HP Service Manager

Software Version: 9.41

For the supported Windows® and UNIX® operating systems

Status and notifications 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

Status and Notifications

The HP Service Manager server includes a number of status and notifications options you can configure after installation. The following table lists the status and notification options you can enable or configure from a new development environment installation.

Feature	Description	Default state in new installations
"Alerts" on page 9	The server can automatically generate messages when a system event meets predefined criteria.	Enabled
"Broadcast messages" on page 16	Administrators can send messages to all logged on users.	Disabled
"Message processors" on page 38	A scheduled process dedicated to managing Service Manager messages.	Disabled
"Notifications" on page 41	The server can automatically generate messages when status change events occur.	Enabled
"System bulletins" on page 71	A utility that allows you to post system information and status messages to your Service Desk operators.	Disabled

Alerts

An alert is a system event that occurs when the event meets predefined criteria. They signal a checkpoint, warning, or reminder to keep an activity on schedule. HP Service Manager calculates alert times by subtracting (or adding) a known interval from a specified time.

Alert calculations depend on the work schedule, time zones, or other defined input. A schedule might cover seven days a week and 24 hours a day. When Service Manager processes alerts, it excludes scheduled holidays and break times in its calculations. Service Manager can make the necessary adjustments to deliver alerts at the correct time, regardless of time zone differences. For example:

- The work shift starts at 8:00 a.m. and ends at 5:00 p.m.
- The lunch break starts at 12:00 p.m. and ends at 1:00 p.m.

If you schedule an alert to occur four and a half hours after the start of the shift, then the alert occurs at 1:30 p.m. because the system excludes the lunch break interval when calculating the alert. If a holiday occurs, Service Manager postpones the alert until the next regularly scheduled day. For example:

- Independence Day holiday starts at 07/04/2004–2005 00:00:00 and ends at 07/05/2004–2005 00:00:00.
- If you schedule an alert at 5 p.m. July 3 to occur six hours later, the alert occurs at 3:00 p.m. on July 5. The alert ignores all nonscheduled hours outside of work shift, the July 4 holiday, and scheduled break times.

You can also set an alert as a TO-DO alert, which enables this alert to appear on your home page.

Associated tables

Service Manager uses information from various tables to process alerts. The tables vary, depending on whether Service Manager processes the alert from the AlertDef or category table:

- AlertDef can use assignment, cm3groups, contacts, device, location, and ocmgroups
- category uses assignment (for Incident Management alerts)

Create an alert definition record

Applies to User Roles:

System Administrator

Change Manager

Problem Manager

To create an alert definition record, follow these steps:

1. Change Management: Click **Change Management** > **Maintenance** > **Alerts**.

   Problem Management: Click **Problem Management** > **Administration** > **Alert Definitions**.

   Request Management: Click **Request Management** > **Maintenance** > **Supporting Files** > **Alert Definitions**.

   The **Alert Definition** form opens.

2. Type the alert name in the **Alert Name** field.

3. Type the alert description in the **Description** field.

4. Complete the remaining fields in the record form. If necessary, press **Ctrl+H** in the Windows client or **F1** in the Web client for each field.

   - The **Scheduling** tab describes the calculations that trigger when the alert occurs.
   - The **Update Info** tab describes Format Control considerations and notification messages to be sent.
   - The **Work Schedule** tab specifies the work schedule that the alert belongs to.
     - Holiday Group specifies the holiday group used when calculating an interval. The holiday group defined here overrides the value of holiday group in the work schedule.
   - The **Time Zone** tab enables you to choose one of the following:
     - Define a specific time zone by choosing from the drop-down list
     - Define a RAD expression to set the time zone alert

- Obtain the time zone from a table lookup

- The **To-Do Alert** tab enables you to set this alert as a To-Do alert. For detailed information, see "Create a To-Do alert definition record" below.

5. Click **Add**.

Create a To-Do alert definition record

Applies to User Roles:

System Administrator

Change Manager

Problem Manager

Incident Manager

Request Manager

To create a To-Do alert definition record, follow these steps:

1. Change Management: Click **Change Management** > **Maintenance** > **Alerts**.

   Problem Management: Click **Problem Management** > **Administration** > **Alert Definitions**.

   Request Management: Click **Request Management** > **Maintenance** > **Supporting Files** > **Alert Definitions**.

   The **Alert Definition** form opens.

2. Type the alert name in the **Alert Name** field.

3. Type the alert description in the **Description** field.

4. Complete the remaining fields in the record form. If necessary, press **Ctrl+H** in the Windows client or **F1** in the Web client for each field.

   - The **Scheduling** tab describes the calculations that trigger when the alert occurs.

   - The **Update Info** tab describes Format Control considerations and notification messages to be sent.

- The **Work Schedule** tab specifies the work schedule that the alert belongs to.
  - Holiday Group specifies the holiday group used when calculating an interval. The holiday group defined here overrides the value of holiday group in the work schedule.
- The **Time Zone** tab enables you to choose one of the following:
  - Define a specific time zone by choosing from the drop-down list
  - Define a RAD expression to set the time zone alert
  - Obtain the time zone from a table lookup
- The **To-Do Alert** tab enables you to choose one of the following:
  - Define this alert as a To-Do alert
  - Assign an alert group

    Note: HP provides four out-of-box alert groups and you can add new alert groups in the **To-Do Alert Type** global list. These groups are used to show the types of alerts when you look at your To-Do Alerts window.
  - Specify the alert message template for this alert group

    The message content is displayed in the**To-Do Alerts** window. You can use fixed or dynamic expressions as the message template. For example, the `1 in action in $L.file` expression means that the information of the ticket description is displayed.

5. Click **Add**.

Enable a To-Do alert for an operator

Applies to User Roles:

System Administrator

Change Manager

Problem Manager

Incident Manager

Request Manager

To enable To-Do alert for an operator, follow these steps:

1. Click **System Administartion** > **Ongoing maintenance** > **Operators**.
2. Open an operator record.
3. From the **To-Do Alert** tab, select the check box to enable To-Do alert for this operator.
4. Complete the remaining fields in the record form. If necessary, press **Ctrl+H** to view help for each field.
   - The **Display records from previous days** field specifies the days for the records to be displayed since the alert occurs.
   - The **Maximum number of records in the list** field specifies the maximum number of the records to be displayed on the To-Do alert window.
   - The **Display records assigned to** field specifies the assigned group for the records displayed on the To-Do alert page. There are two available fields: Me and My Group.
   - The **Display records reported by the selected companies** field specifies the company for the records to be reported. You can select and add the available company names from the company list on the left panel.

     - If no company is specified on the right panel, Service Manager applies all the companies available by default.
     - This field is only available when the multi-company mode has been enabled. To enable the multi-company mode, click **System Administration** > **Base System Configuration** > **Miscellaneous** > **System Information Record**.

   - The **Display records from the selected folders** field specifies the folder for the records to be reported. You can select and add the available folder names from the folder list on the left panel.

     - If no folder is specfied on the right panel, Service Manager applies all the folders available by default.

- This field is only available when the folder entitlement has been enabled. To enable the folder entitlement, click **System Administration** > **Base System Configuration** > **Miscellaneous** > **System Information Record**.

5. Click **Save**.

Note: Out-of-box, To-Do alert is enabled for Incident, Incident Task, Request, Request Task, Known Error, and Change Approval.

View the To-Do alerts

If the administrator has set To-Do alerts for you, the **To-Do Alerts** floating window appears on the top immediately after you log in. To view all the To-Do alerts in a Service Manager session, click the alerts icon to open the **To-Do Alerts** window.

- The language of To-Do alert list refers to the operator's preferred language (the Language settings in the operator record). However, the login language is also referred when the operator logs in to the system. If the login language and operator's language setting are not the same value, there might be two different languages displayed in the To-Do alert list.
- The To-Do alerts feature is disabled for the users who log in to Service Manager ESS portal.

Field	Description
Alert category	Displays the alert group for the current To-Do alert. The **To-Do Alerts** window displays four alert groups. **Alert group** / **Description** Approval / Lists the tickets that are pending on the approval of the current operator for more than 1 day. Reminder / Lists the high priority (1 or 2) **In Progress** tickets which are not updated for 6 hours. Follow Up / Lists the tickets which are pending for customer actions for more than 1 day. SLT / Lists the tickets whose SLT will breach within 30 minutes.

Field	Description
Record ID	Click the record ID to open this record in the main window. You can check the record details and perform required actions without closing the **To-Do Alerts** window.
Acknowledge	Click this button to acknowledge this alert, which removes this alert from the alert window. If there are more alerts than the maximum number set by the administrator, a new alert in the system will be added to the bottom of the list. **Note:** Once the alert is acknowledged, the Ack flag is marked as true in the corresponding record of TodoAlertList table.
Display	Shows the number of the alerts displayed in the list.
Total	Shows the number of total alerts in the system.
Close	Click this button to close the **To-Do Alerts** floating window.

Broadcast messages

As a system administrator, you can broadcast messages to the users currently logged on to the server from the **System Status** form. This form allows you to broadcast messages to all users or to pick which users you want to send a message to. Broadcast messages appear in the message bar and message view of the user's client.

Broadcast a message to a particular user

Applies to User Roles:

System Administrator

To broadcast a message to a particular user, follow these steps:

1. Click **System Status**. The system status form opens.
2. Type the following command in the Command field for the user process to which you want to send a message:

   s
3. Click **Execute Commands**.

   The operator status display form (operator.status.g) opens.
4. Click **Send Msg**.
5. Type the message you want to broadcast.
6. Click **Send Msg**.

   HP Service Manager sends your message to the selected user.

Broadcast a message to all users

Applies to User Roles:

System Administrator

You can broadcast a message to all users from the system status form.

To broadcast a message to all users, follow these steps:

1. Click **System Status**. The system status form opens.
2. Click **Broadcast**. The system.status.broadcast.g form opens.
3. Type the text of your message in the field provided.
4. Click **Send Msg**.

   HP Service Manager broadcasts your message to all currently logged on users.

Dynamic debugging of user sessions or schedulers

The dynamic debugging feature enables administrators to enable or disable the debugging or tracing information for a user/scheduler session, without the need to restart the server. When enabled, relevant debugging information of that session/scheduler will be written to the server log (sm.log). Once you have finished troubleshooting, you can then disable some debugging information for that user session or scheduler, using dynamic debugging; however some debugging information cannot be disabled using dynamic debugging, and in this case the user needs to reconnect to the server or an administrator needs to manually stop and then restart the scheduler, to disable such debugging information.

Caution: If multiple sessions exist for one user account or scheduler (for example, one user logs in simultaneously from different clients or multiple instances of one scheduler have been started), the dynamic debugging settings specified for one of these sessions will take effect for all of the sessions of this user account or scheduler.

Dynamic debugging supported parameters

The following table lists debugging parameters can be enabled and disabled or can only be enabled in dynamic debugging.

Parameters can be enabled and disabled in dynamic debugging	Parameters can be enabled but cannot be disabled in dynamic debugging
dbmonitorfiles: [file1],[file2]...	dbtriggertrace
debugca:n	dbstats
debughttp	debugattachments
debugdiagnostics	debugjni
debugscauto	debugjavascript
debugvmmap	debugadhocsql
debuglk	debugfileio
debugrs	debugshutdown

Parameters can be enabled and disabled in dynamic debugging	Parameters can be enabled but cannot be disabled in dynamic debugging
ir_trace	debugprocesses
rtm	debugdbtypes
sqldebug	debugdbquery

Note: Once you have completed debugging of a user session or scheduler using any of those parameters that cannot be disabled in dynamic debugging, you are recommended to re-connect the session or restart the scheduler to disable the parameters.

Set debugging parameters using dynamic debugging

Applies to User Roles:

System Administrator

Note: Some debugging parameters can be enabled and disabled using the dynamic debugging feature, while some can be enabled but cannot be disabled using this feature. For more information about these parameters, see "Dynamic debugging of user sessions or schedulers" on the previous page.

To set debugging parameters for a user session/scheduler, follow these steps:

1. Click **System Status**. The system status form opens.
2. Type the following command in the Command field for the user session or scheduler:

   s
3. Click **Execute Commands**.

   The **Operator Status Display** form (operator.status.g) opens.
4. Click **Send Debug Msg**. The **Send Debug Message** form opens.
5. Set debugging parameters as needed. The following figure shows an example.

6. Click **Send Debug Message**. A message displays: `Message sent to all users specified`.
7. Click **End** to exit.
8. Check the server log file for relevant debugging information of the session/scheduler.
9. Once you have completed troubleshooting, you are recommended to disable the debugging parameters for the user session/scheduler. To do so, repeat the steps above and disable the parameters.

   Note: Some parameters cannot be disabled using dynamic debugging. To disable such debugging information, disconnect the user session or manually restart the scheduler.

Server log file

The HP Service Manager server log file provides detailed information and error messages about the server and clients, which can assist support engineers and System Administrators in troubleshooting.

By default, the server log file (sm.log) is located in <Service Manager home>\Server\logs.

You can change the log file path by setting the startup parameter `log`, and you can also enable log switching for the server.

Log switching

A system administrator can enable log switching to have HP Service Manager write log information to a new file when the current log file reaches a pre-defined size limit

Log switching is particularly useful for systems that run continuously and do not have downtime for system administrators to back up or delete logs. If you do not enable log switching, Service Manager will add all log messages to the one log file defined in the initialization file.

