

HP Service Manager Software

for supported Windows® and Unix® operating system

Software Version: 9.32

Report Writer Guide

Document Release Date: August 2013

Software Release Date: August 2013



Legal Notices

Warranty

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

The information contained herein is subject to change without notice.

Restricted Rights Legend

Confidential computer software. Valid license from HP required for possession, use or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

Copyright Notices

© Copyright 1994-2013 Hewlett-Packard Development Company, L.P.
This product includes cryptographic software written by Eric Young (eay@cryptsoft.com). This product includes software written by Tim Hudson (tjh@cryptsoft.com). Smack software copyright © Jive Software, 1998-2004. SVG Viewer, Mozilla JavaScript-C (SpiderMonkey), and Rhino software Copyright © 1998-2004 The Mozilla Organization. This product includes software developed by the OpenSSL Project for use in the OpenSSL toolkit. ([http:// www.openssl.org](http://www.openssl.org)). OpenSSL software copyright 1998-2005 The OpenSSL Project. All rights reserved. This project includes software developed by the MX4J project ([http:// mx4j.sourceforge.net](http://mx4j.sourceforge.net)). MX4J software copyright © 2001-2004 MX4J Team. All rights reserved. JFreeChart software © 2000-2004, Object Refinery Limited. All rights reserved. JDOM software copyright © 2000 Brett McLaughlin, Jason Hunter. All rights reserved. LDAP, OpenLDAP, and the Netscape Directory SDK Copyright © 1995-2004 Sun Microsystems, Inc. Japanese Morphological Analyzer © 2004 Basis Technology Corp. The Sentry Spelling-Checker Engine Copyright © 2000 Wintertree Software Inc. Spell Checker copyright © 1995-2004 Wintertree Software Inc. CoolMenu software copyright © 2001 Thomas Brattli. All rights reserved. Coroutine Software for Java owned by Neva Object Technology, Inc. and is protected by US and international copyright law. Crystal Reports Pro and Crystal RTE software © 2001 Crystal Decisions, Inc., All rights reserved. Eclipse software © Copyright 2000, 2004 IBM Corporation and others. All rights reserved. Copyright 2001-2004 Kiran Kaja and Robert A. van Engelen, Genivia Inc. All rights reserved. Xtree copyright 2004 Emil A. Eklund. This product includes software developed by the Indiana University Extreme! Lab (<[http:// www.extreme.indiana.edu/](http://www.extreme.indiana.edu/)>). Portions copyright © Daniel G. Hyans, 1998. cbg.editor Eclipse plugin copyright© 2002, Chris Grindstaff. Part of the software embedded in this product is gSOAP software. Portions created by gSOAP are copyright © 2001-2004 Robert A. van Engelen, Genivia Inc. All Rights Reserved. Copyright © 1991-2005 Unicode, Inc. All rights reserved. Distributed under the Terms of Use in <http://in http:// www.unicode.org/copyright.html>.

Trademark Notices

Java™ and all Java based trademarks and logos are trademarks or registered trademarks of Sun Microsystems, Inc. in the U.S. and other countries.

Microsoft® and Windows® are U.S. registered trademarks of Microsoft Corporation.

Oracle® is a registered US trademark of Oracle Corporation, Redwood City, California.

UNIX® is a registered trademark of The Open Group.

Documentation Updates

The title page of this document contains the following identifying information:

- Software Version number, which indicates the software version.
- Document Release Date, which changes each time the document is updated.
- Software Release Date, which indicates the release date of this version of the software.

To check for recent updates or to verify that you are using the most recent edition of a document, go to:

<http://h20230.www2.hp.com/selfsolve/manuals>

This site requires that you register for an HP Passport and sign in. To register for an HP Passport ID, go to:

<http://h20229.www2.hp.com/passport-registration.html>

Or click the **New users - please register** link on the HP Passport login page.

You will also receive updated or new editions if you subscribe to the appropriate product support service. Contact your HP sales representative for details.

Support

Visit the HP Software Support web site at:

www.hp.com/go/hpssoftwaresupport

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

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

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

Most of the support areas require that you register as an HP Passport user and sign in. Many also require a support contract. To register for an HP Passport ID, go to:

<http://h20229.www2.hp.com/passport-registration.html>

To find more information about access levels, go to:

http://h20230.www2.hp.com/new_access_levels.jsp

Contents

1	Introducing Report Writer	11
2	Report Writer Basics	13
	Overview	13
	Basic Report Functions	14
	Access a report	14
	Copy or rename reports	15
	Delete reports	16
	Create a new report	16
	Basic Report Forms	18
	Existing reports: Report Maintenance Form	18
	New reports: Report Maintenance Form	19
3	Running Reports	21
	Overview	21
	Foreground and Background Processing	22
	Run a report in the foreground	22
	Background Processing	23
	Run a report in the background	23
	Run Report Exerciser form	25
	Viewing and Editing Report Schedules	26
	Edit report schedules	26
	Viewing Reports	27
	View a report online	27

4	Using Stacked Queries	29
	Overview	29
	Primary Queries	30
	Rules for primary queries	30
	Keyed queries	31
	Stacked Queries	32
	Rules for stacked queries	32
	Stacked queries example	34
5	Using Report Forms	37
	Overview	37
	Report Forms	38
	Creating and Editing Report Forms	39
	Create or edit general report forms	39
	Query forms	40
	Create query forms	40
	Report Query Maintenance form	44
	Probsummary form	45
	Developing Report Queries by Using Initial Forms	47
	Access a form in Forms Designer	47
	Specify an initial form	47
	Using Totals and Format Controls	48
	Access the Totals section of a report	48
	Report Totals form	49
	Sample report: Using simple subtotals	49
	Create a subtotals form	50
	Sample report: Using subtotals, summary totals, and grand totals	52
	Define totals parameters	52

6 Using Format Control in Reports	55
Overview	55
Format Controls	56
Accessing Format Control	57
Access Format Control	57
Format Control options	58
Sample Reports	59
Sample report: Using Format Control for calculations	59
Sample report: Using Format Control for subheaders	62
Sample report: Using Format Control in a Matrix report	67
Index	73

1 Introducing Report Writer

Welcome to the HP Service Manager Report Writer Guide. Report Writer is a component of the HP Service Manager toolkit. This guide tells you how to run existing reports and create new reports using Report Writer.

This guide contains information about:

- [Report Writer Basics](#) on page 13
- [Running Reports](#) on page 21
- [Using Stacked Queries](#) on page 29
- [Using Report Forms](#) on page 37
- [Using Format Control in Reports](#) on page 55

What you need to know

To run Report Writer reports, you need a working knowledge of your HP Service Manager system. To create new Report Writer reports you need a working knowledge of your DBMS, HP Service Manager applications and utilities.

- For information about a particular RDBMS, refer to the documentation for your database.
- For database configuration information, refer to the *HP Service Manager Installation Guide*.
- For information about HP Service Manager administration and configuration, and customizing HP Service Manager, refer to the *HP Service Manager Help*.

2 Report Writer Basics

Overview

Report Writer is a component of the HP Service Manager Tailoring tools. You can use it to search for existing reports, and to create simple or complex reports that you can modify at any time.

Report Writer enables you to define selection, totaling, and report form criteria to create listings from one or more database files by using one database file as the primary file. The reports can be simple or complex, and can be modified at any time to add complexity or clarify details. Report Writer allows for complete user-definition.

