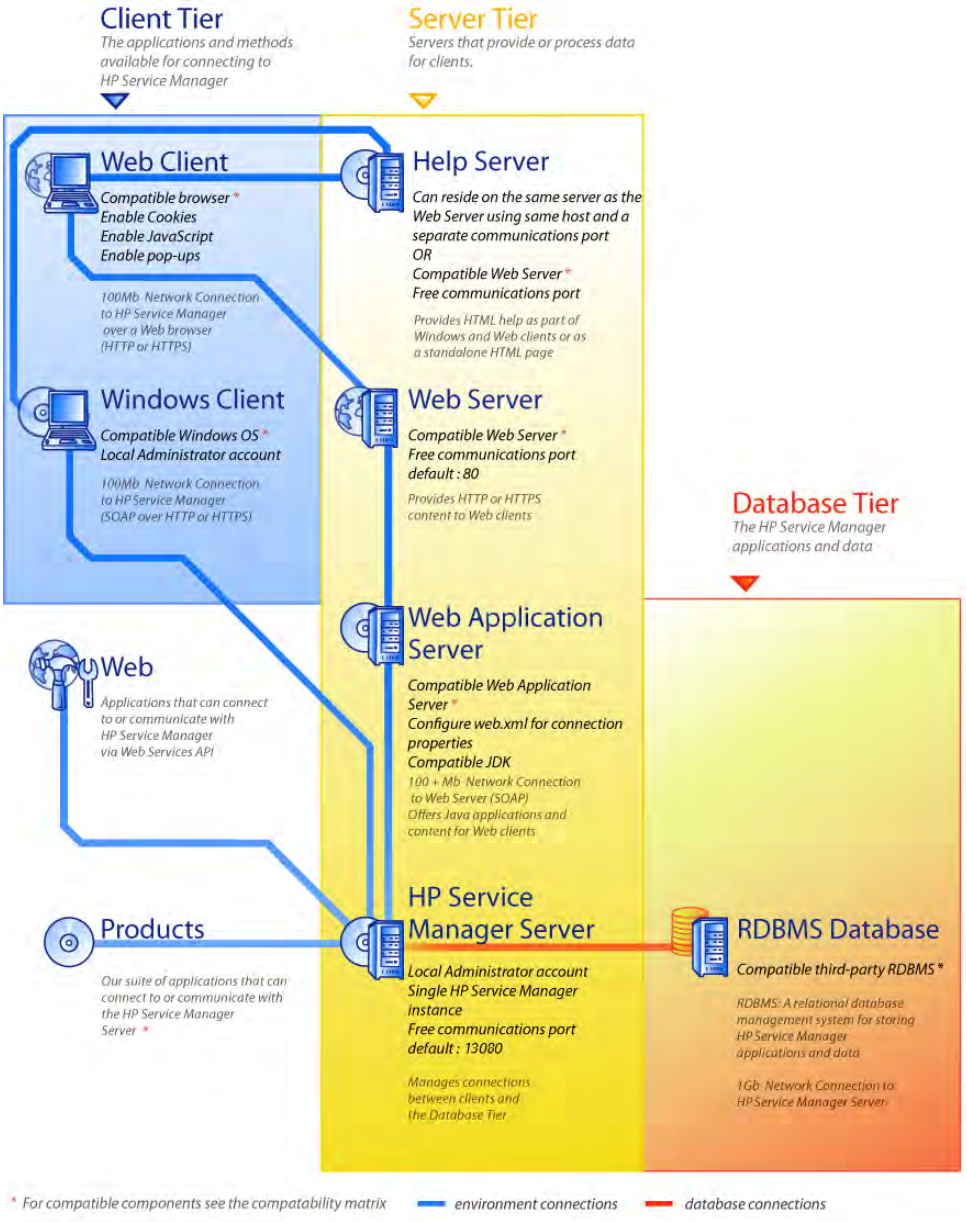
These components are logically connected as depicted in the following diagram:



Implementation reference list

The Service Manager 9.20 release offers a wide variety of significant new features. Service Manager offers various configuration and deployment options that you should consider from the start to maximize the benefits of the product, ease its integration into your environment, and provide a foundation for future support and updates. The checklist below provides considerations and recommended steps that you can incorporate into your implementation and upgrade plans.

Follow these steps to implement Service Manager:

1. Determine the hardware required for your Service Manager production environment.

   For an estimate of the server hardware required, see the *Basic Server Sizing Worksheet* for instructions. This worksheet is available for download from the Customer Support web site's Knowledge Base.

2. Are you upgrading from ServiceCenter?

   Yes. See the *HP Service Manager 9.20 Upgrade Guide* for instructions.

3. Configure a connection to your RDBMS.

   See Database Preparation on page 21 for instructions.

4. Install Service Manager server in a development environment.

   See Server Installation on page 41 for instructions.

5. Determine the clients (Windows and/or web) that will connect to Service Manager.

   See the *Choosing Clients Worksheet* for instructions. This worksheet is available for download from the Customer Support web site's Knowledge Base.

6. Do you need to install Windows clients?

   Yes. Review the Windows client installation requirements. See Client Installation on page 75 for instructions.

7. Do you need to support web clients?

   Yes. Install the Service Manager web tier in a development environment. See Web Tier Installation on page 85 for instructions.

8. Do you want to provide online help?

Yes. Install the Help Server. See Help Server Installation on page 105 for instructions.

No. Go to step 9.

9 Do you want to make customizations to your Windows clients such as changing the splash screen, adding custom images, adding company branding, adding default settings and connections, and configuring connections to a Help Server?

Yes. Install the Client Configuration Utility. See Client Configuration Utility Installation on page 113 for instructions.

No. Install Windows clients in your development environment, and then go to step 12.

10 Customize a Windows client with the Client Configuration Utility.

See Client Configuration Utility Installation on page 113 for instructions.

11 Deploy the customized Windows client to your development environment.

12 Tailor the Service Manager applications to your environment.

a Add or update the operator records in your development environment with new capability words.

See the Service Manager online help for instructions about adding new operators and a list of new capability words.

b Optimize the Service Manager interface in your development environment. For example, you can add public favorites and dashboards, tailor forms for viewing in the web tier, and tailor forms for accessibility-assisted users.

See the Service Manager online help for instructions on adding new favorites and dashboards, tailoring forms for the web tier, and addressing the needs of accessible-assisted users.

c Configure the Service Manager server to accept connections and integrations from external data sources and applications such as Release Control, Connect-It, and Web Services.

See the Service Manager online help for instructions on enabling integrations to other applications.

See the Service Manager Compatibility Matrix for a list of applications that can connect to and share data with Service Manager. To access the HP Support matrices you must register as an HP Passport user and sign in.

To register for an HP Passport ID, go to:
http://h20229.www2.hp.com/passport-registration.html.

If you already have an HP Passport account, go to:
http://support.openview.hp.com/sc/support_matrices.jsp.

13 Test your development environment.

Review your client and server customizations, client connections, and overall system performance. Correct any problems and retest the development environment.

14 Convert or push your development environment to your production environment.

To convert the development environment connect the Service Manager server to your production environment network and deploy necessary clients to the production environment.

To push the development environment to your production environment, create an unload file of your application and operator customizations and load the file into your production environment system. See the Service Manager online help for instructions.

2 Database Preparation

This chapter explains database configuration requirements that must be met prior to installing the HP Service Manager database into your Relational Database Management System (RDBMS).

The following recommendations assume the implementation of conventional database tuning and performance measures. Actual results may vary on a system-by-system basis, based on the tuning expertise available and hardware and software selections. These recommendations are intended only as a guide and should not be implemented on a production system without extensive testing.

This chapter is for system and database administrators preparing to install and support the HP Service Manager server.

Topics in this section include:

IBM DB2 Universal Database preparation

This section outlines the implementation of supported IBM DB2 Universal Databases for Service Manager. It builds from the premise that Service Manager and DB2 Universal have already been installed.

You must complete the following procedures prior to the initial load of your Service Manager database.

A fully qualified DB2 Universal Database administrator should assist with this preparation.

Task 1: Allocate data space large enough to hold your data.

See General space requirements on page 23.

Task 2: Allocate enough additional server connections for all your users.

See Server connections on page 23.

Task 3: Create a login ID and password for Service Manager to use when it connects to your DB2 server.

See Login ID on page 23.

Task 4: If you plan to report on Service Manager data using DB2 tools, set up time zones.

See Time zones for DB2 reporting on page 25

Task 5: Set the DB2 case-sensitivity

See Case-sensitivity on page 24.

Task 6: Enable connectivity for DB2

See Connectivity with Service Manager on page 24.

Task 7: Set the page size to 32 KB.

See Page size on page 25.

Task 8: Enable the database for multipage file allocation.

See Multiple file allocation on page 25.

Task 9: Catalog the database.

See Catalog the DB2 database on page 25.

Task 10: Set database code page.

See Code page considerations on page 26.

General space requirements

If you are establishing a new Service Manager system, allocate at least 1 GB of data space for a test system. The amount of space necessary for a production system varies depending on the amount of data you need to store and your specific implementation.

- Place all Service Manager data in one or more dedicated table spaces within a single DB2 instance. These table spaces must contain Service Manager data only. Multiple instances consume more system resources than a single-instance solution.

Server connections

Every Service Manager thread, foreground or background, requires a connection to your DB2 server. Service Manager background processors require 17 connections to run. When you configure your database, make sure that you allocate enough connections for all of your users. For additional information, refer to your DB2 vendor documentation.

Login ID

Create a login ID and password for Service Manager to use to connect to your DB2 server. The login must have CREATE/ALTER/DROP TABLE authority for the target database.

- CREATE/ALTER/DROP TABLE authority is only required during installation and creation of new Service Manager tables, and only if you allow Service Manager to issue the DDL to create tables and indexes.

The login ID requires the following DB2 connection privileges:

- Connect to database
- Create tables
- Create schemas implicitly

When you log on to Service Manager, it creates a table in the default table space defined for that login ID.

Service Manager requires the Use privilege on all tables spaces that it uses, including temporary tablespaces.

Case-sensitivity

Service Manager supports only case-sensitive DB2.

Connectivity with Service Manager

Service Manager connects to the database through a DB2 client. To set up the connection between the Service Manager application server and your DB2 server, you will need the following information:

- Name of the database.
- Login and password required to connect to the database server. This is the login and password created in Login ID on page 23.

The Service Manager initialization file is called `sm.ini`. It must be present in the Service Manager server `RUN` directory. You can set the Service Manager server parameters in the `sm.ini` file.

After you create the connection, you will be able run the configuration utility, which verifies the connection and loads the system to DB2. For more information, see Configuring the server on page 70.

Time zones for DB2 reporting

If you plan to report on Service Manager data using DB2 tools, set the `sqltz` parameter in `sm.ini` file. For information about using the `sqltz` parameter, see the System Parameters topic in the Service Manager Help.

If you use different time zone settings, the dates contained in reports made by your DB2 utility may be inaccurate.

Page size

The default page size in DB2 is 4096 bytes (4 KB). Service Manager requires 32768 byte (32 KB) pages. Be sure to create a 32 KB page-size buffer pool, table space, and system temporary table space. Grant the login ID access to the new table spaces.

Multiple file allocation

Enabling multipage file allocation reduces overhead of large insert operations. It does so by causing DB2 to allocate new data pages in a table space one multipage extent at a time, rather than one page at a time.

Enable multipage file allocation on SMS table spaces only.

To enable multipage file allocation:

1. As the instance owner, disconnect all applications from the database.
2. Run the following command:

   ```
   db2empfa <dbname>
   ```

Catalog the DB2 database

To catalog the database:

1. Install the DB2 client on your Service Manager server machine.
2. Catalog the database you want to connect to by using the DB2 client utilities.

3 Use the name you defined when you performed the catalog operation as the database name for the configuration tool.

Code page considerations

Create your DB2 database with a UTF-8 code page for use with Service Manager. All data passed from Service Manager to the DB2 client is encoded in UTF-8; therefore, using a UTF-8-based DB2 reduces the overhead of converting data and prevents loss of special characters.

Microsoft SQL Server preparation

This section outlines the implementation of supported Microsoft SQL Server databases for Service Manager. It builds from the premise that Service Manager and SQL Server have already been installed.

You must complete the following procedures prior to the initial load of your Service Manager database.

A fully qualified Microsoft SQL Server administrator should assist with this preparation.

Task 1: Allocate enough additional server connections for all your users.

See Server connections on page 28.

Task 2: Create a login ID and password for Service Manager to use when it connects to your SQL Server.

See Login ID on page 28.

Task 3: If you plan to report on Service Manager data using SQL Server tools, set up time zones.

See Time zones for SQL Server reporting on page 29.

Task 4: Enable Truncate Log on Checkpoint for the target database.

See Microsoft SQL Server transaction log size on page 29.

Task 5: Create an ODBC Driver system data source.

See Connectivity with Service Manager on page 30.

Task 6: Set desired case-sensitivity.

See Case-sensitivity on page 31.

Task 7: Set the SQL server code page.

See Code page considerations on page 31.

General space requirements

If you are establishing a new Service Manager system, allocate at least 1 GB of data space for a test system. The amount of space necessary for a production system varies depending on the amount of data you need to store and your specific implementation.

Place all Service Manager data in a dedicated table space within a single SQL Server instance. This table space must contain Service Manager data only. Multiple instances consume more system resources than a single-instance solution.

Server connections

Every Service Manager thread, foreground or background, requires a connection to your SQL Server. Service Manager background processors require 17 connections to run. When you configure your database, make sure that you allocate enough connections for all of your users. For additional information, refer to your SQL Server documentation.

Login ID

Create a login ID and password for Service Manager to use to connect to your SQL Server. The login must have CREATE/ALTER/DROP TABLE authority for the target database. When you log on to Service Manager, it creates a table in the default table space defined for that login ID.

CREATE/ALTER/DROP TABLE authority is only required during installation and creation of new Service Manager tables, and only if you allow Service Manager to issue the DDL to create tables and indexes.

Time zones for SQL Server reporting

If you plan to report on Service Manager data using SQL Server tools, set the `sqltz` parameter in `sm.ini` file. For information about using the `sqltz` parameter, see the System Parameters topic in the Service Manager Help.

If you use different time zone settings, the dates contained in reports made by your SQL Server utility may be inaccurate.

Granting access to the ODBC driver for reporting

To grant operator access to the ODBC driver for reporting purposes:

1. Log on to Service Manager with System Administrator privileges.
2. Click **System Administration > Ongoing Maintenance > Operators**.
3. Click **Search** to locate the Operator record to edit.
4. Select the Startup tab.
5. In the **Execute Capabilities** field, use the Fill function to select **ODBC**. This grants operator access to the ODBC Driver.
6. Click **Save**.
7. Click **OK**.

Microsoft SQL Server transaction log size

During initial system load, Service Manager places a high insert transaction load on your SQL server. To prevent the transaction log from growing too large, set the Truncate Log On Checkpoint option for the target database on your SQL server.