Configure log switching by the maximum log size

Applies to User Roles:

System Administrator

To configure log switching by the maximum log size, follow these steps:

1. Stop the HP Service Manager server.
2. Open the sm.ini file in a text editor.

   This file is in your Service Manager RUN directory.
3. Type the following system parameter:

System parameter	Description
maxlogsize: *n*	For *n*, type the maximum log size in bytes you want Service Manager to use as the log size threshold. The default value is 5MB. Service Manager

System parameter	Description
	switches the log when the log size reaches the maximum size defined by this parameter.

Caution: You must have configured the `numberoflogfiles` parameter to enable log switching.

4. Save your changes.
5. Restart Service Manager.

   Service Manager uses your new log file settings.

Enable log switching

Applies to User Roles:

System Administrator

To enable log switching, follow these steps:

1. Stop the HP Service Manager server.
2. Open the sm.ini file in a text editor.

   This file is in your Service Manager RUN directory.
3. Type the following system parameter.

System parameter	Description
numberoflogfiles: *n*	For *n*, type the number of log files you want Service Manager to maintain. The minimum value is 1 and the maximum value is 100. The default value is 7. If the specified number exceeds the maximum value, Service Manager uses the default value. Service Manager switches the log when the log size reaches the maximum size defined by the `maxlogsize` parameter. When this happens, the current log file is archived to the log file ending with 1, and the existing log files are renamed to the next higher number, so that the archive log file n+1 always contains older data than archive file n.

4. Save your changes.
5. Restart Service Manager.

   Service Manager uses your new log file settings.

Stack traces

HP Service Manager automatically copies any stack trace produced by a general protection fault (GPF) to the Service Manager log file (by default, sm.log). You can use this information to troubleshoot your server and to pass information to Customer Support.

View the Web clients connected to the server

When users log on to HP Service Manager through Web clients, Service Manager automatically detects the web browsers and web application servers accessing the server, and logs the information in the server log file (by default, sm.log). Support personnel can view information about the connected web clients from the server log without the need to consult users.

Supported application servers and browsers

Service Manager can recognize and log information for all Web application servers listed in the support matrix, as well as the following major browsers: Microsoft Internet Explorer(MSIE), Mozilla Firefox, Google Chrome, Apple Safari, and Opera.

Web client information in the server log

Service Manager writes information about Web browser name and version, Web application server (or Web server) name and version, as well as Web services client agent information (if available) to the server log.

Note: Service Manager does not write JBoss application server version information to the server log; instead, it logs JBoss Web server version information.

See the following for some examples (where `xx.xxx.xx.xx` represents IP addresses).

```
RTE I SOAP client information scguiwweb 9.30.021 (021) at xx.xxx.xx.xx Browser MSIE
7.0 AppServer Apache Tomcat 7.0.4

RTE I SOAP client information scguiwweb 9.30.021 (021) at xx.xxx.xx.xx Browser
Chrome 8.0.552.215 AppServer IBM WebSphere Application Server 7.0

RTE I SOAP client information scguiwweb 9.30.021 (021) at xx.xxx.xx.xx Browser
Firefox 3.5.11 AppServer Apache Tomcat 7.0.4

RTE I SOAP client information scguiwweb 9.30.021 (021) at xx.xxx.xx.xx Browser MSIE
8.0 AppServer Apache Tomcat 7.0.4

RTE I SOAP client information scguiwweb 9.30.021 (021) at xx.xxx.xx.xx Browser
Safari 5.0.3 Jboss Web 2.1.3 GA

RTE I SOAP client information scguiwweb 9.30.021 (021) at xx.xxx.xx.xx Browser MSIE
7.0 AppServer WebLogic Server 10.3 Fri Jul 25 16:30:05 EDT 2008 1137967

RTE I SOAP client information scguiwweb 9.30.021 (021) at xx.xxx.xx.xx Browser MSIE
7.0 AppServer WebLogic Server 10.3.2.0 Tue Oct 20 12:16:15 PDT 2009 1267925 Oracle
WebLogic Server Module Dependencies 10.3 Tue Oct 20 13:57:01 EDT
```

View diagnostic counter information

As a System Administrator or support engineer, you can view diagnostic counter information in the console or server log (default:sm.log) to assist in investigating system stability or performance issues.

HP Service Manager provides the following diagnostic counter information:

- Web services transaction count / size (max size of a web service transaction / average size)
- Session login/logout count
- Database client transmission volume / size (network traffic)
- Heartbeat interval - request response count (only servlet container process information is printed)
- event-in / event-out count
- email-in / email-out count

Note: All the above diagnostic counter information is retrieved for the time since system startup.

Retrieval of diagnostic counter information

Service Manager retrieves diagnostic counter information as follows:

- When you run the **sm -reportdiagnostics** command, Service Manager prints diagnostic counter information to the console and also writes the information to the server log.

  Note: By default, the Diagnostic Service is disabled. Before running the **sm -reportdiagnostics** command, administrators must specify `debugdiagnostics:1` to enable the Diagnostic Service.

- When the servlet node or SCAuto listener or emailout process terminates, Service Manager writes diagnostic counter information to the server log.

