HP Service Manager

Software Version: 9.41

For the supported Windows® and UNIX® operating systems

Troubleshooting help topics for printing

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be present in this PDF version. Those topics can be successfully printed from within the online help.

Contents

Troubleshooting

The HP Service Manager troubleshooting section contains the following resources to help you troubleshoot Service Manager issues:

"Troubleshooting" on page 8

"HP Service Manager Doctor" on page 33

Troubleshooting

The section lists the troubleshooting topics available for the specified area of Service Manager. These areas include:

Troubleshooting: Server startup

This section provides some basic information about anticipating and correcting issues related to server startup. Some of these issues include:

- Server will not start
- Bad version number in .class file
- Failed to initialize or attach to shared memory environment (Windows only)
- Unable to attach to shared memory (Linux only)
- Java buffer size errors occur in the server log

Troubleshooting: Server will not start

Possible causes:

- incorrect configuration
- incorrect database password
- unsupported JRE version

Incorrect configuration and missing or wrong database password

If you are unable to start Service Manager from the command prompt, review your configuration in `sm.ini` and confirm that you have the correct database connection information, login, and password, using the instructions in the *Service Manager Installation Guide*.

The Service Manager server starts as a Windows service by default. If the server starts from the command line, but not as a Windows service, uncomment the following line in `sm.cfg` to produce an output file which may contain some information from the Java JVM.

```
#cmd /c "sm" > C:\\process_stdout 2>&1
```

You can change the name and location of the output file by changing "C:\\process_stdout" to the path and file name you prefer. Using "C:\\process_stdout.log" creates a file called `process_stdout.log` at the root of the C drive. Once you have done this, try starting the server as a service. Any Java errors that occur will show up in the file and folder you specified.

Unsupported version of JRE

If you have installed a version of Java Runtime Environment (JRE) that is not supported, the server displays the following error message:

```
Exception in thread "main" java.lang.UnsupportedClassVersionError: Bad version
number in .class file
```

Install a supported version of the JRE as indicated in the Service Manager installation guide.

Troubleshooting: Bad version number in .class file

The Service Manager server requires a proper Java run-time environment (JRE) to start. If the server does not start and you receive a "`Bad version number in .class file`" error message, then your system does not have the proper version of the JRE installed.

Service Manager installations on Windows and Linux should already include the proper JRE necessary to start the server. If you receive this error on a Windows or Linux system, you may need to reinstall the server to get the proper JRE version.

Installations on systems running AIX, HP-UX, or Solaris require you to provide your own JRE. Install a proper version of JRE as directed by the *HP Service Manager Installation Guide* and the *HP Service Manager Support Matrix*.

Troubleshooting: Failed to initialize or attach to shared memory environment (Windows only)

If the Service Manager server does not start and you receive a "Failed to initialize or attach to shared memory environment" error message, then your Windows system has one of two issues:

- There is not enough free contiguous memory available to initialize Service Manager
- The address Service Manager attempted to use for shared memory was already in use by a shared library (DLL), dynamic memory (heap), or another data structure

Review the sm.log file and search for one of the following RTE error messages:

Type of error	Error Message
Insufficient free memory	RTE E Error 8 in call MapViewOfFileEx - Not enough storage is available to process this command.
Address already in use	RTE E Error 487 in call MapViewOfFileEx - Attempt to access invalid address.

Insufficient free memory

Out-of-box, Service Manager analyzes the memory layout of the process address space and identifies free memory ranges big enough to hold shared memory. If Service Manager could not find any contiguous piece of memory large enough to contain your Service Manager shared memory, the system fails to start with the following error messages:

```
RTE E Error 8 in call MapViewOfFileEx - Not enough storage is available
to process this command.
...
RTE E No valid shared_memory_address parameter setting was found for a
shared memory size of nnnnnnnnnn (NNNN MB)
```

In order to fix this issue, you must reduce the amount of shared memory.

Address already in use

When a Service Manager process attaches to shared memory, it has to use the same address as the shared memory was originally created with. The process might find that that address is already occupied by another data structure such as a DLL or dynamic memory (heap). The same scenario might

happen if you use the shared_memory_address parameter, but the address specified in the parameter is already occupied.

If you had previously specified a shared memory address with the shared_memory_address parameter, HP recommends you remove the parameter and have Service Manager automatically determine a suitable memory address. The current best practice is to only specify a shared_memory_address value if the automatic assignment fails.

After this type failure, the system will scan your system memory searching for a memory range that is large enough to contain Service Manager's shared memory. If the scan finds a suitable memory range it lists it in the log file with the following RTE information messages:

```
6116(  2716) 03/05/2010 11:06:41  RTE E shmat: MapViewOfFileEx failed
6116(  2716) 03/05/2010 11:06:41  RTE E Error 487 in call MapViewOfFileEx - Attempt
to access invalid address.
6116(  2716) 03/05/2010 11:06:41  RTE E sm_init: shmat( 516, 0x73000000, 0 ) failed
for size 67108864 and key 0x2A02E500
6116(  2716) 03/05/2010 11:06:41  RTE I List of possible shared_memory_address
parameter settings for a shared memory size of 67108864 (64 MB)
6116(  2716) 03/05/2010 11:06:41  RTE I # Free range 0x7FFF0000-0xFFFAD000
size=2147209216 (2047 MB)
6116(  2716) 03/05/2010 11:06:41  RTE I Preferred        : shared_memory_
address:0x80000000
6116(  2716) 03/05/2010 11:06:41  RTE I Lowest available : shared_memory_
address:0x80000000
6116(  2716) 03/05/2010 11:06:41  RTE I Highest available: shared_memory_
address:0xFBFA0000
6116(  2716) 03/05/2010 11:06:41  RTE I For a complete list of available shared_
mempory_address settings, run with the debugvmmap parameter.
6116(  2716) 03/05/2010 11:06:41  RTE W !!! Use the preferred shared_memory_address
parameter above
6116(  2716) 03/05/2010 11:06:41  RTE W !!! or remove the shared_memory_address
parameter completely.
6116(  2716) 03/05/2010 11:06:41  RTE E HP Service Manager is unable to start.
Failed to initialize or attach to shared memory environment
```

The scan lists three possible shared_memory_address values. The first memory address is the preferred shared_memory_address value. This address is the least likely to already be in use by a Windows or Service Manager shared library (DLL), dynamic memory (heap), or another data structure. The next address is the lowest possible address within this range you can use for shared memory. The last address is the highest possible address within this range you can use for shared memory. Pick one of these values for your shared_memory_address and test to see if the system starts.

If your system continues to fail with the address already in use error, you can start the server with the debugvmmap parameter to see a complete list of all address ranges large enough to contain shared memory as well as an address map of all the files that are currently using system memory. The list of memory ranges are in order of suggested use. The address ranges at the top of the list are better

candidates than those at the bottom of the list. Within each address range there is a recommended address, lowest possible address, and highest possible address.

```
2724(  3572) 03/05/2010 11:06:38  RTE I List of all possible shared_memory_address
parameter settings for a shared memory size of 67108864 (64 MB)
2724(  3572) 03/05/2010 11:06:38  RTE I # Free range 0x7FFF0000-0xFFFAD000
size=2147209216 (2047 MB)
2724(  3572) 03/05/2010 11:06:38  RTE I Preferred        : shared_memory_
address:0x80000000
2724(  3572) 03/05/2010 11:06:38  RTE I Lowest available : shared_memory_
address:0x80000000
2724(  3572) 03/05/2010 11:06:38  RTE I Highest available: shared_memory_
address:0xFBFA0000
2724(  3572) 03/05/2010 11:06:38  RTE D # Free range 0x122B5000-0x30000000 size=
500477952 ( 477 MB)
2724(  3572) 03/05/2010 11:06:38  RTE D                   shared_memory_
address:0x20000000
2724(  3572) 03/05/2010 11:06:38  RTE D Lowest available : shared_memory_
address:0x122D0000
2724(  3572) 03/05/2010 11:06:38  RTE D Highest available: shared_memory_
address:0x2C000000
...
2724(  3572) 03/05/2010 11:06:38  RTE D # Free range 0x77DF0000-0x7C360000 size=
72810496 (  69 MB)
2724(  3572) 03/05/2010 11:06:38  RTE D                   shared_memory_
address:0x77E00000
2724(  3572) 03/05/2010 11:06:38  RTE D Lowest available : shared_memory_
address:0x77E00000
2724(  3572) 03/05/2010 11:06:38  RTE D Highest available: shared_memory_
address:0x78360000
2724(  3572) 03/05/2010 11:06:38  RTE D # Free range 0x039B0000-0x10000000 size=
207945728 ( 198 MB)
2724(  3572) 03/05/2010 11:06:38  RTE D                   shared_memory_
address:0x039C0000
2724(  3572) 03/05/2010 11:06:38  RTE D Lowest available : shared_memory_
address:0x039C0000
2724(  3572) 03/05/2010 11:06:38  RTE D Highest available: shared_memory_
address:0x0C000000
2724(  3572) 03/05/2010 11:06:38  RTE W !!! Use the preferred shared_memory_address
parameter above
2724(  3572) 03/05/2010 11:06:38  RTE W !!! or remove the shared_memory_address
parameter completely.
2724(  3572) 03/05/2010 11:06:38  RTE E HP Service Manager is unable to start.
Failed to initialize or attach to shared memory environment
```

If the system cannot find any suitable memory ranges, it lists the following RTE error message:

```
RTE E No valid shared_memory_address parameter setting was found for a
shared memory size of nnnnnnnnnn (NNNN MB)
```

If there are no suggested shared memory parameters, you must reduce the amount of shared memory.

Troubleshooting: “Unable to attach to shared memory. HP Service Manager may be damaged.” error (Linux only)

When executing Service Manager (SM) commands on Linux with a non-SM user account or using the crontab of an SM user account, an error occurs:

"Unable to attach to shared memory. HP Service Manager may be damaged."

Below is an example.

You have installed Service Manager with a specific account (adminsc4 - groups: adminsc4), and you have some verification processes that are scheduled and executed by another account (sdi - groups: dba and adminsc4). Since the group "adminsc4" is the same for both accounts, you are able to execute sm command lines as follows:

1. Connect to the SM server with the account "sdi".
2. Run the following command lines:

```
su -adminsc4
cd /soft/sc400/RUN
sm –reportshm
```

The above described error occurs.

Rootcause

The system parameters in /etc/security/limits.conf of Linux control the resources that are available to a user or group, and may affect Service Manager’s behavior. When certain parameter values defined for a Service Manager user or for the group to which the user belongs are too low, Service Manager may fail to execute commands or even fail to start the servlet.

Since a non-SM user may execute the “su” command to run shell with a substituted SM user, the resource control of the non-SM user may or may not affect Service Manager’s behavior after the user substitutes the SM user, depending on the implementation of the Linux kernel.

Workaround

HP recommends that you use a Service Manager user directly to perform any SM related operations on Linux.

If failures occur when starting an SM servlet or executing SM commands, you are recommended to check the parameters in /etc/security/limits.conf.

To do a diagnostic check:

1. Set a parameter in /etc/security/limits.conf to “unlimited”.
2. Restart the system.
3. Perform the operation. If this solves the previous issue, the conclusion can be made that this limit parameter was set to a value that was too low and caused the failure.

To identify which parameter caused the problem, repeat the above steps for the parameters one by one until the problem is solved.

When the problematic parameter is identified, set it to a higher value appropriate to your Service Manager system. It is difficult to provide an accurate value for each parameter. The right value only depends on your system load. For this reason, you may need to repeat the step for each parameter and repeat until you get the correct value.