Connectivity with Service Manager

General connectivity rules:

- The database name entered in the configuration tool must correspond to the ODBC Driver system data source.
- Configure the ODBC Driver data source as a System DSN. Set it up to use:
  - SQL server authentication
  - ANSI quoted identifiers
  - ANSI nulls, paddings, and warnings
- Service Manager is compatible with 64-bit Microsoft SQL Server 2005.
  - If you create the system DSN by using a 64-bit ODBC administrator, Service Manager will not work.
  - If your Service Manager is installed on a 64-bit Windows system, create the System DSN entry for the ODBC Driver by launching odbcad32.exe from: **`C:\WINDOWS\SysWOW64`**.

    This command creates a 32-bit SQL Native Client System DSN driver that Service Manager uses.
- If your Service Manager is installed on a 32-bit Windows system, Service Manager uses the 32-bit SQL Native Client System DSN driver.

Enabling connectivity

Service Manager connects to the database through an ODBC connection. To set up the connection between the Service Manager application server and SQL Server, you will need the following information:

- Name of the database.
- Login and password required to connect to the database server. This is the login and password created in Login ID on page 23.

The Service Manager initialization file is called `sm.ini`. It must be present in the Service Manager server `RUN` directory. You can set the Service Manager server parameters in the `sm.ini` file.

After you create the connection, you can run the configuration utility, which verifies the connection and loads the system to the SQL Server. For more information, see Configuring the server on page 70.

Case-sensitivity

Service Manager supports both case insensitive and case-insensitive Microsoft SQL server. To use HP Service Manager in case-insensitive mode, you must select a case-insensitive collation on the SQL Server before installing HP Service Manager. You can specify the desired case-sensitivity for sort order during the creation of the database.

Setting SQL Server case-sensitivity

Set the SQL Server database to the desired collation when you create it.

- To run in case-sensitive mode, pick a collation that ends with `_BIN`, such as `Latin1_General_BIN`.
- To run in case-insensitive mode, pick a collation that ends with `_CI_AS`, such as `Latin1_General_CI_AS`.

Service Manager will automatically detect the settings and perform correctly.

Code page considerations

Create your SQL Server database with a codepage that supports the character set of most of your data. Since SQL Server does not support a UTF-8 code page, you might want to use data types that support multiple character sets.

If you choose a Western European code page, the system cannot store Eastern European or Asian characters in columns defined as VCHAR, CHAR, or TEXT data type. If you must store characters from different languages, consider using the NVARCHAR, NCHAR, or NTEXT data types instead.

Oracle Server preparation

This section outlines the implementation of supported Oracle databases. It builds from the premise that Service Manager and Oracle have already been installed.

You must complete the following procedures prior to the initial load of your Service Manager database.

A fully qualified Oracle administrator should assist with this preparation.

Task 1: Allocate data space large enough to hold your data.

See General space requirements on page 33.

Task 2: Allocate enough additional server connections for all your users.

See Server connections on page 33.

Task 3: Create a login ID and password for Service Manager to use when it connects to your Oracle server.

See Login ID on page 33.

Task 4: If you plan to report Service Manager data using Oracle tools, set up time zones.

See Time zones for Oracle reporting on page 34.

Task 5: Make sure that your tablespaces are set up properly.

See Oracle tablespaces and users on page 35.

Task 6: Update the Unix environmental variable with the path to your Oracle 32-bit client libraries.

See Oracle 32-bit client libraries on page 36.

Task 7: Install an Oracle client on the Service Manager system.

See Setting up connectivity on page 35.

Task 8: Set desired case-sensitivity.

See Case-sensitivity on page 36.

Task 9: Set the database code page

See Code page considerations on page 39.

General space requirements

If you are establishing a new Service Manager system, allocate at least 1 GB of data space for a test system. The amount of space necessary for a production system varies depending on the amount of data you need to store and your specific implementation.

Place all Service Manager data in a dedicated table space within a single Oracle instance. This table space must contain Service Manager data only. Multiple instances consume more system resources than a single-instance solution.

Server connections

Every Service Manager thread, foreground or background, requires a connection to your Oracle server. Service Manager background processors require 17 connections to run. When you configure your database, make sure that you allocate enough connections for all of your users. For additional information, refer to your Oracle documentation.

Login ID

Create a login ID and password for Service Manager to use to connect to your Oracle server. The login ID must have the privileges listed below. When you log on to Service Manager, it creates a table in the default table space defined for that login ID.

Service Manager requires the following Oracle user privileges:

- Connect
- Create, Alter, Drop a table

- Create, Alter, Drop an index
- Select Any Dictionary
- Alter Session Privileges

CREATE/ALTER/DROP TABLE privileges are only required during installation and creation of new Service Manager tables, and only if you allow Service Manager to issue the DDL to create tables and indexes.

You can provide these privileges to an Oracle user by using the following oracle statements:

```
create user <smadmin> identified by <smadmin> default
tablespace <users> quota unlimited on <users>;
grant connect, resource, select any dictionary to <smadmin>;
```

Time zones for Oracle reporting

If you plan to report on Service Manager data using Oracle tools, set the `sqltz` parameter in `sm.ini` file. For information about using the `sqltz` parameter, see the System Parameters topic in the Service Manager Help.

If you use different time zone settings, the dates contained in reports made by your Oracle utility may be inaccurate.

Connectivity with Service Manager

Service Manager connects to the database through an Oracle client. To set up the connection between the Service Manager server and Oracle, you will need the following information:

- Name of the database.
- Login and password required to connect to the database server. This is the login and password created in Login ID on page 33.

The Service Manager initialization file is called `sm.ini`. It must be present in the Service Manager server `RUN` directory. You can set the Service Manager server parameters in the `sm.ini` file.

After you create the connection, you can run the configuration utility, which verifies the connection and loads the system to Oracle. For more information, see Configuring the server on page 70.

Setting up connectivity

Follow these steps to set up connectivity to your Oracle database:

1. Install the Oracle client on your Service Manager server machine.

   Service Manager requires 32 bit Oracle Client library, which can be found in the Oracle 64 bit Client installation directory or Oracle 32 bit Instant Client directory. Please refer to the Oracle site to download the proper Oracle client for the platform where you plan to run Service Manager server.

2. Configure a connection to the Oracle server in the `tnsnames.ora` file.

   Define the name in the `tnsnames.ora` file.

   - On Unix platforms, the `tnsnames.ora` file is located in $ORACLE_HOME/network/admin or can be specified using the TNS_ADMIN environment variable.
   - On Windows platforms, the tnsnames.ora file is located in the Oracle Home [`%ORACLE_HOME%/network/admin`] directory.

3. Specify the name of the Oracle database connection in the sqldb parameter in the `sm.ini` file. You can do this after you install the Service Manager server by running the Configuration tool and specifying the database name you provided in the `tnsnames.ora` file. For more information, see Configuring the server on page 70.

Oracle tablespaces and users

Most tables on an Oracle server hold less than 50 KB of data. Service Manager sets the initial storage space size when creating the SQL tables.

When manually creating a new Oracle instance for Service Manager:

- Create the database with a block size of 8 KB or a multiple thereof.
- Create a separate table space for the Service Manager data, and make this the default table space for the Service Manager user.
- Set the TEMPORARY table space for the Service Manager user to an appropriate temporary table space.

Oracle 32-bit client libraries

Follow these steps to set your Unix environment variable for Oracle:

1. Find the path to your Oracle client's 32-bit shared libraries.
2. Set the Unix environment variable as shown in the following examples. In these examples, the path to the Oracle client shared libraries is set relative to the Oracle environment variable `$ORACLE_HOME`.

   C shell: `setenv LD_LIBRARY_PATH $LD_LIBRARY_PATH:$ORACLE_HOME/lib32`

   Korn shell: `export LD_LIBRARY_PATH=$LD_LIBRARY_PATH:$ORACLE_HOME/lib32`

Case-sensitivity

Service Manager supports case-insensitivity for Oracle 11.2 and later. For earlier versions of Oracle, Service Manager requires a case-sensitive database.

Setting the case-sensitivity

You can set the case-sensitivity of a new Oracle database when creating it or modifying the case-sensitivity of an existing database.

To set case-sensitivity on a new Oracle database:

1. While creating a new Oracle instance, choose "All Initialization Parameters" and modify the parameters.
2. Set the case-sensitivity as described in the following table.

   Be sure to mark the Override Default checkbox for the NLS_SORT and NLS_COMP parameters.

Parameter name	Case-sensitive	Case-insensitive
NLS_SORT	BINARY	BINARY_CI
NLS_COMP	BINARY	LINGUISTIC

3 In Service Manager, verify that parameters are in effect by querying using the following SQL statement:

```
select parameter, value from nls_instance_parameters;
```

The value for NLS_SORT and NLS_COMP should match your selection.

To change an existing case-sensitive Oracle database with Service Manager data to be case-insensitive:

1 Backup all Service Manager data.
Run "`sm -system_unload -system_directory:<path to where you want to store the Service Manager data unload files>`".

2 Log in to Oracle as a sys admin user and issue the following statements:

```
alter system set NLS_SORT=BINARY_CISCOPE=SPFILE;
alter system set NLS_COMP=LINGUISTICSCOPE=SPFILE;
create pfile from spfile;
```

3 Shut down and restart the Oracle instance.

If you are running Oracle on parallel servers, be sure to replicate the parameter file to all instances of Oracle.

4 Drop all Service Manager tables.

5 In Service Manager, verify that parameters are in effect by querying using the following SQL statement:

```
select parameter, value from nls_instance_parameters;
```

The value for NLS_SORT and NLS_COMP should match your selection.

6 Remove `groupname`, `sqldebug`, and any other debugging parameters from the `sm.ini` file, and then run "`sm -system_load -system_directory:<path to the Service Manager data unload files>`".

Validate the case-insensitive unique indexes

During the initial system load, Service Manager created a set of case-insensitive indexes for each table, based on the keys in that table. Service Manager logs these indexes first time reads a table when the `sqldebug:1` parameter is in the `sm.ini` file. You can review the settings created for each table by viewing the `sm.log` file.

The case-insensitive unique indexes should be as Oracle function-based indexes where the Column Expression is:
NLSSORT("<field name>",'nls_sort="BINARY_CI"').

To verify whether the case-insensitive unique indexes are being created with the correct column expression:

1. Set `sqldebug:1` in the `sm.ini` file, located in the *<SM_install_location>*`\Server\RUN` directory.
2. Start Service Manager.
3. Check the `sm.log` file, located in the *<SM_install_location>*`\Server\logs` directory.

The following entry in the log file indicates that the Oracle instance is set to case insensitive, and that you were able to connect to it successfully.

```
RTE I Oracle server settings for language, territory and character set:
AMERICAN_AMERICA.AL32UTF8 (AL16UTF16)
RTE I OCI Client settings for language, territory and character set:
AMERICAN_AMERICA.AL32UTF8 (UTF16)
....
RTE I Oracle instance setting for NLS_SORT is set to BINARY_CI
RTE I Oracle instance setting for NLS_COMP is set to LINGUISTIC
...
RTE I Oracle session is set up in CASE INSENSITIVE mode
```

The following information in the log file indicates that the Dbdict table has an index, DBDICTM1C989DE64, with a key called "NAME", which is case-insensitive.

```
RTE D Table Name: DBDICTM1

RTE D Schema Name                    Index Name
RTE D ------------------------------ ------------------------------
RTE D SMDB                           DBDICTM1C989DE64
RTE D ------------------------------ ------------------------------
```

(Lines continue)

```
Type Column Name                    Column Expression
---- ------------------------------ ---------------------------------------
U    SYS_NC00003$                   NLSSORT("NAME",'nls_sort=''BINARY_CI''')
---- ------------------------------ ---------------------------------------
```

Code page considerations

Create your Oracle database with a UTF-8 code page for use with Service Manager. All data passed from Service Manager to the Oracle client is encoded in UTF-8, therefore using a UTF-8-based Oracle will reduce overhead for converting data and prevent loss of special characters.

Installing the sample database

A copy of SQL Server Express Edition is included on the installation DVD for demonstration purposes only. You will need an enterprise-level RDBMS for use in your development, test, and production systems.

Follow these steps to install the sample database:

1. Log in to the Windows server as a user with local administrator privileges.
2. Insert the Service Manager installation DVD into the appropriate drive of the server.

   If you are installing on a system that has auto-run enabled, the DVD browser starts automatically. If auto-run is disabled, follow these steps to start the DVD browser manually.

   a. Navigate to the DVD directory.

   b. Open `clickme.htm`.
3. Click **Install SQLServer2005 for use with HP Service Manager for testing purposes only.**

   The SQLServer folder opens.
4. Double-click **SetupSQLServer.bat.**
5. When prompted, press any key to exit the installation.

The sample database is now installed and has the following properties.

Instance Name:	`SMDEMO`
Security Mode:	`SQL`
Database Name:	`SMDEMO`
SQL login/user:	`SA`
SA password:	`SM@DEMODATA1`
Collation:	`Latin1_General_BIN`

The default settings in the out-of-box `sm.cfg` and `sm.ini` files are set up to work with this sample database. To connect to a different database server, set the appropriate values using the Configuration Tool (see Configuration tool on page 70).

3 Server Installation

You can install HP Service Manager on a Windows or Unix server. This section contains information about installation requirements and how to install the server.

Topics in this section include:

Refer to the *HP Service Manager Upgrade Guide* for instructions on how to upgrade the server.

Before you can install the Service Manager server on AIX, HP-UX, and Solaris systems, you must install JVM 1.6. Refer to the Java documentation for instructions on how to install JVM.

Installing the server on Windows

For complete information about current platform requirements and compatibility, go to the Customer Support web site at the following URL:

http://support.openview.hp.com/

Installation requirements

To install HP Service Manager on a Windows server, you'll need the following:

- A compatible Windows operating system

  For more information, see the Service Manager Compatibility Matrix. The HP Support matrices require that you register as an HP Passport user and sign in.

  To register for an HP Passport ID, go to:
  http://h20229.www2.hp.com/passport-registration.html.

  If you already have an HP Passport account, go to:
  http://support.openview.hp.com/sc/support_matrices.jsp.

- Current Windows updates for your operating system
- 1 GB RAM minimum (recommended)
  - For production purposes, RAM is based on the expected user load.
- Local administrator account to install on the Windows server

System requirements

Make sure that your system meets the following requirements before installing Service Manager.

Table 1 Windows system requirements for server installation

Requirement	Resources needed
Disk space	400 MB for server installation
TCP/IP service name	During the Service Manager server configuration, the system prompts you for a valid TCP/IP port. The port number you choose for Service Manager must be greater than 1024.

Database resources

Service Manager requires the following relational database system (RDBMS) resources.

Table 2 Database requirements for server installation

Requirement	Resources needed
RDBMS server	Install and configure a supported RDMS server: • IBM DB2 • Oracle • MS SQL Server See the Service Manager compatibility matrix for a list of currently supported RDBMS servers.
RDBMS client	Install and configure a supported database client for your RDBMS server. • DB2 client • Oracle client • Windows ODBC DSN defined for SQL Server See the Service Manager compatibility matrix for a list of currently supported RDBMS clients.