Sample diagnostic counter information

See the following scripts for sample information.

```
Web Service Diagnostics Summary(Bytes):
Pid:4010 Command:/home/fpeSM/sm930/RUN/smserver  Name:ThreadControllerId-16080
Count:1 Request Total(MIME/MTOM Attachment):721(0/0) Request Avg(MIME/MTOM
Attachment):721(0/0) Response Total(MIME/MTOM Attachment):238(0/0) Response Avg
(MIME/MTOM Attachment):238(0/0)
Pid:4095 Command:/home/fpeSM/sm930/RUN/smserver system.start
Name:ThreadControllerId-background
Count:0 Request Total(MIME/MTOM Attachment):0(0/0) Request Avg(MIME/MTOM
Attachment):0(0/0) Response Total(MIME/MTOM Attachment):0(0/0) Response Avg
(MIME/MTOM Attachment):0(0/0)
Pid:14273 Command:/home/fpeSM/sm930/RUN/smserver -reportdiagnostics  Name:
Count:0 Request Total(MIME/MTOM Attachment):0(0/0) Request Avg(MIME/MTOM
Attachment):0(0/0) Response Total(MIME/MTOM Attachment):0(0/0) Response Avg
(MIME/MTOM Attachment):0(0/0)

Sessions Diagnostics Detail:
Pid:4010 Command:/home/fpeSM/sm930/RUN/smserver  Name:ThreadControllerId-16080
Session Login: 22, Logout: 18
Pid:4095 Command:/home/fpeSM/sm930/RUN/smserver system.start
Name:ThreadControllerId-background
Session Login: 0, Logout: 0
Pid:14273 Command:/home/fpeSM/sm930/RUN/smserver -reportdiagnostics  Name:
Session Login: 0, Logout: 0

Database Statistics:
Pid:4010 Command:/home/fpeSM/sm930/RUN/smserver  Name:ThreadControllerId-16080
FileName               Selects  Inserts  Updates  Deletes  Counts   Sorts    Finds
  Fetchs   Inits    Cache Inits  Terms    Cache Terms  Cache Finds
dbdict                    2        0        0        0        12       0        58
     1084     53       2            44       48           6
triggers                  111      0        0        0        0        0        0
```

```
     334       44        0            38        38           0
datadict                    19        0         0         0        0         0         566
     0         88        783           74        865          4732
scldapconfig                44        0         0         0        0         0         0
     0         88        0             76        88           0
code                        0         0         0         0        0         0         57
     0         54        0             46        48           0
format                      3         0         0         0        0         0         344
     61        75        118           64        185          1146
link                        0         0         0         0        0         0         110
     0         96        167           78        253          207
ScriptLibrary               0         0         0         0        0         0         14
     0         48        0             41        42           520
info                        28        0         0         0        0         0         3
     15        67        119           56        181          116
tzfile                      0         0         0         0        0         0         2
     0         67        88            56        151          132
joindefs                    2         0         0         0        2         0         1
     68        4         1             0         3            0
erddef                      4         0         0         0        0         0         0
     121       5         0             3         5            0
sctypecheck                 1         0         0         0        0         0         0
     7         2         0             0         2            0
scmandant                   1         0         0         0        0         0         0
     0         1         0             0         1            0
scaccess                    1         0         0         0        0         0         0
     134       2         0             0         2            0
licenseinfo                 1         0         56        0        1         0         79
     0         47        0             36        42           0
userinfo                    1         22        19        18       0         0         59
     0         104       0             95        40           0
SYSPUBLISH                  0         0         0         0        0         0         0
     0         44        0             38        38           0
scversion                   2         0         0         0        2         0         0
     3         4         0             0         3            0
scmessage                   0         0         0         0        0         0
3451     0         35        0             30        30           29997
operator                    0         0         22        0        0         0         100
     0         88        107           72        183          0
scsecuritygroup             0         0         0         0        0         0         22
     0         22        0             18        22           0
cmcontrol                   22        0         0         0        0         0         0
     0         44        0             36        40           0
currency                    0         0         0         0        0         0         1
     0         23        0             19        23           22
environment                 0         0         0         0        0         0         11
     0         264       45            216       261          308
smenv                       0         0         0         0        0         0         2
     0         24        0             20        20           22
```

```
tableAccess             0        0        0        0        0        0        0
     0        352      22          288      310         0
pmenv                   0        0        0        0        0        0        2
     0        24       0           20       20          22
category                0        0        0        0        0        0        0
     0        22       0           18       18          0
globallists             22       0        0        0        0        0        72
     2860     66       50          54       116         0
locallist               0        0        0        0        0        0        44
     0        66       0           54       58          0
TodoMap                 22       0        0        0        0        0        0
     242      44       0           36       44          0
Object                  19       0        0        0        0        0        34
     437      80       114         70       192         256
dataaccess              0        0        0        0        0        0        108
     0        22       224         18       246         492
cm3profile              44       0        0        0        0        0        0
     0        44       22          36       58          0
stathistory             171      0        16       0        0        0        0
     0        41       215         35       256         0
language                34       0        0        0        0        0        0
     80       68       0           60       64          0
kmprofile               22       0        0        0        0        0        0
     0        66       0           54       58          0
sapconfig               22       0        0        0        0        0        0
     0        44       0           36       40          0
ApprovalDelegation      88       0        0        0        0        0        0
     0        88       0           72       72          0
slacontrol              22       0        0        0        0        0        0
     0        44       0           36       40          0
slaprofile              0        0        0        0        0        0        22
     0        44       0           36       40          0
rcenv                   0        0        0        0        0        0        2
     0        24       0           20       20          22
ocmprofile              66       0        0        0        0        0        0
     0        66       22          54       76          0
ctenv                   0        0        0        0        0        0        2
     0        24       0           20       20          22
icmenv                  0        0        0        0        0        0        2
     0        24       0           20       20          22
syslog                  0        22       0        0        0        0        0
     0        44       1           36       45          0
counters                6        0        7        0        0        0        7
     3        9        0           6        7           0
mail                    22       0        0        0        22       0        0
     0        29       5           25       34          0
formatctrl              47       0        0        0        0        0        12
     0        46       79          38       125         98
contacts                0        0        0        0        0        0        24
```

```
     0        50       2            42       48           0
dept                     22       0        0        0        0        0        0
     0        22       0            18       22           0
menu                     3        0        0        0        0        0        15
     0        37       111          32       146          139
inbox                    466      0        0        0        399      0        0
     205      57       49           51       104          0
inboxgrid                0        0        0        0        0        0        6
     0        21       0            18       19           38
docenv                   0        0        0        0        0        0        0
     0        38       5            34       41           0
ViewDefault              0        0        0        0        0        0        19
     0        19       0            17       17           0
Todo                     19       0        0        0        0        0        0
     26       38       38           34       74           0
displaymaster            0        0        0        0        0        0        2
     0        21       0            18       19           19
displayscreen            3        0        0        0        0        0        0
     0        25       9            22       32           0
displayoption            3        0        0        0        0        0        0
     0        21       13           19       34           0
displaycache             0        0        0        0        0        0        6
     0        25       8            20       31           29
displayevent             2        0        0        0        0        0        0
     2        22       8            18       28           0
systext                  23       0        0        0        0        0        0
     69       28       9            24       37           0
distgroup                0        0        0        0        0        0        0
     0        3        0            3        3            0
eventregister            4        0        0        0        6        0        0
     189      6        1            4        5            0
eventout                 3        2        0        1        0        0        0
     2        9        10           4        19           0
number                   0        0        2        0        0        0        2
     0        4        1            0        3            0
eventmap                 173      0        0        0        376      0        0
     5675     175      1            4        5            0
typecheck                0        0        0        0        0        0        0
     0        2        2            2        4            0
config                   0        0        0        0        0        0        1
     0        2        0            2        2            0
uimpages                 2        6        0        0        0        0        6
     13       7        0            7        7            0
schedule                 0        7        0        0        0        0        0
     0        3        0            3        3            0
uimuserpreferences       3        1        2        0        0        0        5
     6        5        6            5        11           0
uimcompdefinitions       3        0        0        0        0        0        0
     16       4        1            4        5            0
```

```
uimpagecategories          1        0        0        0        0        0        0
     0        1        0            1        1           0
uimpagecatspages           8        0        0        0        0        0        0
     0        1        7            1        8           0
uimuserpagecontent         6        0        0        0        0        0        0
     0        2        4            2        6           0
extaccess                  6        0        0        0        0        0        0
     0        4        4            4        8           0
States                     0        0        0        0        0        0        13
     0        11       13           7        24          21
help                       3        0        0        0        0        0        382
     525      4        383          4        387         0
probsummary                2        0        0        0        0        0        0
     0        14       13           14       15          0
sqlsystemtables            0        0        0        0        0        0        2
     0        2        0            2        2           0
status                     0        0        0        0        0        0        0
     0        2        0            2        2           0
incidents                  1        0        0        0        0        0        0
     0        5        5            5        6           0
SearchConfig               1        0        0        0        0        0        1
     28       2        1            0        3           0
AdvFilter                  0        0        0        0        0        0        0
     0        1        0            0        1           0
eventin                    0        1        0        0        0        0        1
     0        3        1            0        2           0
Pid:4095 Command:/home/fpeSM/sm930/RUN/smserver system.start
Name:ThreadControllerId-background
FileName               Selects  Inserts  Updates  Deletes  Counts   Sorts    Finds
  Fetchs   Inits    Cache Inits  Terms    Cache Terms  Cache Finds
dbdict                     0        0        0        0        0        0        53
     0        19       0            2        2           0
triggers                   55       0        0        0        0        0        0
     187      19       0            2        2           0
datadict                   0        0        0        0        0        0        61
     0        1150     222          950      1186        1734
scldapconfig               19       0        0        0        0        0        0
     0        38       0            6        38          0
code                       0        0        0        0        0        0        71
     0        28       0            4        11          0
format                     0        0        0        0        0        0        27
     0        30       0            5        13          135
link                       0        0        0        0        0        0        1
     0        35       0            3        4           15
ScriptLibrary              0        0        0        0        0        0        6
     0        22       0            3        5           192
info                       57       0        1        0        0        0        1
     0        60       76           8        100         20
tzfile                     0        0        0        0        0        0        0
```

```
     0        30       96           5        118          82
SYSPUBLISH                0        0        0        0        0        0        0
     0        19       0            2        2            0
scmessage                 0        0        0        0        0        0        112
     0        16       0            2        2            4941
schedule                  5889     33       2649     40       0        0        0
     0        33       16           5        21           0
counters                  5        0        26       0        0        0        26
     3        7        0            2        4            0
anubissystemstate         2        0        2        0        0        0        0
     0        2        1            2        3            0
syslog                    0        17       0        0        0        0        0
     0        2        16           2        18           0
marquee                   31       0        0        0        0        0        0
     0        2        29           1        31           0
shutdown                  1        0        0        0        0        0        0
     0        2        0            2        2            0
cmcontrol                 15       0        0        0        0        0        0
     0        30       0            3        16           0
currency                  0        0        0        0        0        0        1
     0        16       0            2        16           15
environment               0        0        0        0        0        0        11
     0        145      32           13       45           175
smenv                     14       0        0        0        0        0        1
     0        29       0            3        15           14
tableAccess               0        0        0        0        0        0        0
     0        197      10           16       32           0
operator                  0        0        0        0        0        0        229
     0        54       165          6        189          0
pmenv                     0        0        0        0        0        0        1
     0        16       0            1        2            15
category                  298      0        0        0        0        0        0
     1788     18       296          3        300          0
globallists               1505     0        1192     0        0        0        15
     41882    51       2080         7        2129         0
locallist                 0        0        0        0        0        0        30
     0        45       0            6        19           0
TodoMap                   15       0        0        0        0        0        0
     165      30       0            4        30           0
Object                    0        0        0        0        0        0        8
     0        18       111          2        129          160
dataaccess                156      0        0        0        0        0        110
     0        15       145          2        160          164
cm3profile                30       0        0        0        0        0        30
     0        30       15           2        17           0
stathistory               0        10       0        0        0        0        0
     0        16       40           2        56           0
sapconfig                 15       0        0        0        0        0        0
     0        30       0            3        16           0
```

```
ApprovalDelegation          60        0         0         0         0         0         0
     0         60        0             8         8             0
slacontrol                  15        0         0         0         0         0         0
     0         30        0             3         16            0
slaprofile                  0         0         0         0         0         0         15
     0         30        0             3         16            0
formatctrl                  0         0         0         0         0         0         16
     0         16        0             1         2             30
contacts                    0         0         0         0         0         0         15
     0         15        0             1         1             0
dept                        15        0         0         0         0         0         0
     705       30        0             4         30            0
rcenv                       0         0         0         0         0         0         2
     0         11        0             1         3             9
ocmprofile                  0         0         0         0         0         0         54
     0         27        9             3         12            0
ctenv                       9         0         0         0         0         0         2
     0         18        0             3         10            9
icmenv                      9         0         0         0         0         0         2
     0         18        0             3         10            9
patcotask                   298       0         0         0         0         0         0
     0         1         297           0         298           0
msgclass                    40        0         0         0         0         0         0
     40        2         39            0         41            0
msgtype                     0         0         0         0         0         0         40
     0         2         39            0         41            0
msglog                      0         25        0         0         0         0         0
     0         2         24            0         26            0
erddef                      1         0         0         0         0         0         0
     0         1         0             0         1             0
applicationfields           298       0         0         0         0         0         0
     11026     2         297           1         299           0
eventin                     298       0         1         0         0         0         1
     1         2         298           0         300           0
contract                    60        0         0         0         0         0         0
     0         1         59            0         60            0
expline                     30        0         0         0         0         0         0
     0         1         29            0         30            0
agent                       269       0         0         0         0         0         0
     0         1         268           0         269           0
outage                      10        0         0         0         0         0         0
     0         1         9             0         10            0
sloavail                    10        0         0         0         0         0         0
     0         1         9             0         10            0
slo                         10        0         0         0         0         0         0
     790       2         9             0         11            0
slaresponse                 840       0         790       0         0         0         0
     790       3         18            0         20            0
clocks                      0         0         0         0         0         0         0
```

```
     0        1        9            0        10           0
sloresponse               790      0        0        0        0        0        0
     0        2        1578         0        1580         0
sla                       10       0        0        0        0        0        0
     50       2        9            0        11           0
slamonthly                50       0        0        0        0        0        0
     0        1        9            0        10           0
slamonthlyag              0        0        50       0        0        0        50
     0        2        9            0        11           0
ocmq                      0        0        0        0        0        0        0
     0        1        0            0        1            0
ocml                      1        0        0        0        0        0        0
     0        1        0            0        1            0
eventregister             1        0        0        0        0        0        0
     1        2        0            0        2            0
mail                      0        0        0        0        0        0        0
     0        3        0            0        2            0
eventmap                  1        0        0        0        0        0        0
     5        2        0            0        2            0
SYSATTACHMENTS            1        0        0        0        0        0        0
     0        1        0            0        1            0
Pid:14273 Command:/home/fpeSM/sm930/RUN/smserver -reportdiagnostics  Name:
FileName               Selects  Inserts  Updates  Deletes  Counts   Sorts    Finds
  Fetchs   Inits    Cache Inits  Terms    Cache Terms  Cache Finds
dbdict                    0        0        0        0        0        0        0
     0        1        0            0        0            0
triggers                  0        0        0        0        0        0        0
     0        1        0            0        0            0
datadict                  0        0        0        0        0        0        0
     0        1        0            0        0            7
scldapconfig              1        0        0        0        0        0        0
     0        2        0            0        2            0
code                      0        0        0        0        0        0        0
     0        1        0            0        0            0
format                    0        0        0        0        0        0        0
     0        1        0            0        0            0
link                      0        0        0        0        0        0        0
     0        1        0            0        0            0
ScriptLibrary             0        0        0        0        0        0        0
     0        1        0            0        0            0
info                      0        0        0        0        0        0        0
     0        1        1            0        2            2
tzfile                    0        0        0        0        0        0        0
     0        1        1            0        2            2
SYSPUBLISH                0        0        0        0        0        0        0
     0        1        0            0        0            0

Apps Statistics:
Pid:4010 Command:/home/fpeSM/sm930/RUN/smserver  Name:ThreadControllerId-16080
```

```
Module                    Name                      Count
Pid:4095 Command:/home/fpeSM/sm930/RUN/smserver system.start
Name:ThreadControllerId-background
Module                    Name                      Count
Event Services            emailin                   1
Event Services            eventin                   1
Pid:14273 Command:/home/fpeSM/sm930/RUN/smserver -reportdiagnostics  Name:
Module                    Name                      Count

Heartbeat Diagnostics Detail:
Pid:4010 Command:/home/fpeSM/sm930/RUN/smserver  Name:ThreadControllerId-16080
Heart Beat Count: 1028     Heart Beat Interval: 15
```

Trace JavaScript execution

If you are a HP Service Manager JavaScript developer and want to trace JavaScript execution invoked from within RAD, specify `rtm:3` in the sm.ini configuration file. This enables Service Manager to log tracing information in the Service Manager server log file (default: <Service Manager home>\Server\logs\sm.log).

The following is an example of the log information:

```
RTE D SCRIPTTRACE: localizeTable.getLocalizedValues entered, line 210

RTE D Parameter type:STRING value:categories

RTE D Parameter type:ARRAY value:{"complaint", "incident", "problem",  "request for change", "request for information"}

RTE D SCRIPTTRACE: localizeTable.getLocalizedValues exited, line 219  elapsed: 110 ms
```

This example indicates that the getLocalizedValues function in script `localizeTable` has been invoked, starting from line 210; the execution completes at line 219, which might be the last line of this function; The execution consumes 110 ms in total. In addition, the parameters passed to this function are also dumped into the log file: the first one is STRING type, with a value of "categories"; the other one is an ARRAY, with its parameters enclosed in braces by their order in the array.

The System log file

Applies to User Roles:

System Administrator

The System log (Syslog) file contains information about system events, such as failed logon attempts.

To view or edit system events in the Syslog file, follow these steps:

1. Click **Tailoring** > **Database Manager**. Or, type `db` in the command line, and then press **Enter** or click **Execute Command**.
2. Type `syslog` in the **Form** field, and then press **Enter**.
3. Type any search criteria in the appropriate fields, and then click **Search**.

   A list of events in the Syslog file is displayed.
4. Select a system event in the list to display detailed information about the event. To edit the event, make the desired changes to the detailed information, and then click **Save**.

The Syslog file records the following types of event:

- **Successful logon**

  The following event is an example of a successful logon.

Event Type	Start Time	Stop Time	User Name	Terminal Name	Current Status	IP Address	PID
user	7/15/2013 1:27:56		falcon	SOAP-Windows 7	logged on	16.158.154.213	4

- **Failed logon**

  The following event is an example of a failed logon.

Event Type	Start Time	Stop Time	User Name	Terminal Name	Current Status	IP Address	PID
user	7/10/2013 20:12		ddd	SOAP-Windows 7	login failed	16.158.154.213	4

  Note: Failed logon events are recorded both when a user enters an incorrect password and when a user enters an incorrect user name.

- **Logout**

  The following event is an example of a logout.

Event Type	Start Time	Stop Time	User Name	Terminal Name	Current Status	IP Address	PID
user	7/7/2013 20:36	7/7/2013 22:33	falcon	SOAP-Windows 7	logged off	16.158.154.213	4

- **Scheduler starts**

  The following event is an example of a scheduler starting.

Event Type	Start Time	Stop Time	User Name	Terminal Name	Current Status	IP Address	PID
scheduler	7/14/2013 0:25		availability	availability	started		3

  Note: The IP address column is populated only if the event is triggered from a machine that is not the HP Service Manager server.

- **Scheduler terminates**

  The following event is an example of a scheduler terminating.

Event Type	Start Time	Stop Time	User Name	Terminal Name	Current Status	IP Address	PID
scheduler	7/14/2013 0:25	7/14/2013 0:25	KMUpdate	SYSTEM	stopped		18

  Note: The IP address column is populated only if the event is triggered from a machine that is not the Service Manager server.

Client log file

Each HP Service Manager client has a log file, which stores client session information for troubleshooting.

For each client, the log file is defined as follows:

- Windows client

  Go to **Window** > **Preferences** > **HP Service Manager** > **Logs**. The **Log file** field specifies the log file path.

- Web client

  By default, the log file is located in the Web application server's home directory: <Web application server home directory>/sm.log.

  For example: C:\Program Files\Apache Software Foundation\Tomcat 6.0\sm.log.

View SOAP fault information in the client log

When a SOAP fault or an exception occurs on the HP Service Manager server, the SOAP fault information is written to the client log file. This information can assist support engineers and System Administrators in troubleshooting.

Service Manager logs SOAP fault information in the Windows or Web client log file (sm.log) as follows:

- When a SOAP FAULT occurs, Service Manager logs the SOAP request, SOAP response, and SOAP fault information.
- When a server session ends unexpectedly and an exception is thrown, Service Manager logs the SOAP request, SOAP response (if any), and the exception information.