You can base a report on one or more database tables. If you use several tables, you must specify a primary file. You can define the data selection and totaling criteria as well as the forms used to display the report. This chapter contains the following topics:

- [Basic Report Functions](#) on page 14
- [Basic Report Forms](#) on page 18

Basic Report Functions

Basic report functions include accessing existing reports, creating new reports, copying or renaming reports, and deleting reports. To perform basic report functions, use the following procedures:

- [Access a report](#) on page 14
- [Copy or rename reports](#) on page 15
- [Delete reports](#) on page 16
- [Create a new report](#) on page 16

Access a report




To access an existing a report using Report Writer:

- 1 Open Report Writer.
 - a Open **Tailoring** > **Report Writer**.
 - b Type **rw** at the HP Service Manager command line and press **Enter**.
The Report Writer Entry form (**report.prompt.rw**) opens.
- 2 Select one of the following options:
 - Click **Search** or press **Enter** without specifying any values. A list of existing report records opens.
 - Type an existing report name or primary file name and click **Search** or press **Enter**. A list that shows reports that match your search criteria opens.
 - ▶ • If the specified query produces only one record, that report record opens on the Report Maintenance form.
 - If the specified query finds more than one record, Report Writer displays a list of report records. Scroll through the list. Place your cursor on any record and double-click to select the record.
- 3 Click **Back** to exit Report Writer.

Copy or rename reports

To copy or rename reports:

- 1 Access the report.
For this example, open the **ocml.category.print** report.
- 2 Click **Edit** to access the edit functions of Report Writer.
- 3 Open **Options > Copy/Rename**.
The Report Writer Entry form opens with the current name of the report in the **Name** field.
- 4 Type the new report name to replace the existing name in the **Name** field. The new name must be a unique name.
- 5 Type the new report title in the **Title** field.
- 6 Continue with one of the following options.

Button	Option	Result
	Copy	Creates a copy of the report using a different name. This action copies all definitions from the current record to the new report. If you make any changes to the fields, Report Writer copies the edited version to the new report. Report Writer does not change the existing definition during the copy process. Although reports can share forms, Report Writer does not copy the forms defined in the original report.
	Rename	Renames the current report. This action changes only the report name and report title. All other definitions for the report remain unchanged.
	Cancel	Cancels the procedure and return to the Report Maintenance form. This cancels all actions. The original report remains unchanged.

Delete reports

To delete reports:

- 1 Access the report.
For this example, open the `ocml.category.print` report.
- 2 Click **Delete** to delete the report.
The Report Deletion (`report.prompt.delete`) form opens.
- 3 Continue with one of the following Delete options.
 - Select **Abort Del** to end the delete process and exit to the report form.
 - Select **Rpt Record** to delete only the report record.
 - Select **Rpt Fmt** to delete the report record and its report forms.
 - Select **All** to delete the report record, report forms, and all associated application panels. This option is only available for manual reports.



When you delete report forms, make sure that the forms defined in this report are not required in any other report that is used.

Create a new report

To create a new report:

- 1 Open **Tailoring > Report Writer**.
– OR –
Type `rw` at the HP Service Manager command line and press **Enter**.
The Report Writer Entry form opens.
- 2 Type a unique name for the new report in the **Report** field. Do not use special characters other than period (.) or blank spaces. For this example name the report, `problem.category.report`.



Use the text before the first period (.) to indicate the primary file for the report. If there are no periods, HP Service Manager does not associate a primary file with the report.

For example, if you name the report `problem.category.report`, HP Service Manager assumes that *problem* is the name of the primary file. If you type `problemcategory` without a separating period (.), Report Writer does not make that assumption.

- 3 Type the name of the primary file for the report.

4 Click **Create New Report**.

HP Service Manager checks to see whether the report form already exists.

- If the report form already exists, Report Writer displays it in the Report Maintenance form to enable you to make changes, or copy data to create a new report.
- If the report form does not exist, Report Writer displays the new report in the Report Maintenance form and populates the **Name**, **Primary File**, **Header**, and **Detail** fields based on the data you entered.

5 Fill in the fields and click **OK**. For more information, see [Existing reports: Report Maintenance Form](#) on page 18 and [New reports: Report Maintenance Form](#) on page 19.



When you add a field that refers to a Service Manager column name, you need to add double quotes " " around the column name.

6 To set the width of a report, complete the **Page Width** field of the **Client Printing** structure in the user's operator record. For more information, refer to the *HP Service Manager Help*.



The maximum width of a report is 132 characters. If the forms defined for a report exceed this limit, Report Writer generates them with the specified width. However, when passing the report to the printer, it truncates them to 132 characters. You can change this setting in the *config* record for the printer used to print the report.

7 Create the header and detail forms for the report, if they do not already exist. For more information, see [Creating and Editing Report Forms](#) on page 39.








Basic Report Forms






HP Service Manager Report Writer provides basic report forms that you can use to customize your reporting environment based on your specific requirements. The options available on a form vary depending on the selected preferences, record, and permissions and whether you are opening an existing report or creating a new report.

Existing reports: Report Maintenance Form

When you open an existing report, Report Writer displays it in the Report Maintenance form (*report*). The fields in this form are described in the HP Service Manager field help. To view the help for a field, put your cursor in the field and press **Ctrl+H** or select **Help > Help on Field**.

The available options may vary depending on the selected preferences, the record you select, and your permissions.



Button	Option	Description
	Update	Saves changes to the current record.
	Back	Returns to the previously displayed form.
	Delete	Deletes the currently displayed query record.
	Run	Opens the Run Report Exerciser, enabling you to run a report in the foreground or background. It saves new reports and modifications made to existing reports. For more information, see Running Reports on page 21.
	Previous	Displays the previous report on the list.
	Next	Displays the next report on the list.
	Edit	Opens the Report Maintenance Editing form, enabling you to edit the report.






Button	Option	Description
	View Spooled Reports	Opens the spoolheader form, enabling you to view spooled reports. For more information, see Viewing Reports on page 27.
	Forms Designer	Opens Forms Designer, enabling you to edit the form for the report. For more information, refer to the <i>HP Service Manager Help</i> .
	Create RAD	Opens the RAD Editor, enabling you to create or edit RAD code for the report.
	Maintenance Schedule	Open the form, enabling you to modify the current schedule for this report. For more information, see Viewing and Editing Report Schedules on page 26.
	Close Application	Closes the current application.

New reports: Report Maintenance Form

When you create a new report, Report Writer displays it in the Report Maintenance form (**report.maint**). The fields in this form are described in the HP Service Manager field help. To view the help for a field, put your cursor in the field and press **Ctrl+H** or select **Help > Help on Field**.

The available options may vary depending on the preferences you have selected, the record you select, and your permissions.

Button	Option	Description
	OK	Saves the report and returns you to the previous screen.
	Cancel	Cancels any changes and returns you to the previous screen.

Button	Option	Description
	Run	Opens the Run Report Exerciser, enabling you to run a report in the foreground or background. It saves new reports and modifications made to existing reports. For more information, see Running Reports on page 21.
	Forms Designer	Opens Forms Designer, enabling you to edit the form of a report. For more information, refer to the <i>HP Service Manager Help</i> .
	Set Query	Opens the Report Query Maintenance screen, enabling you to edit or define the primary query for the selected report. For more information, see Query forms on page 40.
	Totals	Opens the Report Totals screen, to enable you to define totals parameters. For more information, see Developing Report Queries by Using Initial Forms on page 47.
	Copy/Rename	Enables you to create a new record by copying an existing record and giving it a new name. For more information, see Copy or rename reports on page 15.

3 Running Reports

Overview

HP Service Manager Report Writer enables you to run customized reports. You can run reports as either foreground or background processes, view and edit report schedules, and set options for viewing reports. This chapter contains the following topics:

- [Foreground and Background Processing](#) on page 22
- [Viewing and Editing Report Schedules](#) on page 26
- [Viewing Reports](#) on page 27

Foreground and Background Processing

You can run your report in the foreground, or schedule it for background processing. When you run a report in the foreground the user's session and terminal are dedicated to the task until the report has completed.