Troubleshooting: Java buffer size errors occur when starting Service Manager (AIX only)

The following Java buffer size errors may occur in the `sm.log` file when starting Service Manager on AIX:

```
"Failed setting receives buffer size of 20000000 in
java.net.DatagramSocket@49ca49ca: java.net.SocketException: There is not enough
buffer space for the requested socket operation."
```

```
"Failed setting receive buffer size of 25000000 in
java.net.MulticastSocket@4bb04bb0: java.net.SocketException: There is not enough
buffer space for the requested socket operation."
```

Rootcause:

The out-of-box value of the UDP receive buffer size (in bytes) in Service Manager is 20000000, which exceeds the maximum value (8388608) of sb_max on AIX.

Workaround:

1. Go to the Service Manager server's RUN folder.
2. Open the following file in a text editor: {SM_SERVER_DIR}\RUN\udp.xml (in vertical scaling deployment mode) or {SM_SERVER_DIR}\RUN\udpcluster.xml (in horizontal scaling deployment mode).
3. Change these parameter values from:

   ```
   ucast_recv_buf_size="20000000"
   mcast_recv_buf_size="25000000"
   ```

   to a value less than or equal to 8388608, for example:

   ```
   ucast_recv_buf_size="8000000"
   mcast_recv_buf_size="8000000"
   ```

4. Restart the Service Manager server. The Jave buffer size warning messages will disappear.

Troubleshooting: Common database errors

The following list contains the most common HP Service Manager errors encountered. For information on solutions to these database errors, see the related topics.

- Error message: `Cannot Find SQL Server, Error Connecting to servername`.
- Error message: `Corresponding join not defined`.
- Error message: `Error opening the Core.ir file in read mode`.
- Power outages and hardware failure.
- Slow query execution.

Messages: Cannot Find SQL Server, Error Connecting to servername

Message: `Cannot Find SQL Server` and `Error Connecting to` *`servername`*

These generic connection failure messages indicate that the Run-time Environment (RTE) attempted to log in to HP Service Manager and either failed or received no reply. See the following list for common causes and possible solutions.

- The Service Manager server is not running.
  Ensure that the server is running and then attempt to connect using the Service Manager client.
- Your login information is incorrect.
  On failure, Service Manager prompts you to re-enter your login information. Ensure that you enter the correct case-sensitive login and password. For future login attempts, you can optionally modify program options to automatically set them to the correct information.
- The number of valid Service Manager licenses are already in use.
  Service Manager accepts a set number of concurrent users, depending on your license agreement. If all available licenses are in use, Service Manager rejects your login. Contact your Service Manager administrator to confirm the number of licenses available.

Message: Corresponding Join Not Defined

Message: `Corresponding Join Not Defined`

This message indicates that the report is attempting to join multiple tables that have not been properly joined in the database.

When designing reports, linking tables using the application is not sufficient to create a join. You must also configure Service Manager with the equivalent values.

To join the tables:

1. Inspect the joined tables in your application. Arrows should connect to only the fields that you want to join between the tables.
2. Make an unload of both tables before making modifications so that you can return to the original configuration if needed.
3. Open Service Manager and compare the settings in the JOINDEF and ERDDEF tables to this linking scheme. You may need assistance from your administrator to confirm this task. Ensure that the following criteria apply:
   - The joins match exactly.
   - The join in Service Manager is unique, no other join connects the same tables in a different

manner.

- Stop, and then restart, the Service Manager server after creating the join.

Note: Modify the JOINDEF and ERDDEF tables in Service Manager with caution and only with prior approval from an administrator.

Messages: Error opening the Core.ir file in read mode

Error message text: `Error opening the Core.ir file in read mode`

To correct the error and regenerate the IR indexes, follow these steps:

1. Click **Tailoring** > **Database Manager**.
2. Select **Administration mode**.
3. Type **core** in the Table Name field, and then click **Search**.
4. Select a record to edit.
5. Open the More Actions menu and choose **Regen**.

   Note: This option does not appear for files that contain no data records.

6. You are prompted to confirm this regen action.
   - Click **OK** to confirm this regen and erase all records in this file.
   - Click **Cancel** to cancel the regen.
   - Click **Schedule** (clock) to schedule the regen to perform at a designated time.

   Note: If you clicked **OK**, the regen performs immediately in the foreground. When completed, Service Manager displays a message confirming the time/date of the file regen and the removal of all records.

> **Note:** The asterisk (*) at the beginning of a message indicates there are additional messages related to this operation.

7. View all messages.
8. Read the messages and identify any errors that occurred during the operation.

Troubleshooting: Database debug

You can add the debugdbquery parameter to the **sm.ini** file to allow the server to run the database debug utility. You can then use Microsoft Excel to sort the query results.

Examples:

- To show all database access, use the following syntax: `debugdbquery:999`.
- To show all queries that exceed *n* number of seconds, use the following syntax: `debugdbquery:n/`.

Troubleshooting: Interpreting debugdbquery output

Output from the Database debug query parameter, debugdbquery, writes to the sm.log file. The messages written to the sm.log file contain several fields, each separated by a caret (^) character. The sm.log file is located in the following directory:

..\..\HP\ Service Manager\Server\logs

Sample debugdbquery 999 output to the sm.log file:

```
223 02/05/2007 17:39:51 DBFIND^F^scmessage(Oracle)
^1^0.000000^F^0^0.000000^“syslanguage=“en”
and class=“us” and message.id=“1””” ^ ^0.000000^0.000000 ( [ 0] apm.get.inbox.by.name
start )
223 02/05/2007 17:39:51 DBQUERY^F^probsummary(Oracle)
^18^1.000000^F^0^0.020000^“hot.tic#true”^
{“category”}^0.000000^0.000000 ( [ 0] sc.manage select )
```

The following table describes the output fields for the database debug query (debugdbquery) parameter.

Field	Description
who	DBFIND or DBQUERY

Field	Description
where	F = foreground or B = background
file	The file name followed by database type: Oracle, DB2, SQL server or LDAP, or JOIN. If you add a letter *I* suffix, then the file name is case-insensitive.
key	The number of the selected key. If an asterisk character (*) follows the key number, Service Manager selected that key based on sort requirements, not query requirements. The system first uses a key that satisfies the sort criteria because a physical sort of the data is not required.
weight	The calculated weight for the key Service Manager selects for that specific query. For additional information, see the Key selection algorithms Help topic.
keytype	P = Partially keyed, I = IR expert search
record count	The number of records that satisfy the query. The system adds the DBQUERY entry to the log after processing the select panel and then returns the first 128 records that satisfy that query.
seconds till result came back	The amount of time required to satisfy the query.
query	The actual query from the user.
sortfields	The sort order in which the records are requested.
extracttime	The time required to read data records and extract the key values needed for sorting. This is only necessary if a key satisfying the requested sort order does not exist.
sorttime	The time required to sort all data records matching the query. This is only necessary if a key satisfying the requested sort order does not exist.

Troubleshooting: Power outages and hardware failure

Ensure that procedures are in place that provide continuous power in the event of a power outage or hardware failure. In the event of a power outage or hardware failure, transactions written to the log file are compromised and cannot be retrieved. If a backup process is running when the outage occurs, use your RDBMS tools to check the validity of the backup.

Troubleshooting: Slow execution of queries

Slow query execution time is usually related to hardware and network limitations, or report design. After eliminating hardware or network limitations as a source of the slow response time, you can apply the following suggested tips to your report designs to speed execution:

- Limit the number of records kept in a database table, such as avoid saving several years of incident records in a single database table. The more records that are kept in a file, the larger the index is. The larger the index is, the slower queries run.
- Limit sorting layers. If the raw SQL contains more than two *ORDER BY* statements, the processing time increases. Each *ORDER BY* statement significantly increases execution time.
- Use joins instead of subreports. Although subreports are universal and allow greater portability over different servers, they execute SQL queries against the database one time for every record. For example, a report with 100 records with a subreport in the Details section executes 101 SQL statements. A joined report of equivalent size executes only once.
- Use indexes where possible. Typically, the Unique key of any table is already indexed; however, in a join, placing a key on the field used to join the two tables dramatically increases the speed to execute. Add indexes only with the guidance of your HP Service Manager administrator. Adding too many indexes to a Service Manager table can affect performance.

Troubleshooting: lister

Use the following procedure to troubleshoot lister:

1. Verify lister status and configuration.
2. Regenerate obsolete lists.
3. Rebuild every list in the system.

Note: This procedure assumes you have properly modified and linked your forms.

Troubleshooting: ODBC error when running Crystal Reports

Crystal Reports cannot sort on fields that contain SQL reserved words such as `group`. If you receive an ODBC error when running a sort operation in Crystal Reports, then one of the fields in your query contains a SQL reserved word. Review the SQL query and identify any fields that contain a SQL reserved word. For example, you will receive an error if you attempt to sort on the field `cm3rm1.group` because it contains the SQL reserved word `group`.

To fix the error, you can create an alias field in the database dictionary to remove the SQL reserved word. For example, you can create the alias field `cm3rm1.group_alias` that is an alias of the original field `cm3rm1.group`.

Troubleshooting: Knowledge Management

This section provides some basic information about anticipating and correcting issues related to Knowledge Management. Some of these issues include:

- Difficulties displaying all of the buttons when a display screen uses a resolution setting of 1024x768
- Providing the correct path information for the search engine when it is installed on a separate server

Troubleshooting: Service Manager does not support true multilingual capabilities when using Microsoft SQL Server

To support true multilingual capabilities when you use Microsoft SQL Server, you can do the following based on your Service Manager version.

For Service Manager 9.40 and later

As of Service Manager 9.40, when you run the server configuration utility to load the Applications data, you can select the Unicode data type option to store characters from multiple languages on Microsoft SQL Server. In the Unicode mode, SQL Server uses the NVARCHAR data type, which is capable of storing characters from many different languages. This Unicode support for SQL Server is available only for new installations of the Service Manager 9.40 or later applications, but not available if you upgrade the applications from a version earlier than 9.40.

For Service Manger earlier than 9.40

If your applications are earlier than version 9.40 or are upgraded from a version earlier than 9.40, be aware that SQL Server does not offer a UTF-8 code page. Regular data types, such as VARCHAR, CHAR, or TEXT use single-byte code pages (such as, Windows 1252) or double-byte code pages (such as Shift-JIS), but they cannot hold characters out of multiple regions. SQL Server uses a specific collation per language and allows one collation per database. For example, if you set collation for Chinese, you cannot store Japanese characters in the database.

Note: This is not a problem for Oracle or DB2 databases, since they use plain UTF-8.

If you have a requirement to store special characters from many different languages, you must use the Microsoft SQL Server data types NVARCHAR, NCHAR, or NTEXT instead of VARCHAR, CHAR, or TEXT. These data types use UTF-16 as a code page and, therefore, are capable of storing special characters from many different languages.

Example: Shift-JIS allows you to store English and Japanese characters, but not Cryllic or Portuguese characters. On the other hand, Microsoft Windows 1251 allows you to store Cryllic characters, but not Japanese. If you want to store characters from Japanese, English, and Cryllic languages, you must use the Microsoft SQL Server data types NVARCHAR, NCHAR, or NTEXT.

Caution: Use these data types only for fields that need to be localized, not for fields that only use English characters, because these types of data take up twice as much storage space. In addition, Microsoft SQL Server has a limitation of 8060 bytes per row in a single table.