Example

If a user is doing operations in the client (such as generating charts) and then a System Administrator kills the user's process from System Status, SOAP fault information like the following is logged in the client log file (sm.log):

```
ERROR Timer-0 com.hp.ov.sm.client.webtier.SCLogging - Jan 10, 2011 17:58:32
GMT+08:00 [ERROR] SOAP Failure - Session no longer valid

ERROR Timer-0 com.hp.ov.sm.client.webtier.SCLogging - Jan 10, 2011 17:58:32
GMT+08:00 [ERROR] request:

<getMessages />

ERROR Timer-0 com.hp.ov.sm.client.webtier.SCLogging - Jan 10, 2011 17:58:32
GMT+08:00 [ERROR] response:

<Fault>

<faultcode>SOAP-ENV:Server</faultcode>

<faultstring>Session no longer valid</faultstring>

<faultactor>Server</faultactor>

</Fault>

ERROR Timer-0 com.hp.ov.sm.client.webtier.SCLogging - Jan 10, 2011 17:58:32
GMT+08:00 [ERROR] The soap fault is : SOAP-ENV:Server

Session no longer valid
```

Message processors

Message processors are scheduled processes dedicated to managing HP Service Manager messages. By default, the `problem` background process manages all Service Manager messages. If your system generates enough messages, it may create a backlog in your message queue. You can remove the message backlog by adding additional message processors.

Each message processor must have an agent initialization record definition that defines the name of the processor and the RAD application to call. The message processor name must match the name listed in the System Wide Company Record for the message processor. All message processors must call the `scheduler` RAD application.

To determine if the message queue is affecting your system performance, you can review the schedule file. If you see schedule records with the name **message processor record** with an expiration time greater than a minute old, then you should consider adding additional message processors.

Define which system processes manage message traffic

Applies to User Roles:

System Administrator

To define which system processes manage message traffic, follow these steps:

1. Click **System Administration** > **Base System Configuration** > **Miscellaneous** > **System Information Record**.
2. Click the **Message Processors** tab.
3. In the **Processor Name** field, type the names of the background or scheduler processes that are to manage message traffic. The processor name must match the class name specified for the message class processor.
4. Click **Save**.
5. Start the message processors.

HP Service Manager rotates messages among all the processes you define. If you do not define any message processors, then Service Manager uses the problem processor to manage all message traffic.

Add additional message processors

Applies to User Roles:

System Administrator

By default, HP Service Manager uses the `problem` background process to manage all message traffic. If your message queue grows too large, you can add additional message processors to handle the message load.

To add additional message processors, follow these steps:

1. Create a message processor agent record.
2. Add the message processors to the System Wide Company record.
3. Start the message processor processes.

> **Tip:** You can also add your message processors to the `startup` agent record to have Service Manager automatically start them.

Create a message processor agent record

Applies to User Roles:

System Administrator

You can create message processor agent records to divide the message load between multiple processes.

To create a message processor agent record, follow these steps:

1. Click **System Administration** > **Base System Configuration** > **Miscellaneous** > **Agent Registry**. The **Background Processor Initialization Registry** form opens.
2. Click **Search**.
3. Type or select the information record information.
4. Click **Add**.

HP Service Manager displays the message: Information record added.

5. Repeat steps 2-3 for each message processor you wish to add.

View the messages

HP Service Manager notifies you when you have activity messages to review. The messages can appear at the top of the detail window.

Information type	Meaning
Information	Information about the most recent action
Warning	A warning about the most recent action
Error	The most recent action caused an error to occur

Note: By default, these three types of messages all appear on the top of the detail window. You can change the default settings by modifying the related parameters.

To view all the messages in a Service Manager session, click the message icon to open the **Messages** window.

Notifications

You can configure HP Service Manager to send notifications whenever specific system events occur. By default, Service Manager supports notifications for every type of status change event in all applications. You can also define custom notifications that Service Manager sends when specific events occur.

You can configure the following properties for notifications:

- Conditions under which Service Manager sends the notification
- Content of the notification
  - Record ID of the triggering event
  - Current phase of the triggering event
  - Operator assigned to the triggering event
  - E-mail formatting
- Delivery method of the notification
  - Active Note
  - E-mail
- Recipient list
  - Contact name
  - Group
  - Operator
  - Operator assigned to
  - Operator coordinator
  - Operator requested by

Default message classes

By default, HP Service Manager provides the following message classes.

- agent
- alert
- am
- approval
- cau
- cib
- cm
- cm3
- contract
- copyds
- ct
- da
- dbdict
- dcu
- dde
- de
- debug
- dewiz
- diffupg
- displayscreen

- doceng
- ds
- dt
- erd
- erp
- error
- es
- fc
- fin
- fm
- ga
- help
- icm
- ins
- ir
- itil
- kpak
- macro
- mail
- misc
- news
- ns
- object

- ocm
- patcort
- pm
- print
- ps
- queue
- rad
- rc
- rca
- rsm
- rw
- sap
- sc
- sc.email
- sc24x7
- scballon
- scbase
- scbutton
- sccaption
- scev
- scgui
- scir
- scjs

- scjsdesc
- scmenu
- scmenugroup
- scpolicy
- scrad
- scscd
- scsql
- sctitle
- scutility
- scxmlapi
- sla
- sm
- sql
- swcompliance
- trigger
- upg
- us
- validity
- wizard
- wm
- work

Default notifications

By default, HP Service Manager includes the following notifications.

Notification record	Notification event
ChM Change Close	Closing a change phase in Change Management
ChM Change Open	Opening a change phase in Change Management
ChM Change Update	Updating a change phase in Change Management or opening a phase that has been deferred
ChM Task Close	Closing a task phase in Change Management
ChM Task Open	Opening a task phase in Change Management
ChM Task Update	Updating a task phase in Change Management or opening a deferred phase
ChM Retract All	Reversing approval for all levels of a change phase in Change Management
ChM Retract One	Reversing approval for one level of a change phase in Change Management
Clone Relation	Copying associations of a cloned incident or service desk interaction record
IM Action Alert	Updating the alert status of an incident in Incident Management
IM Alert Reassign	Exceeding the reassignment limit for an incident in Incident Management
IM Close	Closing an incident in Incident Management
IM Edit Close Cascade	Closing an incident and its related service desk interaction records in Incident Management
IM Edit Close Linked	Closing an incident but not its related service desk interaction records in Incident Management
IM Open	Opening an incident in Incident Management
IM Reopen	Reopening an incident in Incident Management
IM Resolved	Resolving an incident in Incident Management
IM Save Relation	Opening a related incident for a service desk interaction and linking the record to an existing incident
IM Updated	Updating an incident in Incident Management
RM Approval	Approving a request or order in Request Management
RM Denial	Denying request or order in Request Management
RM Final Approval	sent when the request is completely approved in Request Management
RM Final Denial	Denying a request in Request Management
RM Line Item Change Category	Manually changing the category of a line item in Request Management

Notification record	Notification event
RM Line Item Close	Manually closing a line item in Request Management
RM Line Item Drop Avail	Marking a line item as unavailable in Request Management
RM Line Item Mark Avail	Marking a line item as available to order in Request Management
RM Line Item Open	Opening a new line item in Request Management
RM Line Item Reopen	Reopening a line item in Request Management
RM Line Item Update	Updating a line item in Request Management
RM Order Change Category	Manually changing the category of the order in Request Management
RM Order Close	Closing an order in Request Management
RM Order Open	Opening an order in Request Management
RM Order Update	Updating an order in Request Management
RM Request Change Category	Manually changing the request category in Request Management
RM Request Close	Closing an request in Request Management
RM Request Deferred	Deferring a request in Request Management
RM Request Open	Opening a request in Request Management
RM Request Open Next Phase	Moving a quote to the next phase in Request Management
RM Request Phase Change	Manually changing the phase of the request in Request Management
RM Request Reopen	Reopening a request in Request Management
RM Request Update	Updating a request in Request Management
Request Late Notice	Expired due date in Request Management
Request Not Ordered	Too much elapsed time between the date that the first line item is ordered and moving to the ordering phase
SM Add	Opening a service desk interaction record in an active state in Service Desk
SM Close	Closing a service desk interaction record in Service Desk
SM Save	Opening a service desk interaction record in an inactive state in Service Desk

Notification record	Notification event
SM Update	Updating a service desk interaction record in Service Desk
Save Association	Linking two associated records
Save Relation	Opening a related record

Add a message record

Applies to User Roles:

System Administrator

To add a message record, follow these steps:

1. Click **Tailoring** > **Notifications** > **Messages**. The **Search Message Records** form opens.
2. Type or select the following information.

Field	Description
Language Code	You can leave this field blank to have HP Service Manager use the language code defined in the company record. To display the message in another language, type the ISO code of that language.
Class	Type a name or label to describe the Service Manager applications to which this notification applies. For example, you can make a message relating to Change Management part of the cm3 class.
Message Number	Type a unique ID to identify this message.
Severity	This field is reserved for future use and can be ignored.
Text	Type the text of the message to display. You can use the arguments %S and %S[*n*] to include information from the triggering event.
Comments	This is an optional field you can use to type a description of the message.

3. Click **Add**.

Add a notification definition record

Applies to User Roles:

System Administrator

The Notification Engine is primarily responsible for sending messages that are generated by HP Service Manager events, such as opening or closing a quote or order. System Administrators can edit these messages, add new messages, change the conditions under which the messages will be sent out, and select who will receive the messages.

To add a notification definition record, follow these steps:

1. Click **Tailoring** > **Notifications** > **Notifications**. The **Notification Definition** form opens.
2. Type or select the following information.

Field	Description
Name	Type the name of the notification record.
Condition	Type `true` to enable the notification in all conditions. Type an expression that is true or false to specify a condition when HP Service Manager should send the notification. Type `false` to disable the notification in all conditions. By default, Service Manager treats a blank entry as true.
Message tab	Use this tab to define the message type, delivery method, and conditions under which Service Manager should send the notification.
Msg Class	Type the message class for the notification. This value must match a message class definition in the message record.
Msg No	Type the message number for the notification. This value must match a message number definition in the message record.
Arguments	Type any RAD expressions to display information from the record or event that triggered the notification. Service Manager displays this information in the text of the notification. You can enter an array of arguments by enclosing all arguments in brackets and separating each argument with a comma. For example: `{argument1,argument2,argument3}` **Note:** Arguments typically take the following form: `<field name> in $L.file` where `<field name>` is the name of a field in the record that triggered the notification.
Condition	Type `true` to enable the notification in all conditions. Type an expression that can be true or false to define a condition when Service Manager should send the notification. Type `false` to disable the notification in all conditions. By default, Service Manager treats a blank entry as true.

<table>
<tr><th>Field</th><th>Description</th></tr>
<tr><td>Format</td><td>Type the format control record used to display the triggering record as part of the notification.</td></tr>
<tr><td>Notify Method</td><td>Type or select the delivery method to be used to send the notification. This value must match a delivery method defined in the msgtype table.

Note:
◦ The notification applications listed below must be defined in RAD code and exist in Service Manager to work.
◦ The message type must be enabled (true) by selecting "Active?" in the msgtype table.

See the following table for valid message types.

<table>
<tr><th>Message type</th><th>Desctiption</th></tr>
<tr><td>connect</td><td>Send a message to an external device.</td></tr>
<tr><td>email</td><td>Send email.</td></tr>
<tr><td>log</td><td>Create a log entry for a message.</td></tr>
<tr><td>mail</td><td>Send internal mail.</td></tr>
<tr><td>msg</td><td>Send an internal message to a user's current Service Manager session (for example, "Incident IM1011 has been assigned to your monitor list since...").

Note: If the user is not currently connected to a Service Manager session, the message is not sent.</td></tr>
<tr><td>print</td><td>Print message.</td></tr>
</table>
</td></tr>
<tr><td>Recipients</td><td>Type one of the following to identify who should receive the notification:

◦ A contact name
◦ An operator name
◦ Array of approval group names
◦ A RAD expression that gathers a contact or operator name from some field in</td></tr>
</table>

Field	Description
	the triggering record
Group File	Type the name of the group receiving the notification. You can specify the On Call group to send the notification to for those operators who meet the On Call criteria.
Group Area	Type the name of the group area receiving the notification. You can use this field only with ocmgroups and cm3groups group tables. Valid choices include: ◦ ocmgroups -All -Line Items -Orders -Quotes ◦ cm3groups -All -Changes -Tasks
Subgroup	Type the name of the subgroup area receiving the notification. You can use this field only with ocmgroups and cm3groups group tables. Valid choices include: ◦ All ◦ Approvers ◦ Members
Email/Mail Subject Line tab	Use this tab to type any custom information that should appear in e-mail notifications.
Msg Class	Type the message class for the subject of the notification. This value must match a message class definition in the message record.
Msg No	Type the message number to use as the subject of the notification. This value must match a message number definition in the message record.
Arguments	Type any RAD expressions used to display information from the record or event

Field	Description

	that triggered the notification. Service Manager displays this information in the subject of the notification. You can enter an array of arguments by enclosing all arguments in brackets and separating each argument with a comma. For example:
	
	`{argument1,argument2,argument3}`
	
	Note: Arguments typically take the following form:
	
	`<field name> in $L.file`
	
	where `<field name>` is the name of a field in the record that triggered the notification.

3. Click **Add**.

Add a notification delivery method

Applies to User Roles:

System Administrator

To add a notification delivery method, follow these steps:

1. Click **Tailoring** > **Notifications** > **Message Types**. The **Message Type File** form opens.
2. Type or select the following information.

Field	Description
Type	Type a name or label to describe the notification method. For example, to send an e-mail message, you can create a type called e-mail.
Description	This is an optional field you can use to type a description of the notification method.
Application	Type the name of the RAD application that sends the notification.
Active?	Select this option to enable the notification method for use by notification records.