Server resources

The Service Manager server uses the following resources.

Table 3 Service Manager server system resources

Resource	Definition
Processes	The system starts one process for each sm command line in the `sm.cfg` file. By default, each process is limited to 50 concurrent user sessions. The system assigns each user session or background process a dedicated thread. • If you start background processes by using the sm system start command in the `sm.cfg` file, then the sm processes own the background process threads. • If you start the background processes from a user session inside Service Manager, then the thread controller process that owns the user session also owns the background process threads. To allow more than 50 concurrent user sessions, refer to the server implementation options topic in the help.
Shared Memory	A server uses approximately 50 MB of base shared memory and requires an additional 5 MB of shared memory for every 50 users. You can specify the amount of shared memory the system allocates by using the `shared_memory` parameter in the `sm.ini` file.

Service Manager server setup

Follow these steps to install the Service Manager server:

1. Log in to the Windows server as a user with local administrator privileges.
2. Insert the Service Manager installation DVD into the appropriate drive of the server.

   If you are installing on a system that has auto-run enabled, the DVD browser starts automatically. If auto-run is disabled, follow these steps to start the DVD browser manually.

   a. Navigate to the DVD directory.

   b. Open `clickme.htm`.
3. Click **Install HP Service Manager Server for Windows**.
4. Click **Run** to start the Service Manager Server setup wizard.
5. Click **Next** to read and accept the licensing agreement.
6. Select the **I accept the terms in the License Agreement** option.

   The **Next** button becomes active.
7. Do one of the following:

   - Click **Next** to accept the default installation folder.

     The default installation folder is:
     `C:\Program Files\HP\Service Manager 9.20\Server\`

     Do not install the server over existing versions of ServiceCenter or Service Manager. You must install into a new folder.

   - Click **Browse** to choose a different installation location.

     The Service Manager server folder name cannot contain parentheses or use non-ASCII characters in the name. The server cannot start if installed in a folder with a noncompliant folder name.

     See the *HP Service Manager 9.20 Upgrade Guide* for more information about upgrading the server from previous versions.
8. Click **Next** to prepare the installation process.

   The summary information page opens.

9 Click **Install** to begin copying the installation files.

You can stop the installation by clicking **Cancel**.

The Completing the Service Manager Server Setup wizard page opens when the installation is complete.

The Autopass installation box opens and installs autopass automatically. Do not click **Finish** until the autopass installation is complete.

10 To automatically configure the server, select the **Run the configuration program after install** option.

You can also configure the Service Manager server by editing the `sm.ini` configuration file. See Configuring the server on page 70.

11 Click **Finish** to exit the Setup wizard.

The server installation is complete.

If you selected the **Run the configuration program after install** option, the Configuring HP Service Manager Server wizard opens. Complete the steps in Configuring the server on page 70.

12 After the configuration steps are complete, close the browser window or click the next item you want to install.

Uninstalling the Windows server

You can uninstall the server in one of two ways:

- Uninstall the server from Add/Remove Programs. See Uninstalling by using Add/Remove Programs on page 47.
- Uninstall the server from the Service Manager installation DVD. See Uninstalling by using the installation DVD on page 48.

The server uninstall process intentionally preserves server configuration settings and Service Manager data on your RDBMS. You must manually remove the configuration files and RDBMS data if you are completely uninstalling Service Manager from your system. HP recommends that you delete the entire server installation folder if you do not want to preserve any existing server data.

Uninstalling by using Add/Remove Programs

Follow these steps to uninstall the server by using Add/Remove Programs:

1. Log in to the Windows server as a user with local administrator privileges.
2. Stop the Service Manager service.

   For information about stopping the server, refer to the HP Service Manager online help.
3. From the Windows main menu, click **Start** > **Settings** > **Control Panel** > **Add/Remove Programs**.

   The Add/Remove Programs dialog box opens.
4. Scroll to the Service Manager server program and click **Remove**.

   A message prompts you to verify that you want to remove the program.
5. Click **Yes**.

   The process takes several minutes. Additional messages indicate the progress of the uninstall.

   When you complete the uninstall, you return to the Add/Remove Programs dialog box.
6. Click **Close**.

Uninstalling by using the installation DVD

Follow these steps to uninstall the server by using the installation DVD:

1. Log in to the Windows server as a user with local administrator privileges.
2. Stop the Service Manager service.

   For information about stopping the server, refer to the HP Service Manager online help.
3. Insert the Service Manager installation DVD into the appropriate drive of the server.

   If you are installing on a system that has auto-run enabled, the DVD browser starts automatically. If auto-run is disabled, follow these steps to start the DVD browser manually.

   a. Navigate to the DVD directory.

   b. Open `clickme.htm`.
4. Click **Install HP Service Manager Server for Windows**.

   The Service Manager Server setup wizard opens.
5. Click **Next**.

   The Remove the Program window opens.
6. Click **Remove**.

   The process takes several minutes. Additional messages indicate the progress of the uninstall. After the operation is complete, the InstallShield Wizard Completed page opens.
7. Click **Finish**.
8. Click **Exit Install** to close the DVD browser.

Installing the server on Unix

For complete information about current platform requirements and compatibility, go to the Customer Support web site at:

http://support.openview.hp.com/

System requirements

Make sure that your system meets the following requirements before installing Service Manager.

Table 4 Unix system requirements for the server installation

Requirement	Resources needed
Disk space	400 MB for server installation
Java	Service Manager requires Java version 1.6 be installed on the system. Either the JDK or JRE can be used and Service Manager will search for it at install time. Users running Linux on Intel x86 platforms do not need to install Java; Service Manager includes Java for that platform. Users running on Solaris need to install Java 1.6 update 20 or later.
TCP/IP service name	During the Service Manager server configuration, the system prompts you for a valid TCP/IP port. The port number you choose for Service Manager must be greater than 1024.
AIX patch levels	AIX 5.3 requires the following patch levels: • TL6 SP5 or later • TL7 SP2 or later • TL8 or later AIX 6.1 requires the following patch levels • TL0 SP3 or later • TL1 or later The Service Manager checks to see if your AIX system meets the required TL and service patch levels. If your systems fails to meet the required patch level, the Service Manager server displays an error message and will not start.

Service Manager will not run from a root account. You must create a separate user ID that owns Service Manager.

Database resources

Service Manager requires the following relational database system (RDBMS) resources.

Table 5 Database requirements for server installation

Requirement	Resources needed
RDBMS server	Install and configure a supported RDMS server: • DB2 • Oracle
RDBMS client	Install and configure a supported database client for your RDBMS server. • DB2 client • Oracle client

Server resources

The Service Manager server uses the following resources.

Table 6 Service Manager server system resources

Resource	Definition
Processes	The system starts one process for each sm command line in the `sm.cfg` file. By default, each process is limited to 50 concurrent user sessions. The system assigns each user session or background process a dedicated thread. • If you start background processes by using the sm system start command in the `sm.cfg` file, then the sm processes own the background process threads. • If you start the background processes from a user session inside Service Manager, then the thread controller process that owns the user session also owns the background process threads. To allow more than 50 concurrent user sessions, refer to the server implementation options topic in the help.
Semaphores	Service Manager uses 11 semaphores, regardless of the number of users logged on to the system.
Shared Memory	A server uses approximately 50 MB of base shared memory and requires an additional 5 MB of shared memory for every 50 users. You can specify the amount of shared memory the system allocates by using the `shared_memory` parameter in the `sm.ini` file. You should always allocate more shared memory in the operating system than what you specify for Service Manager in the `sm.ini` file. That is, your system needs more shared memory than what Service Manager requires to run.

Other information

Review the following information before you install Service Manager.

Table 7 Additional Unix requirements

Resource	Requirement
ANSI Terminal	If you want to run the installation from a console, run the installation script from an ANSI terminal to avoid rendering errors. Non-ANSI terminals such as hpterm may produce unreadable results.
Root Access	You only need root access to modify the system kernel, mount the Service Manager DVD, and install AutoPass. You must create a separate user ID to run Service Manager.

Preliminary steps

The following convention identifies variables that may change depending on your particular installation:

```
<variable>
```

As you go through the installation steps and see a variable in brackets, remember that you must replace the variable with information specific to your system. Do not type the brackets (< >) as part of the command.

Task 1: Determine the Service Manager installation path.

The user running the installation script must have permission to create new directories in the chosen installation path.

Task 2: For Oracle users, add the path to your 32-bit RDBMS client to the library path variable.

Update your system's library path variable to include the path to the 32-bit versions of your RDBMS client. You can add these directories as part of the shell login or as part of a profile script.

Table 8 Path variables by operating system

OS	Path variable to set
AIX	LIBPATH
HP-UX	SHLIB_PATH
Linux and Solaris	LD_LIBRARY_PATH

Refer to your operating system documentation for information on setting variables.

For DB2 users, the db2profile script provided by your DB2 installation updates your system's library and class path variables automatically.

Installing the server

Follow these steps to install the Service Manager server:

1. Before installing the server, acquire an AutoPass license by following the instructions in AutoPass requirements on page 64.
2. Mount the DVD, and change directories to the mount location.
3. Run the executable script that matches your operating system.

Table 9 Setup scripts by operating system

OS	Setup script
HP-UX on PA-RISC systems	setupHP11.bin
HP-UX on Itanium systems	setupHPIA64.bin
AIX	setupaix
Solaris	setupSolaris.bin
Linux	setupLinuxX86.bin

The setup scripts assume you will run them from an X-Windows environment. If you prefer to run the scripts from a console instead, add "-console" to the command line. For example, to run the Solaris setup script from a console, type the following command.

```
setupSolaris.bin -console.
```

4. Choose to accept the license agreement in order to proceed.
5. At the installation script prompt, type the installation directory address where you want to install Service Manager.

Do not install the server over existing versions of ServiceCenter or Service Manager. You must install into a new folder.

The system validates any directory name that you specify. If you specify an invalid directory, the installation generates an error message.

Do not use the "~" symbol when entering the path. InstallShield treats this as a regular character, and will create a directory with the name '~'.

6 The system takes several minutes to read the contents of the DVD, uncompress the files, and complete the server installation in the specified directory.

7 Click **Finish** to exit the wizard.

8 To automatically configure the server, run the configure script, which is found in your `<Install path>/directory` to update the `sm.cfg` file. Go to Configuring the server on page 70 for instructions.

You can also configure the Service Manager server by editing the `sm.ini` configuration file. See Configuring the server on page 70.

9 Check to ensure that the `/jre` folder in the run directory is a symlink to a Java 1.6 JRE.

Uninstalling the Service Manager server

Follow these steps to uninstall the Service Manager server:

1 Stop the Service Manager server.

2 Delete all the Service Manager server directories and subdirectories.

Kernel resource requirements

The Service Manager server requires additional shared memory and semaphores to run. On most Unix systems, you can configure these resources through kernel configuration parameters.

The following kernel resource requirements are the minimum values required to run a Service Manager server. If you are running other programs that require kernel resources on the same system as Service Manager, then add the Service Manager kernel resource requirements to the existing resources. For example, if the existing system requires 100 MB in kernel resources, and Service Manager requires an additional 50 MB, then update the kernel resources to 150 MB.

AIX server

You do not need to manually adjust kernel resources on AIX systems because they are self-adjusting.

HP-UX server

The settings and considerations when using an HP-UX server are explained below.

Shared memory

Table 10 Shared Memory requirements

Kernel setting	Value	Remarks
shmem	1	Enables shared memory
shmmax	Variable	A server uses approximately 50 MB of base shared memory and requires an additional 5 MB of shared memory for every 50 users. You can specify the amount of shared memory the system allocates by using the `shared_memory` parameter in the `sm.ini` file. You should always allocate more shared memory than what you specify in the `sm.ini` file.
shmmni	Variable	1 semaphore ID per Service Manager system

Maxdsiz parameter

The HP-UX `maxdsiz` parameter sets the maximum data segment size for each process. This data segment can consist of virtual memory (swap space) and real memory. The system attempts to meet your requirements with real memory. It uses swap space to make up the difference until it reaches the `maxdsiz` limit.

Set `maxdsiz` to the maximum value. See your HP-UX help for information about setting this parameter.

Number of file handles

Make sure the upper limit (ulimit -n size) for file descriptors is at least 1024.

Setting kernel parameters

Use the SAM utility to configure kernel parameters on HP-UX.

You must be a root user or have superuser capabilities before you start the SAM utility.

To configure kernel IPC parameters:

1. Start SAM.
2. Select the Kernel Configuration option from the main menu.
3. Select the Configurable Parameters option.
4. Modify the kernel parameters as specified in Shared Memory requirements on page 56.

When you finish modifying the necessary parameters, the SAM utility guides you through the steps to restart the system. Restarting is necessary to activate the changes.

Linux server

The settings and considerations when using a Linux server are explained below.

Shared Memory

Table 11 Shared Memory requirements

Kernel setting	Value	Remarks
shmmax	Variable	A server uses approximately 50 MB of base shared memory and requires an additional 5 MB of shared memory for every 50 users. You can specify the amount of shared memory the system allocates by using the `shared_memory` parameter in the `sm.ini` file. You should always allocate more shared memory than what you specify in the `sm.ini` file.
shmmni	Variable	1 semaphore ID per Service Manager system

Number of file handles

Make sure the upper limit (ulimit -n size) for file descriptors is at least 1024.

Setting kernel parameters

The default shared memory limit (both SHMMAX and SHMALL) is 32 MB, but you can change it from the `proc` file system without restarting the system. For example, to specify 128 MB:

```
# echo 134217728 >/proc/sys/kernel/shmall
# echo 134217728 >/proc/sys/kernel/shmmax
```

You can use `sysctl.conf` to control these parameters. Add the following lines to the `/etc/sysctl.conf` file:

```
kernel.shmall = 134217728
kernel.shmmax = 134217728
```

This file is usually processed at startup, but `sysctl.conf` can be called later.

Security

Before you start the Service Manager server, you must disable the Linux security feature, exec-shield-randomize. The out-of-box `smstart` script sends you an error message and does not start the server if exec-shield-randomize is on. However, if you use your own script instead of `smstart`, be aware that the server can start if exec-shield-randomize is turned on, but it will stop later.

The `/proc/sys/kernel/exec-shield-randomize` file controls whether Exec-Shield randomizes VM mapping. You can turn off exec-shield-randomize by using any of the following options:

- Use the following command:

  ```
  echo 0 >/proc/sys/kernel/exec-shield-randomize
  ```

  The default value for `/proc/sys/kernel/exec-shield-randomize` is 1.

- Include the following line in the `/etc/sysctl.conf` file:

  ```
  kernel.exec-shield-randomize=0
  ```

- Include the following line in the `/etc/grub.conf` file:

  ```
  exec-shield=0
  ```

Solaris 9 server

The settings and considerations when using a Solaris 9 server are explained below.