Troubleshooting: Problems viewing buttons

For some monitors, when the display screen is set to 1024x768 resolution, the toolbar buttons preview, approve internal, and submit for approval do not appear on the toolbar. Also, the buttons in the toolbar of the Contribute Document form do not fit properly on the toolbar. They overlap.

Workaround

On the affected forms, the drop-down option menu has the buttons available.

Troubleshooting: Event Services

The problems and solutions described in the troubleshooting section provide some assistance with configuring and using Event Services. In some cases the problem described may not match exactly the problem you are experiencing, but your problem may be exhibiting similar symptoms. In these case parts of the solutions described may be useful in resolving the issue you are having.

Troubleshooting: Having incident events processed separately

Can I have my incident events processed separately, so they are not held up by other events?

1. Copy the event agent to a new agent called (for example) probevent.
2. Copy the associated info record, substituting probevent for event.
3. Modify the query field for the event agent to read `evtype~#"pm"`.
4. Modify the query field for the probevent agent to read `evtype#"pm"`.

Troubleshooting: Sending test notifications to external programs after installing SCAuto

To send a test notification of a new device to my external program after installing SCAuto:

1. Click **System Administration** > **Ongoing Maintenance** > **Communication Utilities** > **Write an Output Event**.
2. Select Configuration Management.
3. Click **Write Event**.
4. Note the event type.
5. Click **Queues > Output Event**.
6. Search for an event with a event code of `icma`.

   The Event Services Output Queue should include the test item you generated.

Troubleshooting: No problems opening with pmo records in Event Input queue

Why are no problem records opening, even though there are pmo records in the Event Input queue?

To troubleshoot this problem:

1. Verify the records in the queue have processed. If the records have processed, there should be no Event Time value.

- The Status field should contain a value.
- Any messages should appear in the Messages field.

2. Verify there is an active event agent.
   - In the event agent, the Stop button should be enabled and a start time and an idle time should appear.
   - Click the Refresh button to reset the idle time to 00:00:00. It should begin increasing again.
   - If the Start button is enabled and there is no start and idle time, click Start and wait until the problem agent recycles.
3. Verify the following, and then wait for the event processor to recycle:
   - The event schedule record exists.
   - The Class field has a value of event.
   - The Status field has a value of rescheduled.
4. If there is an active event agent, check the Event Registration table.
   - Are there entries for Event pmo with a Type of input?
   - Is the Execute Condition true?
   - Verify the content of the pmo registration.
5. Verify there are event maps matching the Event Map Name values in the registration record. The same rules apply to all event types, not just pmo.
6. Verify that you have provided an active category

Troubleshooting: Not receiving email after opening a problem

Why am I not receiving email even after installing HP Service Manager and opening a problem?

To troubleshoot this problem:

1. Verify you are a member of the assignment group for the problem. If not, you will not receive notification of any kind.

2. Determine whether you are attempting to send email to yourself when you open a problem. HP Service Manager does not send email to the individual who is opening, updating or closing a problem, regardless of their membership in the assignment group.
3. Log on to HP Service Manager as someone else.
4. Open a new problem.
5. Determine whether the operator to whom you are sending email has an email address specified in his or her operator record.
6. Ensure it is correct.
7. Check the Message Class file for External Email records.
8. Is there one for problem open?
9. If not, add one.
10. Verify there are records in the event output queue with a type of email.
11. If so, determine whether the scemail agent or another email agent is active.

    Use Agent Status to:

    - Check that in the event agent, the Stop button should be enabled, and a start time and an idle time should appear.
    - Click the Refresh button to reset idle time to 00:00:00. It should begin increasing again.
    - If the Start button is enabled and there is no start and idle Time, click Start and wait until the problem agent recycles.
12. Determine if there is an output type event registration record for email.
13. If the SCEMAIL agent or another email agent is active and you still do not receive mail, stop the agent.
14. Open a problem and check the event output queue for new events with a type of email.
15. If a new email event is added to the queue, restart the SCEMAIL agent or another email agent. When the email has been sent, the event is deleted only if the `keepmail` parameter is turned off.

Note: Always check the HP Service Manager Message Log and any external log files for errors. All SCAutomate errors are logged with a class of `event management errors`.

Troubleshooting: Sending email only when opening emergency problems

How can I only send email when I open problems with a priority code of emergency?

To solve this problem:

1. Click **Tailoring** > **Notifications** > **External Email Message Class**.
2. Remove any External Email record for problem open.
3. Click **Tailoring** > **Tailoring Tools** > **Macros**.
4. Select the incidents macro that sends the email.
5. Change the Condition field value to:
   ```
   nullsub(priority.code in $L.new, "")="1"
   ```

Troubleshooting: Setting the category for incidents opened using email

How do I set the category for my message when I am opening problems via email?

1. Put each field assignment on a separate line in your mail message, uniquely identified by a label.
2. Use mapping expressions to extract the information and populate the appropriate fields in the incident.

   ```
   The mail message looks like this:
           Fri, 12 Jan 05 14:40:41 -08:00
           Re: Test to assign a category
           John Jones <john@mac.acme.com>
           CATEGORY: example
           This is line 1 of the text of mail.
          This is line 2 of the text of mail.
   ```

3. In the eventin record, the `evfields` should appear as follows:

   ```
   xjohn^^^^Fri, 12 Jan 01 14:40:41 -08:00|Re: Test to assign a
   category|John Jones<john@hp800.hp.com>|CATEGORY:
   example||This is line 1 of the text of mail.|This is line 2
   of the text of mail.|^^^^^^^^^^^^^^John Jones
   <john@mac.acme.com>^^
   ```

4. In the problem open event map record for the category field, enter the following Initialization statements:

   ```
   $axtype=type in $axces.target
   if (index("axmail", evuser in $axces)>0) then $axtype=type
   in $axces.target
   if (index("axmail", evuser in $axces)>0) then
   ($ax.action=denull(action in $axces.target);$axl=lng($ax.action))
   if (index("axmail", evuser in $axces)>0) then for $axpos = 1 to $axl
   do ($axt=$axpos in $ax.action;if $axt#"CATEGORY
   then ($axtype=substr($axt, 10, lng($axt) - 9);
   $ax.action=delete($ax.action, $axpos);
   action in $axces.target=$ax.action))
   ```

5. Enter the following Instructions:

   ```
   if (index("axmail", evuser in $axces)>0) then category in
   $axces.target=$axtype
   cleanup($axtype);cleanup($axt);cleanup($axpos);cleanup($axl)
   cleanup($ax.action)
   ```

This procedure (substituting other field names) allows specification of any incident field values within the body of the email message as long as the map record in which the instructions are entered has a higher sequence number than that of the action (or `update.action`) field.

Troubleshooting: Verify mail sent to myself was received

How do I know that mail sent to myself was received?

To troubleshoot this problem:

Click **Mail > All Mail**.

Your message should appear in the list of email messages.

Troubleshooting: Sending test reports to external programs after installing SCAuto

To test sending an incident report to my external program once SCAuto/SDK is installed:

1. Click **System Administration** > **Ongoing Maintenance** > **Communication Utilities** > **Write an Output Event**.
2. Select Incident Management.
3. Click **Write Event**.
4. Note the incident number.
5. Click **Queues > Output Event**.
6. Search for an event with a event code of `pmo`.

   The Event Services Output Queue should include the test incident report you generated.

Troubleshooting: clients

This section provides some basic information about how to anticipate and correct issues related to the web client. This includes the following issues:

- Workflow diagrams are not displayed when Service Manager is accessed from the web client
- Cannot automatically log in to Service Manager from the web client
- Unable to view an attachment from the web client

Troubleshooting: workflow diagrams are not displayed in the web client

Workflow diagrams cannot be displayed when HP Service Manager is accessed from the web client.

Per Federal Desktop Core Configuration (FDCC) restrictions, the Java applet is not allowed to run in Internet Zone. Follow either of these two solutions to solve this issue:

Note: The solutions described in the following section provide some assistance with configuring Internet Explorer security settings and Java permissions on a single computer only. To apply the solutions to multiple computers, the system administrator should manage to perform batch operations.

Solution 1: Add the address of the web client to the Local intranet Zone setting or the Trusted sites Zone setting (recommend)

Per FDCC restrictions, the security settings of Internet Explorer are locked by default and the users cannot change these settings.

Follow these steps to unlock and change the Internet Explorer security settings:

1. Log on to the computer as a local administrator.
2. Open the Windows command prompt.
3. Type the following command and press Enter to open the Group Policy window:

   gpedit.msc
4. Double-click **Computer Configuration** > **Administrative Templates** > **Windows Components** > **Internet Explorer**.
5. Double-click **Security Zones: Do not allow users to change policies** and select **Not configured**.
6. Click **Apply**, and then click **OK** to close the window.
7. Double-click **Security Zones: Do not allow users to add/delete sites**, and then select **Not configured**.
8. Click **Apply**, and then click **OK** to close the window.
9. (For Windows Vista only) Double-click **Security Zones: Use only machine settings**, and then select **disabled**.
10. Close the Group Policy window.
11. (For Windows Vista only) Restart Vista.
12. Start Internet Explorer. Select **Tools** > **Internet Options**.

13. On the **Security** tab, select **Local Intranet** or **Trusted sites**, and then click the **Sites** button to open the Trusted sites window.
14. Add the address of the web client to the list. Click **OK** two times to close the Internet Options window.
15. Refresh the web client login page. Log in to Service Manager again by using the web client.

Note: After adding the web client to the trusted sites list, revert the security configurations in step 4 and step 6.

Solution 2: Allow Java Applets to run in Internet Zone

Follow these steps to allow Java Applets to run in Internet Zone:

1. Log on to the computer as a local administrator.
2. Open the Windows command prompt.
3. Type the following command and press Enter to open the Group Policy window:

   gpedit.msc
4. Double-click **Computer Configuration** > **Administrative Templates** > **Windows Components** > **Internet Explorer** > **Internet Control Panel** > **Security Page** > **Internet Zone**.
5. Double-click **Java Permissions**. In the window that opens, select **Enabled**.
6. Select **High safety** in the Java permissions drop-down list.
7. Click **Apply**, and then click **OK** to close the window.
8. Close the Group Policy window.
9. (Optional) For domain computers, run the **gpupdate /force** command or wait for 10 minutes.
10. Restart Internet Explorer.

Troubleshooting: web client fails to automatically log in to Service Manager

Trusted sign-on (TSO) uses the current user's domain login name and password to log on. In the Internet Explorer security setting, only the Local intranet and Trusted sites security zones allow automatic logon.

However, the HP Service Manager web server is probably not identified as a local intranet or trusted site.

Refer to **Solution 1** in "Troubleshooting: workflow diagrams are not displayed in the web client" on page 28 to solve this issue.

Troubleshooting: unable to view an attachment from the web client

Why can I not open an attachment in a record (for example, an incident record) from the web client?

The **getAbsolutePath()** function in Attachment.java returns the full paths of attachments. The web tier supports long full paths (greater than 255 characters) for attachments when running on Linux, Unix, or Windows with an NTFS file system (not a FAT file system).

If the web tier is running on Windows with a FAT file system, and if the attachment file full path is greater than 255 characters, you cannot open the attachment. This issue is most likely to occur on WebSphere systems where the deployment path to the temp directory is prefixed by various WebSphere node name and server names, and attachment file full paths are dependent on the length of WAR file name and the installation path of the web application server.