3. Click **Add**.

Create a custom notification

Applies to User Roles:

System Administrator

To create a custom notification, follow these steps:

1. Create the custom message for the notification.
2. Define the delivery methods available for notifications.
3. Define the on call schedules for the groups in your organization.
4. Create a notification definition record.
5. Configure your HP Service Manager applications to use your notification.

Create a distribution group

Applies to User Roles:

System Administrator

You can create distribution groups that the Report Exerciser and Event Services applications can use to send reports to pre-defined group of users, or to automatically open change and incident records. HP Service Manager saves changes that you make to distribution groups in the distgroup table.

To create a distribution group, follow these steps:

1. Click **System Administration** > **Base System Configuration** > **Miscellaneous** > **Distribution**.

   The **Distribution Group File** form opens.
2. In the Group Name field, type the name of the group.
3. Select the type of distribution group.

Type	Description
Change	Creates a change request and assigns it to the distribution group

Type	Description
Email	Sends an e-mail message to the distribution group
Print	Sends a print job to the printer on behalf of the distribution group
Problem	Creates an incident and assigns it to the distribution group

4. In the Operators/Contacts field, type the operator name or names of contacts who belong to the distribution group.
5. Click **Add**.

   Service Manager adds the distribution group record.

Send a notification using Format Control

Applies to User Roles:

System Administrator

To send a notification using Format Control, follow these steps:

1. Click **Tailoring** > **Format Control**.
2. Search for and open the format control record for which you want to enable notification.
3. Select an existing notification definition record or create a custom notification and note the name of the record. This notification is the target of the Format Control call.
4. Click the **Subroutines** tab, or click **Subroutines** from **More** or the **More Actions** menu to create a Format Control subroutine with the following properties:

Name	Value
Add	The expression that is evaluated to determine whether to execute the specified RAD application every time that the corresponding format is used to add a record. Example: `true` (if you want a notification to be sent on any Add operation)
Upd	The expression that is evaluated to determine whether to execute the specified

Name	Value
	RAD application every time that the corresponding format is used to update a record. Example: `true` (if you want a notification to be sent on any Update operation)
Del	The expression that is evaluated to determine whether to execute the specified RAD application every time that the corresponding format is used to update a record. Example: `true` (if you want a notification to be sent on any Delete operation)
Dis	The expression that is evaluated to determine whether to execute the specified RAD application every time that the corresponding format is displayed. Example: `true` (if you want a notification to be sent every time the form is displayed) **Note:** This option is not typically used to create a notification.
Initial	The expression that is evaluated to determine whether to execute the specified RAD application every time that the corresponding format initially opens. Example: `true` (if you want a notification to be sent the first time the form displays) **Note:** This option is not typically used to create a notification.
Before	Type `false` (to send a notification *after* an operation is made)
Application	Type `us.notify`
Msg ID	The message you want to display if the system cannot run the application or one of the Name/Value inputs is incorrect. **Note:** This option is not typically used to create a notification.

Name	Value
Error Message	The error message you want to display if the system cannot run the application or one of the Name/Value inputs is incorrect. **Note:** This option is not typically used to create a notification.
Names and **Values**	The names and values of the parameters to be passed into the RAD application.For the us.notify application, we can add the following parameters: **name**: The name of the notification definition record to be the target of the Format Control call. For example: `CM Deny` **record**: The record variable the notification should use. For example: `$file` **names** (optional): The array of values to display in the notification.

5. To save your changes, click **Save**.
6. Click **OK**.

Sample notifications

HP Service Manager comes with sample notifications for the following modules:

- User Interaction Management
- Incident Management
- Problem Management
- Change Management

User Interaction Management Notifications

Notification Title	Notification Subject	Notification BodyText
Interaction Registration notification to ESS User	Interaction,(number) has been registered	Dear Sir/Madam, Interaction,(number); has been registered for you with the following details: Title:(Title)

Notification Title	Notification Subject	Notification BodyText
		Service: (Service) Urgency: (Urgency) If you would like to view the actual status of this Interaction, please click this URL: (URL) If you have any queries you can always contact the Service Desk. Kind regards, ICT Service Desk tel: #8888
Interaction Registration notification to User	Interaction (Interaction #) has been registered	Dear Sir/Madam, Interaction (Interaction#) has been registered for you with the following details: Title: (Title) Service: (Service) Category: (Category) Area: (Area) Sub-area: (Sub-area) Priority: (Priority) Status: (Status) Target Date: (SLA target date) If you would like to view the actual status of this Interaction, please click this URL: (URL) If you have any queries you can always contact the Service Desk. Kind regards, ICT Service Desk tel: #8888
Web interaction processed by Service Desk	Interaction (Interaction #) has been processed by the Service Desk	Dear Sir/Madam, Interaction (Interaction#) has been processed by the Service Desk. Title: (Title) Service: (Service) Category: (Category) Area: (Area) Sub-area: (Sub-area)

Notification Title	Notification Subject	Notification BodyText
		Priority: (Priority) Status: (Status) Target Date: (SLA target date) If you would like to view the actual status of this Interaction, please click this URL: (URL) If you have any queries you can always contact the Service Desk. Kind regards, ICT Service Desk tel: #8888
Interaction updated by User notification to Service Desk	Interaction (Interaction #) has been updated by User	Dear (Assignee), (Category) (Incident#) has been updated by (name of person who did the update (if possible)). (Category) details: Title: (Title) Service: (Service) Area: (Area) Sub-area: (Sub-area) Priority: (Priority) Status: (Status) Open Date: (Open Date) Target Date: (SLA target date) Assignment Group: (Assignment Group) (URL) Description: (Description) Last update: (text of the last update made (if possible))
Interaction Closure notification to User	Interaction (number) has been closed	Dear Sir/Madam, Interaction, (number) has been Closed for you. Title: (Title) Service: (Service) Category: (Category) Area: (Area)

Notification Title	Notification Subject	Notification BodyText
		Sub-area: (Sub-area) Priority: (Priority) Open Date: (Open Date) SLA Target Date: (SLA target date) Close Date: (Close Date) If you disagree with the solution below, you can resubmit the Interaction by clicking this URL: (URL) Description: (Description) Solution: (Solution) If you have any queries you can always contact the Service Desk. Kind regards, ICT Service Desk tel: #8888

Incident Management notifications

Notification Title	Notification Subject	Notification BodyText
Complaint Assigned notification to Service Desk Manager	(Category) (Incident #) has been assigned to you	Dear (Assignee), (Category) (Incident#) has been assigned to you. (Category) details: Title: (Title) Service: (Service) Area: (Area) Sub-area: (Sub-area) Priority: (Priority) Status: (Status) Open Date: (Open Date) Target Date: (SLA target date) Assignment Group: (Assignment Group) (URL) Description: (Description)
Incident SLA breached notification to Incident Manager	(Category) (Incident #) has breached its SLA	Dear (Assignee),

Notification Title	Notification Subject	Notification BodyText
		(Category) (Incident#) has breached its SLA. (Category) details: Title: (Title) Service: (Service) Area: (Area) Sub-area: (Sub-area) Priority: (Priority) Status: (Status) Open Date: (Open Date) Target Date: (SLA target date) Assignment Group: (Assignment Group) Assignee: (Assignee) (URL) Description: (Description)
Incident Assigned notification to Assignee	(Category) (Incident #) has been assigned to you	Dear (Assignee), (Category) (Incident#) has been assigned to you. (Category) details: Title: (Title) Service: (Service) Area: (Are)) Sub-area: (Sub-area) Priority: (Priority) Status: (Status) Open Date: (Open Date) Target Date: (SLA target date) Assignment Group: (Assignment Group) (URL) Description: (Description)
Incident updated by NOT (Assignee) notification to Assignee	(Category) (Incident #) has been updated by IT specialist	Dear (Assignee), (Category) (Incident#) has been updated by (name of person who did the update (if possible)). (Category) details: Title: (Title) Service: (Service) Area: (Area) Sub-area: (Sub-area)

Notification Title	Notification Subject	Notification BodyText
		Priority: (Priority) Status: (Status) Open Date: (Open Date) Target Date: (SLA target date) Assignment Group: (Assignment Group) (URL) Description: (Description) Last update: (text of the last update made (if possible))

Problem Management notifications

Notification Title	Notification Subject	Notification BodyText
Problem Assigned notification to Assignee	Problem (Problem #) has been assigned to you	Dear (Assignee), Problem (Problem#) has been assigned to you. Problem details: Title: (Title) Service: (Service) Area: (Area) Sub-area: (Sub-area) Priority: (Priority) Status: (Status) Open Date: (Open Date) Target Date: (SLA target date) Assignment Group: (Assignment Group) (URL) Description: (Description)
Problem Rejected notification to Problem Coordinator	Problem (Problem #) has been Rejected by (Problem Analyst)	Dear (Problem Coordinator), Problem (Problem#) has been rejected by (name of person who did the update (if possible)). Problem details: Title: (Title) Service: (Service) Area: (Area) Sub-area: (Sub-area)

Notification Title	Notification Subject	Notification BodyText
		Priority: (Priority) Status: (Status) Open Date: (Open Date) Target Date: (SLA target date) Assignment Group: (Assignment Group) (URL) Description: (Description)
Known Error Closed notification to Problem Coordinator	Known Error (Known Error#) has been Closed by (Operator)	Dear (Problem Coordinator), Known Error (Known Error ID#) has been closed by (Operator). Known Error details: Title: (Title) Service:(Service) Area: (Area) Sub-area: (Sub-area) Priority: (Priority) Assignment Group: (Assignment Group) (URL)
Problem Registered notification to Problem Coordinator	Problem (Problem #) has been registered	Dear (Problem Coordinator), Problem (Problem#) has been registered. Problem details: Title: (Title) Service: (Service) Area: (Area) Sub-area: (Sub-area) Priority: (Priority) Status: (Status) Open Date: (Open Date) Target Date: (SLA target date) Assignment Group: (Assignment Group) Problem Coordinator: (Problem Coordinator) (URL) Description: (Description)

Notification Title	Notification Subject	Notification BodyText
Problem Assigned to group notification to Problem Coordinator	Problem (Problem #) has been assigned to your group	Dear (Problem Coordinator of Assignment Group), Problem (Problem#) has been assigned to your group. Problem details: Title: (Title) Service: (Service) Area: (Area) Sub-area: (Sub-area) Priority: (Priority) Status: (Status) Open Date: (Open Date) Target Date: (SLA target date) Assignment Group: (Assignment Group) (URL) Description: (Description)
Problem for Review & Closure notification to Problem Manager	Problem (Problem #) is ready for Review & Closure	Dear (Problem Manager), Problem (Problem#) has now entered the Problem closure and review phase. Problem details: Title: (Title) Service: (Service) Area: (Area) Sub-area: (Sub-area) Priority: (Priority) Status: (Status) Open Date: (Open Date) Target Date: (SLA target date) Assignment Group: (Assignment Group) (URL) Description: (Description)
Problem Workaround published notification to Service Desk Manager	Workaround published for Problem (Problem#)	Dear (Service Desk Manager), Known Error (Known Error#) now has a published workaround.

Notification Title	Notification Subject	Notification BodyText
		Known Error details: Title: (Title) Service: (Service) Area: (Area) Sub-area: (Sub-area) Priority: (Priority) Status: (Status) Open Date: (Open Date) Assignment Group: (Assignment Group) (URL) Description: (Description) Workaround: (Workaround)
Problem Task Closed notification to Problem Coordinator	Problem Task (Problem Task#) has been Closed	Dear (Problem Coordinator of Assignment Group), Problem Task (Problem Task#) has been closed. Problem Task details: Title: (Title) Assignee: (Assignee) Problem details: Title: (Title) Service: (Service) Area: (Area) Sub-area: (Sub-area) Priority: (Priority) Status: (Status) Open Date: (Open Date) Target Date: (SLA target date) Assignment Group: (Assignment Group) (URL) Description: (Description)
Known Error proposed solution notification to Problem Manager	Known Error (Known Error#) has a proposed solution	Dear (Problem Manager), Known Error (Known Error#) now has a solution proposed Known Error details: Title: (Title) Service: (Service)

Notification Title	Notification Subject	Notification BodyText
		Area: (Area) Sub-area: (Sub-area) Priority: (Priority) Status: (Status) Open Date: (Open Date) Assignment Group: (Assignment Group) (URL) Description: (Description) Solution: (Solution)
Known Error Assigned notification to Assignee	Known Error (Known Error#) has been assigned to you	Dear (Assignee), Known Error (Known Error#) has been assigned to you. Known Error details: Title: (Title) Service: (Service) Area: (Area) Sub-area: (Sub-area) Priority: (Priority) Status: (Status) Open Date: (Open Date) Assignment Group: (Assignment Group) (URL) Description: (Description)
Solution identification target exceeded notification to Problem Manager	Known Error (Known Error#) solution identification target has been exceeded	Dear (Problem Manager), Known Error (Known Error#) solution identification target has been exceeded. Known Error details: Title: (Title) Service: (Service) Area: (Area) Sub-area: (Sub-area) Priority: (Priority) Status: (Status) Open Date: (Open Date) Assignment Group: (Assignment

Notification Title	Notification Subject	Notification BodyText
		Group) (URL) Description: (Description)

Change Management notifications

Notification Title	Notification Subject	Notification BodyText
Task rejected notification to Change Coordinator	Task (Task#) of Change (Change#) has been rejected by (Assignee)	Dear (Change Coordinator of parent Change), Task (Task#) of Change (Change#) has been rejected by (Assignee). Task details: Category: (category) Brief Description: (brief description) Rejection reason: (rejection reason) Change details: Category: (category) Brief Description: (brief description)
Change information incomplete or incorrectly assigned notification to Change Initiator	Change (Change#) is incorrectly assigned or has incomplete information	Dear (Change Initiator), Change (Change#) has been returned to you because of incomplete information or incorrect assignment. Please update the Change. Change details: Category: (category) Brief Description: (brief description)
Task assigned notification to Assignee	Task (Task#) of Change (Change#) has been assigned to you	Dear (Assignee), Task (Task#) of Change (Change#) has been assigned to you. Task details: Category: (category) Planned Start: (Planned Start) Planned End: (Planned End) Brief Description: (brief description) Change details: Category: (category) Change Coordinator: (Change Coordinator)

Notification Title	Notification Subject	Notification BodyText
		Brief Description: (brief description)

Example: Creating an email notification for change updates

Applies to User Roles:

System Administrator

The following example describes how to set up a notification that meets the following requirements:

- The notification sends an email message when a change record is updated.
- The email message displays "Change *[Num]* Updated by *[Operator]*" where *[Num]* represents the number of the updated change and *[Operator]* represents the name of the operator who updated the change.
- The email message is sent to the Change Manager.