Shared memory

Table 12 Shared Memory requirements

Kernel setting	Value	Remarks
forceload:sys/ shmsys		Enables shared memory
shmsys:shminfo _shmmax	Variable	A server uses approximately 50 MB of base shared memory and requires an additional 5 MB of shared memory for every 50 users. You can specify the amount of shared memory the system allocates by using the `shared_memory` parameter in the `sm.ini` file. You should always allocate more shared memory than what you specify in the `sm.ini` file.
shmsys:shminfo _shmmni	Variable	1 per Service Manager system

Number of file handles

The default upper limit for file descriptors is 256. Make sure the upper limit (ulimit -n size) is at least 1024.

Follow these steps to increase the upper limit:

1. Log in to the Solaris server.
2. Run **ulimit -a**:

```
bash-3.00$ ulimit -a
core file size        (blocks, -c) unlimited
data seg size         (kbytes, -d) unlimited
file size             (blocks, -f) unlimited
open files                    (-n) 256
pipe size          (512 bytes, -p) 10
stack size            (kbytes, -s) 8192
cpu time             (seconds, -t) unlimited
max user processes            (-u) 29995
virtual memory        (kbytes, -v) unlimited
```

   To increase this value to 1024, type the following command:

```
$ ulimit -n 1024
```

Setting kernel parameters

You can control kernel parameters with the `/etc/system` file. The operating system reads the `/etc/system` file at initialization time to define the initial kernel parameters. See your Solaris help for information on setting kernel parameters.

Solaris 10 server

The settings and considerations when using a Solaris 10 server are explained below.

Shared memory

Table 13 Shared Memory requirements

Project setting	Value	Remarks
max-shm-memory	Variable	A server uses approximately 50 MB of base shared memory and requires an additional 5 MB of shared memory for every 50 users. You can specify the amount of shared memory the system allocates by using the `shared_memory` parameter in the `sm.ini` file. You should always allocate more shared memory than what you specify in the `sm.ini` file.
max-shm-ids	Variable	1 per Service Manager system

Number of file handles

The default upper limit for file descriptors is 256. Make sure the upper limit (max-file-descriptor) is at least 1024.

UDP Buffer Sizing

On AIX and Linux, warnings may be generated if the UDB buffer sizing set in the configuration files surpasses kernel limits.

For example, on Linux the warning would look like:

```
23966( 23966) 08/11/2009 15:38:33 receive buffer of socket
java.net.DatagramSocket@c9d92c was set to 20MB, but the OS only
allocated 131.07KB. This might lead to performance problems.
Please set your max receive buffer in the OS correctly (e.g.
net.core.rmem_max on Linux)
```

0 Kernel limits can be changed by a superuser if it is deemed to enhance performance of UDP communication.

The following table shows the settings for determining and altering kernel limits for socket buffer sizes.

Table 14 Kernel limits for socket buffer sizes

Platform	Getting and changing settings:
Linux	To get setting: sysctl -w net.core.rmem_max To change setting: sysctl -w net.core.rmem_max=8388608
Solaris	To get setting: ndd -set/dev/udp udp_max_buf To change setting: ndd -set/dev/udp udp_max_buf 8388608
AIX	To get setting: no -o sb_max To change setting: no -o sb_max=8388608 **Note:** AIX only permists sizes of 1048576, 4194304, 8388608, etc.)

For HP-UX, the default kernel limit is 2 GB, so no change is necessary.

AutoPass requirements

The Service Manager installer automatically copies AutoPassJ libraries as part of the server installation. AutoPass validates your Service Manager license and determines what product features are enabled. You must have a valid license to run Service Manager. You may request either a temporary of permanent license for Service Manager

Temporary licenses

You can install a 60-day temporary license to evaluate, test, or develop your Service Manager system using the following command line option:

```
sm -instantOn
```

A temporary license can only be installed once per system and is valid for 60 days.Within this 60-day period, you must obtain a perpetual license key password or a trial evaluation extension to continue using the product.

During the last ten days of the evaluation period, every user who wants to log in to the system will see a license expiration warning message. To remove the warning message, a system administrator of the product must go to the Webware site (**www.webware.hp.com**) and download a perpetual license to use the product.

If you have not purchased all modules and you would like to consider adding modules for review during the Instant-On process, please contact your HP account manager.

Permanent licenses

You can request a permanent Service Manager license from the following URL:

http://webware.hp.com

managed with AutoPass.

To request perpetual license passwords, you need the following items:

- Entitlement Certificate, which contains the HP product number and order number

- IP address of the server
- Your company or organization information

A permanent license is tied to your server's IP address and requires you to place a copy of your license file (LicFile.txt) in your server's RUN directory. The default value is:

```
licensefile:<Service Manager server installation path>/RUN/
LicFile.txt
```

You may specify a different license file path with the licensefile parameter. For example:

```
licensefile:c:/common/LicFile.txt
```

If your sever obtains an IP address from DHCP, you may have to request a new license that matches the server's new IP address.

You can also contact the HP Password Center by using fax, E-mail, or phone. This information is available on the Password Request Form and the License Entitlement Certificate. To obtain product licenses, you need the License Entitlement Certificate.

License Entitlement Certificate

HP Order Number:
Product Number:
Product Name:
Quantity Ordered:

Your OpenView product may be currently running under an initial 60-day *Instant On*. This *Instant On* expires 60 days from the date of installation, and after this your product may be automatically disabled. To ensure uninterrupted availability of this product, please obtain and install your permanent password before the 60-day *Instant On* period has expired.

Password Retrieval
Check your product's documentation for specific instructions on password installation. Many products include the **Autopass** feature which simplifies password redemption by providing direct password retrieval and installation.

If this feature is not available, or if the system does not have direct internet access, permanent passwords can also be redeemed on-line at **http://www.webware.hp.com,** or by contacting the HP Password Center, using the contact information provided below.

Your permanent password will limit the number of users to the quantity of licenses that you purchased.

Hewlett-Packard Password Center

To obtain your password on-line, 24 hours a day, 7 days a week:

http://www.webware.hp.com

North/South America		Europe/Africa		Asia/Pacific	
Fax:	+1 801.431.3654	Fax:	+31 (55) 543.4645	Fax:	Outside Japan: +81 (3) 3227.5238 Within Japan: +81 (03) 3227.5238
Phone: (US & Canada)	+1 801.431.1597 +1 800.326.0411	Phone:	+31 (55) 543.4642	Phone:	Outside Japan: +81 (3) 3227.5672 Within Japan: +81 (03) 3227.5264
E-mail:	americas_password@cnd.hp.com	E-mail:	europe_password@cnd.hp.com	E-mail:	asia_password@cnd.hp.com
Monday - Friday: 8:00 AM - 8:00 PM EST		Monday - Friday: 9:00 AM - 6:00 PM CET		Monday - Friday: 9:00 AM - 5:00 PM Japan Local Time	

Your right to use the Software, as well as important restrictions on the use, transfer, and copying of the Software, are set forth in the Software Licensing Terms ("Agreement"), which is included with this certificate. You must review and agree to the Agreement prior to using the Software.

Retain this Certificate as your proof of License to Use.

Using the web site

Follow these steps to obtain your product licenses:

1. Go to **www.webware.hp.com**.
   This links you to the web site - HP Password delivery service.
2. Select **Generate password(s)** on the Webware licensing menu.
3. Type your order number in the **Order number** text box. You order number is found on the License Entitlement Certificate - Password Request Form (HP Order Number).
4. Click **Next**.
5. Select the product you are requesting a password for on the Product selection form by clicking the check box for the product, and then click **Next**.
6. Select the product(s) for which you want to request password(s), and then click **Next**.
7. For each product you selected, type the number of Licenses To Use (LTUs) - limited by number of LTUs available for the order:
   - Server host name
   - IP address for the system where the software is installed
8. Click **Next**.
9. Provide all required information on the Member sign-in form, and then click **Sign-In**.
10. Provide all required information on the Address information form, and then click **Next**.
11. The Receive Permanent Password Certificate form displays a copy of your Permanent Password Certificate. It also offers additional delivery options for your certificate.

You should also receive an email containing your password certificate(s) and license key/password file attachment(s) similar to the following example.

HEWLETT PACKARD

Permanent Password Certificate

Do Not Discard - Retain for Reference

Issue Date:	5/24/2007	Send To:	Jack j. Smith
Confirmation Number:	5227953		Smith Enterprises
Session ID:	1626517		12 smith drive
HP Order number:	TESTLAB		
Product Number:	J8888X		
Product Name:	HP TEST product for Lab Development Use		San Diego, CA 92100
Product Version:	1.0		U.S.A.
License Type:	Node Locked	Fax:	

Server IP Address:	15.4.45.33	Expiration Date:	Not Applicable

Number of licenses encoded in these passwords: 1

The password(s) shown below are intended for reference purposes only. Files containing the password string(s) are automatically sent by e-mail to the requestor.

If the password file is not readily available, the license key(s) shown below may be entered manually. Because many e-mail applications insert extra carriage returns into long license key strings, license passwords may be broken up by carriage returns into multiple lines. To address this possibility, the marker string of <end> is appended to the end of every password. This provides a way to clearly identify individual passwords. The <end> markers are not part of the password string, and must be removed and replaced by a single carriage return. Passwords must each be formatted as a single line, and must not contain any embedded carriage returns.

9CRA FRVX H9PQ CHU3 V2A4 HWWR Y9JL KMPL B89H MZVU GX9V 2C89 VEMU MA8S UNYW EX9B SE83 HVLJ EFV6 DS42 P6CJ 2KKC QER9 LBWK AARX CL4R M8NX 32C2 JSDG C9AA N4ZF BGWB VKD9 9VAB 8QMQ 3HVB 58GY VFM3 "TESTLAB" <end>

To eliminate the chances of error, HP recommends that you install license/password(s) directly from a license key/password file, rather than attempt to manually transcribe and edit them from the license/password certificate. Each license key/password file can be copied to the appropriate target system and then directly imported and installed by the application. No editing of the license key/password file is required.

Saving your license key/password file to your system

As part of the process of obtaining a permanent AutoPass license, a `.dat` file or several `.dat` files were sent to the E-mail address that you provided. These files contain the licensing data required to use the applicable Service Manager modules. After you receive these files, you must move them to the Service Manager server.

Follow these steps to save your license key/password file to your system:

1. Rename the `.dat` file to a `.txt` file so that you can open it with a text editor.

   Example: from `J8888X1624204.dat` to `J8888X1624204.txt`

2. Create a file, `LicFile.txt`, to store the license data in. The default location for this file is:

   ```
   <Service Manager server installation path>/RUN/
   LicFile.txt
   ```

   You need to create this file only once. If you request any additional licenses, you should append those licenses to the end of this file.

3. Copy the license data from the license file and paste it in the `LicFile.txt` you created.

Horizontal scaling license requirements

In order to run your system in a horizontally-scaled environment, you must copy the LicFile.txt to all hosts running in the horizontal group. Place the LicFile.txt file in the `<Service Manager server installation path>/RUN/` folder. You will also need to provide the grouplicenseip parameter for each host. The grouplicenseip value should match the IP address you provided when applying for a license at **webware.hp.com**. See the Service Manager help for more information about horizontal scaling.

Configuring the server

You can customize your Windows and Unix server installation by modifying the HP Service Manager initialization file (`sm.ini`).

See the Service Manager help for a complete list of the parameters stored in the `sm.ini` file.

You can define the processes the system starts automatically and the system's startup parameters from the `sm.cfg` file. This file exists on both Windows and Unix systems.

- On Windows, `sm.cfg` determines how the system starts when started from a service.
- On Unix, `sm.cfg` determines how the system starts when started from the smstart script.

Configuration tool

If you select the **Run the configuration program after installation** option, the configuration tool starts automatically during your installation.

When you install the server for the very first time, the default settings are configured for the sample database (see Installing the sample database on page 40).

While this tool is intended to configure new or test implementations running the out-of-box sample data, you can use it whenever you want to change the settings in your system's `sm.ini` file.

The configuration tool overwrites your current `sm.ini` settings. You should back-up your system's `sm.ini` file prior to running the configuration utility to prevent any accidental data loss or loss of service.

Follow these steps to configure the server:

1 Run the Configure Server tool.

2 Specify the listener ports.

Table 15 Listener Port Parameters

Parameter	Default	Description
HTTP Port (system)	13080	The communication port number to which you want Service Manager to listen to client connection requests.
Enable HTTPS Port		Select this option to enable an HTTPS port.
HTTPS Port		The communication port number to which you want Service Manager to listen to secure client connection requests.

3 Specify the database type and connection information.

Table 16 Database type and connection information

Parameter	Description
Database Type	The database you want to use to store your data.
SQL Database Name	• SQL server: the ODBC DSN name • Oracle: the entry in `tnsnames.ora` • DB2: the dbname
SQL User	The user that Service Manager should connect to your Database with.
SQL Password	The password for the user that Service Manager should use to connect to your database with.

4 Verify the connection to confirm that Service Manager can connect to the database.

5 Upload the demo data, if desired.

Uploading the demo data also uploads the out-of-box 9.20 applications. You will want to install these if you are not upgrading from ServiceCenter.

Starting the server

You must start the server before users can access Service Manager. See Appendix B, Installation Verification, for instructions on starting the server.

You can choose between several different implementation options to manage client connections to the server. The following is a list of the most common server implementation options:

- Horizontal scaling implementation
- Single servlet implementation
- Vertical scaling implementation
- Vertical scaling and required SSL implementation

For detailed information about selecting the implementation option that best meets your specific requirements, you must first install the Service Manager online help. For information about installing the online help, see Help Server Installation on page 105.

4 Client Installation

You can only install an HP Service Manager Windows client on a Windows workstation. You can support clients running on other operating systems by installing the Service Manager web tier. This section contains information about installation requirements and how to install the Windows client.

Topics in this section include:

Installing the Service Manager Windows client

You must have local administrator privileges to install the Service Manager client.

The Windows client requires that the workspace and configuration folders are writable. By default, the client workspace and configuration information is stored in the following directory:
`C:\Documents and Settings\user_name\Service Manager`

Upgrading the Windows client

You cannot upgrade previous Service Manager clients to the Service Manager 9.20 Windows client. You must install the Service Manager 9.20 Windows client in a new folder. HP recommends but does not require that you remove previous Service Manager clients.

Make a backup of any customized Help files you have created for your Service Manager clients. The installer for the Service Manager 9.20 Windows client overwrites any customized help from prior clients.

Installation requirements

You will need the following to install the Service manager client on Windows.

Table 1 Windows client installation requirements

Requirement	Minimum	Recommended
OS	Windows XP Professional SP2 or higher	Windows Vista SP1 or higher
CPU	Pentium III 650Mhz	Pentium IV or Celeron 2.4 Ghz
RAM	256 MB	384 MB
HD	150 MB Help Server installed	150 MB with Help Server installed 300 MB with documentation installed

Table 1 Windows client installation requirements

Requirement	Minimum	Recommended
Resolution	800 x 600 (16 colors)	1280 x 1024 (256 colors)
Network	100 Megabit	100+ Megabit
Login account	Local administrator account	Local administrator account

Service Manager client setup

The Service Manager Windows client setup displays in the same language as the operating system.