Run a report in the foreground

To run a report in the foreground:

- 1 Access the report you want to run. See [Existing reports: Report Maintenance Form](#) on page 18.
- 2 When you have access to the report form, check the information to make sure that it is correct. Click **Edit** to make any necessary modifications.
- 3 Click **Run** to run the report.
- 4 From the Run Report Exerciser form, you can modify the summary or detail and Primary File Query definitions.
 - The **Print Report After Spooling** field defaults to true (yes). Change this to false (no).
 - The **Background** field defaults to true (yes). Change this to false (no). If you leave the default set to true, the report will run at a set time in the background processor.
 - If you change the default setting to false, Report Writer schedules the report to pass to the printer and print immediately after generating it.
- 5 Click **View Spooled Reports**. The spoolheader form opens, which enables you to view the report output online.
- 6 Click **End** to exit.

Background Processing

You can run your report in the foreground, or schedule it for background processing. When you schedule a report to run in the background, a simulated user session within the HP Service Manager system generates the report.

The default background processor (report) starts when HP Service Manager starts and processes all reports. Report Writer adds information about the report to the schedule table. The report background processor scans the schedule table every 60 seconds (the default scan interval), for any records whose scheduled time has elapsed and whose class is defined as report. When it finds a record, the background processor performs all functions necessary to generate the report to the spool and spoolheader tables. You can schedule reports to run in the future and specify a repeat interval. For example, you can schedule a report to run once every few hours, once a day, or once a week.

Run a report in the background

To schedule a report for background processing:

- 1 Access a report, following the procedures discussed in [Existing reports: Report Maintenance Form](#) on page 18. For this example, access the Problem Response Analysis by Assignment report.
- 2 From the Report Maintenance form, make sure that all the information about the report is correct. To modify any information, click **Edit** and make the necessary changes.
- 3 When you are finished editing the report, click **Run** to schedule the report for background processing.

The Run Report Exerciser form opens. For more information, see [Run Report Exerciser form](#) on page 25.

- 4 Click **Summary** to print a summary report.
– OR –
Click **Detail** to print a detailed report.
- 5 If necessary, modify the **Primary File Query** field definitions.
- 6 Select one of the following print options.
 - Select (check) **Print** to print the report when it finishes spooling. Report Writer prints the report immediately after generating it.

- Leave the field blank (unchecked) to only spool the report. The report remains in the spool table until you delete it schedule it to print.
 - OR –
 - Select (check) **Background** to print the report in the background when it finishes spooling. You must schedule the report to run at a particular time (defined in the next screen sequence) in a background processor.
 - Leave the field blank (unchecked) to print the report in the user's session. To learn more about running reports in a user's session, see [Overview](#) on page 21.
- 7 Type the number of lines per page in the **Lines Per Page** field that you would like printed on the report. Otherwise, it will default to the original settings in the report form.
 - 8 Click **Run**.
The Schedule a Report (**report.prompt.sch1**) form opens.
 - 9 Specify all the necessary values to generate the report.
 - 10 Click **Schedule**.

HP Service Manager returns you to the Report Maintenance (report) form and displays the following message in the status bar: **"Approx. time of exec: (00: 00: 00) for report: (name of report)."**




A record in the schedule table now contains all the pertinent run information.

- 11 Press **Enter** to erase the message and return to Ready.
- 12 Open **Option > Maintenance Schedule** to view the schedule record. For more information, see [Viewing and Editing Report Schedules](#) on page 26.
- 13 Open **Options > View Spooled Reports** to view the report. For more information, see [Viewing and Editing Report Schedules](#) on page 26.

Run Report Exerciser form

When you run a report, Report Writer displays your options in the Run Report Exerciser form (**report.prompt.exer**). The fields in this form are described in the HP Service Manager field help. To view the help for a field, put your cursor in the field and press **Ctrl+H** or select **Help > Help on Field**.

The available options may vary depending on the preferences you have selected, the record you select, and your permissions

Button	Option	Description
	Run	Opens the Run Report Exerciser, enabling you to run a report in the foreground or background. It saves new reports and modifications made to existing reports.
	Back	Returns to the previously displayed form.
	Close Application	Closes the current application.

Viewing and Editing Report Schedules

When you schedule a report for background processing, Report Writer adds it to the schedule table with a scheduled class of report. The schedule definition remains in effect until the background processor processes the report, or until you delete the record from the schedule table.

When the background processor begins processing the report, it changes the Class field from report to blank, and updates the Status field to application running. While both of these conditions exist, the background processor is actively processing the report.

If you specify a repeat interval in the schedule record, Report Writer uses the same schedule record to redefine when the report should be spooled again. Report Exerciser (the application called by the background processor) takes the original expiration time and adds the repeat interval to it, updates the status to rescheduled, and changes the application name back to its original setting.

Edit report schedules

To view and edit a report schedule:

- 1 Access a report that is currently scheduled to run, following the procedures discussed in [Existing reports: Report Maintenance Form](#) on page 18.
- 2 Select **Options > Maintenance Schedule**.
- 3 Make any necessary changes and click **Save**.

Viewing Reports

When Report Writer generates a report, it adds the report to the spoolheader and spool tables to be printed or available for online viewing. The spoolheader and spool tables link to each other. You cannot modify the contents of the report, but you can adjust the spoolheader table information, if necessary.

After sending a report to the spoolheader and spool tables, Report Writer passes it to the operating system based on parameters you define when scheduling the report to run.

The spoolheader table defines the name of the report, the time the report started and ended spooling, and the operator who scheduled the report to be processed.

The spool table contains the actual report (each page being a separate record within the spool table). You can view the generated reports online.

The fields in the spoolheader and spool forms are described in the HP Service Manager field help. To view the help for a field, put your cursor in the field and press **Ctrl+H** or select **Help > Help on Field**.

View a report online

To view a report online:

- 1 Access a report, following the procedures discussed in [Existing reports: Report Maintenance Form](#) on page 18. For this example, access the resolution code listing report.
- 2 Select **Options > View Spooled Reports**.

Place your cursor in the field on which you would like to base your search, and click **Find**. A record list opens, and a record frame opens to display the item details.

- 3 Click **Refresh** to refresh your view of the report.
- 4 Click **Back** to finish viewing the report.

4 Using Stacked Queries

Overview

HP Service Manager Report Writer enables you to define selection, totaling, and report form criteria by using stacked queries for sorting. Report Writer bases report generation on the records retrieved from the primary file by the definition of the primary query or the definition of the stacked queries. Different rules apply to each of these approaches and each has advantages and disadvantages. This chapter contains the following topics:

- [Primary Queries](#) on page 30
- [Stacked Queries](#) on page 32

Primary Queries

Choose the Primary Query option in the following circumstances:

- A query of *true* is defined and either:
 - No sort fields are defined (Report Writer uses the first key in the key list to retrieve the data records).
 - OR —
 - The sort fields are defined as keys.
 - The primary query and the sort fields reference the same key and the primary query is fully keyed.
- The primary query is fully keyed and no sort fields are defined.

Rules for primary queries

The following rules apply if you run a report with a primary query.

- Report Writer does not create a work table.
- For optimum performance, the primary query must be fully keyed.
- If you define sort fields, Report Writer uses that key (and that key only) to retrieve records from the database.



If the primary query is not fully keyed based on the sort key, turnaround time is degraded.

Keyed queries

Some queries are fully keyed and others are only partially keyed. For example, if a table has the following keys:

- **category**
- **status**
- **open.time**
- **assignment**
- **category**

and the sort fields for the report are:

- **open.time**
- **assignment**
- **category**

then the query:

```
category="network"and status~="closed"
```

is not fully keyed.

This query is partially keyed. The sort fields force HP Service Manager to use the second key to retrieve the records. Report Writer must expand each record the query retrieves (in this case all records appearing in the key list for the second key) to determine if the data record meets the search requirement.