The following is an example of a full path to an attachment that is greater than 255 characters, where the "x" string represents the unique directory created for each user session that handles attachment files:

```
/app/IBM/WebSphere7/AppServer/profiles/AppSrv01/temp/qasolaris01Node01/server1/PRO
D_webtier-7_02_013_P3_ear_SSO_HELP_SRVRPROD_webtier-7_02_013_P3_ear_SSO_HELP_SRVR_
war/PROD_webtier-7_02_013_P3_ear_SSO_HELP_SRVRPROD_webtier-7_02_013_P3_ear_SSO_
HELP_SRVR.war/attachments/xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx/sm_attachment.txt
```

Note: If you use a very long file name or folder name, which causes the full path of the file to

exceed 255 bytes, you will not be able to delete the web application server's temporary file/folder that is generated when you upload the file (normally, this is located in the web application server installation directory). Deleting the temporary file/folder will fail with a system warning message that states the file name is too long. In this case,follow these steps to delete the file:

1. Rename the temporary file to a short name, and then delete it.
2. If the deletion still fails, open the system command prompt, type `dir /x` to display the file's short name, and then run the **rmdir {short name} /S** command to delete the folder.

Contact HP support

Visit the HP Software Support site at: https://softwaresupport.hp.com.

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

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

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

Most of the support areas require that you register as an HP Passport user and to sign in. Many also require a support contract. To register for an HP Passport ID, click **Register** on the HP Support site or click **Create an Account** on the HP Passport login page.

To find more information about access levels, go to: https://softwaresupport.hp.com/web/softwaresupport/access-levels.

HPSW Solutions Catalog accesses the HPSW Integrations and Solutions Catalog portal website. This site enables you to explore HP Product Solutions to meet your business needs, includes a full list of Integrations between HP Products, as well as a listing of ITIL Processes. The URL for this website is https://softwaresupport.hp.com/group/softwaresupport/search-result/-/facetsearch/document/KM01702710.

HP Service Manager Doctor

HP Service Manager Doctor enables support engineers to collect configuration and diagnosis data from Service Manager. This tool eliminates the need of excessive exchanges of emails between support engineers and customers before engineers can have all needed information to analyze a reported incident.

This tool collects these types of information:

- SM server configurations and reports
- Operating system configurations
- Database configurations on the database server
- Service Manager server logs
- List of files in the `%SM_HOME%RUN`, `%SM_HOME%RUN/lib/endorsed`, and `%SM_HOME%RUN/lib` folders
- Additional configurable data collected by third-party tools, such as `supportTool.sh` and `generateSchema.sql`

Introduction

Service Manager Doctor enables support engineers to collect configuration and diagnosis data from Service Manager. This tool eliminates the need of excessive exchanges of emails between support engineers and customers before engineers can have all needed information to analyze a reported incident.

Target audiences

- Service Manager customers
- Service Manager support engineers

Supported platforms

This tool supports platforms that are allowed in the Service Manager server compatibility matrix. For details, see HP Support matrices on the Software Support Online site.

Supported Service Manager versions

7.1x and 9.x

Modes

The Service Manager Doctor Tool can run in two modes:

- Command-line
- Graphic user interface (only on Windows)

Running Service Manager Doctor

Run the following command in the smdoctor folder directly under the server installation directory to start the tool in GUI mode (only for Windows):

```
smdoctor_gui.bat
```

Run one of the following commands in the smdoctor folder directly under the server installation directory to start the tool in command-line mode:

`smdoctor.bat` (for Windows)

`smdoctor.sh` (for UNIX/Linux)

When running Service Manager Doctor commands with logging enabled, the tool generates a `SMDoctor_Report_<hostname>.html` and `SMDoctor_Report_<hostname>.txt` logs in the current directory, where `<hostname>` is the host name of the Service Manager server. For example: `run -all -dlog` or `run -all -zip`.

Note: If the SQL Server database is used, go to https://www.microsoft.com/en-us/download/details.aspx?id=11774 and download the Microsoft JDBC Driver for SQL Server 4.1. Follow the install instructions to install the driver. The file sqljdbc41.jar must be in the installation folder of the driver.

Check whether the system environment variable "CLASSPATH" exists. If not, create it and set the value to the absolute path of the sqljdbc41jar file; otherwise, add the absolute path of the file to the value of "CLASSPATH".

Product Overview

This section describes the usage of the Service Manager Doctor Tool.

Information collected

This tool collects thefollowing types of information:

- SM server configurations and reports
- Operating system configurations
- Database configurations on the database server
- Service Manager server logs
- List of files in the `%SM_HOME%RUN`, `%SM_HOME%RUN/lib/endorsed`, and `%SM_HOME%RUN/lib` folders
- Additional configurable data collected by third-party tools, such as `supportTool.sh` and `generateSchema.sql`.

GUI mode

Follow these instructions when running the Service Manager Doctor Tool in GUI mode.

Service Manager Doctor Main window

The GUI mode of the Service Manager Doctor Tool allows you to easily perform a full health check with a simple click and then it displays a detailed health report in a new window. Additionally, you can use the Actions menu item to save certain files from the Service Manager server, including these options:

- `sm.ini`
- `sm.cfg`
- Service Manager logs
- List of files in the `%SM_HOME%RUN` folder

- List of files in the %SM_HOME%RUN/lib folder
- List of files in the %SM_HOME%RUN/lib/endorsed folder
- Iwssofmconf.xml
- SM client configuration
- licfile.txt
- udp.xml
- udpcluster.xml
- All these types of information (available with a “Save all above items” option)

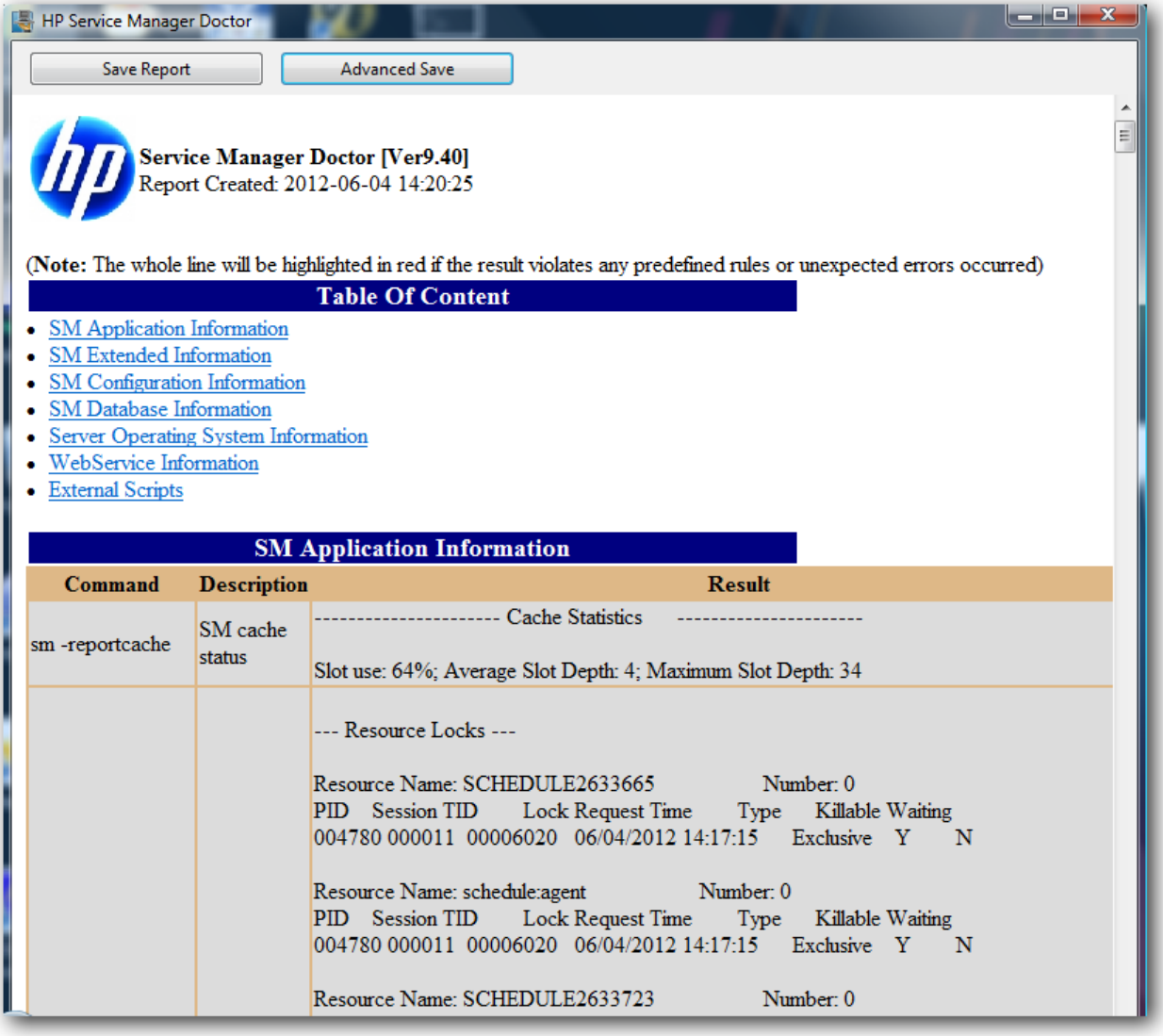
In a complex, vertically-scaled configuration, the Service Manager Doctor Tool parses the sm.ini and sm.cfg files to locate all possible logs that are scattered on the server and packages them into a zip file.

You can click **Health Check** to perform health check multiple times. The latest report overwrites previously generated reports. However, the right pane of the main console window displays all check history.

The Service Manager Doctor Main window is shown in the screenshot below:

Report window

The GUI mode shows the report in the Report window:



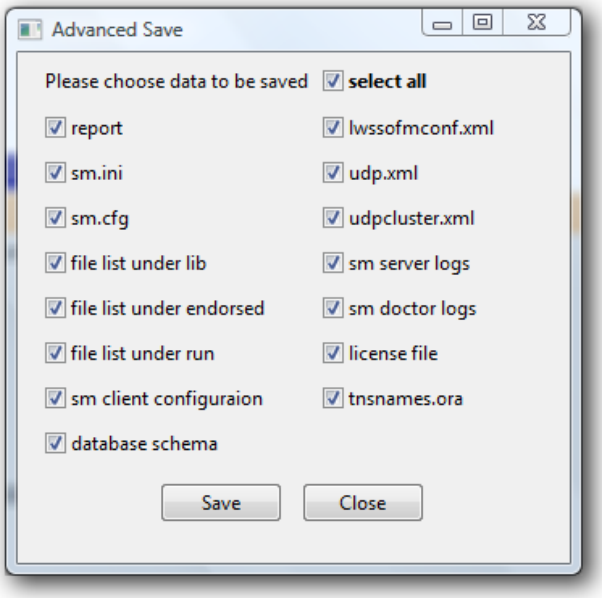
Advanced Save window

Advanced Save allows you to select specific data that you want to save. By default, all the items are selected. You can select the **select all** check box on the **Advanced Save** dialog box to select or clear all the items.

The Advanced Save option is available only after you run a health check. Additionally, the **report** and **sm doctor logs** save items are available only on the **Advanced Save** dialog box.

> **Note:** If the total size of the server logs is too large for shipping, you can check a few items each time and save the log files in several small zip packages.