Follow these steps to install the Service Manager Windows client:

1. Log in to the Windows server as a user with local administrator privileges.
2. Insert the Service Manager installation DVD into the appropriate drive of the server.

   If you are installing on a system that has auto-run enabled, the DVD browser starts automatically. If auto-run is disabled, follow these steps to start the DVD browser manually.

   a. Navigate to the DVD directory.

   b. Open `clickme.htm`.
3. Click **Install Windows Client**. The Service Manager Client Setup wizard opens.
4. Click **Next** to read and accept the licensing agreement.
5. Select the **I accept the terms in the License Agreement** option.

   The **Next** button becomes active. The Select Installation Folder page opens.
6. Do one of the following:

   a. Click **Next** to accept the default installation folder.

   The default installation folder is:
   `C:\Program Files\HP\Service Manager 9.20\Client`

   b. Click **Browse** to choose a different installation location.
7. Click **Next** to select the client features you would like to install.

8 Click **Next** to prepare the installation process. The Summary page opens.

9 Click **Install** to begin copying the installation files. You can stop the installation by clicking **Cancel**.

The Completing the Service Manager Client Setup wizard opens when the installation is complete.

10 Click **Finish** to exit the Setup wizard. The client installation is complete.

11 Close the browser window, or click the next item you want to install.

Defining a new client connection

The first time you access the client, the Connections window opens, which enables you to define a connection to a Service Manager host server. You can add and save multiple connection settings from the Connections window.

You must set your connection to an active server process. By default, the following are the defined settings:

- Client listener on ports 13080 (http) and 13443 (https/SSL) for HTTP clients, including Windows, web, and SOAP-API
- Special listener on port 12690 for SCAuto

If your server setup does not use the default settings, you must set the client to connect to the server.

Define a new client connection

Follow these steps to define a new client connection:

1 From the Windows main menu, click **Start** > **Programs** > **HP > Service Manager** 9.20 > **Service Manager Client**. The Connections window opens.

2 Click **New**. The Connections window displays a new node in the Connections pane.

3 Type or select the connection parameters.

Table 2 Windows client connection parameters

Parameter	Default option	Description
Name	New_configuration	The name of this configuration.
User name	User name of the Windows user currently logged on.	The name that you use to log in to the server.
Password	blank	The password that you use to log in to the server.
Remember my password	False	An option for the system store your password.
Automatically login	False	An option to log in automatically when you start the Service Manager client.
Server host name	localhost	The name of the server that hosts the Service Manager service.
Server port number	13080	The port number that your computer uses to connect with the server.
Language	blank	The language to use for this session (can differ from the language set on the computer).
Connection identified by a color	blank	An option to change the background color of your connection.

4 Click **Advanced** to set other connection options. The advanced features are optional.

Table 3 Windows client advanced connection parameters

Parameter	Description
Compress SOAP messages	An option that compresses SOAP messages using GNU zip (gzip) encoding. This can reduce the amount of data transmittal to and from the server.
Use SSL Encryption	An option that uses a Secure Socket Layer (SSL) encryption tool to protect your data when transmitting it over the network.
Trace SOAP traffic	An option that logs SOAP messages for debugging.

You must define a valid CA certificates file to enable SSL encryption. A sample CA certificate file called cacerts is included with the client installation. The default location of the `cacerts` file for a windows installation is:
`C:\Program Files\HP\Service Manager 9.20\Client\plugins\com.hp.ov.sm.client.common_9.20`

5 Click **OK** to add advanced features.

6 Click **Apply** to add the connection.

7 To add additional connections, repeat step 2 through step 6.

For additional information about configuring the Windows client, see the Service Manager Help.

Connecting to a Service Manager server

You can connect to multiple servers from one Service Manager client. Each connection opens in its own window.

Follow these steps to connect to a Service Manager server:

1 From the Windows main menu, click **Start** > **Programs** > **Service Manager Client** > **Service Manager Client**.

The Connections window opens.

2 Do one of the following:

- Double-click a connection.
- Click a connection and then click **Connect**.

Installing a shared Service Manager client

You can install the Service Manager client on a network share and have multiple users run from the shared client installation. In a shared client configuration, you can configure each user to have individual local settings or require users to use common settings. The Service Manager server tracks each client connection separately regardless of its source. Follow these steps to install a shared instance of the Service Manager client:

1 Install the Service Manager client on a network server. For more information, see Installing the Service Manager Windows client on page 76.

2 Create a Windows network share to the folder where you installed the Service Manager client, and grant users access to the network share. For example:

```
\\my_server\Service Manager Client
```

For more information, refer to the Windows online help.

3 Log in to the computer system of each user who will use the shared client.

4 Map the network share to a drive letter on the local system. For example:

Drive letter: `F:`
Mapped to: `\\my_server\Service Manager Client`

5 Create a Windows shortcut to the `ServiceManager.exe` file in the network share. For example: `F:\ServiceManager.exe`

By default, all users share common client settings. If you want each user to have individual local client settings, continue to the next step.

6 Modify the target properties of the Windows shortcut to add the following information after the executable name: `-data %USERPROFILE%\Service Manager\`

The `-data` parameter allows you to specify a path where you want to store client settings. The example path above places a Service Manager `folder` in the `Document and Settings` folder of the currently logged in user.

If your path name includes spaces, you must enclose the path in double quotation marks. For example:

```
F:\ServiceManager.exe -data "%USERPROFILE%\HP
Service Manager\workspace"
```

Uninstalling the Service Manager client or its components

You can uninstall the Service Manager client using Windows Add/Remove Programs.

Follow these steps to uninstall the Service Manager client or components:

1. From the Windows main menu, click **Start** > **Settings** > **Control Panel** > **Add/Remove Programs**.

   The Add/Remove Programs window opens.

2. Scroll to Service Manager Client and click **Remove**.

   A message prompts you to verify that you want to remove the program.

3. Click **Yes**.

   The uninstall process takes several minutes. Additional messages indicate the progress of the uninstall.

   When you complete the uninstall, you return to the Add/Remove Programs dialog box.

4. Click **Close**.

The client uninstall process intentionally preserves your client configuration settings. You must manually remove these files if you are completely uninstalling Service Manager from your system. HP recommends that you delete the entire client installation folder and the local writable workspace and configuration folder if you do not want to preserve any existing client settings.

5 Web Tier Installation

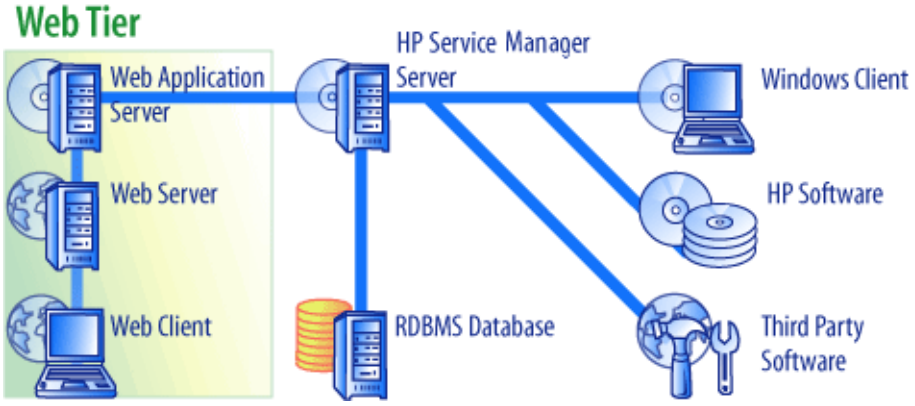
The web tier installation allows clients to use a web interface to access the HP Service Manager server.

Topics in this section include:

Web tier architecture

The Service Manager web tier uses both a web server and a web application server to allow access to Service Manager forms through a web browser. The web server handles incoming HTTP requests while the web application server runs the Java and JSP necessary for connecting to Service Manager.

Some web application servers such as Tomcat and WebSphere include built-in web servers.



You install the web tier on Windows or Unix platforms by deploying the `webtier-9.20.war` file to your web application server. Some web application servers also require you install the Sun J2SE Java Development Kit (JDK).

Browser requirements for the web client

For users to access the web client through a browser, the following settings and options must be enabled:

- Enable cookies
- Enable Java
- Enable JavaScript
- Enable pop-ups. You can add the Service Manager server URL to the pop-up exception list.

To display the workflow graphical view, install the Sun Java Runtime Environment (JRE).

Installing the web tier

To install the Service Manager web tier you must complete the following tasks:

Task 1: Determine the web architecture needed to support your web tier.

See Determining the web architecture needed to support your web tier on page 89.

Task 2: Deploy the Service Manager web tier to your web application server.

See Deploying the Service Manager web tier on page 90.

Task 3: Set your web application server memory settings for your production environment.

See ISetting the web application server heap size on page 97.

Task 4: Set global web client preferences in the web.xml file

See Setting web client preferences from the web.xml configuration file on page 93.

Determining the web architecture needed to support your web tier

A Service Manager web tier requires at least one web application server to run. Depending on the features and scale of your web tier, it may also require a dedicated production web server and additional web application servers. Refer to the guidelines below to determine the number of web application servers and web servers your implementation requires.

Determining if the web tier requires a dedicated production web server

If you use any of the implementation options list below, you will need to install and configure a dedicated production web server. If you are not running any of the configurations listed below, then you can run your web tier from a single web application server.

- A trusted sign-on implementation (You want web client users to log in to Service Manager without entering a user name and password.)
- A load balanced implementation (You want to distribute web client connections among multiple web application servers.)
- A scaled implementation to support a large number of concurrent users (You want to support 300 or more concurrent web client connections.)

Trusted sign-on implementations

A trusted sign-on implementation requires a web server to accept the pre-authenticated HTTP header information from your authentication software (such as SiteMinder or Integrated Windows Authentication). You must install and configure the authentication software separately. See your web server documentation for information about the HTML headers that your web server expects from your authentication software.

For additional information, go to the Software Support Online site at **http://support.openview.hp.com/** and search for the following white paper:

Setting up Single Sign-on in Service Manager. SSL Setup and Single Sign-on in Service Manager using Windows or Third Party Authentication

Load balanced implementations

A load-balanced implementation uses a web server to route connection requests to two or more web application servers. You must configure the web server to identify the web application servers (also known as workers) that are available to accept web client requests. For some web server and web application server combinations, you may need to install additional connection software (for example, to route requests to Tomcat web application servers using the Apache web server, you must install the proper connector). See your web server and web application server documentation for information about routing HTTP requests to available worker web application servers.

Scaled implementations

A scaled implementation uses the load balanced implementation described above to support a large number of concurrent web client users. As a general rule, HP recommends starting one worker web application server for every 300 concurrent web client connections you want your web tier to support. To help determine the number of connections your web tier can support, go to the Software Support Online site and search for the following white paper:

Service Manager 7 Reference Configurations

Deploying the Service Manager web tier

The Service Manager web tier contains a J2EE-compliant web application that runs on your web application server. Each web application server has its own method of deploying web applications. See your web application server documentation for specific instructions on deploying a web application.

The following table provides a summary of deployment methods required.

Table 1 Web tier deployment methods

Web application server	Deployment method
Apache Tomcat	Copy the `webtier-9.20.war` file to the `webapps` folder and start the web application server.
BEA WebLogic	Open the administration console and install the web application from the `webtier-9.20.war` file.
IBM WebSphere	Open the administration console and install the web application from the `webtier-9.20.ear` file.
JBoss	Copy the `webtier-9.20.war` file to the `webapps` folder and start the web application server.
Sun ONE	Configure to joint to JBoss and the `webtier-9.20 folder.`

Deploy the web tier on Tomcat

For example, use the following steps to deploy the `webtier-9.20.war` file on Tomcat.

1. Log in to the server as a user with local administrator privileges.
2. Stop the Tomcat Web application server.
3. Insert the Service Manager installation DVD into the appropriate drive of the server.

   If you are installing on a system that has auto-run enabled, the DVD browser starts automatically. If auto-run is disabled, follow these steps to start the DVD browser manually.

   a. Navigate to the DVD directory.

   b. Open `clickme.htm`.
4. Click **Download Service Manager Web Tier**. The File Download prompt opens.
5. Click **Save**. The Save As dialog box opens.
6. Save the file to your Tomcat webapps directory. For example, `C:\Program Files\Apache Software Foundation\Tomcat 5.5\webapps`)

7 Edit the `web.xml` file within the `webtier-9.20` file to add your server connection information. See Setting web client preferences from the web.xml configuration file on page 93.

You can also set your web client preference after you deploy the web tier. You can deploy the web tier without setting web client preferences, but the web tier will not accept client connections until you set them.

Setting web client preferences from the web.xml configuration file

You can define global web client preferences from the `web.xml` file on the web tier server. The settings you define in this file determine the client preferences for all web clients. See the Service Manager online help for a complete list and more detailed explanation of each parameter.

Follow these steps to set client preferences from the `web.xml` file:

1. Open the `webtier-9.20.war` file in an archive management program.

   You can download these files from the Service Manager installation DVD.

2. Extract the `web.xml` file from the archive to your local system.

   Extract this file into its default path of `WEB-INF\` so that you can preserve the path information when you archive it again.

3. Open the `web.xml` file in a text editor.
4. Add or edit the preferences in the file. For a list of the most commonly set web parameters, see Commonly set web parameters on page 95.