Stacked Queries

Stacked queries are separate and distinct from secondary queries. Choose the Stacked Queries option in the following circumstances:

- The sorting requirements for a report are not defined as a key in the Primary File's dbdict.
- The primary query does not reference the same key as the sort fields.
- The reporting requirements are such that one fully keyed query cannot be defined.

Rules for stacked queries

The following rules apply if you run a report with stacked queries:

- Repertories creates a work table.
- Any Format Control definitions specified for any forms used in the report are still in effect.
- Any subtotaling requirements defined for the report are still in effect.
- Sort fields do not have to be keys in the primary file's dbdict, but they must exist as fields.
- If you use structure names in one sort field, you must use them in all sort fields.
- Report Writer performs the following validations on all sort fields and logs any errors msglog file.
 - The structure name (if any) referenced in each sort field must be valid.
 - The sort field must belong to the indicated structure (if one is specified).
 - The sort field must be a scalar number, character, logical, or date/time field.
- ▶ Do not specify other field types. Other types of fields can cause Report Writer to abort the sort.
- Report Writer runs each stacked query against the primary file and temporarily stores all records in the sort work table.
- Report Writer runs the primary query against the sort work table, and therefore, under normal circumstances, is defined as true.

- The work table is a logical file defined with the following naming standard:
workxxxmddyhhmms
where work is a constant, xxx is the name of the primary file and mddyhhmms is the date and time that the work table was created.
- The work table is created in physical file 3. Exercise caution when using stacked queries. Stacked queries causes all records from any table to be read and placed in the sort work table.
- The work table, scheduled for deletion 2 hours after its creation, has a class of report and an operator name of sortsubr. Periodically review the dbdict file to ensure that all work tables have in fact been deleted. Be sure to only delete those files that completely follow the naming standards of the sort work tables.
- The sort routine copies all unique keys from the primary file to the sort work table and adds the sort fields as nulls&duplicates keys. All no nulls and no duplicates keys that appear in the keylist before the first unique key are copied to the sort work table. If no unique, no nulls or no duplicates keys exist, the first key in the keylist is copied to the sort work table.
- If the same record is retrieved using different queries and at least one unique key is defined for the sort work table, the duplicate record is not added to the sort work table.
- All error messages issued from the sort routine are logged in the msglog file.
- A message stating how many records were added to the sort work table based on the execution of each stacked query is issued to the msglog file.

Stacked queries example

Suppose that the requirements of a report are:

- 1 List all open Incident tickets for the categories of lines, modems, and operator.
- 2 The sort requirements are by category, assignment, status, and open.time.
- 3 The primary file is `probsummary` and the following keys are defined.

```
number
*****
flag
category
subcategory
company
*****
logical.name
*****
```

The specifications for the report would be:

Field	Value
Primary File	<code>probsummary</code>
Primary Query	<code>true</code>
Stacked Queries	<code>category="lines" and status=~"closed"</code> <code>category="modems" and status=~"closed"</code> <code>category="operator" and status=~"closed"</code>



Each of these queries is fully keyed. For optimal performance, define the queries so that HP Service Manager can meet all or most of the query requirements from a key list rather than having to expand records retrieved from a particular key.

The sort fields would be:

category

assignment

status

open.time



These sort fields are not defined as keys in the primary file, but they will be defined as keys in the temporary file.

If the report ran at 15: 00 hours on 02/07/06, the name of the sort work table would be `workprobsummary0207061500`.

5 Using Report Forms

Overview

When you create a report, Report Writer uses several forms to generate the report. This chapter contains the following topics:

- [Report Forms on page 38](#)
- [Creating and Editing Report Forms on page 39](#)
- [Developing Report Queries by Using Initial Forms on page 47](#)
- [Using Totals and Format Controls on page 48](#)

Report Forms

This table describes the report forms.

Report Form	Description
Initial	Collects data from the user at runtime.
Header	Displays the report titles or headings. Report Writer prints this form at the top of every page. It usually contains column headings that explain the fields in the detail section of the report.
Detail	Displays the values of database fields. The detail form comprises the input fields, positioned in a columnar arrangement immediately beneath the corresponding headings. The names of the input fields must reflect the exact names used in the respective database tables or variables that are defined through Format Control or Totals Parameters definitions. You can use the same detail form for multiple reports.
Subheader	Displays information immediately preceding detail information extracted from a secondary file. To use subheader reports, you must define a Format Control record for the detail form, to identify the secondary file to use to extract information for the detail form.
Totals	Display summary totals of the data gathered.

Creating and Editing Report Forms

You can create and edit many different kinds of report forms.

Create or edit general report forms

To create or edit a report form:

- 1 Open an existing report following the instructions in [Existing reports: Report Maintenance Form](#) on page 18.

For this example, open **problem.category**. This is the report created in [Create a new report](#) on page 16.

- 2 Click **Edit** to open the editing screen and add any necessary information. The Report Maintenance form opens.
- 3 Edit the fields, based on the following table and the information in [Existing reports: Report Maintenance Form](#) on page 18.

Field	Description
Detail	problsummary.category.detail
Sort Sequence	assignment This example report does not use stacked queries, therefore the sort sequence field must be a key in the primary filename (problsummary) dbdict.
Width (80/132)	80

- 4 When filling in a detail form for a report, you must define the Input fields. You may also define Caption fields.
- 5 Open **Options > Forms Designer**.
If the Name field is blank, Forms Designer opens a prompt where you can name your report.
 - a Type the detail form name at the Name field.
For this example, type **problsummary.category.detail**.
 - b Associate the form with the primary file of the report. For this example, use **problsummary**.

6 Fill in the detail form, following normal Forms Designer procedures. For more information, refer to the *HP Service Manager Help*.

7 Click **Add**.

▶ Edit the field names to reflect their dbdict field names. To ensure that the input field names are correct, you can associate the form with the primary file of the report. As you define each input field, check the field name to verify that the field does exist in the primary file.

8 Click **Cancel** to close the edit field window.

9 Click **OK** or **Back** until you return to the Report Maintenance form.

10 Save the newly-created form.

▶ Update the header form if prompted to do so.

11 To run this report, follow the instruction in [Running Reports](#) on page 21.

Query forms

Report Writer provides the option to define a set of queries for a report, which you can then use as the Primary Query when initially scheduling the report to run. HP Service Manager stores these queries by report name and user ID. You can access them for viewing and updating. These stored queries do not overwrite the original Primary Query defined in the report record.

Create query forms

To create a query form for a report and establish stored queries:

1 Open an existing report following the instructions in [Existing reports: Report Maintenance Form](#) on page 18.

For this example, open **problem.category.report**. This is the report created in [Create a new report](#) on page 16. The Report form opens.

2 Click **Edit** to access the edit functions of Report Writer.

3 Specify a Query Format name.

If you leave the Query Format field blank, Report Writer takes the value in the Primary File field as the form to use when creating queries. For this example leave the this field blank.

- 4 Open **Options** > **Set Query** to access the query form and begin the process of setting queries for the report. The Report Query Maintenance form opens. For a description of this form, see [Report Query Maintenance form](#) on page 44.
 - If report queries already exist for this report, a record list of those queries opens. From this list, you can select a query for maintenance.
 - If there no report queries exist for this report, HP Service Manager prompts you to add a query.
- 5 Select a record from the list and click **Edit** to make changes. For this example, select the *problem.category.report* record.
 - a Type the name of the query in the Name field and the query into the Query field. For this example, type **Alert Status** in the Name field.
 - b Type the query you want to use as the primary query in the Query field. For this example, type the following in the Query field.
status#"alert" or status#"DEADLINE"
- 6 Click **Add** to add the stored query.
- 7 To begin the process of entering a report query, click **Build**.