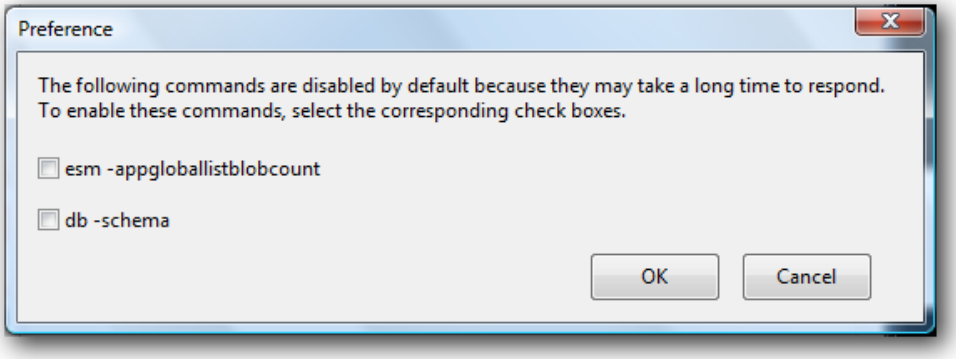
The Advanced Save window is shown in the screenshot below:



Preference dialog box

The `esm -appgloballistblobcount` and `db -schema` commands are disabled by default because they may take a long time to respond. Each of these commands could take more than 10 minutes, depending on the actual environment. You can enable these commands by selecting the corresponding check boxes in the **Preference** dialog box.

The Preference dialog box is shown in the screenshot below:

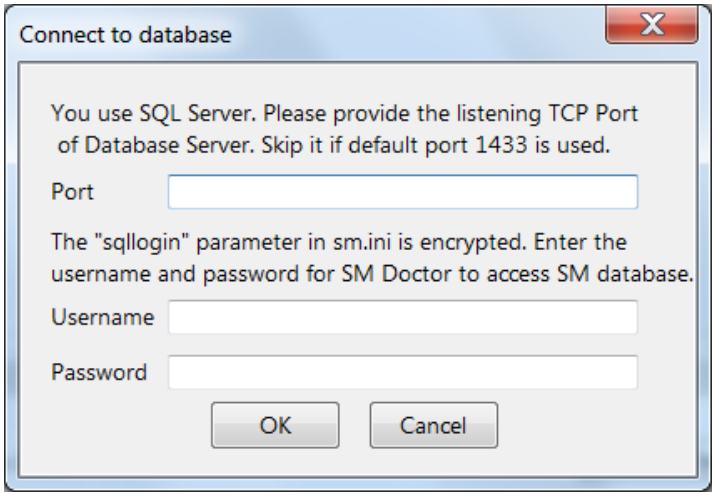


Note: In command-line mode, you can run `set -globallistcheck 1` and `set -schemacheck 1` to enable these commands.

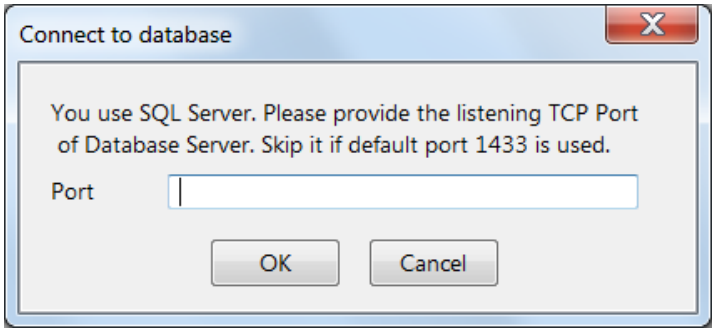
Connect to database dialog box

Based on the database that Service Manager uses and whether the `sqllogin` parameter is encrypted in the `sm.ini` file, Service Manager Doctor displays different fields in the Connect to database dialog box to prompt you for the log-in information of the Service Manager database.

- If SQL Server is used and the `sqllogin` parameter is encrypted, Service Manager Doctor prompts you for the listening TCP port, user name, and password, as shown below:

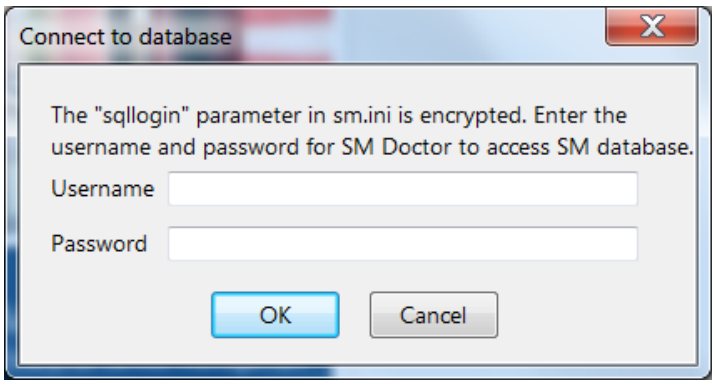


- If SQL Server is used but the `sqllogin` parameter is not encrypted, Service Manager Doctor prompts you for the listening TCP port, as shown below:



- If a database other than SQL Server is used and the `sqllogin` parameter is encrypted, Service

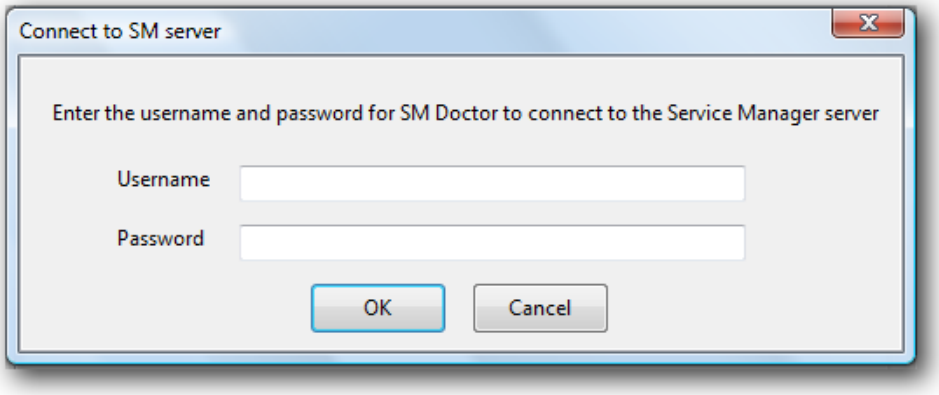
Manager Doctor prompts you for the user name and password, as shown below:



Connect to SM Server dialog box

Service Manager Doctor prompts you for the username and password of the Service Manager server if the `esm -appgloballistblobcount` command is enabled.

The Connect to SM Server dialog box is shown in the screenshot below:

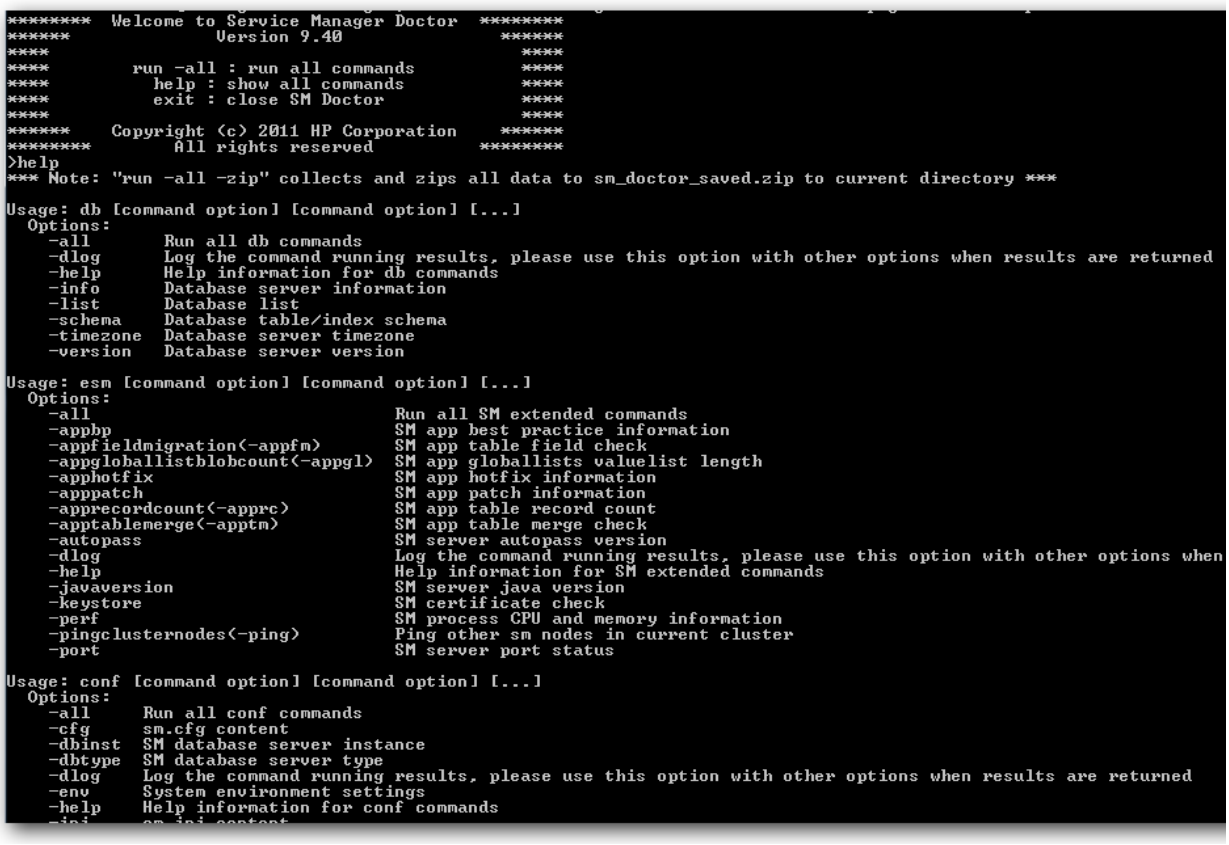


Command-line mode

The command-line mode of the Service Manager Doctor Tool allows you to run the tool more flexibly. You can run specific commands or command groups to collect certain types of information. You can also choose to type "run -all -zip" to package all data that is collected in the current directory. Eventually, the command-line mode generates `SMDoctor_Report_<hostname>.html` and `SMDoctor_Report_`

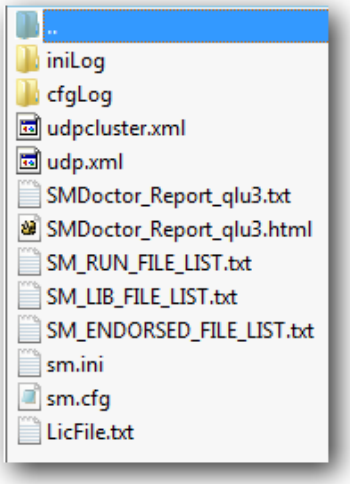
<hostname>.txt logs in the current directory, where *<hostname>* is the host name of the Service Manager server.

The Command-line mode is shown in the screenshot below:



Note: If the sm_doctor_saved.zip file generated in command-line mode is too large for shipping, you can unzip the package and repackage them into smaller zip packages.

The sm_doctor_saved.zip file has the following folder structure:


..
iniLog
cfgLog
udpcluster.xml
udp.xml
SMDoctor_Report_qlu3.txt
SMDoctor_Report_qlu3.html
SM_RUN_FILE_LIST.txt
SM_LIB_FILE_LIST.txt
SM_ENDORSED_FILE_LIST.txt
sm.ini
sm.cfg
LicFile.txt

Command References

This section describes the usage of commands when you are running the Service Manager Doctor Tool in command-line mode. The command-line mode of Service Manager Doctor provides 10 groups of commands. When you try to run an invalid Service Manager Doctor command, the command-line mode returns an error message. For more information, see "Error References" on page 65.