5 At a minimum, you must set the `serverHost` and `serverPort` parameters.

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE web-app PUBLIC "-//Sun Microsystems,
Inc.//DTD Web Application 2.2//EN" "http://
java.sun.com/j2ee/dtds/web-app_2_2.dtd">
<web-app>
<display-name>Service Manager</display-name>
<description>Service Manager</description>
...
<init-param>
<param-name>serverHost</param-name>
<param-value>localhost</param-value>
</init-param>
<init-param>
<param-name>serverPort</param-name>
<param-value>13080</param-value>
</init-param>
...
```

Set the host

Set the port

6 Save the file.

7 Start the Tomcat server.

Tomcat automatically opens the `webtier-9.20.war` file and creates a webtier-9.20 virtual directory.

If Tomcat does not create a webtier-9.20 directory when started, check the log files and contact support with the information found in the log files.

8 Add the updated `web.xml` file back into the `webtier-9.20.war` archive.

The `web.xml` file must include the `WEB-INF\` path.

Web clients will now use the client preferences you defined in the `web.xml` file when you deploy the `webtier-9.20.war` to the web tier.

Web tier log files

The Service Manager web tier writes log files to the default log file and location used by your web application server. See your web application server documentation for the name and location of the log file.

Commonly set web parameters

Table 2 Commonly set web tier parameters

Parameter	Default value	Description
cacerts	WEB-INF	This parameter lists the path to the CA certificates required for SSL support.
compress_soap	false	This parameter specifies if you want to use data compression between web clients and the Service Manager web tier.
helpServerHost	localhost	This parameter specifies the name of the Service Manager Help Server.
helpServerPort	80	This parameter specifies the communications port number to which the Service Manager Help Server listens.
refreshMessages	false	This parameter determines whether the browser checks for new messages from the application server.
refresh MessagesInterval	15000	This parameter determines how often (in milliseconds) the browser checks for new messages from the application server.
serverHost	localhost	This parameter specifies the name of the Service Manager host server.
serverPort	13080	This parameter specifies the communications port number to which the Service Manager server listens.
ssl	false	This parameter enables the web client to encrypt communications using the server's demonstration certificate.
viewactivenotes	false	This parameter determines whether you see a pop-up message when the server sends a message.

Setting the WebSphere class loader mode

If you are using WebSphere, you must verify that this web module has the class loader order set to PARENT_FIRST.

1. In the administrative console of the WebSphere application server, select **Applications**.
2. Select **Enterprise Applications**.
3. Select **HP Service Manager 9.20 Web**.
4. Select **Class loading and update detection**.
5. Ensure that “Class Loader Order” is set to “Parent class loader first.”
6. Click **Apply**.
7. If you have made a change, in the message box select **Save**.
8. Select **Save**.
9. Start the application.

Endorsed JAR files

Endorsed JAR files are no longer required. If you installed them in previous installations, you should remove them.

ISetting the web application server heap size

The web application server heap size directly determines how many connections each web application server can handle. Most application servers require a heap size of at least 256 MB for optimal performance. If you experience poor performance from your web client connections, try increasing the web application server heap size. See your web application server documentation for instructions on setting the heap size.

Configuring the web server to work with Service Manager

IIS

Edit the `workers.properties.minimal` (IIS 5) or `workers2.properties` (IIS 6.2) file to include the following five parameters:

```
[uri:/sm/servlet/*]
info=Prefix mapping

[uri:/sm/*.jsp]
info=Extension mapping

[uri:/sm/*.do]
info=Extension mapping

[uri:/sm/attachments/*]
info=Extension mapping

[uri:/sm/cwc/nav.menu]
info=Extension mapping
```

Accessing Service Manager from the web client

Use the following URLs to access Service Manager from the web tier.

- The address for the standard web client is:

  http://<server>:<port>/webtier-9.20/index.do

  The address for employee self-service web client is:

  http://<server>:<port>/webtier-9.20/ess.do

  The address for the accessible web client is:

  http://<server>:<port>/webtier-9.20/accessible.do

  The accessible web client does not display record lists.

  The address for the accessible employee self-service web client is:

  http://<server>:<port>/webtier-9.20/accessible_ess.do

For *<server>*, type the name of the web server running the web tier. For *<port>*, type the communications port number used to connect to the web tier.

You do not need to specify the communications port in the web tier URL if you use the default web server port (port 80). See your web server documentation for instructions on setting the communications port.

Web client Computer Telephony Integration (CTI)

The web client can support connections from Computer Telephony Integration (CTI) applications. The web client CTI implementation uses the Service Manager Event Services application to open or update records.

Follow these steps to set up and use CTI:

Task 1: Set up your web browser.

See Setting the web browser requirements on page 100.

Task 2: Install a JRE.

See Installing the JRE on page 100.

Task 3: Install the CTI applet.

See Installing the CTI applet on page 102.

Task 4: Connect to the web client to receive calls.

See Taking a call with the telephony web client on page 103.

Setting the web browser requirements

Enable the following settings and options to use CTI with a web client:

- Cookies
- Java
- JavaScript
- Pop-ups (Add the Service Manager server URL to the pop-up exception list.)

Installing the JRE

You must install a Java Runtime Environment (JRE) on each web client system to run the CTI applet. See your Web browser documentation to determine a compatible JRE version

For example, you can follow these steps to install the Sun J2SE JRE, which you can use with Internet Explorer or Mozilla:

1. Go to Sun java web site: **http://java.sun.com/javase/downloads/index.jsp**.
2. Find the Java Runtime Environment (JRE) section, and click **Download**.
3. Accept the license agreement.
4. Navigate to your operating system (for example, Windows), and download the latest JRE for your operating system.

Installing the CTI applet

You must perform a one-time installation of the CTI applet on each web client system so the web client can accept Service Manager system events from a CTI application.

Follow these steps to install the CTI applet:

1. Log in to the web client system with a local administrator account.

   The applet installation requires a local administrator account.

2. Close all other Service Manager clients and web browser windows.
3. Open a web browser and navigate to the telephony web tier URL:

   http://<*server*>:<*port*>/webtier-9.20/index.do?telephonyuser=1

   For <*server*>, type the name of the web server running the web tier. For <*port*>, type the communications port number used to connect to the web tier.
4. If the web client system has a properly installed JRE, then the web browser prompts the user to install the CTI applet:
5. Click the appropriate action on your browser to accept the applet (for example, **Run** or **OK**).
6. Close and restart the web browser.

Using the telephony web client

The telephony web client requires a CTI application and the Event Services application within Service Manager.

Accessing CTI from the web client

You can use the following URLs to access the telephony portions of the web client.

The telephony applet does not apply to the self-service portions of Service Manager.

- The address for the standard telephony web client is:

  http://<server>:<port>/sm/index.do?telephonyuser=1

- The address for the accessible telephony web client is:

  http://<server>:<port>/sm/accessible.do?telephonyuser=1

  This address turns off record list mode and the classic menu, which do not conform to accessibility requirements.

For <*server*>, type the name of the web server running the web tier. For <*port*>, type the communications port number used to connect to the web tier.

You do not need to specify the communications port in the web tier URL if you use the default web server port (port 80). See your web server documentation for instructions on setting the communications port.

Taking a call with the telephony web client

When an event comes from a CTI application, the telephony web client prompts users to save their current work.

Save your current work, and then click **Yes** to receive the incoming call (or other event).

6 Help Server Installation

You must install the HP Service Manager Help Server on a Windows system. This section contains information about installation requirements and how to install the Help Server. For information about starting and stopping the Help Server, see Accessing the Help Server on page 111.

Topics in this section include:

Overview of the Service Manager Help Server

The Service Manager Help Server provides a centralized location to access and store all online help files. The Service Manager Help Server includes an integrated web server that allows end users to access documentation from either the Windows or web clients as well as directly from a web browser.

Upgrading the Help Server

You cannot upgrade previous Help Servers to the Service Manager 9.20 Help Server. You must install the Service Manager 9.20 Help Server in a new folder or on a different system than your previous Help Server. HP recommends that you remove previous Help Servers, but it is not required.

Make a backup of any customized Help files you have created for your Help Servers. The installer for the Service Manager 9.20 Help Server overwrites any customized help from prior Help Servers.

Installation considerations

Installing the Service Manager Help Server enables you to:

- Provide your users with an easily updatable help source.
- Deploy tailored versions of Service Manager documentation. You can edit the online help stored on the Help Server and deploy it with the integrated web server. All clients that connect to the Help Server automatically see the customized online help files.

Testing the Help Server

To test the Help Server from the server machine, use a direct browser connection to:

http://<helpserverhost>:<helpserverport>/help/

For <*helpserverhost*>, type the name or IP address of the Help Server you want to connect to.

For <*helpserverport*>, type the communications port used to connect to the Help Server. You may omit the port number if you use the default port 80 HTML port.

Installing the Help Server on Windows

After installing the Help Server, you can customize the server settings in the Help Server Configuration wizard.

Installation requirements

The following are required to install the Help Server on Windows:

- Windows 2003 or higher
- The most current Windows updates on your operating system
- 240 MB disk space
- 256 MB RAM minimum recommended
  - For testing purposes, 128 MB RAM is sufficient
  - For production purposes, RAM is based on the expected user load
- A free communications port to listen for HTTP connections requests. The default communications port is 8083.
- Sun Java Runtime Environment (JRE)

Service Manager Help Server setup

Follow these steps to install the Service Manager Help Server:

1. Log in to the Windows server as a user with local administrator privileges.
2. Insert the Service Manager installation DVD into the appropriate drive of the server.

   If you are installing on a system that has auto-run enabled, the DVD browser starts automatically. If auto-run is disabled, follow these steps to start the DVD browser manually.

   a. Navigate to the DVD directory.

   b. Open `clickme.htm`.
3. Click **Install HP Service Manager Help Server**. The Service Manager Help Server Setup wizard opens.
4. Click **Next** to read and accept the licensing agreement.
5. Select the **I accept the terms in the License Agreement** option. The Next button becomes active.
6. Click **Next** to continue. The Select Installation Folder page opens.
7. Type or select the path where you want to install the Help Server, and then click **Next** to continue. The Ready to Install page opens.
8. Click **Install**. The wizard installs the Help Server on the system.
9. Click **Finish**. The Configure HP Help Server wizard closes.
10. Click **Start > All Programs > HP > Service Manager 9.20 > HelpServer > Configure Help Server**. The Service Manager Help Server Configuration page opens.
11. Click **Next**.

12 Do one of the following:

a Click **Skip** to use the default configuration settings.

b Update the following parameters as needed.

Table 1 Help server configuration parameters

Parameter	Default value	Description
Server port	8083	This parameter specifies the communications port to which you want the Help Server to listen for HTTP requests.
Windows Service Name	HP Service Manager 9.20 Help Server	This parameter specifies the name of the Windows service you want the Help Server to use.

13 Click **Next** to continue.

The Service Manager Help Server Configuration page opens.

14 Select the **Install Windows Service** option.

15 Click **Finish**.

The wizard configures the Help Server and installs the Windows service.

Accessing the Help Server

You can access the Help Server from the following interfaces:

- Windows client, see Accessing the Help Server from the Windows client on page 111
- Web client, see Accessing the Help Server from the web client on page 112
- Web browser, see Accessing the Help Server from a browser on page 112

Accessing the Help Server from the Windows client

To have Windows clients display online help from the Help Server, you must configure the Windows client preferences and define the Help Server host name and communications port.

This setting is saved with your client preferences and is captured by the Client Configuration utility so that you can easily deploy it to your Windows client users.

Follow these steps to configure a Windows client to display online help from the Help Server:

1. Log in to the Windows client.
2. Click **Window** > **Preferences**.

   The Preferences window opens.
3. Click the **Help** node to expand it.
4. Click **Help Server**.
5. Enable the **Use a Help Server to access documentation** option.
6. Type the following information:
   a. Host name or IP address of the Help Server
   b. Communication port of the Help Server
7. Click **OK**.

   The Windows client now displays the online help from the Help Server when the user clicks the **Help** icon or select **Help** > **Help Contents**.

Accessing the Help Server from the web client

By default, web clients do not display online help. To have web clients display online help from the Help Server, you must configure the web client `web.xml` file and define the Help Server host name and communications port.

Follow these steps to configure a web client to display online help from the Help Server:

1. Log in to the server where you installed the web tier.
2. Open the `web.xml` file from the `sm/WEB-INF` folder of your application server installation.
3. Type the following information:
   a. `helpServerHost` - Host name or IP address of the Help Server
   b. `helpServerPort` - Communication port of the Help Server
4. Save the `web.xml` file.

   The web client displays the online help from the Help Server.

Accessing the Help Server from a browser

You can view the online help from a Help Server by typing the following URL into a compatible web browser:

http://<helpserverhost>:<helpserverport>/help/

For *<helpserverhost>*, type the name or IP address of the Help Server you want to connect to.

For *<helpserverport>*, type the communications port used to connect to the Help Server. You may omit the port number if you use the default port 80 HTML port.

7 Client Configuration Utility Installation

You can install the Service Manager Client Configuration Utility on a Windows system. This section contains information about installation requirements and how to install the Client Configuration Utility.

Topics in this section include:

Overview of the Service Manager Client Configuration Utility

The Service Manager Client Configuration Utility is an optional tailoring component that enables you to customize a Windows installation for deploying to end users. You can use the Client Configuration Utility to customize the Windows client before deploying it to the rest of your organization.

The Client Configuration Utility cannot push customization changes to previously installed Windows clients. To change existing installations of the Windows client, you uninstall the existing client and reinstall using the customized files you create.

The Client Configuration Utility only picks up changes made directly from the Windows client interface or within the utility itself. The Client Configuration Utility cannot pick up changes made directly to Windows client initialization files.

The Service Manager Client Configuration Utility changes the following Windows client settings:

- Splash screen image that Service Manager displays when users open the Windows client
- Name of provider listed for Service Manager — for example, Hewlett-Packard Development Company, L.P.
- Name of the Service Manager application — for example, Service Manager
- Location of application images and icons
- Location of the Help Server where Windows clients can access documentation
- Changes that an administrator saves within the Windows client interface prior to running the Client Configuration Utility, including:
  - Default login options
  - Connection dialog box configuration options to display
  - Default connection configuration settings
  - Help server configuration options

Installation considerations

You may want to use the Service Manager Client Configuration Utility for the following reasons:

- To deploy tailored versions of Windows clients. You can use the Client Configuration Utility to preconfigure Windows clients to use custom settings and images.
- To reduce the number of tailoring steps. When you use the Client Configuration Utility you are not required to tailor each Windows client individually.

Known issues

The Service Manager Client Configuration Utility has the following known issues:

- You must customize images before you run the Client Configuration Utility. The Client Configuration Utility enables you to change the location of images but not to edit them directly.
- If you deploy a repackaged Windows client that has a predefined connection over SSL, the Windows clients may display the connection error message “No trusted certificate found.” This indicates that you are installing the customized client in a different path than the original client used. You can restore the client connection by providing the correct path to the CA certificate file in the client Preferences dialog box.

Installing the Client Configuration Utility on Windows

You install the Client Configuration Utility by running the installation executable on the installation DVD. After installation, you can customize the Windows client settings by using the Client Configuration Utility.

Installation requirements

- Windows 2000, Windows XP Professional, or Windows Vista
- The most current Windows updates on your operating system
- 70 MB disk space
- 256 MB RAM minimum recommended
  - For testing purposes, 128 MB RAM is sufficient
  - For production purposes, add RAM to match the expected user load
- Access to a Service Manager Windows client installation

Service Manager Client Configuration Utility setup

Follow these steps to install the Service Manager Client Configuration Utility:

1. Log in to the Windows system as a user with local administrator privileges.
2. Insert the Service Manager installation DVD into the appropriate drive of the server.

   If you are installing on a system that has auto-run enabled, the DVD browser starts automatically. If auto-run is disabled, follow these steps to start the DVD browser manually.

   a. Navigate to the DVD directory.

   b. Open `clickme.htm`.
3. Click the **Downloads** tab.
4. Click **Download the HP Service Manager Client-Configuration utilities**.

   The Service Manager Client Configuration Utility Setup wizard opens.

5 Click **Next** to read and accept the licensing agreement.

6 Select the **I accept the terms in the License Agreement** option.

The Next button becomes active.

7 Click **Next** to continue.

The Select Installation Folder page opens.

8 Type or select the path where you want to install the Client Configuration Utility.

9 Click **Next** to continue.

The Ready to Install page opens.

10 Click **Install**.

The wizard installs the Client Configuration Utility on the system.

11 Click **Finish**.

Customizing images used by the Windows client

You can customize the images that Windows clients use by providing alternate versions of the images from a local folder or web server virtual directory

Image editing guidelines and considerations

The following guidelines and considerations apply to customized images:

- All custom images must retain their original file name.
- All custom images must retain their original relative path from the `icons/obj16` folder.
- You only need to save customized images in the `branded/obj16` folder. If the Service Manager client does find updated images in the `branded/obj16` folder it uses the default images in the `icons/obj16` folder.
- Providing custom images from a web server allows you to automatically update images without having to reinstall the Windows client.

Providing custom images from a local folder

You can use the following steps to provide custom images with the repackaged client. This image customization method increases the amount of hard disk space required to install the Service Manager Windows client as the custom images are installed in addition to the default images.

Follow these steps to customize images from a local folder:

1. Copy the images from the Service Manager client into a temporary folder.

   The Service Manager client images are located in the following folder:
   `C:\Program Files\HP\Service Manager 9.20\Client\plugins\com.hp.ov.sm.client.eclipse.user_9.20\src\resources\icons\obj16`
2. Edit the images you want to customize in the temporary folder.

   See Image editing guidelines and considerations on page 118.
3. Delete any images that you do not customize from the temporary folder.
4. Run the Client Configuration Utility and select the local images option.

The Client Configuration Utility creates the following new folder in the Service Manager client installation:
`C:\Program Files\HP\Service Manager 9.20\Client\plugins\com.hp.ov.sm.client.eclipse.user_9.20\src\resources\icons\branded\obj16`

5 Copy your custom images to the `branded\obj16` folder.

You can copy the your custom images to the local folder while the Client Configuration Utility is open.

6 Repackage the client as a zip file or another distribution format of your choice.

Providing custom images from a web server virtual directory

You can use the following steps to provide custom images from a central web server. This image customization method does not increase the amount of hard disk required to install the Service Manager Windows client. In addition, any changes you make to images on a web server are automatically applied to Windows clients.

Follow these steps to customize images from web server virtual directory:

1 Create a virtual directory on your web server to store the custom images.

2 Copy the images from the Service Manager client into a temporary folder.

The Service Manager client images are located in the following folder:
`C:\Program Files\HP\Service Manager 9.20\Client\plugins\com.hp.ov.sm.client.eclipse.user_9.20\src\resources\icons\obj16`

3 Edit the images you want to customize in the temporary folder.

See Image editing guidelines and considerations on page 118.

4 Delete any images that you do not customize from the temporary folder.

5 Copy your custom images to the virtual directory on your web server.

6 Run the Client Configuration Utility and select the web server virtual directory option.

The Client Configuration Utility configures the Service Manager client to point to the URL of your web server virtual directory.

Customizing the Windows client

To use the Client Configuration Utility, you must have previously installed a Windows client.

Follow these steps to create a custom Windows client:

1 Click **Start** > **Programs** > **Service Manager Client Configuration Utility** > **Service Manager Client Configuration Utility.**

The Client Configuration Utility opens.

2 Click **Next** to continue.

The Specify Service Manager Directory page opens.

3 Type or select the path to an existing installation of the Service Manager Windows client.

4 Click **Next** to continue.

The Change Startup Splash Image page opens.

5 Do one of the following:

- Click **Skip** to use the default splash image.
- Type or select the path to the splash screen image you want to use.

The default splash screen image is named `splash.gif` and is located in the following folder:
`C:\Program Files\HP\Service Manager 9.20\Client\plugins\com.hp.ov.sm.client.eclipse.user_9.20\src\resources\icons\obj16`

Use the following guidelines to edit the splash screen image:

- The image must retain its original file name
- The image must be in the Windows bitmap (gif) file format
- The image should be approximately 500 wide by 600 pixels high. The Client Configuration Utility crops larger images to this size.

6 Click **Next** to continue.

The Replace Provider and Application Strings page opens.

7 Do one of the following:

- Click **Skip** to use the default application text strings.
- Type the text strings you want to use for the following items:

Table 1 Provider and application settings

Field	Type this information
Provider	Type the company name you want to display in the Windows client interface. The default name is Hewlett-Packard Development Company, L.P.
Application	Type the application name you want to display in the Windows client interface. The default name is Service Manager.

8 Click **Next** to continue.

The Customize Where Service Manager Application Images are Located page opens.

9 Do one of the following:

- Use the default application images.
  - **No customization**: Select this option to use the default images.
  - Click **Skip**.
- Select the path to your customized Windows client images.
  - **Locally**: The Client Configuration Utility creates a folder named `\branded\obj16` where you can place customized images to override the default Windows client images.
  - **Remotely**: Type the URL where the Windows client can access customized images.

See Customizing images used by the Windows client on page 118 for more information.

10 Click **Next** to continue.

The Customize Default Login Options page opens.

11 Do one of the following:

- Click **Skip** if you do not want to create a default connection.
- Select whether to display the following options on Connections dialog box of your customized client.

Table 2 Connection dialog configuration options

Field	Description
Show the "Remember my password" option.	Enabled by default. When disabled, the client's Connections dialog box will not display the "Remember my password" check box option.
Show the server parameters.	Enabled by default. When disabled, the client's Connections dialog box will not display the "Use Login/ Password" and "Use Trusted Sign-on" radio buttons, or the "Server host name" and "Server port number". Also, the New and Delete buttons will be disabled.
Show the "Advanced" options page.	Enabled by default. When disabled, the client's Connections dialog box will not display the "Advanced" notebook tab. Additionally, the "Trace SOAP Traffic" feature will not be available.

- Type the following information about the default connection you want to create.

Table 3 Default connection dialog configuration options

Field	Description
Hostname	Type the network name or IP address of the Service Manager server to which you want the Windows client to connect.
Port Number	Type the communications port on which the Service Manager server listens to client connection requests. The default communications port is 13080.

Table 3 Default connection dialog configuration options (cont'd)

Field	Description
Compress Messages	Select true to enable message compression between the Windows client and the Service Manager server. Select false to have messages remain uncompressed.
Use SSL Connection	Select true to enable an SSL connection between the Windows client and the Service Manager server. Select false to use a standard connection.
CA Certificate Path	Type or select the local path to the CA certificate used by your SSL connection. Leave this entry blank if you are not using an SSL connection.

You can find a sample CA certificate file `cacerts` in the following path:
`C:\Program Files\HP\Service Manager 9.20\Client\plugins\com.hp.commons_9.20\`

- Click **Next** to continue.

The Use and Configure Help Server page opens.

12 Do one of the following:

- Click **Skip** if you do not want to provide online help from a Help Server.
- Select the **Use Central Help Server** option to establish a connection to a Help Server. Type the following Help Server information.

Table 4 Help server configuration options

Field	Description
Help Server Host	Type the network name of the Service Manager Help Server to which you want the Windows client to connect.
Help Server Port	Type the communications port on which the Service Manager Help Server listens to client connection requests. The default communications port is 80.

The Help Server host and port must be identical to the settings you configured with the Help Server configuration wizard. See Help Server Installation on page 105 for more information.

- Click **Next** to continue. The Client Configuration Utility page opens.

13 Click **Exit**.

The client is now configured.

14 Zip the contents of the Service Manager 9.20 directories to prepare and deploy the customized configuration of the Service Manager 9.20 client to other users. The following two directories are necessary for a proper deployment. The default directory paths are as follows:

— C:\Program Files\HP\Service Manager 9.20

— %HOMEPATH%\Service Manager

End users must have the installation DLLs in their windows\system32 directory in order for the deployed client to work properly. They should have the following path added to their system environment variables:
<ServiceManagerHome>\plugins\com.hp.ov.sm.client.thirdparty_9.20\lib;

8 Search Engine Installation

You can install the HP Service Manager search engine on a Windows or Unix server. This section contains information about installation requirements as well as how to install and configure the search engine.

The Knowledge Management applications are installed with the regular server installation, however the search engine must be installed separately.

Topics in this section include:

Installing the Service Manager search engine

There are two ways of installing the Service Manager search engine. You can install the search engine by using an installation wizard, or by using a text-based installer. After installing the search engine, you can configure the search engine settings.

The Linux installer includes a JVM, but for other operating systems, you install a JVM to run the search engine installer.

Installation requirements

The following are required to install the Service Manager search engine:

- 512 MB RAM
- 4 - 6 GB disk space
- 800 MHz or higher processor
- 400 MB of space designated for `/tmp` (Unix) and `\TEMP` (Windows)

Kernel resource requirements for HP-UX

To run Knowledge Management on HP-UX, configure the following kernel parameters:

Table 1 Knowledge Management kernel resource requirements for HP-UX

Value	Setting
maxdsiz	1.9 GB (0x7B033000)
maxfiles	2048 KB
maxfiles_lim	2048 KB
maxssiz	160 MB (0xA000000)
max_thread_proc	1024
maxswapchunks	8192

Table 1 Knowledge Management kernel resource requirements for HP-UX (cont'd)

Value	Setting
maxtsiz	1 GB (0x40000000)
maxuprc	512
maxusers	128
nkthread	1024
nproc	517

Installing the search engine by using the installation wizard

Follow these steps to install the Service Manager search engine by using the installation wizard:

1. Insert the search engine installation DVD into the appropriate drive of the server.
2. Start the Service Manager search engine installation wizard.
3. If you are installing on a Windows system that has auto-run enabled, the wizard starts automatically.

   If auto-run is disabled, you can manually start the wizard by using one of the following methods.

   On Windows systems:

   - From the GUI, navigate to the DVD directory, and double-click `setupwin32.exe`.
   - From the command prompt, type the following: `D:\>setupjwin32`

     where D identifies the DVD drive. Substitute your DVD drive identifier.

On Unix systems:

For HP-UX, be sure that you have set the kernel configuration parameters described in Kernel resource requirements for HP-UX on page 126.

- From the GUI:
  - Mount the DVD and navigate to the DVD directory.
  - Double-click the executable script that matches your Unix system, for example, `setupsolaris` for Solaris systems or `setupaix` for AIX systems.
- From the command prompt:
  - Mount the DVD and change directories to the mount location.
  - Run the executable script that matches your Unix system, for example:
    `./setupsolaris` for Solaris systems
    or
    `./setupaix` for AIX systems

The Service Manager Search Engine Setup wizard opens.

4 Click **Next** to read and accept the licensing agreement.

5 Select the **I accept the terms in the License Agreement** option. The **Next** button becomes active.

6 Click **Next** to provide the following installation parameters.

Table 2 Search engine installation parameters

Parameter	Value
Hostname	Server host name If the search engine will be on a separate machine on a separate domain, use the fully qualified domain, for example, `my.machine.mydomain.com`.
Masterport	The default is 9950.
Docserver Port (9920-9949)	The default is 9948.
Indexer Port (9960-9979)	The default is 9967.

Record the settings in Table 2. You will need them to configure Service Manager to communicate with the search engine.

7 Click **Next** to provide the installation directory.

The default installation directory for Windows is:
`C:\Program Files\HP\Service Manager 9.20\Search Engine`

If necessary, click **Browse** to choose a different location.

8 Click **Next** to review the installation summary information.

9 Click **Install** to begin copying the installation files.
To stop the installation click **Cancel**.

The InstallShield Wizard opens a dialog box when the installation is complete.

10 If you are on a Unix system, run `InstallConfiguration.sh`, which is found in your `<Search Engine install path>`/directory.

11 Click **Finish** to exit the Wizard.

Installing the search engine by using the text-based installer

Follow these steps to install the Service Manager search engine using the text-based installer:

1. Insert the search engine installation DVD into the appropriate drive of the server.
2. Run the installer.
3. On Windows systems:

   Open the command prompt and type the following:

   ```
   D:\>setupwin32 -console
   ```

   where D identifies the DVD drive. Substitute your DVD drive identifier.

   On Unix systems:

   a. Mount the DVD and change directories to the mount location.

   b. Run the executable script that matches your Unix system, for example:
   `./setupsolaris -console` for Solaris systems or
   `./setupaix -console` for AIX systems.
4. At the installation script prompt, type `yes` to agree to the license agreement.
5. At the installation script prompt, type the installation directory address where you want to install Service Manager.

   The system validates any directory name that you specify. If you specify an invalid directory, the installation generates an error message.

   The system takes several minutes to read the contents of the DVD, uncompress the files, and create a logs directory.
6. At the installation script prompt, type a host name, then press **Enter**.

   If the search engine will be on a separate domain, use the fully qualified domain, for example, mymachine.mydomain.com.

7 At the installation script prompt, type a Masterport number, then press **Enter**. The default is 9950.

8 At the installation script prompt, type a Docserver Port number (9920-9949), then press **Enter**. The default is 9948.

9 At the installation script prompt, type an Indexer Port number (9960-9979), and then press **Enter**. The default is 9967.

Record these settings, as you will need them to configure Service Manager to communicate with the search engine.

10 The server installation completes.

11 If you are on a Unix system, run `InstallConfiguration.sh`, which is found in your `<Search Engine install path>`/directory.

Starting and stopping the search engine

The methods for starting and stopping the search engine are described below.

On Windows systems

The installer creates a service named **KMSearch.** Use it to start and stop the search engine. This service starts automatically after installation.

On Unix systems

Add the following to the `sm.ini` file:

For HP-UX