The associated form opens. For this example, the probsummary form opens. Report Writer displays the form and the search arguments you specify in the Query field of the Report Query Maintenance form. For more information, see [Probsummary form](#) on page 45.
- 8 Type data that will satisfy your search. The more fields you fill in, the narrower your search will be.

For this example, type the following in the Category field.
=network
- 9 Click **Query Window** to open the query form. You can view and edit the SQL translation of this query in this form.

– OR –

Press **Enter** to translate the query into SQL. HP Service Manager again displays the form with that SQL expression in the Query field.

For this example, click **Query Window**.



This routine does not automatically insert the `flag=true` portion of queries, which are normally associated with queries used against Incident Management and Change Management. You must make the necessary modification to the translated SQL to accommodate these or any other special query needs.

- 10 If the query is correct, press **Enter**.

– OR –

If the query shown in the Report Query Maintenance form is not the desired query, make changes as needed and click **Update**.

For this example, the desired query, which will select all records from the probsummary file that have a *category* value of *network*, is displayed. Therefore, press **Enter**. HP Service Manager displays the translated SQL expression in the Query field.

- 11 Specify a unique name for the query.

For this example, type the following in the Name field.

network

- 12 Optionally, you can modify the SQL expression shown in the Query field.

For this example, add the following to the expression in the Query field.

and flag=true

- 13 Click **Add** to add a new query record, or click **Update** to update an existing record.
- 14 Click **Back** to get back to the Report Maintenance form.

– OR –

Click **Run** to run the new report query. For more information, see [Running Reports](#) on page 21.







A record list of one or more queries opens.

- Double-click the query name of one of the query records listed.
- The Run Report Exerciser form opens, enabling you to schedule the report to run in either the background or foreground.
- While in the Run Report Exerciser form, the query you defined in the previous steps is now in the Primary File Query field. However, the original Primary Query defined in the report record itself is not affected.

Report Query Maintenance form

When you add queries to a report, Report Writer displays your options in the Report Query Maintenance form (report.query.maint).

The fields in this form are described in the HP Service Manager field help. To view the help for a field, put your cursor in the field and press **Ctrl+H** or select **Help > Help on Field**. The available options may vary depending on the preferences you have selected, the record you select, and your permissions.

Button	Option	Description
	Add	Enables you to modify a selected record and add it to the database, while leaving the original record in place.
	Update	Saves changes to the current record.
	Back	Returns to the previously displayed form.
	Delete	Deletes the currently displayed query record.
	Build	Displays the form defined in the Query Form. If you do not specify a form, HP Service Manager displays the form with the same name as the primary file name of the report (if any.)
	Clear	Clears all displayed fields.
	Update Report Query	Copies the currently displayed query and overlays the Primary Query of the report you are editing.

Probsummary form

The field descriptions in the *probsummary* form describe how you to set up your data to satisfy your search. The Header Information structure delineates how to print each record within the query.

Field	Description
<i>Header Information structure</i>	
Incident No	Use this field to query for a specified Incident number. Leave this field blank to return records with any incident number.
Status	Use this field to query for a status. Leave this field blank to return records with any status.
Category	Use this field to query for incidents classified by this the category. Leave this field blank to return records with any category.
Assigned To	Use this field to query for incidents assigned to this person. Leave this field blank to return records assigned to any person.
Priority	Use this field to query for incidents with the Priority (1 through 4). Leave this field blank to return records with any priority.
Change No.	Use this field to query for incidents with this the unique change record number. Leave this field blank to return records with any change number.
Page	Use this field to query for a specific page number of the printed report. Leave this field blank to return all pages.
Reassign Count	Use this field to query for incidents tickets that have been reassigned the specified number of times. Leave this field blank to return records that have been reassigned any number of times.
Opened	Use this field to query for incidents opened on this date. Leave this field blank to return records opened on any date.
Alert	Use this field to query for the alert status that was generated, if an alert has been generated for this record. Leave this field blank to return records with any alert status.

Field	Description
Updated	Use this field to query for the date the record was last updated. Leave this field blank to return records updated on any date.
Closed	Use this field to query for the date the record was closed. Leave this field blank to return records closed any date
Logical Name	Use this field to query for the logical file name of the device associated with the record. Leave this field blank to return records with any logical name.
Location	Use this field to query for a particular company location. Leave this field blank to return records with any location.
Contact Name	Use this field to query for a particular contact name. Leave this field blank to return records with any contact name.
Service Contact	Use this field to query for a particular service contact. Leave this field blank to return records with any service contact.

Developing Report Queries by Using Initial Forms

An initial form enables you to enter data for Report Writer to use to develop the query for the report. If you want to retrieve data from the user at runtime, you must create an Initial form.

For example, if the report requires a date and time range, you can use an initial form to enable the user to enter this range rather than entering a complete SQL query in the Primary Query field.

Access a form in Forms Designer

To access a form in Forms Designer:

- From the Report Maintenance form or Report Totals form, open **Options > Forms Designer**.
- From the main menu or system navigator, open **Tailoring > Forms Designer**.

Specify an initial form

To specify an initial form for a report:

- 1 Access the form in forms designer. For this example, access the *problem.category report*.
- 2 Type the form name in the Initial Format field.
- 3 Create the form, using the usual Forms Designer procedures. For more information, refer to the *HP Service Manager Help*.



The Input field names for the fields displayed when creating your new form in Forms Designer are \$start and \$end.

- 4 To include information from the initial form on the report, change the Primary Query statement to the following: **number > \$start and number < \$end**
- 5 Click **Run** to run the report. For more information, see [Running Reports](#) on page 21.



You cannot run reports that use the initial form option in the background. Therefore, the Run Report in Background field is defaulted to f (false).

- 6 Click **Run** to complete the request.

Using Totals and Format Controls

In addition to producing simple report listings, Report Writer also allows for accumulation of various statistics, based on user-specified totals and parameters. You can print these statistics according to user-defined forms at various phases of report generation based on user-defined control or condition breaks. You can use variations of Totals Parameters with or without Format Control definitions. Format Control definitions enable you to create a wide variety of report statistics.

Access the Totals section of a report

This section demonstrates accessing the Totals section of a report and defines the various Totals Parameters, including referencing them and creating the forms used to print accumulated statistics.

To access the Totals section of a report:

- 1 Open **Tailoring > Report Writer**

– OR –

Type **rw** on a HP Service Manager command line and press **Enter**.

The Report Writer Entry form opens.

- 2 Type **problem.category** in the Report field.

The Report form opens.

Click **Edit** to access the edit functions of Report Writer.




The Report Maintenance form opens. See the [New reports: Report Maintenance Form](#) on page 19.

- 3 Open **Options > Totals** to access the Report Totals (report.totals) form. This form is described in [Report Totals form](#) on page 49.

Report Totals form

When you create a totals or subtotals report, Report Writer displays it in the Report Totals form (report.totals).

The fields in this form are described in the HP Service Manager field help. To view the help for a field, put your cursor in the field and press **Ctrl+H** or select **Help > Help on Field**. The available options may vary depending on the preferences you have selected, the record you select, and your permissions.

Button	Option	Description
	Back	Returns to the previously displayed form.
	Clear	Clears the data displayed on the form.
	Forms Designer	Opens Forms Designer, enabling you to edit the form of a report. For more information, see the <i>HP Service Manager Help</i> .

Sample report: Using simple subtotals

This sample report demonstrates how to define the Totals parameters to print a subtotals form. It is a continuation of the form created in [Create a new report](#) on page 16.

This report generates subtotals from the primary file (*problem*), showing the total number of records for each Assignment Group.

Create a subtotals form

To create a subtotals form:


- 1 Access the totals section of the report you want to create a totals form for. For more information, see [Access the Totals section of a report](#) on page 48.