Service Manager Runtime commands (sm)

Service Manager Runtime commands allow you to run regular Service Manager commands in the Service Manager Doctor Tool. Therefore, you can use this command-line mode as a command-line console, except that it provides tool-specific commands. For example, you can run `sm -reportcache -reportlocks` to check both the cache and locks in one single command.

We do not recommend that you run commands that require options or that return no command results, such as `sm -version -log:version.txt` and `sm -httpport:XXX`.

The timeout for Service Manager Runtime commands is 50 seconds.

Option	Description	Usage
-reportstatus	Retrieves the Service Manager status.	sm -reportstatus
-reportlbstatus	Retrieves the Service Manager load balancer status.	sm -reportlbstatus
-reportcache	Retrieves the Service Manager cache data.	sm -reportcache
-reportipc	Retrieves the semaphore data.	sm -reportipc
-reportlocks	Retrieves the lock status.	sm -reportlocks
-reportlic	Retrieves the Service Manager license status.	sm -reportlic
-version	Retrieves the Service Manager version. **Note:** • Always available regardless of whether the Service Manager service is running or not. • Currently supports the reporting of versions 7.1x and 9.30	sm -version
-appversion	Retrieves the Service Manager application version.	sm -appversion

Option	Description	Usage
-sqlverifyconnection	Verifies the database connection.	sm -sqlverifyconnection
-reportshm	Retrieves the Service Manager shared memory.	sm -reportshm
-reportsem	Retrieves the Service Manager semaphore.	sm -reportsem
-all	Runs all Service Manager Runtime commands at one time and returns the results in the output.	sm -all
-help	Displays Help information. **Note:** If the -help option is used together with other options, only Help information is returned.	sm -help
-dlog	Outputs the command result to html and txt files.	sm -all -dlog

Note: The `sm` commands listed in the table above, except the `-all`, `-help`, and `-dlog` options, are enabled by default and will be run when you run the `sm -all` or run `-sm` command. These `sm` commands are defined in the `CmdOnDemand.xml` file. You can edit this file to enable additional commands to be run. The `CmdOnDemand.xml` file can even include commands to launch external diagnostic tools. For example, the Service Manager Doctor tool is shipped with a shell script tool (`supportTool.sh`), which collects diagnostic information, such as stack traces of core system files, logs, and configuration files, and saves it in a `$HOSTNAME_smsupport.tar` file. See "CmdOnDemand.xml" on page 60 for more information.

Extended Service Manager commands (esm)

Extended Service Manager commands return Service Manager specific information that the current Service Manager Runtime commands may not return but is helpful for diagnosis.

The timeout for Extended Service Manager commands is 60 seconds.

Option	Description	Usage
-javaversion	Retrieves the Java runtime environment version of the Service Manager server (the JRE version in the Service Manager RUN directory)	esm -javaversion
-apppatch	Retrieves Service Manager application patch information (in the `patchrelversioninfo` table).	esm -apppatch

Option	Description	Usage
-apphotfix	Retrieves Service Manager application hotfix information (in the `patchrelversioninfo` table).	esm -apphotfix
-appbp	Retrieves Service Manager Best Practice information (in the `bpreleaseinfo` table).	esm -appbp
-port	Retrieves Service Manager server ports (as returned by the 'netstat' command).	esm -port
-perf	Retrieves Service Manager process CPU and memory information (as returned by the following system-specific commands). • Windows: tasklist • Linux: top -p • Unix: ps -p)	esm -perf
-autopass	Retrieves the Service Manager autopass version. Pre-9.20: `...\Hewlett-Packard \HPOvLIC\About.txt` 9.20 and later: The `AutoPassJ*.jar` version	esm -autopass
-apprecordcount	Retrieves the record count for Service Manager tables: • syslog • stathistory • eventin • systemperform • systemtotals • clocks • activity **Note:** The threshold for validation is 10 KB.	esm -apprecordcount
-apptablemerge	Retrieves Service Manager table merge information, such as whether `M2` or `M3` tables exist for the `cm3r`, `cm3rpage`, `cm3t`, and incidents tables.	esm -apptablemerge

Option	Description	Usage
-appfieldmigration	Retrieves information about certain fields: • The “approval” and “members” fields in the `cm3groups` table. • The “related_cis” field in the `cirelations` table.	esm -appfieldmigration
-appgloballistblobcount	Retrieves the length of the Service Manager application globallists value list. **Note:** The threshold for validation is 1 KB.	esm -appgloballistblobcount
-keystore	Checks the Service Manager certificate, including these files: • `Server.keystore` • `Trustedclients.keystore` • `cacerts` **Note:** When running this command, if the server certificate passwords (keystorePass, truststorePass and ssl_trustedClientsPwd) are encrypted in the sm.ini file, SM Doctor prompts the user to enter the passwords in the command line (command line mode) or enter them in a dialog (GUI mode).	esm -keystore
-pingclusternodes	Sends “ping” and “traceroute” messages to other Service Manager nodes in the current cluster. Maximum ping times: 4 Maximum hops: 10	esm -pingclusternodes
-all	Runs all Extended Service Manager commands at one time and returns the results in the output.	esm -all
-help	Displays Help information. **Note:** If the -help option is used together with other options, only Help information is returned.	esm -help
-dlog	Outputs the command result to html and txt files.	esm -all -dlog

Configuration commands (conf)

Configuration commands extract configuration items from the sm.cfg and sm.ini files, which will be used to diagnose server configuration issues against certain predefined validation rules.

Option	Description	Usage
-dbtype	Retrieves database server type.	conf -dbtype
-dbinst	Retrieves the database server instance.	conf -dbinst
-ini	Retrieves the sm.ini content. **Note:** The `sm.ini` content can also be captured in GUI mode, where the validation result is included in the command output.	conf -ini
-cfg	Retrieves the sm.cfg content. **Note:** The `sm.cfg` content can also be captured in GUI mode, where the validation result is included in the command output.	conf -cfg
-env	Retrieves system environment settings (returned by the `env` operating system command)	conf -env
-all	Runs all Configuration commands at one time and returns the results in the output.	conf -all
-help	Displays Help information. **Note:** If the -help option is used together with other options, only Help information is returned.	conf -help
-dlog	Outputs the command result to html and txt files.	conf -all -dlog

Database commands (db)

Database commands collect information about the database that Service Manager uses.

The timeout for Database commands is 60 seconds.

Note: If you are running these commands with an Oracle database, you must create an OJDBC_LIB environment variable on the system and set its value to the Oracle driver path for the driver to be loaded successfully.

Option	Description	Usage
-version	Retrieves the database server version.	db -version
-info	Retrieves the server information: **SQL Server:** collation **Oracle:** characterset information; case-sensitivity information **DB2:** DB configuration	db -info
-list	Retrieves the database (tablespace) list.	db -list
-timezone	Retrieves the database time zone and returns the time offset from the UTC/GMT time in hours.	db -timezone
-schema	Retrieves the table and index schema of the Service Manager database and outputs the information into an `SM_schema.sql` file. **Note:** This command works only with Oracle databases and requires that the sqlplus utility is installed on the system.	db -schema
-all	Runs all Database commands at one time and returns the results in the output.	db -all
-help	Displays Help information. **Note:** If the -help option is used together with other options, only Help information is returned.	db -help
-dlog	Outputs the command result to html and txt files.	db -all -dlog

Operating System commands (os)

Operating System commands collect basic information about the current operating system.

The timeout for Operating System commands is 180 seconds.

Option	Description	Usage
-ip	Retrieves the server IP addresses.	os -ip
-diskspace	Retrieves the disk space on the server, including the total space and free space.	os -diskspace
-sys	Retrieves server system information. • Windows: systeminfo • AIX: prtconf • HPUX PA-RISC: model • HPUX ITATIUM: machinfo • Solaris: isainfo -kv • Linux: uname -a	os -sys
-openfile	Retrieves the open file limit as returned by the `ulimit -n` command. **Note:** Only for UNIX.	os -openfile
process	Retrieves all processes that are currently running. • Unix: ps -ef • Windows: wmic process get executablepath	os -process
-ipcs	Retrieves the status of inter-process communication	os -ipcs
-sharedmemory	Retrieves the maximum size of shared memory and the count of shared memory segments. • Solaris: sysdef • Linux: sysctl -n • HPUX: kctune -v • AIX: Not available	os -sharedmemory
-udpbuffer	Retrieves the UDP buffer size. • Solais: ndd -get • Linux: sysctl -n • AIX: no -o	os -udpbuffer

Option	Description	Usage
	• HPUX: ndd -get	
-all	Runs all Operating System commands at one time and returns the result in the output.	os -all
-help	Displays Help information. **Note:** If the -help option is used together with other options, only Help information is returned.	os -help
-dlog	Outputs the command result to html and txt files.	os -all -dlog

Note: For Windows platforms, x86 represents the 32-bit version and x64 represents the 64-bit version.

Web Service commands (ws)

Web Service commands determine the Service Manager status by sending a simple SOAP request to the http://localhost:13080/SM/ui endpoint (when run on the local server) and checking the response.

The timeout for Web Service commands is 60 seconds.

Option	Description	Usage
-getpreferences	Returns the preference operation response. **Note:** Returns responses through HTTP server ports.	ws -getpreferences
-all	Runs all Web Service commands at one time and returns the result in the output. **Note:** Only one option is defined for the Web service command group now.	ws -all
-help	Displays Help information. **Note:** If the -help option is used together with other options, only Help information is returned.	ws -help
-dlog	Outputs the command result to html and txt files.	ws -all -dlog

Save commands (save)

Save commands save required files on the Service Manager server. Service Manager Doctor can save up to 10 Service Manager Doctor logs, and each log can have a maximum of 1 megabyte in size.

The timeout for Save commands is 50 seconds.

Option	Description	Usage
-report	Saves html and txt reports in the current directory.	save -report
-ini	Saves the ini file in the current directory.	save -ini
-cfg	Saves the cfg file in the current directory.	save -cfg
-lib	Saves the list of files in the lib folder in the current directory.	save -lib
-endorsed	Saves the list of files in the endorsed folder in the current directory.	save -endorsed
-run	Saves the list of files in the RUN folder in the current directory.	save -run
-ssoconfig	Saves the SSO configuration file in the RUN folder in the current directory. **Note:** This file does not always exist.	save -ssoconfig
-logs	Saves all logs generated for Service Manager	save -logs
-smdlog	Saves all Service Manager Doctor logs. **Note:** Service Manager Doctor logs are not collected by the `run -all` command.	save -smdlog
-udp	Saves the `udp.xml` file.	save -udp
-udpcluster	Saves the `udpcluster.xml` file.	save -udpcluster
-licfile	Saves the `LicFile.txt` file.	save -licfile
-clientcfg	Saves Windows client configurations if a Windows client is installed on this machine.	save -clientcfg
-tnsnames	Saves the `tnsname.ora` file for the Oracle database.	save -tnsnames
-	Saves the output file (`SM_schema.sql`) of the `db -schema` command for	save -

Option	Description	Usage
dbschema	the Oracle database.	dbschema
-all	Runs all Save commands at one time and returns the result in the output.	save -all
-help	Displays Help information. **Note:** If the -help option is used together with other options, only Help information is returned.	save -help

Set commands (set)

The Set command group now includes only one command that sets the `-dlog` parameter.