```
plugin0:libkmplugin.sl
```

For all other versions of Unix

```
plugin0:libkmplugin.so
```

Your installation folder has two executable scripts.

Table 3 Search engine start scripts for Unix systems

Name	Purpose
k2adminstart.sh	Starts the search engine and index service
k2adminstop.sh	Stops the search engine and index service

Run the `k2adminstart.sh` executable script file to start the index service for your search engine.

Configuring the search engine

Before you can use the search engine, you must set up connectivity, and then index the search engine.

Connecting to the search engine

Follow these steps to connect to the search engine:

1. Log in as a user with the KM ADMIN profile.
2. Open **System Administration > Ongoing Maintenance > Environment Records > Knowledge Management Environment**.
3. To **Assign the Default Knowledge View Group to all operators**, select the check box.
4. Specify the **Host Name of Search Server.** This must be identical to the host name you indicated when installing the server.
5. You can confirm that you have the correct information by looking in the configuration file at `C:\Program Files\HP\Service Manager 7.0\Search Engine\KMSearch.cfg`.
6. Click **Verify Server** to verify connectivity to the search engine.
7. Specify the **Mapped drive for Style files.** The path default is `C:\Program Files\HP\Service Manager 9.20\Search Engine\data\stylesets`.
8. Click **Verify Path** to verify that your path and map settings are correct.
9. Make sure that both the search engine and Service Manager server have read and write privileges in the stylesets folder.

   If the search engine is installed on a separate machine, you will need to share the stylesets folder from the search engine to the Service Manager server. Use the share name and path for this setting so that the style files path in the environment form is set to the stylesets folder.

10. Specify the **Search Engine administration port number.** This must be identical to the port number you indicated when installing the server. If you did not change the default port number, use the default given in the field.

11 Specify the **Search Engine indexer port number.** This must be identical to the port number you indicated when installing the server. If you did not change the default port number, use the default given in the field.

12 Specify the **Search Engine search port number.** This must be identical to the port number you indicated when installing the server. If you did not change the default port number, use the default given in the field.

13 Specify the **Max number of Documents returned from a search.**

14 Specify the **Default expiration period.** The time limit specified here will be over-ridden if the user specified an expiration date when they created a document by using the Contribute New Document function.

15 Specify the **Style text for search results.** Use this style sheet to control the appearance of the information the search returns. This is similar to an HTML css stylesheet.

16 Log out of Service Manager, and then log back in again.

Using a Web Service Connection

The following additional fields on the Knowledge Management Application Environment form enable the search engine to use a Web service to call back to Service Manager and report which documents have been updated or deleted in the index and which documents contain errors and were not indexed.

- **Service Manager Host Name or URL** specifies the host name or URL for the Service Manager server. An example is `localhost` or `15.124.215.218`.
- **Service Manager Http Port Number** specifies the port number for the Service Manager server. An example is 13080.
- **Service Manager Login Name for Web Service Connection** specifies the user login name that has delete rights for the kmknowledgebaseupdates table and add and delete rights for the kmknowbaseerrors table.

  As a best practice, create a new user and password designated for this Web service connection.

Service Manager Password for Web Service Connection specifies the password for the login name.

The Manage Knowledgebase form displays the error:
`Search Engine incorrect or not found! Please check the Environment Settings`
when a user attempts to access a knowledgebase and these fields are not set correctly.

Indexing data with the search engine

Certain actions require a full reindex. These actions include the following:

- Initial setup (no indexes exist)
- Changing any value on the Type Information tab or the Field Definitions tab

You may also want to do a full reindex if:

- You have a large number of changes or new documents
- Search performance is becoming sluggish

As updates are applied to the index, they are added in as incremental index files. If you have a knowledge base that has had many changes applied, these incremental index files can slow the search engine down since it must perform your query on each one. A full reindex builds a new clean index that performs better, similar to defragmenting a hard drive. Doing a full reindex on a large knowledge base can have a significant impact on system resources because it removes all changes for the knowledge base from the change cache.

You can only reindex or get status for your knowledge base if the search engine has been properly configured on the environment page. A message box will notify you if the search engine cannot be found.

Indexing data with the search engine

Follow these steps to index data with the search engine:

1. Log on as a user with the KM ADMIN profile.
2. Open **Knowledge Management > Manage KnowledgeBases**.
3. Click **Search** to bring up a list of knowledge bases.
4. For each knowledge base, check that the information is correct, and click **Full Reindex**. Refer to the field help for descriptions of each field.
5. If the index does not exist, it will be created. If it does exist, it will be deleted and recreated. The **Docs** field will not be blank after an index has been created.

After the indexes have been created, users will be able to access the indexed documents the next time they log in.

A Legacy Integrations

Using legacy integrations with the Service Manager server requires you to set up a read-only legacy ServiceCenter listener. A legacy integration is any integration that depends on SCCL32 or the ServiceCenter ODBC driver. These include Connect-It, Get-It, and Crystal Reports.

This appendix provides information on how to set up a legacy listener and connect to Service Manager, as well as how to set up the ServiceCenter ODBC driver.

Topics in this appendix include:

Overview

You will need to complete the following tasks to connect to Service Manager when you use SCCL32 or the legacy ServiceCenter ODBC driver.

While the server runs on both Windows or Unix platforms, the ODBC driver runs only on Windows.

Task 1: Editing the legacy sc.ini file on page 139

Task 2: Installing the Windows service on page 140

Task 3: Starting a legacy listener on page 141 (Windows servers only)

Task 4: Installing the ODBC driver on page 143

Task 5: Configuring the ODBC driver on page 144

Editing the legacy sc.ini file

The out-of-box server `sc.ini` file is configured to connect to the Demo Database. To connect to another RDBMS, edit the parameters in `sc.ini`. Windows users also need to add the `ntservice` parameter to the `sc.ini` file. This parameter provides the name used to identify the Windows service.

Follow these steps to edit the `sc.ini` file:

1. Log in to the Service Manager server with an administrator account.
2. Open a command prompt and navigate to `<Service Manager 9.20 installation path>\Server\LegacyIntegration\RUN.`
3. Open the file `sc.ini` with a text editor.
4. To connect to your Service Manager RDBMS, add the database connectivity settings. These match the settings you used in Database Preparation on page 21.

   If the legacy listener will connect to a case-insensitive Oracle database, add the parameter **`sql_oracle_binary_ci`** to the sc.ini file.

5. Windows users only: Add the following parameter on its own line.
   `ntservice:<Service Manager Legacy Readonly Service Name>`
6. Save the file and exit.

Unix users proceed to Starting a legacy listener on page 141.

Windows users continue with the next section, Installing the Windows service.

Installing the Windows service

You can create a separate Windows service to use with the legacy ODBC driver. You can manually install a ServiceCenter Windows service on any machine where you have already installed the Service Manager server.

Follow these steps to install the Windows service:

1. Log on to the Windows server as a user with local administrator privileges.
2. Open a command prompt and navigate to `<Service Manager 9.20 installation path>\Server\LegacyIntegration\RUN.`
3. Type `scservic -install.`

This command creates a Windows service with the name specified by the `ntservice` parameter in the `sc.ini` file.

Uninstalling the Windows service

You can manually remove the Windows service on any machine where you have already installed Service Manager server.

Follow these steps to uninstall the Windows service:

1. Log on to the Service Manager server with an administrator account.
2. Open a command prompt and navigate to `<Service Manager 9.20 installation path>\Server\LegacyIntegration\RUN.`
3. Type `scservic -remove`.

This command removes the Windows service with the name specified by the `ntservice` parameter in the `sc.ini` file.

Starting a legacy listener

You can start a read-only ServiceCenter listener from the command prompt or Windows services. Because this is not an instance of Service Manager it will not show up in your System Status window.

Unix

Follow these steps to start a listener for your legacy integration on Unix servers.

1. Navigate to `C:\Program Files\HP\Service Manager 9.20\Server\LegacyIntegration\RUN`
2. Run the `scstart` script.

Windows

Follow these steps to start a listener for your legacy integration on Windows servers.

1. From the Windows Start menu, select **Control Panel > Administrative Tools > Services.**
2. Select the service you installed in Installing the Windows service on page 140, and then click **Start**.

If you prefer, you can start the listener as an application rather than as a service. To do so, go to the `<installation path> \Service Manager 9.20\Server\ LegacyIntegration\RUN` directory and run the following command at the Windows command prompt:

```
scenter -listener:<port number> -RPCReadOnly
```

RPC read-only mode parameter

You must start a legacy listener with the RPC read-only mode parameter. This parameter allows a ServiceCenter 6.2 server to connect to a Service Manager database without interfering with the Service Manager server (it does not create a system lock).

The RPC read-only parameter prevents Service Manager clients (Windows, web tier, and web services) from connecting to the Service Manager server. The only connections the ServiceCenter 6.2 RPCReadOnlyMode listener accepts are connections from the ServiceCenter ODBC driver or Connect-It.

If you are using Connect-It 3.81, you must provide the host name and port for both the Service Manager and ServiceCenter 6.2 ReadOnly listener. Connect-It requires this information to use the RPC functions for reading the event services and other ServiceCenter information. The connector writes data to Service Manager through web services.

You can also use the legacy listener to run reports or SQL queries against your Service Manager data without affecting the Service Manager performance.

Installing the ODBC driver

Follow these steps to install the legacy ServiceCenter ODBC driver.

1. Log on to the Windows server as a user with local administrator privileges.
2. Insert the Service Manager installation DVD into the appropriate drive of the server.
   a. If you are installing on a system that has auto-run enabled, the DVD browser starts automatically.
   b. If auto-run is disabled, follow these steps to start the DVD browser manually.
      – Navigate to the DVD directory.
      – Open `clickme.htm`.
3. Click **Install ODBC Driver.**

   The ServiceCenter ODBC driver InstallShield Wizard opens.
4. Click **Next** to read and accept the licensing agreement.
5. Select the **I accept the terms in the License Agreement** option.

   The Next button becomes active.
6. Click **Next** to select your installation folder.

   The default installation location is:

   ```
   C:\Program Files\Peregrine Systems\ServiceCenter 6.2\ODBC Driver
   ```

   If necessary, click **Browse** to choose a different location.
7. Click **Next** to prepare the installation process.
8. Click **Install** to begin copying the installation files.

   You can stop the installation by clicking **Cancel**.

   A dialog box opens when the installation is complete.
9. Click **Finish** to exit.

Configuring the ODBC driver

The default installation sets up the ODBC DSN to connect to the default legacy listener, and assumes it is on the local host. To connect to your legacy listener, you will need to edit these settings.

Follow these steps to configure the legacy ODBC driver to connect to the legacy read-only listener:

1. From the Windows Start menu, click **Control Panel > Administrative Tools > Data Source (ODBC)**.
2. Open the System DSN tab.
3. Select `sc_report_odbc` and click **Configure**.
4. Configure the ODBC driver by using the following parameters.

Table 4 ODBC parameters

Field	Value
Data Source Name	sc_report_odbc
Server	The host where the legacy ServiceCenter listener is running. The out-of-box default is localhost.
Port	The port the legacy server is set to use. The out-of-box default is 12690.

5. Start the legacy listener. For additional information, see Starting a legacy listener on page 141.
6. Verify that the ODBC driver can connect.

   To test the connection, use any ODBC query tool. For example, in Excel, open: **Data > Get External Data > New Database Query.** Choose the ServiceCenter ODBC driver as your data source. If it connects, you will see the HP Service Manager tables.

Installing Crystal Reports for use with HP Service Manager

You can use Crystal Reports to view, update, and develop new reports with HP Service Manager.

Follow these steps install Crystal Reports 2008 for use with HP Service Manager.

1. Ensure proper installation of the ServiceCenter ODBC driver. See Installing the ODBC driver on page 143.
2. Log in to the Windows server as a user with local administrator privileges.
3. Insert the Service Manager installation DVD into the appropriate drive of the server.

   If you are installing on a system that has auto-run enabled, the DVD browser starts automatically. If auto-run is disabled, follow these steps to start the DVD browser manually.

   a. Navigate to the DVD directory.

   b. Open `clickme.htm`.
4. Click **Install Crystal Reports 2008 for use with HP Service Manager only** to run the installer in silent mode.
5. Restart your computer

   You must restart your computer before opening Crystal Reports 2008.
6. Start the legacy listener. See Starting a legacy listener on page 141.

Download reports for HP Service Manager

The Service Manager installation DVD comes with out-of-box reports that you can run using Crystal Reports. Using these reports requires the ServiceCenter ODBC driver and requires that the legacy listener is started. See Installing the ODBC driver on page 143 to install the HP Service Manager ODBC driver.

Follow these steps to download the reports.

1. Log in to the Windows server as a user with local administrator privileges.
2. Insert the Service Manager installation DVD into the appropriate drive of the server.

   If you are installing on a system that has auto-run enabled, the DVD browser starts automatically. If auto-run is disabled, follow these steps to start the DVD browser manually.

   a. Navigate to the DVD directory.

   b. Open `clickme.htm`.
3. Select the Downloads tab.
4. Click **Download Reports for HP Service Manager**.

   A folder containing the available reports opens.
5. Copy the desired reports to your local directory.

See the *HP Service Manager Reporting by Using Crystal Reports* for more information.

B Installation Verification

To verify that Service Manager has successfully installed, you need to run the Service Manager server, start the Service Manager service, and then start the Service Manager client.

Topics in this appendix include:

For information on accessing the Service Manager web client, see Web Tier Installation on page 85.

Starting the Service Manager server

You must start the Service Manager server before users can connect with client sessions. You can use several methods to start and stop the Service Manager server and associated background process, depending upon the operating system on which your system runs. For more information, see the topics associated with your Service Manager server's operating system.

Start the server from the Windows command prompt

To start the Service Manager server from the Windows command prompt, do the following:

1. Open the Windows command prompt. Click **Start > All Programs > Accessories > Command Prompt**.
2. Change directories to the RUN folder of your HP Service Manager installation. For example:

   ```
   cd C:\Program Files\HP\Service Manager 9.20\Server\RUN.
   ```

3. Type the following command:

   ```
   sm -httpPort:13080 -httpsPort:13081
   ```

You can omit the `httpPort` and `httpsPort` parameters, if you provide them in the Service Manager initialization file (`sm.ini`).

4. Press **Enter**.

You must leave the command prompt open while the Service Manager server runs. Closing the command prompt window stops Service Manager immediately without cleaning up any processes or releasing any record locks.

Start the server from Windows services

To start the Service Manager server from Windows services, do the following:

1. Open the Services applet. From the Windows Control Panel, click **Administrative Tools > Services**.
2. In the Services list, click **HP Service Manager**.

3 Click **Start** to start the service.

Windows displays a message that the Service Manager service is starting. After several seconds, the service starts and displays Started in the Status field. If the Service Manager service does not start, contact customer support with any error messages.

Start the server from the Unix command line

To start the Service Manager server from the Unix command line, do the following:

1 Change the directories to your HP Service Manager Run directory. For example:

```
cd /HP/Service Manager 9.20/Run
```

2 Type the following command:

```
smstart
```

3 Press **Enter**.

Starting the Service Manager service from Windows

The Service Manager service can be found in the Services panel of the Windows Control panel. The executable defined in the service is `sm.exe` and is stored in the RUN directory.

To start the Service Manager service from Windows:

1. From the Windows Start menu, select **Control Panel > Administrative Tools > Services.**
2. Click the **HP Service** service, and then click **Start**. The service is started. If the service does not start, contact Customer Support.

Starting the Service Manager client

To start the Service Manager client:

1. Click **Start > All Programs > Service Manager Client,** or navigate to the `Service Manager` folder on your hard drive. The default path is:

   ```
   C:\Program Files\HP\Service Manager 9.20\Client\
   ServiceManager.exe
   ```

   The Connections dialog box opens where you can create, manage, and use database connections for your users.

2. Create a database connection for the System Administrator.
   a. Click the **New Launch Configuration** icon.
   b. In the Name field, type the System Administrator name.
   c. Choose **Use Login/Password**.
   d. In the User name field, type `System.Admin`.
   e. In the Password field, type a password.
   f. Enter or verify the information in the Server host name and Server port number fields.
   g. If desired, click the Connection identified by a color field, and select a color for the connection.
   h. Click **Connect** to start using the Service Manager client.

   For detailed information about starting a client connection, see Define a new client connection on page 78.

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