For this example access the totals section of the *problem.category* report.

- 2 Type the name of the form want to use to print the subtotal in the Form Name field of the Totals structure. For this example, type **probsummary.demo.totals** and press **Enter**. Report Writer checks for a form called *probsummary.demo.totals* in the format table. If the form already exists, it opens.

If the form does not exist, open **Tailoring > Forms Designer** and create the form by using standard Forms Designer procedures. For more information, refer to the *HP Service Manager Help*.

- 3 Create each field by using the input properties described in [Table 6](#) on page 50.
- 4 Click **OK** to save your new form before exiting the Forms Designer to save the changes you made to the form.
- 5 Scroll to the left to enter parameters in other fields on the form.

 Any time you scroll left or right while in this form, place the cursor in the home position before scrolling. This ensures that the labels and input fields remain properly aligned within the structured array.

- 6 To define the field by which you will be subtotaling, type its name in the Reset/Field Variable Name field. This causes the subtotals form (in this example, *problem.category.totals*) to print every time the value of the Assignment field changes. For example, if the Assignment field value of the current detail record is network control and the next detail record has an Assignment field value of software support, the subtotals are printed before the next detail record.
- 7 Scroll to the left again to enter parameters in the third section of this form.
- 8 Type **true** in the Always field. This forces the subtotals to print even if only one detail record is printed.
- 9 Click **End** to return to the Report Maintenance form.
- 10 To run this report, follow the instruction in [Running Reports](#) on page 21.


 If you would like to erase all values in the Report Totals form, click Clear Fields. A confirmation prompt will display, allowing you to either click Clear Fields to continue clearing the fields or Abort to cancel deleting the totals information.

Table 1 Input properties for the subtotals form

Field	Description
report.count	Contains the total number of detail records processed by the report and is normally printed on a grand totals form, but may be printed on any totals form to show a running total.
report.subcount	Contains the total number of records processed for each calculation of each subtotal. If it is necessary to reference a particular array element on a subtotals form, the correct field name would be report.subcount,x where x is an array element number relative to the position of a calculation within the totals definition. This field is normally used in conjunction with the report.sumflds field for summary totals.
report.sumflds	Contains the value of each field that caused a control break. This field is normally used in conjunction with report.subcount for summary totals.
report.subfld	Contains the value of the field entered in Reset Field/Variable Name at the time a control/condition break is detected.
\$rw.dummy	A variable defined by Report Writer that contains NULL characters.
\$rw.months	Contains full month names. January is the first element with December being the twelfth element.
\$rw.mon	Contains abbreviated (three-character) month names. Jan is the first array element with Dec being the twelfth element.
\$rpt.date	A variable defined by Report Writer that contains the date and time when the report was run.
\$page	A variable defined by Report Writer that contains the page of the output of the report.

Sample report: Using subtotals, summary totals, and grand totals

This example report demonstrates how to define the necessary Totals Parameters to print subtotals, summary totals, and grand totals. Summary totals and grand totals are defined as follows:

- Summary totals display the same statistics printed in each subtotal, but in a summarized form. Changing the Summary/Detail field on the Report Maintenance form causes only the totals portions (subtotals, summary totals, and grand totals) of the report to print. The detail form does not print.
- Grand totals show the total number of detail records selected during report generation.

Define totals parameters

To define the totals parameters:

- 1 Create the report. For this example, use the following parameters.

Field	Value
Report Name	operator.count
Report Title	Monthly Inventory
Auto/Manual	Auto
Summary/Detail	Detail
Primary File	operator
Header Format Name	operator.count.header
Detail Format Name	operator.count.detail
Primary Query	true
Sequence of Report	model

For instructions on creating a report, see [Create a new report](#) on page 16

- 2 Service Manager checks for a form the matches the name you specified in the Detail Format Name fields.
 - If the form exists, it opens.
 - If the form does not exist, Forms Designer opens.
- 3 Create the detail form using following input fields:
 - model
 - logical.name
 - serial.no
 - location
- 4 Add captions to identify the fields.
- 5 When you are finished adding the report, click **Edit Rpt** to access the Edit functions.
- 6 Click **Totals** to access the Report Totals form.
- 7 Type the name of the form to use to print the subtotal in the Subtotals Format Name field. For this example, type **operator.count.subtotal**.



You can create the subtotals form through normal Forms Designer procedures either before entering the Totals Parameters or during the Totals Parameters definition process.

In this example, we create the subtotals form *operator.count.subtotal* from the Report Totals form.

- 8 Position the cursor on the Totals Format Name field and open **Options > Forms Designer**. HP Service Manager checks for a form called *operator.count.subtotal* in the format table.
 - If the form already exists, it opens.
 - If the form does not exist, a blank screen opens, allowing you to fill in the form using the normal Forms Designer procedures. For more information, refer to the *HP Service Manager Help*.
- 9 Edit the fields to update the form. For the example use the following values.

Caption	Input
Subtotals for:	report.subfield
No. of recs:	report.subcount,1
	\$rw.dummy

- 10 Click **OK** to return to the Report Totals form.
- 11 To force a page break after each subtotals form prints, type **true** in the New Page field.
- 12 To access the second portion of the Report Totals form, press **Home** to move the cursor from the array, and scroll to the left until you see the label Reset/Field Variable Name.
- 13 To define the field by which you will be subtotalling, type its name in the Reset/Field Variable Name field. This causes the subtotals form (*operator.count.subtot*) to print every time the value of the Model field changes.
- 14 Scroll to the left again to enter parameters in the third section of this form.
- 15 To run this report, follow the instruction in [Running Reports](#) on page 21.

6 Using Format Control in Reports

Overview

Report Writer uses several forms. Each of these forms can have Format Control records for Report Writer to run when executing your report. Sample reports demonstrate how to use format controls in various reporting scenarios. This chapter contains the following topics:

- [Format Controls](#) on page 56
- [Accessing Format Control](#) on page 57
- [Sample Reports](#) on page 59

Format Controls

This table describes format controls on the report forms and gives a description of each format control's function.

Report Form	Description
Initial form	Set up Format Control on the Initial form to initialize data entered on the Initial form. Use initialization expressions to validate data entered on the Initial form. The Format Control record looks like Format Control on any HP Service Manager form.
Header form	Set up Format Control on the header form to initialize the variables, defined in the initialization expressions section of the Format Control record, for other forms to use. Use the header form to initialize a variable only once when executing the report.
Detail form	Set up Format Control on the detail form to initialize or calculate data, select records from secondary files, and run P4 subroutines, using the display option of the Format Control record. Validation expressions have no effect in this version of the Report Writer. HP Service Manager resets all variables set in the detail form each time a user selects a record.

Accessing Format Control

Accessing Format Control through Forms Designer reduces the chances of accessing the incorrect record because you are accessing the record directly from the form with the same name as the Format Control record.

Access Format Control

To access Format Control:

- 1 When in the Report Maintenance form or Report Totals form, open **Options > Forms Designer**.

The initial Forms Designer view opens.

- 2 Type the name of the form you want to see in the Form field of the Forms Designer dialog box.

– OR –

Click **Search** to find the form.

- 3 Open **Options > Format Control**.

The Format Control record appears for the selected form.



Make sure that the Format Control record has the same name as the detail form.

Format Control options

Format control records provide the following options:

Option	Description
Add	Adds the Format Control record.
Update	Updates the Format Control record.
End	Saves and Exits the Format Control record.
Calculations	Accesses the calculations section of the Format Control record. Example calculation expression: if (flag=false) then (\$demo.elapsed=close.time in \$file - open.time in \$file) else (\$demo.elapsed=tod() - open.time in \$file)
More	Accesses other sections of the Format Control record.
End	Exits the Format Control record without saving the information. Returns back to the Report Writer Entry form.