Option	Description	Usage
-dlog	Enables or disables the -dlog option for all commands. However, the -dlog option specified in each command overrides this setting.	set -dlog true set -dlog 1 set -dlog false set -dlog 0
-schemacheck	Enables or disables database schema check for the `run -all` or `esm -all` commands.	set -schemacheck 1 set -schemacheck true set -schemacheck 0 set -schemacheck false
-globallistcheck	Enables or disables globallist blob field check for the `run -all` or `esm -all` commands.	set -globallistcheck 1 set -globallistcheck true set -globallistcheck 0 set -globallistcheck

Option	Description	Usage
		false
-help	Displays Help information. **Note:** If the -help option is used together with other options, only Help information is returned.	set -help

Run commands (run)

Run commands execute multiple commands or multiple command groups.

Option	Description	Usage
-sm	Runs all Service Manager Runtime commands in a sequence and returns the results in the output. **Note:** Equivalent to `sm -all`.	run -sm -db -os
-esm	Runs all Extended Service Manager commands in a sequence and returns the results in the output. **Note:** Equivalent to `sm -all`.	run -esm -db
-db	Runs all Database commands at one time and returns the results in the output. **Note:** Equivalent to `db -all`.	run -db
-conf	Runs all Configuration commands at one time and returns the results in the output. **Note:** Equivalent to `conf -all`.	run -conf -dlog
-os	Runs all Operating System commands at one time and returns the results in the output. **Note:** Equivalent to `os -all`. .	run -os
-ws	Runs all Web Service commands at one time and returns the results in the output.	run -ws

Option	Description	Usage
	Note: Equivalent to `ws -all`.	
-all	Runs all commands at one time and returns the results in the output. **Note:** Peforms a full health check.	run -all
-zip	Packages all data to an sm_doctor_saved.zip file, which include the SM log files, endorsed file list, lib file list, html report, txt report, sm.cfg and sm.ini.	run -all -zip
-help	Displays Help information. **Note:** If the -help option is used together with other options, only Help information is returned.	run -help

Clear commands (clear)

The Clear command group deletes log files Service Manager Doctor generated, and clears the content of the current log file if the tool is still running.

Option	Description	Usage
-dlog	Clears Service Manager Doctor logs.	clear -dlog
-help	Displays Help information. **Note:** If the -help option is used together with other options, only Help information is returned.	clear -help

Help command (help)

The Help command displays help information.

'-dlog' parameter

The `-dlog` parameter is available for all commands except the "help" command. Adding this parameter to a command is equivalent to running `set -dlog true` or `set -dlog 1` except that the parameter

included in the command overrides the global setting configured by `set -dlog false` and `set -dlog 0`.

Note: The reason why you may use the `-dlog` parameter instead of `-log` is that the `-log` parameter itself is a valid parameter of Service Manager.

Configuration Validation Rules

This section describes the usage of validation rules in the Service Manager Doctor Tool.

Configuration rule file

Caution: It is not recommended that you edit the configuration rule file manually in this version of the tool.

The configuration rule file is an XML file with predefined rules that are used to validate Service Manager server configurations. All configuration information is based on the `sm.ini` and `sm.cfg` files, where `sm.cfg` is prioritized higher than `sm.ini`.

The elements of the configuration rule file include source, domain, rule, condition, conditonrule, operation, and output. Configuration rules for all configurations should be defined within the configuration source. Configuration rules used for specific validation should be defined within a specific domain. There can be multiple domains within each source, and multiple rules within each domain. See "Rule Configuration File Snippets" on page 63.

Considerations for updating the rule file

- This tool includes an `SM_Configuration_Rule.xsd` file to maintain the integrity of the rule file. Detailed messages are displayed in the validation results, including information about the row, column, and other violation specifics.
- If one rule serves as a condition for another rule, the first rule cannot have conditions of its own. Or, a `TWO_LEVEL_CONDITION_FOUND` error is returned.
- For operation elements within a rule element, the "param" and "action" attributes are required. The "target" and "type" attributes are optional, but they are mutually dependent. If one parameter is defined, you must define the other one too.
- For condition elements, if "operator" and "target" are not defined, they default to `and` and `true` respectively.

- In addition to customized rules, you can use the generic rules directly: is32OS, is64OS, isUnix, and isWindows.
- An error 100018 is returned if the XML content cannot be parsed.
- In the current version of the tool, only the configuration data source is editable, which includes both the `sm.ini` and `sm.cfg` files.

Validation results

Validation results are included as part of the command output for the `conf -ini` and `conf -cfg` commands in command-line mode. In GUI mode, a separate column is displayed next to the command results if a rule failure is detected.

CmdOnDemand.xml

A typical `CmdOnDemand.xml` file resembles the following codes:

```
<?xml version="1.0" encoding="UTF-8"?>

<commands>

<command name="sm" description="sm server commands" provider="hp">

    <param name="-reportstatus" description="SM runtime status"/>

    <param name="-reportcache" description="SM cache status"/>

    <param name="-reportipc" description="SM semaphore use"/>

    <param name="-reportlocks" description="SM lock information"/>

    <param name="-reportlic" description="SM licence information"/>

    <param name="-version" description="SM version"/>

    <param name="-verifylic" description="SM verify license"/>

    <param name="-appversion" description="SM application version"/>

    <param name="-reportshm" description="SM shared memory"/>

    <param name="-reportsem" description="SM semaphore"/>

    <param name="-sqlverifyconnection" description="SM verify DB connection"/>

</command>

<!--

Any command or script should be under RUN directory to be run with SM doctor;
more entries could be added like below.

<command name="supportTool.sh" description="Integration with existing support
tool to trace system information" />

-->

</commands>
```

To add a new command to the `CmdOnDemand.xml` file, follow these steps:

1. Open the `CmdOnDemand.xml` file in a text editor.
2. Add more entries similar to **<param name="-version" description="SM version"/>**.
3. Add the required Service Manager command parameters in the "name" attribute.

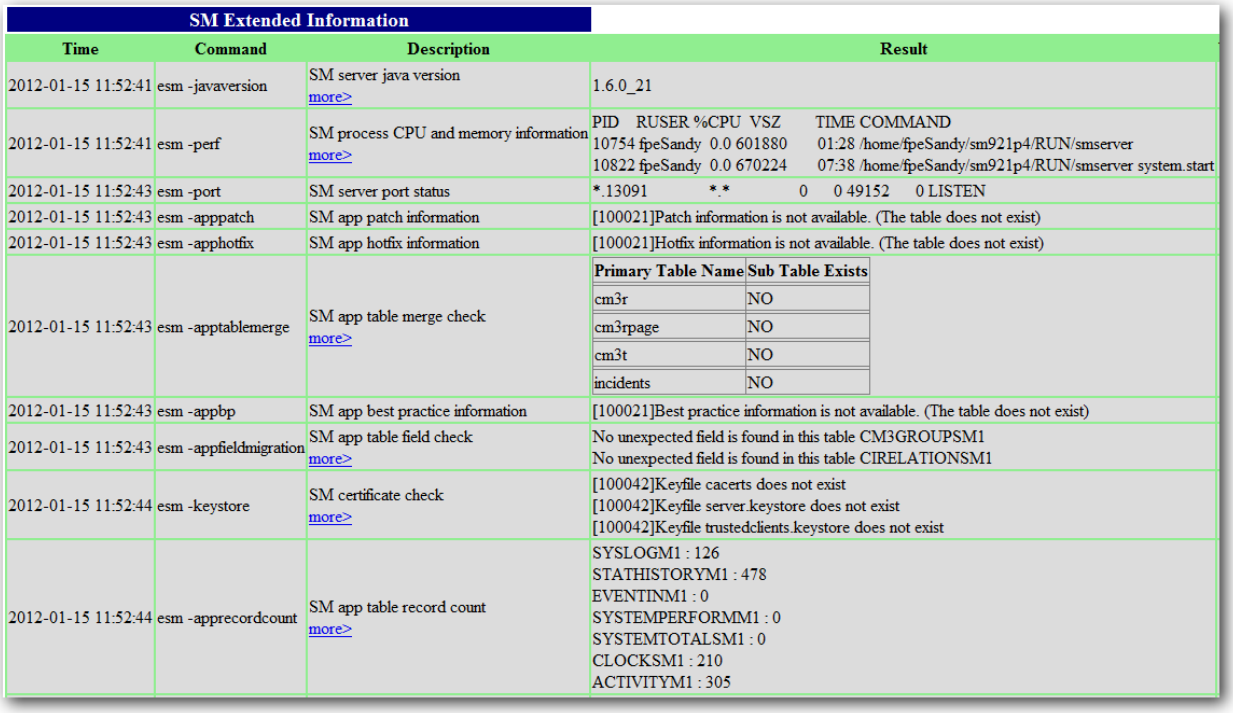
4. Add the command description in the "description" attribute, which will be used for HTML/TEXT report generation.

   Note: To run external commands, make sure that the target scripts or executables reside in the RUN directory. Do not add "param" elements for additional command arguments. Instead, include command arguments in the "name" attribute of the "command" element.

   We do not recommend that you run external commands that work with background processes or I/O streams, such as `uname -a &` and `ls -lrt > 1.txt`.

HTML Log Snippets

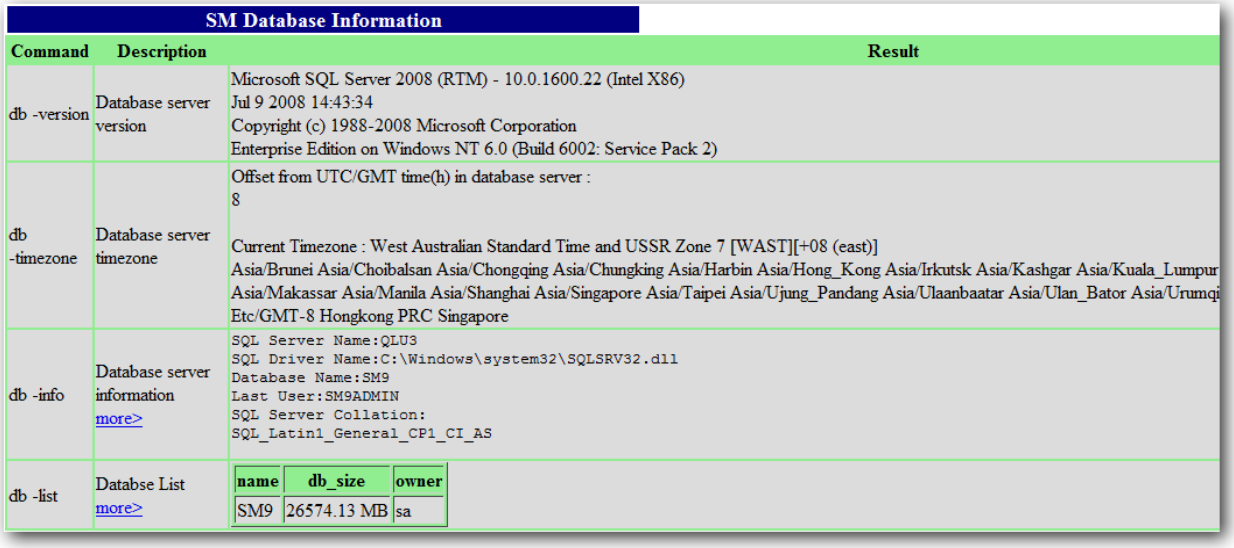
The Extended Service Manager report sample is shown in the screenshot below:



SM Extended Information

Time	Command	Description	Result
2012-01-15 11:52:41	esm -javaversion	SM server java version more>	1.6.0_21
2012-01-15 11:52:41	esm -perf	SM process CPU and memory information more>	PID RUSER %CPU VSZ TIME COMMAND 10754 fpeSandy 0.0 601880 01:28 /home/fpeSandy/sm921p4/RUN/smserver 10822 fpeSandy 0.0 670224 07:38 /home/fpeSandy/sm921p4/RUN/smserver system.start
2012-01-15 11:52:43	esm -port	SM server port status	*.13091 *.* 0 0 49152 0 LISTEN
2012-01-15 11:52:43	esm -apppatch	SM app patch information	[100021]Patch information is not available. (The table does not exist)
2012-01-15 11:52:43	esm -apphotfix	SM app hotfix information	[100021]Hotfix information is not available. (The table does not exist)
2012-01-15 11:52:43	esm -apptablemerge	SM app table merge check more>	Primary Table Name / Sub Table Exists cm3r: NO cm3rpage: NO cm3t: NO incidents: NO
2012-01-15 11:52:43	esm -appbp	SM app best practice information	[100021]Best practice information is not available. (The table does not exist)
2012-01-15 11:52:43	esm -appfieldmigration	SM app table field check more>	No unexpected field is found in this table CM3GROUPSM1 No unexpected field is found in this table CIRELATIONSM1
2012-01-15 11:52:44	esm -keystore	SM certificate check more>	[100042]Keyfile cacerts does not exist [100042]Keyfile server.keystore does not exist [100042]Keyfile trustedclients.keystore does not exist
2012-01-15 11:52:44	esm -apprecordcount	SM app table record count more>	SYSLOGM1 : 126 STATHISTORYM1 : 478 EVENTINM1 : 0 SYSTEMPERFORMM1 : 0 SYSTEMTOTALSM1 : 0 CLOCKSM1 : 210 ACTIVITYM1 : 305

The Database report sample is shown in the screenshot below:



SM Database Information

Command	Description	Result
db -version	Database server version	Microsoft SQL Server 2008 (RTM) - 10.0.1600.22 (Intel X86) Jul 9 2008 14:43:34 Copyright (c) 1988-2008 Microsoft Corporation Enterprise Edition on Windows NT 6.0 (Build 6002: Service Pack 2)
db -timezone	Database server timezone	Offset from UTC/GMT time(h) in database server : 8 Current Timezone : West Australian Standard Time and USSR Zone 7 [WAST][+08 (east)] Asia/Brunei Asia/Choibalsan Asia/Chongqing Asia/Chungking Asia/Harbin Asia/Hong_Kong Asia/Irkutsk Asia/Kashgar Asia/Kuala_Lumpur Asia/Makassar Asia/Manila Asia/Shanghai Asia/Singapore Asia/Taipei Asia/Ujung_Pandang Asia/Ulaanbaatar Asia/Ulan_Bator Asia/Urumqi Etc/GMT-8 Hongkong PRC Singapore
db -info	Database server information more>	SQL Server Name:QLU3 SQL Driver Name:C:\Windows\system32\SQLSRV32.dll Database Name:SM9 Last User:SM9ADMIN SQL Server Collation: SQL_Latin1_General_CP1_CI_AS
db -list	Databse List more>	name / db_size / owner SM9 / 26574.13 MB / sa

Rule Configuration File Snippets

SM_Configuration_Rule.xml snippet

```
<?xml version="1.0" encoding="UTF-8"?>

<xml xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

      xsi:noNamespaceSchemaLocation="SM_Configuration_Rule.xsd" version="1.0">

<source id="configuration" description="service mangaer configuration validation
rules">

…

<domain id="StartUp" description="validate sm startup configuration" >

            <rule id="sync" description="validate synch parameter" >

                  <operation param="sync" action="ValidateIsNotNull" />

            </rule>

            <rule id="systemstart" description="validate system.start" >

                 <operation param="system.start" action="ValidateIsNotNull" />

            </rule>

            <rule id="startuprule" description="validate startup by combination of
sync and system.start" >

                  <condition operator="and" target="false">

                        <conditionrule id="sync" />

                        <conditionrule id="systemstart" />

                  </condition>

                  <output type="failed" message="failed: sync and system.start
processes should not
be started at the same, the recommendation is to remove sync from configuration.
For further information,
please refer to “Configuring a horizontal scaling environment” on help server." />

                  <output type="success" message="success: sync and system.start
are not set both" />

            </rule>

   </domain>

……
```

SM_Configuration_Rule.xsd snippet

```
<xs:complexType name="rule_type">
    <xs:sequence>
        <xs:element name="condition" minOccurs="0" type="condition-type">
            <xs:unique name="NoRepeatConditionRule">
<xs:selector xpath="conditionrule"/>
<xs:field xpath="@id"/>
</xs:unique>
             </xs:element>
             <xs:element name="operation" minOccurs="0" type="operation_type">
             </xs:element>
             <xs:element name="output" minOccurs="0" maxOccurs="unbounded"
type="output_type">
             </xs:element>
        </xs:sequence>
        <xs:attribute name="id" type="xs:string" use="required" />
        <xs:attribute name="description" type="xs:string" use="optional" />
        <xs:attribute name="mode" use="optional" >
        <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:enumeration value="multiple" />
                    <xs:enumeration value="single" />
                </xs:restriction>
            </xs:simpleType>
        </xs:attribute>
</xs:complexType>
```

Error References

The following table lists the possible errors that the Service Manager Doctor commands may return.

Error Code	Description	Category	Error Message (partial)
100000	SYS_ERROR	SYSERROR	System error, please reach support team...
100001	UNKNOWN_ERROR	SYSERROR	Unknown error, please try again later or reach SM Doctor admin for a solution.
100002	COMMAND_NOT_EXIT	PARSEERROR	This command *<command>* is not recognizable, please enter again.
100003	NO_SUCH_OPTION	PARSEERROR	This option *<option>* is not recognizable for this command, please enter again
100004	NO_SUCH_PARAMETER	PARSEERROR	*Xxx* is not passed to any parameter, please enter again.
100005	ARGU_NOT_EXIT	PARSEERROR	This argument *<argument>* is not recognizable, please enter again.
100006	ONLY_LOG_ERROR	PARSEERROR	Log option *<option>* is only valid with another command line option, please enter again.
100007	HELP_LOG_ERROR	PARSEERROR	Log option is not valid with help option, please enter again.
100008	HELP_ERROR	PARSEERROR	Help option is valid by *<command>* -help without other options. Please enter again.
100009	DUPLICATE_ERROR	PARSEERROR	Duplicate options are found, please remove the same ones and keep each unique.
100010	LOG_PARAM_ERROR	PARSEERROR	Only true(1) or false(0) is allowed for this option.
100011	NODATA	NODATA	No data is available for this command.
100012	DB_DRIVER_ERROR	DBERROR	Database driver can not be loaded.
100013	SQL_EXCEPTION	DBERROR	SQLException is caught ...
100014	TABLE_DOES_NOT_EXIT	DBERROR	This table *<table_name>* does not exit.
100015	SM_NOT_FOUND	SYSERROR	Service Manager is not found, please check.
100016	SM_NOT_RUNNING	SYSERROR	Service Manager is not running, please check.
100017	COMMAND_TIMEOUT	SYSERROR	Command execution timeout.

Error Code	Description	Category	Error Message (partial)
100018	UNSATISFIED_LINK_ERROR	DBERROR	Unsatisfied link error.
100019	RULE_PARSING_ERROR	SYSERROR	Exception happened when parsing XML rule configuration file.
100020	OTHER_PARSE_ERROR	PARSEERROR	Invalid input *<input>*.
100021	INFO_NOT_AVAILABLE	SYSERROR	*Xxx* information is not available.
100022	RECORD_COUNT_EXCEED_THRESHOLD	DBERROR	The record count in table *<table_name>* exceeds threashold *<threshold_value>*, purge/ archive is needed.
100023	TABLE_MERGE_NEEDED	DBERROR	M2/M3 tables exist for *xxx*, table merge is needed.
100024	FIELD_NOT_EXPECTED	DBERROR	This field *xxx* is not expected in table...
100025	ORACLE_DRIVER_NOT_FOUND	DBERROR	Oracle driver could not be loaded, please make sure driver's jar exists under *xxx*.
100026	GLOBALLISTS_VALUELIST_LENGTH_EXCEED_THRSHOLD	DBERROR	Valuelist length of *xxx* keys in globallists table exceeds threshold.
100027	DATABASE_AUTH_FAILED	DBERROR	Username or password is invalid, database could not be connected.
100028	FILE_NOT_SAVED	FILEERROR	File could not be saved.
100029	FILES_NOT_FULLY_SAVED	FILEERROR	Files could not be (fully) saved.
100030	FILE_NOT_EXISTS	FILEERROR	*xxx* does not exist.
100031	FILES_NOT_EXIST	FILEERROR	*xxx* do not exist.
100032	NO_NEED_TO_SAVE_TNSNAMES	FILEERROR	No need to save tnsnames.ora for *xxx*.
100033	NO_CLIENT_CONF_SAVED	FILEERROR	No running sm client is detected, no configuration files could be saved.
100034	WEBSERVICE_AUTH_FAILED	WEBSERVICE ERROR	Username or password is invalid, server could not be connected.
100035	WEBSERVICE_TIMEOUT	WEBSERVICE ERROR	Timeout for this soap request.
100036	UNSUPPORTED_OS	SYSERROR	SM Doctor does not support this operating system *<system_name>*.

Error Code	Description	Category	Error Message (partial)
100037	SSL_ENABLED	WEBSERVICE ERROR	Web service call is not done because SSL is enabled, you can start a SSL disabled process to run this command.
100038	UNSUPPORTED_DB	DBERROR	SM Doctor does not support this database.
100039	CMD_LIMITED_TO	SYSERROR	This command is limited to *xxx*.
100040	KEYTOOL_ERROR	FILEERROR	Keytool error happened by checking *xxx*.
100041	NO_LOCAL_PING	SYSERROR	Only vertical scaling setting is found, local host ping/ tracert is skipped.
100042	KEYFILE_NOT_EXIST	SYSERROR	Keyfile *<filename>* does not exist.
100043	PARAMETER_NOT_EXIST	SYSERROR	Parameter *<parameter>* is not configured.
100044	SQLPLUS_NOT_FOUND	DBERROR	Sql plus is not found, please set its path in *<variable>*.

Troubleshooting

Issue 1: Environment setting issues leading to coredump

Symtoms

The coredump happens with the following error messages:

```
/usr/lib/dld.sl: Bad magic number for shared library: <library>
```

```
/usr/lib/dld.sl: Exec format error
```

Resolution

Verify that the database driver path is set correctly in the corresponding library path environment variable and that the driver exists in the specified path.

Issue 2: 'db -version' command returns wrong results on DB2

Symtoms

The following database connection error message is displayed when database connection fails for 'db -version' on DB2:

```
[100012]Database driver cannot be loaded,
```

```
please double check LIBPATH, and make sure 32 bit lib exists and is ahead of 64 bit.
```

Resolution

Run `db2level` under `db2` command shell directly to get database information if necessary. This is to be fixed in next release, since `db2` version information could be returned when connection fails.

Send Documentation Feedback

If you have comments about this document, you can contact the documentation team by email. If an email client is configured on this system, click the link above and an email window opens with the following information in the subject line:

Feedback on Troubleshooting help topics for printing (Service Manager 9.41)

Just add your feedback to the email and click send.

If no email client is available, copy the information above to a new message in a web mail client, and send your feedback to ovdoc-ITSM@hp.com.

We appreciate your feedback!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