Task 1: Create a custom message record

To create a custom message record, follow these steps:

1. Click **Tailoring** > **Notifications** > **Messages**.
2. Specify the properties as listed in the following table.

Name	Value
Language Code	en
Class	ndp
Message Number	9001
Severity	3
Text	Change %S Updated by %S
Comments	Sent when a change is updated.

3. Click **Add**.

Task 2: Create a custom notification definition record

To create a custom notification record, follow these steps:

1. Click **Tailoring** > **Notifications** > **Notifications**.
2. Type `NDP Change Update` in the **Name** field, and then click **Add**. An ID is automatically created.
3. Type `true` in the **Condition** field.
4. On the **Message** tab, add a message entry in the list with properties listed in the following table:

Name	Value
Msg Class	ndp
Msg No.	9001
Arguments	{number in $L.file,operator in $L.file}
Condition	true
Notify Method	email
Recipient(s)	$G.chmmanagerEmail

Note: Set **Msg No** to an unassigned number. Use a custom message class for the **Msg Class** field.

5. Click **Save**.

Task 3: Enable the notification in the object record

To enable the notification in the object record, follow these steps:

1. Click **Tailoring** > **Document Engine** > **Objects**.
2. Type `=cm3r` in the **File name** field, and click **Search**.
3. Click the **Notifications** tab, verify that the **Update** field is empty, and then type `NDP Change`

`Update` in the **Update** field.

4. Click **Save**.

Task 4: Test the notification

To test the notification, follow these steps:

1. Temporarily turn off the email agent that you are using, such as SCEmail, or switch it to debug mode. This is to make sure that newly created email messages remain in the eventout table.
2. Click **Change Management** > **Search Changes**.
3. Use the Search feature to locate a change record.

   Example: C10001.
4. Modify the **Description** field.
5. In the **Activities** section, select **Update** for the **New Update Time** field, and write a description in the **New Update** field.
6. Click **Save** to save the changes.
7. Click **Tailoring** > **Event Services** > **Output Events**.
8. Type `email` in the **Event Code** field, and click **Search**.
9. Verify that an event record is created that has an External Information String that resembles the following.

   ```
   change.manager@advantage.com^falcon^change.manager@advantage.com^Change C10001
   Updated by falcon^Change C10001 Updated by falcon
   ```

Configure email notifications for CI changes in reference modules

Applies to User Roles:

System Administrator

You can configure email notifications that are sent when the affected service or CIs in a reference record (for example, a Change record) is changed. Since the **device** table stores CI names in the **display.name** field, you need to update your email notification definitions and HTML notification templates so that CI display names are used in CI related notifications.

To configure email notifications for CI changes, follow these steps:

1. Go to **Tailoring** > **Notifications** > **Notifications**.
2. Open a notification definition record, for example, **ChM Change Approval**.
3. On the **Message** and **Email/Mail Subject Line** tabs, wrap the **logical.name** filed with the get.display.value function to show CI display names in messages and email/mail subject lines. The following is an example:

   ```
   {get.display.value($L.file,"logical.name",-1,true), $lo.ufname}
   ```

   For details about the get.display.value function, see "RAD function: get.display.value" on page 1.
4. Repeat the steps above for all CI related notifications.
5. Configure HTML notification templates.
   a. Go to **Tailoring** > **Notifications** > **HTML Templates**.
   b. Open an HTML template, for example, **ChM Change Approval Pending**.
   c. On the **Expressions** tab, enter an expression that calls the get.display.value function to obtain the CI display name and assigns the value to a variable. For example:

      ```
      var logical_name_disp_new= system.functions.get_display_value($RECORD,
      "logical.name",-1,true);
      ```

System bulletins

You can post system information and status messages to your Service Desk operators using system bulletins. System bulletins are a good way to make service desk operators aware of global service conditions such as a network outage or a pending change request. Service Desk operators can access system bulletins from their main menu using the Bulletin display option.

Create a system bulletin

Applies to User Roles:

System Administrator

To create a system bulletin, follow these steps:

1. Click **System Administration** > **Base System Configuration** > **Miscellaneous** > **System Bulletin**.

   The **System Bulletin** form opens.

2. In the **Date** field, type or select the date you want listed on the system bulletin.

3. Select **Activate Hot Tics?** if you want the system bulletin to display a list of the day's hot records.

4. Select **Default?** if you want to display the system bulletin to all users.

   > **Note:** Users can only see one bulletin at a time. The bulletin that has a date set to the current date with the time of 00:00:00 is what users see. If none exists, then the first selected Default record is displayed. If the date on the bulletin is set to the current date with a specified time, then it is not used at all. The Default option is supported for each day, as only one bulletin can be displayed at a time.

5. In the text field provided, type the text of the bulletin you want to create.

6. Click **Add** to create the bulletin.

   HP Service Manager creates the Daily Bulletin record.

Create a hot news Knowledge Base entry

Applies to User Roles:

System Administrator

You can create a hot news Knowledge Base entry to alert your service desk staff of global system conditions such as server outages or hardware failures.

To create a hot news Knowledge Base entry, follow these steps:

1. Click **Tailoring** > **Knowledge Engineering** > **Edit Knowledge Records**. The knowledge record form (core.g) opens.
2. Select the **Hot News** option. HP Service Manager displays the **Valid From** and **Valid To** fields.
3. In the **Valid From** field, type or select the date you want the hot news Knowledge Base entry to first appear.

   The default date is today's date.
4. In the **Valid To** field, type or select the date, if any, that you want the hot news Knowledge Base entry to expire.
5. Type the rest of your knowledge article.
6. Click **Add**.

   Service Manager displays the message: Global Knowledge record added.

Hide a system bulletin

Applies to User Roles:

System Administrator

You can hide any system bulletin that you do not want users to see from the bulletin.g form. Hidden system bulletins are saved for later use.

To hide a system bulletin, follow these steps:

1. Click **System Administration** > **Base System Configuration** > **Miscellaneous** > **System Bulletin**.

   The **System Bulletin** form opens.

2. Click **Search**.

   HP Service Manager displays a list of system bulletins.

3. Select the bulletin you want to hide.

4. Clear the **Default?** option.

   Note: Users can only see one bulletin at a time. The bulletin that has a date set to the current date with the time of 00:00:00 is what users see. If none exists, then the first selected Default record is displayed. If the date on the bulletin is set to the current date with a specified time, then it is not used at all. The Default option is supported for each day, as only one bulletin can be displayed at a time.

5. Click **Save**.

   Service Manager displays the message: Daily Bulletin record updated.

Update a system bulletin

Applies to User Roles:

System Administrator

You can update system bulletins from the bulletin.g form, however users can only see one system bulletin at a time from the system.bulletin.g form. You can hide system bulletins to save them for later use.

To update a system bulletin, follow these steps:

1. Click **System Administration** > **Base System Configuration** > **Miscellaneous** > **System Bulletin**.

   The **System Bulletin** form opens.

2. Click **Search**.

   HP Service Manager displays a list of system bulletins.

3. Select the bulletin you want to update.
4. Type the new system bulletin text.
5. Click **Save**.

   Service Manager updates the Daily Bulletin record.

System status form

The system status form allows administrators to view and manage user sessions and processes.

Actions possible

From the system status form a user with system administrator capabilities can:

- View a list of users logged in to the server
- View a list of processes running on the server
- Schedule a process to run at a later date and time
- Broadcast a message to all connected users
- Display a list of users who are locked out of the system
- Filter the system events displayed in the status list
  - View all tasks: users and processes
  - View active processes only
  - View inactive processes only
  - View users only
  - View system processes only
- View the System Monitor for information about the system resources consumed by and connection properties used by each user and process running on the server
- View the list of system status command line options
- View the system status summary form

Note: There can be only one kmupdate process running at any time. Starting more than one kmupdate process causes unpredictable behavior on the search engine server.

System status list

The system status list contains the following columns.

Column	Description
Command	The text field where you can enter the commands **s** for status or **k** for kill process.
User Name	The login and process names currently running on the server.
PID	The unique numeric process identification HP Service Manager assigns to each user and process.
Device ID	The type of client or process running on the server.
Login Time	The date and time the user session or process started.
Idle Time	The length of time in *days hours*:*minutes*:*seconds* since the user session or process was active.

Save system monitor information

Applies to User Roles:

System Administrator

You can create a schedule process that exports information from the system monitor on a regular basis.

To save system monitor information, follow these steps:

1. Click **System Status**.

   The system status form opens.

2. Click **System Monitor**.

   The **System Monitor - Main User Info** form opens.

3. Click **Capture**.

   The **Schedule Monitor** form opens.

4. In the **Begin Time** field, type or select the date you want to start capturing system monitor information.
5. In the **Repeat Interval** field, type or select the next date you want to repeat capturing system monitor information.
6. In **Schedule Class** field, type the name of the schedule class under which you want the background process to run.
7. Click **Schedule** to start the background process.

View all processes running on the server

Applies to User Roles:

System Administrator

To view all processes running on the server from another form, follow the step below:

- Click **System Status**. The system status form opens showing a list of all processes.

To view all processes running on the server from the system status form, follow these steps:

1. Click **Display Options**.
2. Click **All Tasks**.

   HP Service Manager displays a list of all processes running on the server.

View process CPU usage

Applies to User Roles:

System Administrator

To view process CPU usage, follow these steps:

1. Click **System Status**.

   The system status form opens.

2. Click **System Monitor**.

The **System Monitor - Main User Info** form opens.

3. Click **CPU Info**.

   HP Service Manager displays CPU usage including:

   - Process name
   - Last active time
   - CPU time in seconds
   - Priority
   - Application running
   - Memory used in bytes
   - Statements evaluated

View process input and output usage

Applies to User Roles:

System Administrator

To view process input and output usage, follow these steps:

1. Click **System Status**.

   The system status form opens.

2. Click **System Monitor**.

   The **System Monitor - Main User Info** form opens.

3. Click **IO Info**.

   HP Service Manager displays input and output usage including:

   - Process name
   - Statements evaluated

- Physical reads
- Physical writes
- Non-keyed queries
- Screen input and output

View saved system monitor information

Applies to User Roles:

System Administrator

You can create a schedule process that exports information from the system monitor on a regular basis.

To view saved system monitor information, follow these steps:

1. Click **System Status**.

   The system status form opens.

2. Click **System Monitor**.

   The **System Monitor - Main User Info** form opens.

3. Click **View Capture**.

   A list of captured data opens.

View shared memory statistics

Applies to User Roles:

System Administrator

To view shared memory statistics, follow these steps:

1. Click **System Status**.

   The system status form opens.

2. Click **System Monitor**.

   The **System Monitor - Main User Info** form opens.

3. Click **Shared Memory Info**.

   HP Service Manager displays shared memory statistics of the server:

   - Current Size
   - Segment Allocation
   - Large Block Allocation
   - Unused Space
   - Free Space Percent

View the active processes running on the server

Applies to User Roles:

System Administrator

To view the active processes running on the server, follow these steps:

1. Click **System Status**.

   The system status form opens.

2. Click **Display options**.

3. Click **Active**.

   HP Service Manager displays a list of active processes running on the server.

View the inactive processes running on the server

Applies to User Roles:

System Administrator

To view the inactive processes running on the server, follow these steps:

1. Click **System Status**.

   The system status form opens.

2. Click **Display options**.

3. Click **Inactive**.

   HP Service Manager displays a list of inactive processes running on the server.

View the status of a process

Applies to User Roles:

System Administrator

To view the status of a process, follow these steps:

1. Click **System Status**.

   The system status form opens.

2. Type the letter `s` in the Command field of the process whose status you want to see.

3. Click **Execute Commands**.

   The operator status display form (operator.status.g) opens.

View the system monitor

Applies to User Roles:

System Administrator

To view the system monitor, follow these steps:

1. Click **System Status**.

   The system status form opens.