Sample Reports

You can work through the sample reports to learn about using format controls in reports.

Sample report: Using Format Control for calculations

This sample report demonstrates how to define the necessary Totals Parameters to use calculations. You can use the calculations process within Format Control whenever you want to perform a calculation on currently available fields or variables.

To use calculations in a report:

- 1 Create the report. For this example, use the following parameters:

Field	Value
Report Name	problem.calculations.demo
Report Title	Demo of Using Totals Calculations
Auto/Manual	auto
Summary/Detail	detail
Primary File	probsummary
Header Format Name	problem.calculations.demo.header
Detail Format Name	problem.calculations.demo.detail
Stacked Query	flag=true and status~!="closed"
Sequence of Report	assignment

For instructions on creating a report, see [Create a new report](#) on page 16.

HP Service Manager checks for a form called *problem.calculations.demo* in the format table.

- If the form already exists, it opens.
- If the form does not exist, a blank screen opens, allowing you to fill in the form using normal Forms Designer procedures. For Forms Designer procedures, see the *HP Service Manager Help*.

- 2 Create the detail form using following input fields:
 - number
 - category
 - assignment
 - status
 - open.time
 - \$demo.elapsed
- 3 Add captions to identify the fields.
- 4 When you are finished adding the report, click **Edit Rpt** to access the edit functions. The report opens.
- 5 Click **Totals** to access the Report Totals form.
- 6 Type the name of the form being used to print the subtotal in the Format Name field. For this example, type **problem.calculations.demo.subtotal**.
- 7 Create the subtotals form.
- 8 Click **Tailoring > Forms Designer**.
If the form does not exist, a blank screen opens.
- 9 Fill in the detail form by following standard Forms Designer procedures.
- 10 Click **Tailoring > Forms Designer**. For more information, refer to the *HP Service Manager Help*.
For this example, create the form **problem.category2.subtotal** with the following values.

Caption	Input
Summary totals For:	report.subfld
Average Elapsed Time:	\$demo.elapsed.average
Total Elapsed Time:	\$demo.elapsed.sum

- 11 To calculate the average and sum of the variable \$demo.elapsed for each grouping of problem records by category, type the values shown for the Field/Variable Names to Total and Calc fields.

Field/Variable Names to Total	Calc
\$demo.elapsed	AV G
\$demo.elapsed	SU M

- 12 Scroll left to view the second portion of the Report Totals form.
- 13 Specify values in the Variable Names on Form array to identify where to print the result of the calculation within the subtotals form.

Field/Variable Names to Total	Calc	Variable Names on Form
\$demo.elapsed	AV G	\$demo.elapsed.average
\$demo.elapsed	SU M	\$demo.elapsed.sum

- 14 Type **category** in the Reset Field/Variable Name field to calculate the totals separately for each category grouping.
- 15 When you are finished entering the appropriate data, click **End** to return to the Report Maintenance form.
- 16 To evaluate the value to be used for the \$demo.elapsed variable, you must attach Format Control to the detail form.
- a When you are finished with your design changes, open **Options > Format Control** to create a new Format Control record.
 - b A prompt asks you to save your changes. Click **Yes**. The *formatctrl.maint.initial* form opens.
 - c Make sure that the name of your Format Control record is the same name as your subheader form.

- d Specify any initialization expressions, and click **Add**. For this example, there are no entries required in the Initialization Expressions field.
- e When you are finished, click **OK**.
- f Click **Calculations** in the Format Control Maintenance form.
- g Type the following field values:

Field	Value
Display	true
Calculation	if (status in \$file#"closed") then (\$demo.elapsed=close.time in \$file - open.time in \$file) else (#\$demo.elapsed=tod() - open.time in \$file) Put all expressions on one expression line, separated by semicolons. Never place a semicolon at the end of the final expression. This causes HP Service Manager to expect another expression.

- h When you are finished, click **OK**. Continue to click **OK** until you return to the Report Maintenance form.

17 To run this report, follow the instruction in [Running Reports](#) on page 21.

Sample report: Using Format Control for subheaders

You can use the subheader form when designing a report to print the information that immediately precedes the detail information from a secondary file. The subheader form identifies the secondary file used to extract information for the detail form, therefore, you must define Format Control for the subheader form of all Subheader reports.

- The subheader form contains the fields from the primary file, defined in the report.
- The detail form contains fields from the secondary file, defined in the Secondary File Queries section of the Format Control record of the subheader form.
- A common field value connects the primary and secondary files.

In this example, the value in the Location field from the *location* table (primary file) will match the value in the location field from the *operator* table.

(secondary file). Each time the report selects a record based on the Primary Query from the primary file (*location*), Report Writer uses Format Control to find the matching records in the secondary file (*operator*) using the Location field.

To use Format Control for subheaders:

- 1 Create a new report in Report Writer, using the following values. For more information, see [Create a new report](#) on page 16.

Field	Value
Name	location.summary (or any unique name)
Title	Any title
Auto or Manual	Auto
Summary or Detail	Detail
Primary File	location
Header Format	location.summary.header (default)
Subhdr Format	location.summary.subhdr
Detail form	location.summary.detail (default)
Primary Query	true
Sort Sequence	location Since stacked queries are not used, location must be a key in the primary file's dbdict before you can use it as a sort field.

- 2 Create the header form:
 - a Click **Tailoring > Forms Designer** and create a form in with the following input fields: Name, Location, Address, City, State, Zip, and Primary contact.
 - b Add captions to identify the fields.
 - c When you are finished working within the Forms Designer utility, click **OK**.

3 Create the subheader form:

- a Click **Tailoring > Forms Designer**. Create the form using the following values:

Caption	Input
Location:	location
Location Name:	location.name
Address:	address
	window=1
City:	city
State:	state
Zip:	zip
Primary Contact:	primary.contact

- b When you are finished working within the Forms Designer utility, click **OK**.

4 Add Format Control:

- a Click **Tailoring > Format Control** to create a new Format Control record.
- b A prompt asks you to save your changes. Click **Yes**. The *formatctrl.maint.initial* form opens.
- c Make sure that the name of your Format Control record is the same name as your subheader form.
- d Specify any initialization expressions, and then click **Add**. In this example, there are no entries required in the Initialization Expressions field.

5 Add queries:

- a Open **Options > Queries**.
- b Click **Yes**.
- c Make the file queries entries as needed.

For this example, use the following values.

Field	Value
Display	true
Filename	operator This identifies the operator table as the secondary file for this report. The <i>location</i> table and <i>operator</i> table are connected when the values in their Location fields match.
Query	location=location in \$file
Req'd Query	false This signifies that the match is not required for the subheader form to print.

- d Click **Save** to save the record.
 - e Click **OK** twice to exit the forms and return to the Report Maintenance form.
- 6 Create the detail form:
- a From the Report Maintenance form, put your cursor in the Detail field of the Forms structure of the Report Maintenance form (on the location.summary.detail value) and open **Options > Forms Designer**.

HP Service Manager checks for a form called *location.summary.detail* in the format table. If the form already exists, it opens. If it does not exist, a blank screen opens, allowing you to paint the form using normal Forms Designer procedures.
 - b Click **Design** to create the form or change the existing form.

- c Add the appropriate Input fields. For this example, include:

Caption	Input field
Logical Name:	logical.name
Serial Number:	serial.number
Manufacturer:	manufacturer
Model:	model
Type:	type

- d Click **Add** or **OK** to return to the Report Maintenance form.
- 7 To run this report, follow the instructions in [Running Reports](#) on page 21.

Sample report: Using Format Control in a Matrix report

The following sample report gives summary count information on severity codes and the status of incident tickets. The severity code labels print in the column and the status (such as, open and update) labels print in a row.