2. Click **System Monitor**.

   The system monitor opens displaying the following information:

- Process name
- Process identification
- Device name – displays the type of client connection or process
- Idle Time
- Application running
- Network address of the server
- Percent usage of physical memory
- Percent usage of CPU
- Thread identification
- Session identification
- License type

View the system processes running on the server

Applies to User Roles:

System Administrator

To view the system processes running on the server, follow these steps:

1. Click **System Status**.

   The system status form opens.

2. Click **Display options**.

3. Click **System**.

   HP Service Manager displays a list of system processes running on the server.

View the total server usage

Applies to User Roles:

System Administrator

To view the total server usage, follow these steps:

1. Click **System Status**.

   The system status form opens.

2. Click **System Monitor**.

   The **System Monitor - Main User Info** form opens.

3. Click **Grand Totals**.

   HP Service Manager displays total server usage of:

   - CPU time
   - Memory
   - Statements evaluated
   - Non-keyed query reads
   - Physical Reads
   - Physical writes
   - Records retrieved
   - C Code Strcpys (C Code string copies)

View the users logged into the server

Applies to User Roles:

System Administrator

To view the users logged into the server, follow these steps:

1. Click **System Status**.

   The system status form opens.

2. Click **Display options**.

3. Click **User**.

   HP Service Manager displays a list of users logged into the server.

Command line options for the system monitor

Users with the system administrators capability word can use the system monitor form to stop or view additional information about any running process on the server. The system monitor command line has the following options:

Command line option	Description
k	Use this command to stop a process.
s	Use this command to view status information about the process or user. You can also use this command to broadcast a message to a particular user.

System alerts

System alerts are system events that have passed a pre-defined threshold and that HP Service Manager writes to the server log (default: sm.log). System alerts contain information about the health and performance of the Service Manager installation. System administrators can define the conditions that trigger system alerts from the Service Manager initialization file.

The server log lists all the system events that have passed a pre-defined threshold. System administrators can review the server log to determine the health and performance of their Service Manager installation. By default, the server log is located in the <Service Manager>\Server\logs folder. System administrators can change what information Service Manager writes to the server log as well as the location of the log from the Service Manager initialization file.

System alert message format

Service Manager writes system alerts to the server log using the following format:

[*Process ID*] [*Date and time*] [*Alert category*]-[*Alert type*]-[*Alert item*], [*Alert text*]

Alert format	Description
[Process ID]	This is the unique numerical identification of the process that generated the system event.
[Date and time]	This is the date and time that Service Manager recorded the system alert.
[Alert category]	This is one of the four basic alert categories. For more information about alert categories see the list of system alerts.
[Alert type]	This is a numerical value that describes the exact conditions that caused Service Manager to record the system alert. For more information about alert types see the list of system alerts.
[Alert item]	This is the application, resource, or user that generated the system event.
[Alert text]	This is a text description of the user and actions that generated the system event.

Sample system alert messages

The following are sample system alert messages:

```
1712 11/03/2003 07:59:00 Performance-1-company, Full File Scan for
query involving fields {show.company} ; user(falcon),
```

```
application(display), panel(show.rio)

1712 11/03/2003 07:59:06 Performance-2-cm3t, Partial File Scan for query
involving fields {header,parent.change, header,open} ; user(falcon),
application(display), panel(show.rio)
```

Set a system alert parameter

Applies to User Roles:

System Administrator

To set a system alert parameter, follow these steps:

1. Stop the HP Service Manager server.
2. Open the sm.ini file in a text editor.

   This file is in your Service Manager RUN directory.
3. Type the system alert parameters you want to add.
4. Save your changes.
5. Restart Service Manager.

   Service Manager uses your new system alert parameters.

System alerts

HP Service Manager uses the following alert categories.

- Limits
- Mapping
- Performance
- Stalled

Each alert category has a list of alert types that describe what system event conditions triggered the system alert.

Limits

Alert type	Description
Limits-1	The database pool is nearly full. The alert item lists the pool number. This alert type is obsolete in Service Manager.
Limits-2	A user's virtual memory usage exceeds the *alertvirtuallimit* parameter. The alert item lists the name of the user.
Limits-3	A user's CPU usage exceeds the *alertcpulimit* parameter. The alert item lists the name of the user.
Limits-4	The system shared memory is critically close to full.

Mapping

Alert type	Description
Mapping-1	A database field has been truncated and mapped in a compressed format. The alert item lists the truncated file and field names.
Mapping-2	There is a duplicate mapping for a single SQL field. The alert item lists the file name with the duplicate mapping. The alert text lists the field names with the duplicate mapping.
Mapping-3	A query could not be translated into SQL. The alert item lists the file name. The alert text lists the query and the function that could not be translated into SQL.
Mapping-4	There is a field that cannot be used in an SQL query because of its data type. The alert item lists the file and field names.

Performance

Alert type	Description
Performance-1	There has been a non-keyed query request that exceeds the *alertquerylimit* parameter. The alert item lists the name of the file that was the target of the query. You can avoid this alert by creating a key to satisfy the query.
Performance-2	There has been a partially keyed query request. The alert item lists the name of the file that was the target of the query. You can avoid this alert by creating a key to satisfy the query or set a reasonable value of environment parameter *alertquerylimit*.

Alert type	Description
Performance-3	The system has been waiting for a query to return a result but the query has exceeded the *alertwaitlimit* parameter. The alert item lists the name of the lock.
Performance-4	The system has been waiting for a lock to release a resource but the lock has exceeded the *alertholdlimit* parameter. The alert item lists the name of the lock.
Performance-5	There has been a query request that exceeds the *alertquerylimit* parameter. The alert item lists the name of the file that was the target of the query. You can avoid this alert by creating a key to satisfy the query.
Performance-6	There has been a query request that exceeds the *alerthitratio* parameter. The alert item lists the name of the file that was the target of the query. You can avoid this alert by creating a key to satisfy the query.

Stalled

Alert type	Description
Stalled-1	Obsolete alert. This functionality has been removed.
Stalled-3	The IR irqueue is stalled. The number of records in the irqueue exceeds the **alertirqueuelimit** parameter.
Stalled-4	Obsolete alert. This functionality has been removed.
Stalled-6	The IR irqueue is stopped. The first record in the irqueue is not changing.

System alert filters

System administrators can create system alert filters to hide alert messages about system events that they deem are not detrimental to the system. System administrators can define system alert filters from the HP Service Manager initialization file. To filter out a system event, system administrators can add the `alertfilters` parameter to the particular event in the initialization file.

System events

HP Service Manager continually monitors its performance and uses the server log (default: sm.log) to track events. These events include information about the following activities and databases:

- SQL database
- Locked resources
- Virtual or shared storage

Service Manager writes information about system events to the server log. Each system event has its own condition that triggers Service Manager to write a message to the server log. System administrators can configure these system event conditions from the Service Manager initialization file. In addition, system administrators can also define how often Service Manager checks for system events by configuring the alert periodic schedule record.

HTML Email

The HP Service Manager HTML Email Solution enables Service Manager to send HTML email messages automatically or manually on demand. This email solution is based on HTML templates that can be customized and localized.

This document describes how to install this solution, how it works, how to customize HTML email notifications, and how to send on-demand notifications.

Audience

HTML Email is intended for the following audiences:

- System administrators who manage notifications
- System administrators who manage Service Manager email setup
- Engineers who send HTML emails to notify users

Prerequisites

This solution requires the following prerequisites:

- HP Service Manager 9.41 (server runtime environment and applications)
- SMTP for email notifications
- Email configurations (See "Email setup notes" on page 104)

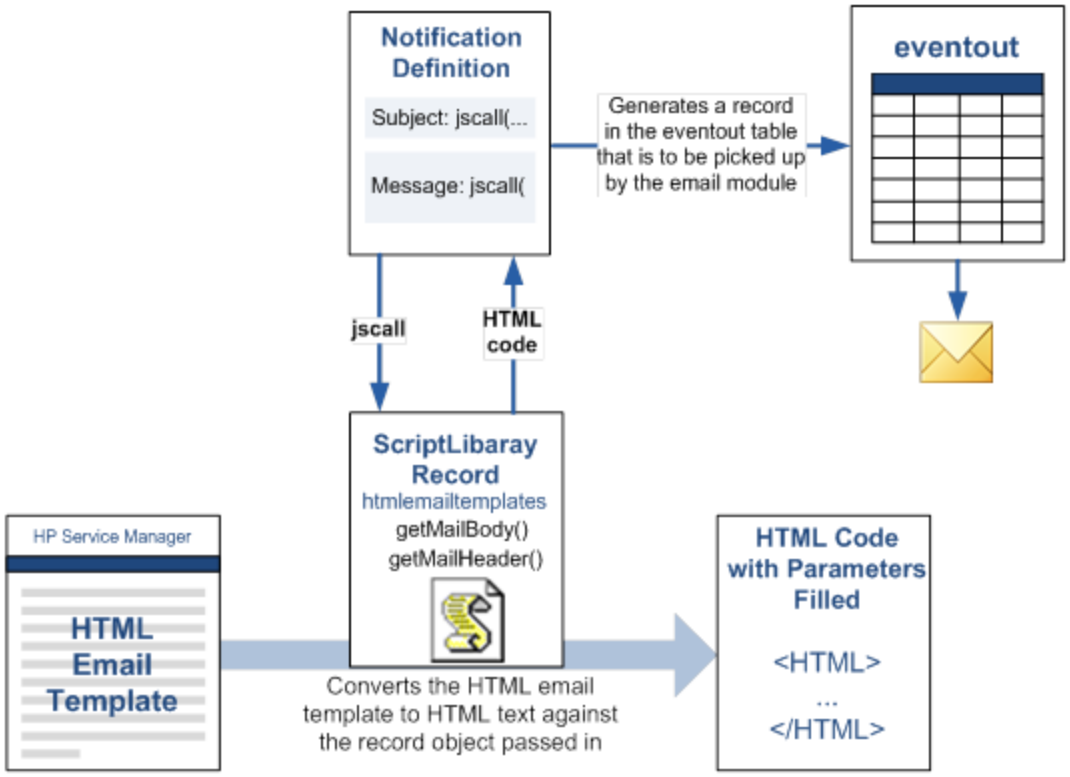
How the solution works

This chapter describes the components of the HP Service Manager HTML Email Solution and how they work with each other.

Components of the solution

The HTML Email Solution uses the following components:

- Notification definitions (in the notifications table)
- HTML templates (in the htmltemplates table)
- JavaScript functions (in the htmlemailtemplate record in the ScriptLibrary)
- The eventout table (available in the existing email notification mechanism)



HTML templates

HTML templates are records saved in the htmltemplates table. Each record defines the common HTML elements that are included in each email message and parameters that are to be replaced with specific values. Each htmltemplates record includes general information, HTML source with parameters, and expressions that are used to evaluate the parameters.

Each HTML template can have multiple language versions. These language versions are defined in separate htmltemplates records with the same name but different language codes, containing localized content. See "Localize a template" on page 98 .

Note: To manage or create HTML templates, users must have either the SysAdmin or the

HTMLTemplatesAdmin capability word.

Notification definitions

HTML email notifications are also defined in notification records. However, instead of referencing a plain-text message or a predefined format, each HTML email notification record always references a message record with an msg class of HTMLTemp and an id of 1. This message record is only a wrapper. The actual message body and subject are generated by a jscall expression in the **Arguments** field that returns HTML text by evaluating the corresponding HTML template.

The Arguments expression for the message body calls the getMailBody function to obtain the body HTML code, and the Arguments expression for the message subject calls the getMailHeader function to obtain the subject HTML code. The template name and the record that triggers the notification are passed in as arguments.

Below is an example for notification **ChM Change Approval**:

The **Message** tab

Field	Value
Msg Class	HTMLTemplate
Msg No.	1
Arguments	jscall("htmlemailtemplates.getMailBody", "ChM Change Approval Approved", $L.file, $L.file.save, requested.by in $L.file)
Condition	category in $L.file~="Subscription"
Notify Method	email
Recipient (s)	requested.by in $L.file

The **Email/Mail Subject Line** tab

Field	Value
Msg Class	HTMLTemplate
Msg No.	1
Arguments	jscall("htmlemailtemplates.getMailHeader", "ChM Change Approval Approved", $L.file, $L.file.save, requested.by in $L.file)

ScriptLibrary record

Both the getMailBody and getMailHeader functions are defined in an htmlemailtemplates ScriptLibrary record.

getMailBody

The getMailBody function returns the HTML body for the email message that is sent for a specific record. This function takes the following arguments:

Argument	Required	Description
templateName	Yes	Specifies the name of the HTML template.
$RECORD	Yes	Specifies the record that triggers the email notification. This record contains data that is used to construct the email message. Example: $L.file
$RECORDOLD	Yes	Specifies the pre-update version of the record that triggers the email notification. Example: $L.file.save
recipient	No	This argument is reserved. The email message will always be sent to the recipient defined in the notification record.
lang	No	Specifies the language code of a specific language version of the HTML template. This argument is typically used if you always send this notification in a certain language. If this argument is not specified, Service Manager takes the recipient's default language when determining which language version of the HTML template to use. For each recipient, Service Manager detects: • The language setting in the recipient's contact record. If this does not exist, then • The language setting in the recipient's operator record. If this does not exist, then • The system default language. If the recipient is a distribution group and all its members have the same default language, the common default language is used. If the members of that distribution have different default languages, the system default language is used. Example: de

Note: The **Arguments** field in the notification record takes only RAD expressions. Therefore, the expression must use a jscall function to call the getMailBody function in the ScriptLibrary. A typical expression resembles the following:

```
jscall("HTMLTemplates.getMailBody", "SM Add", $L.file, $L.file.save)
```

getMailHeader

The getMailHeader function returns the subject for the email message that is sent for a specific record. This function takes the following arguments:

Argument	Required	Description
templateName	Yes	Specifies the name of the HTML template.
$RECORD	Yes	Specifies the record that triggers the email notification. This record contains data that is used to construct the email message. Example: $L.file
$RECORDOLD	Yes	Specifies the pre-update version of the record that triggers the email notification. This record contains data that is used to construct the email message. Example: $L.file.save
recipient	No	This argument is reserved. The email message will always be sent to the recipient defined in the notification record.
lang	No	Specifies the language code of a specific language version of the HTML template. This argument is typically used if you always send this notification in a certain language. If this argument is not specified, Service Manager takes the recipient's default language when determining which language version of the HTML template to use. For each recipient, Service Manager detects: • The language setting in the recipient's contact record. If this does not exist, then • The language setting in the recipient's operator record. If this does not exist, then • The system default language. If the recipient is a distribution group and all its members have the same default language, the common default language is used. If the members of that distribution have different default languages, the system default

		language is used. Example: de

The **Arguments** field in the notification record takes only RAD expressions. Therefore, the expression must use a jscall function to call the getMailHeader function in the ScriptLibrary. A typical expression resembles the following:

```
jscall("HTMLTemplates.getMailHeader", "SM Add", $L.file, $L.file.save)
```

Eventout table

A record is created in the eventout table for each email notification. The eventout record remains until it is picked up by the SCEmail agent.

Customizing HTML email notifications

This chapter describes the most typical scenarios of customizing HTML email notifications. Instead of using the out-of-box set of email notifications and templates, your organization is likely to have its own email templates and include its own fields in email messages. For example, a company may include its company logo and follow its own color schemes in email messages.

In most scenarios, you only need to make some minor changes to an out-of-box HTML template, such as changing the formatting of the message body and including some additional fields in the email message. Therefore, you can use the out-of-box HTML template as a basis and create your own HTML templates by copying from that out-of-box template.

Create your own HTML templates

To create a custom HTML template, follow these steps:

1. Click **Tailoring** > **Notifications** > **HTML Templates**.
2. Search for and select an existing HTML template as the base of the new template.

   Example: SM Add
3. On the **General** tab, specify a name for the new template in the **Name** field.
4. Change the **Mail Title** field if necessary.

5. In the **Language** field, select a language for the template.
6. Describe the template in the **Comment** text box.
7. The **Module** and **Test Record** fields combined determine which record is passed in for preview. Select a module in the **Module** field and specify the id of the record in the **Test Record** field.

   Note: The module name is designed to be a general name, it may include multiple tables or refer to nonexistent table. Therefore, not all previews are supported currently.

8. In the text box on the **Expressions** tab, edit the JavaScript code that evaluates the variables that you include in the email message.

   Note: To post certain field values of the record that is passed in, you can add these fields directly in the HTML Source, such as $RECORD.incident_id. However, if you want to add variables computed based on record fields, you must evaluate these variables using JavaScript code on the **Expressions** tab and then post the variables in the HTML Source.

   Only the following simple data types are supported:

   - String
   - Date/Time
   - Logical
   - Number

9. The **HTML Source** tab displays an HTML editor where you can design the message body of your HTML template. You can click **Source** to toggle between the normal view and the source code view. To reference a variable or expression in the message, enclose your variable or expression in braces, such as `{$RECORD.title}`.
10. To generate a preview using the **Module** and **Test Record** fields that you specified in step 7, click the **Preview** tab.
11. Click **Add** to create the new template.

Localize a template

To create a language version of an HTML template, follow these steps:

1. Click **Tailoring** > **Notifications** > **HTML Templates**.
2. Use search or advanced search to find the template that you want to localize.
3. On the **General** tab, select a language in the **Language** field for the localized template.
4. Keep the name in the **Name** field as is, because HTML template records with the same name are considered language versions of one template.
5. In the **Mail Title** field, replace the original text with the appropriate translation and make sure all the variables are in the correct positions.
6. On the **HTML Source** tab, replace the original text with the appropriate translation.
7. Click the **Preview** tab to verify that your localized version works as expected.
8. Click **Add** to create the localized template.

Link an HTML template to a notification

To link an HTML template to a notification, follow these steps:

1. Click **Tailoring** > **Notifications** > **Notifications**.
2. Search for the notification record to which you want to link the HTML template.
3. On the **Message** tab, locate the message with an **Msg Class** of **HTMLTemplate** and an id **Msg No.** of **1**.
4. In the **Arguments** field, replace the second argument of the jscall function with the name of the template that you want to use for this notification.
5. On the **Email/Mail Subject Line** tab, locate the message with an **Msg Class** of **HTMLTemplate** and an id **Msg No.** of **1**.
6. In the **Arguments** field, replace the second argument of the jscall function with the name of the

template that you want to use for this notification.

7. Click **Save** to save the changes.

Add commonly used elements in templates

This section describes how to add certain elements that you are likely to include in your email message.

Images

To post images in the message, you must store the images in a location that your email recipients can access and add image tags referencing the corresponding URLs.

Web URL

It is a common practice to include a Web URL in the email message pointing to the corresponding record so that the recipient can follow the link to view the record in a Service Manager web client. You can reference the `web_url` variable that is defined in the expressions of the out-of-box templates.

You can keep one of the following statements and comment out the other one, depending on whether the email message is sent to an ESS user or a regular Web-tier user.

For ESS users:

```
var web_url = lib.urlCreator.getURLFromQuery(file_name,record_query,record_title);
```

For regular Web-tier users:

```
var web_url = lib.urlCreator.getESSURLFromQuery(file_name,record_query,record_
title);
```

Disabling individual notification definitions

HTML and non-HTML notifications can coexist. For example, you can:

- Enable all HTML notification definitions and disable their corresponding non-HTML ones
- Enable certain HTML and non-HTML notification definitions

By default, all HTML notification definitions are enabled. You can select to disable individual notification definitions, either non-HTML or HTML.

How to disable an individual notification definition

To disable an individual notification definition, follow these steps:

1. Click **Tailoring** > **Notifications** > **Notifications**.
2. In the **ID** field, type the ID of the notification definition you want to disable. For example, `ChM Change Approval_1`.

   Each non-HTML notification definition has a corresponding HTML version. The two definitions have similar names differentiated by an HTML prefix. For example, `ChM Change Approval_1 (non-HTML)` and `HTML ChM Change Approval_1 (HTML)`.
3. Click **Search**. The notification definition record opens.
4. In the **Condition** field, make the following modifications as appropriate:
   - If the **Condition** field is empty, type `false`.
   - If the **Condition** field is not empty, insert false and to the left of the existing expression text. For example: `false` and `category in $L.file={"Release Management", "Subscription", "CI Group", "KM Document"}`
5. Click **Save** to save the record.

Sending HTML email messages manually

In addition to setting up notifications, engineers can manually send HTML email messages for a specific record by using the Notify option when viewing a record.

Send an HTML email message using the Notify option

To send an HTML email message using the Notify option, follow these steps:

1. Open a record.

   Example: Click **Service Desk** > **Search Interaction Records** to search for an interaction record.
2. From the **More Actions** menu, click **Notify**.

3. To send this message to individuals, specify the names of the recipients in the **To** field. To send this message to a distribution group, specify the name of the distribution group in the **Group** field.
4. Leave the **Type** field as **Email**.
5. If multiple language versions of the associated HTML template are available, select a language in the **Language** field to indicate which language version of the template you want to use to send the email message.
6. The **Subject** field displays the default subject text that is generated based on the HTML template associated with your current record type. You can modify the subject as appropriate.
7. The message body area displays the default message body that is generated based on the HTML template associated with your current record type. You can edit the message body as appropriate. You can click **Source** to toggle between the normal view and the source code view.
8. Click **Send** to send the message.

HTML templates used by the Notify option

The Notify option selects an appropriate HTML template to generate the default subject and message body, depending on the type of the record from which you launch the Notify option.

The following table lists the HTML templates that the Notify option uses to generate email messages:

Module	Record type	Template
Service Desk	Interaction records (incidents)	SD.incident.notify
Incident Management	Incident records (probsummary)	IM.update.incident
Change Management	Change records (cm3r)	The templates named after the Default and Close views of the Change Phase record (on the **Scripts/Views** tab of each Change Phase record). **Note:** If the out-of-box Default and Close views have the same name, only one HTML template is used. For example, for change records in the Change Review phase, the **CM.change.review** HTML template is used.

		If you have modified the out-of-box view settings of a Change Phase record, you need to create one or two (depending on whether the Default and Close views have the same name) HTML templates named after your customized names of the Default and Close views.
Change Management	Change task records (cm3t)	The templates named after the Default and Close views of the Task Phase record (on the **Scripts/Views** tab of each Task Phase record). **Note:** If the out-of-box Default and Close views have the same name, only one HTML template is used. For example, for change task records in the Software phase, the **CM.change.review** HTML template is used. If you have modified the out-of-box view settings of a Task Phase record, you need to create one or two (depending on whether the Default and Close views have the same name) HTML templates named after your customized names of the Default and Close views.

Reference for Out-of-Box HTML email templates

The follow table lists the out-of box HTML email templates.

Module	Template name
Change Management	ChM Change Approval Approved
Change Management	ChM Change Approval Pending
Change Management	ChM Change Close
Change Management	ChM Change Close2
Change Management	ChM Change Denial
Change Management	ChM Change Move
Change Management	ChM Change Open
Change Management	ChM Change Open Subscriptions
Change Management	ChM Change Open2
Change Management	ChM Change Pending
Change Management	ChM Change Retract

Change Management	ChM Change Subscription Approved
Change Management	ChM Change Subscription Close
Change Management	ChM Change Subscription Denied
Change Management	ChM Change Subscription Open
Change Management	ChM Change Subscription Retract
Change Management	ChM Change Update
Change Management	ChM Change Update Reassigned
Change Management	ChM Change Update Returned
Change Management	ChM Change Update Returned2
Change Management	ChM Change Update Subscriptions
Change Management	ChM Final Approval
Change Management	ChM Final Denial
Change Management	ChM not assigned
Change Management	ChM notice
Change Management	ChM Retract All
Change Management	ChM Retract One
Change Management	ChM SLA.alert
Change Management	ChM SLA.max
Change Management	ChM SLA.target
Change Management	ChM Task Approval
Change Management	ChM Task Close
Change Management	ChM Task Denial
Change Management	ChM Task Not Approved
Change Management	ChM Task not assigned
Change Management	ChM Task notice
Change Management	ChM Task Open
Change Management	ChM Task Pending
Change Management	ChM Task Pending Approval

Change Management	ChM Task Retract
Change Management	ChM Task Update
Change Management	CM.change.logging
Change Management	CM.task
Incident Management	IM Alert Reassign
Incident Management	IM Close
Incident Management	IM Open
Incident Management	IM Reopen
Incident Management	IM Resolved
Incident Management	IM.update.incident
Incident Management	IM Update
Service Desk	Contacts Details
Service Desk	Interaction Preview
Service Desk	SD.incident.notify
Service Desk	SM Add
Service Desk	SM Add ESS
Service Desk	SM Close
Service Desk	SM Escalate
Service Desk	SM Update

Email setup notes

This solution requires that you have an email infrastructure in place, including a properly configured SMTP server and configurations in some HP Service Manager files.

Sm.ini configurations

Open the sm.ini file using a text editor and verify that the following parameters are correctly configured.

Parameter	Description
querysecurity:1	Enforces the HP Service Manager server to require a security hash with Web tier URL queries.
queryhashcode:hostname:port	Enables all Service Manager processes to consistently generate a unique hash code, which can be accepted and properly decoded by the Web tier. The parameter value must be a combination of the Service Manager hostname and communications port. If you provide the fully qualified domain name (FQDN) of a server host in web.xml, you need to provide the same value in this parameter. **Example:** `queryhashcode:smserverhost:13080`
smtphost:smtpserverhost	Specifies the name of the SMTP server host for client requests. The value for the parameter can be the IP address, machine name, or DNS name of the SMTP server uses for sending notifications. **Example:** `smtphost:smtpserverhost`
smtpport:port	Specifies the communications port the SMTP server uses. **Example:** `smtpport:25`
mailFrom:EmailAddress	Specifies the descriptive name or other identifier of the sender of an e-mail. This parameter should be set in the format of email address. **Example:** `mailFrom:accountname@hp.com`

For more information about the SCEmail connection parameters, refer to the *System Configuration Parameters* section in the Service Manager Help Server documentation.

Web.xml configuration

Open the web.xml file that is located in the $TOMCAT_HOME\webapps\webtier-9.41\WEB-INF folder using a text editor, and add the following text at the end of the file if it does not exist.

```
<init-param>
<param-name>querySecurity</param-name>
<param-value>true</param-value>
</init-param>
```

When this parameter is enabled, the HP Service Manager Web tier embeds a security key in all queries generated by the Web client. The Service Manager server verifies the security key and, if valid, authorizes the query.

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