The report consists of a header and two subtotals forms. It is a summary report, but it does not use the Summary field (true/false) on the Totals screen. There is a Format Control record associated with both the header and detail forms. they contain initialization and calculation expressions for processing record counts.

To create a matrix report using Format Control:

- 1 Use the following values to create the report:

Field	Value
Name	problem.severity.summ (or any unique name)
Title	A user - defined title
Auto or Manual	Auto
Summary or Detail	Summary
Primary File	probsummary
Header Format	problem.severity.summ.header (default)
Detail format	problem.severity.summ.detail (default)
Primary Query	flag=true Unix users can also use status~="closed".
Sort Sequence	severity To sort and break on the Severity field for a Summary report, the field must exist as a key in the <i>probsummary</i> dbdict, or the primary query must be defined as a stacked query.

2 Create the header form:

- a When you finish entering the field values, place the cursor in the Header field (problem.severity.summ.header value) and open **Options > Forms Designer**.

HP Service Manager checks for a form called *problem.severity.summ.header* in the format table. If the form already exists, it opens. If it does not exist, a blank screen opens, which allows the user to paint the form using normal Forms Designer procedures.

- b In order to sort and break on the Severity field for a Summary report, you must set up the same field as a key in the probsummary dbdict, or define the primary query as a stacked query.
- c Click **OK** to add the new form and return to the Report Maintenance form.

3 Create a detail form. Since this report is a Summary report, Report Writer does not print a detail form when it generates the report. However, because a Format Control record is required for calculations to occur on each detail record, we must create a detail form to attach to the Format Control record.

- a Place your cursor in the Detail field (on the problem.severity.summ.detail value) and click **Tailoring > Forms Designer**.

HP Service Manager checks for a form called *problem.severity.summ.detail* in the format table. If the form already exists, it opens. If it does not exist, a blank screen opens, enabling you to paint the form using normal Forms Designer procedures.

4 Create the first subtotals form:

- a Select **Options > Totals** to open the Report Totals form.
- b Position the cursor on the first Subtotals Format Name field and open **Options > Forms Designer**.
- c Type **problem.severity.summ.sub** and click **New**.
- d A prompt asks if you want to use the Forms Designer wizard. Click **No**.
- e Follow standard Forms Designer procedures to create a new form including the following input fields:

report.subfield	\$open	\$updt
\$alrt1	\$alrt2	\$alrt3
report.subcount,1		

- f Add captions to identify the fields.
 - g When you are finished, click **OK**.
- 5 Edit the Report Totals form.
- a Open **Options > Totals**.
 - b Fill in the fields in the Report Totals form as follows:

Table 1 Subtotals Format Name field: problem.severity.summ.sub

Field/Variable Names to Total	Calc	Variable names on form
\$opn	SU M	\$open
\$upd	SU M	\$updt
\$al1	SU M	\$alrt1
\$al2	SU M	\$alrt2
\$al3	SU M	\$alrt3

- c Access the second portion of the Report Totals form and scroll to the right until you see the Reset Field/Variable Name field.
 - d Type **severity**.
 - e Type **true** in the ALWAYS field.
 - f Click **OK**.
- 6 Create the second subtotals form
- a Position the cursor on the second Format Name field and type **problem.severity.summ.tot**.
 - b Click **Tailoring > Forms Designer**.

- c Follow standard Forms Designer procedures to create a new form with the following input fields.

open.tot \$upd.tot
 \$alrt1.tot \$alrt2.tot \$alrt3.tot
 report.count

- d Add captions to identify the fields.
 - e When you are finished, click **OK**.
- 7 Edit the Report Totals form:
- a Open **Options > Totals**.
 - b Fill in the fields in the Report Totals form to add the following values.

Table 2 Subtotals Format Name field: problem.severity.summ.tot

Field/Variable Names to Total	Calc
\$opn	SU M
\$upd	SU M
\$al1	SU M
\$al2	SU M
\$al3	SU M

- c Access the second portion of the Report Totals form and scroll to the right until you see the Reset Field/Variable Name field.
- d Type **severity**.
- e Type **true** in the ALWAYS field.
- f When you are finished, click **OK**.

- 8 Create a Format Control record for the header form:
 - a Position the cursor on the Format Header field and open **Options > Forms Designer**.
 - b Click **Tailoring > Format Control**. The Format Control utility opens, enabling you to add a new Format Control record.



Make sure that the name of the Format Control record is the same name as your header form.

- c Type the following statements in the Initializations Expressions fields:

```
$open=0; $updt=0; $alrt1=0; $alrt2=0; $alrt3=0
```

```
$opn.tot=0; $upd.tot=0; $alrt1.tot=0; $alrt2.tot=0;  
$alrt3.tot=0
```



These initialization expressions run only once during the report generation.

- d When you are finished, click **OK**. Continue to click **OK** until you return to the Report Maintenance form.

- 9 Create a Format Control record for the detail form:

- a Position the cursor on the Format Detail field and click **Tailoring > Forms Designer**.
 - b Create the necessary fields using standard Forms Designer procedures.
 - c Click **OK**.
 - d Click **Tailoring > Format Control**.
 - e When prompted, click **Yes**.

Make sure that the name of this Format Control record is the same name as your detail form.

- f Type the following statements in the Initializations Expressions field.

```
$open=0 ; $updt=0 ; $all=0 ; $al2=0 ; $al3=0
```



These initialization expressions run each time you select a new detail record.

- g When you are finished, click **OK**.
 - h Click **Calculations** in the Format Control Maintenance form. The Format Control Maintenance - Calculations form opens.

- i Type the following field values:

Field	Value
Display	true
Calculation	if status in \$file#"open" then \$opn=1 ; if status in \$file#"upd" then \$upd=1 ; if (index("1",status in \$file)> 0) then \$al1=1 ; if (index("2",status in \$file)> 0) then \$al2=1 ; if (index("3",status in \$file)> 0) then \$al3=1



Put all expressions on one expression line, separated by semicolons.
Never place a semicolon at the end of the final expression. This causes
HP Service Manager to expect another expression.

- j When you are finished, click **OK**. Continue to click **OK** until you return to the Report Maintenance form.

10 To run this report, follow the instruction in [Running Reports](#) on page 21.

Index

A

accessing
Forms Designer, 47
reports, 14
report totals, 48
Report Writer, 14

C

control for subheaders, using format, 62
copying reports, 15

D

deleting reports, 16

F

format control
accessing, 57
matrix report, 67
subheaders, 62
forms
detail, 65
initial, 47
query, 40
using, 62
Forms Designer, accessing, 47

I

initial forms, 47

M

matrix report, format control, 67

O

option, primary query, 30
options
Copy/Rename, 15
primary query, 30
stacked queries, 32

P

primary query option, 30

Q

queries
primary, 30
showing results of, 14
stacked, 33
stacked, rules, 32
query forms, using, 40
query option, primary, 29

R

records, viewing report schedule, 26
report, 15

reports

- accessing report totals, 48
- copying and renaming, 15
- creating and editing forms, 39 to 40
- deleting, 14, 16
- forms, 38, 56
- grand totals, 52
- page breaks, 54
- processing in background, 23
- running in foreground, 23
- scheduling for background processing, 23
- summary totals, 52
- using calculations in, 59 to 62
- using grand totals in, 52
- using simple subtotals in, 49
- using subtotals in, 52
- using summary totals in, 52
- viewing online, 27

reports, copying, 15

report scheduling records, viewing, 23

report totals, accessing, 48

Report Writer, accessing, 15

S

schedule records, viewing reports, 26

spoolheader table, 27

spool table, 27

Stacked, 32

stacked queries, 32

subheaders, using format control for, 62

T

table, spool, 27

table, spoolheader, 27

totals section, accessing, 70

U

using query forms, 40

V

viewing report schedule records, 26