



HP Revision and Configuration Management Data Collector for HP OpenVMS

User Guide

January 2004

This document provides information for installing and using the HP Revision and Configuration Management (RCM) Data Collector for HP OpenVMS.

Revision/update Information:

This manual replaces the manual for the Revision and Configuration Management Data Collector for OpenVMS Version 4.2

Operating system and version:

OpenVMS Version 6.2 to 7.3-2 and higher

Software versions:

RCM Server Version 5.0
RCM Data Collector Version 5.0 for OpenVMS

Hewlett-Packard Company

Legal Notices

© Copyright 2003, 2004 Hewlett-Packard Development Company, L.P.

The information contained herein is subject to change without notice. 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.

This service tool software is the property of, and contains confidential technology of, Hewlett-Packard Company or its affiliates. Possession and use of this software is authorized only as specified in Exhibit SS5 and the HP Terms and Conditions of Sale and Services, HP Business Terms or HP Global Agreement or pursuant to the software license contained in the software or documentation accompanying this software.

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

Table of contents

| | |
|--|------------|
| Preface | i |
| | |
| 1 Overview | 1-1 |
| How does RCM work? | 1-1 |
| SAN switch collection | 1-2 |
| OpenVMS systems supported by RCM | 1-4 |
| SAN switches supported by RCM | 1-4 |
| EVA SAN data collection | 1-5 |
| | |
| 2 Installing the RCM Data Collector for OpenVMS | 2-1 |
| RCM data collection prerequisites | 2-1 |
| Skills required to use RCM | 2-2 |
| Installing the RCM Data Collector | 2-2 |
| Installing DECEvent | 2-3 |
| Deinstalling the RCM Data Collector for OpenVMS | 2-3 |
| | |
| 3 Performing an RCM data collection | 3-1 |
| Scheduling and executing the RCM data collection | 3-1 |
| Configuring and scheduling the data collection | 3-1 |
| Executing the data collection manually | 3-6 |
| Monitoring the data collection | 3-6 |
| Stopping a data collection | 3-7 |
| Transferring RCM data indirectly | 3-7 |
| Why transfer data indirectly? | 3-7 |
| Manually transferring data | 3-7 |
| Sending data to HP Services | 3-8 |
| Using DSNlink or MFM with RCM | 3-9 |
| | |
| 4 Viewing Configuration Tree data | 4-1 |
| What are the Configuration Tree and the Reader? | 4-1 |
| Collecting Configuration Tree data | 4-2 |
| Viewing Configuration Tree data | 4-2 |
| Software prerequisite | 4-2 |
| Viewing data on the system | 4-2 |
| Viewing data on a different system | 4-3 |

| | |
|---|------------|
| 5 RCM technical support | 5-1 |
| RCM technical support | 5-1 |
| Contact the RCM team | 5-1 |
| A Appendix A – Files Included in the Data Collector kit..... | A-1 |
| B Appendix B – Format of SWITCHES .DAT | B-1 |
| C Appendix C – Format of EVA . INI | C-1 |

Preface

Purpose of this document

This document describes the procedures for installing and running the Revision and Configuration Management Data Collector software on an OpenVMS system.

Intended audience

This guide is intended for HP Services personnel who will install and use RCM to collect revision and configuration data from customer systems.

Structure of this guide

This guide is divided into the following sections:

- Overview
- Installing the RCM Data Collector for OpenVMS
- Performing an RCM Data Collection
- Viewing Configuration Tree Data
- RCM Technical Support
- Appendix A – File included in the Data Collector kit
- Appendix B – Format of SWITCHES.DAT
- Appendix C – Format of EVA.INI

Document conventions

This guide uses the following document conventions:

| Convention | Description |
|----------------------|--|
| <code>Courier</code> | File names, commands, and user input are shown in <code>courier</code> typeface. |
| <i>Italics</i> | <i>Italics</i> emphasize important information, and indicate menu buttons, menu items, field names, section titles, and document titles. |

More information

For more information on the RCM tool, see the following URL:

<http://h18000.www1.hp.com/support/svctools/rcm/>

This chapter provides an overview of the Revision and Configuration Management Data Collector software for OpenVMS. It contains the following sections:

- How does RCM work?
- SAN switch collection
- OpenVMS systems supported by RCM
- SAN switches supported by RCM
- EVA SAN data collection

How does RCM work?

Revision and Configuration Management (RCM) provides revision and configuration reporting for HP AlphaServer and HP VAX systems running OpenVMS Versions 6.2-1 to 7.3-2 and higher. RCM uses the following components to perform the data collection on an OpenVMS system:

- `RCM$DIR:RCM_START.COM` - A DCL command procedure used to configure and schedule the data collection on each selected node.
- AlphaServer models DS10, DS10L, DS20, DS20E, DS25, ES40, ES45, GS80, GS160, GS320, and GS1280 require that the Web-Based Enterprise Service (WEBES) kit also be installed. For details of WEBES, see the following URL:
<http://h18023.www1.hp.com/support/svctools/webes/>
- DECEvent is required for AlphaServer systems with FRU Table 4.0 (1200, 4X00, 8X00, GS60, GS140). DECEvent is a hardware fault-management diagnostic tool that reads hardware configuration information from the error log. No Product Authorization Kit (PAK) is required for the error log translation feature of DECEvent.

For details of DECEvent, see the following URL:

<http://h18023.www1.hp.com/support/svctools/decevent/>

The RCM collected data is automatically transported to HP Services using e-mail, FTP, DSNlink, or Matrix File Manager (MFM). The data is then loaded onto the RCM Server, which is maintained in HP by the RCM team.

Note: MFM in conjunction with the HP communications service tool, WorldWire, is the replacement application for DSNlink.

The Data Collector collects configuration and revision information such as Firmware Revision levels (if available), Layered Products Revisions, License information, Hardware Configuration details, and HSJ/HSD/HSZ/HSG device information. On systems that support FRU4 hardware logging, DECEvent is used to decode the FRU table. For OpenVMS systems V6.2-1 to V7.1.2, the FRU utility included in the kit is used to write the FRU data from memory to a file that DECEvent can translate. For OpenVMS V7.2 and higher systems, the Analyze/System command `CLUE FRU` is used to generate a dummy error log record containing the FRU4 entry.

The RCM Data Collector gathers additional hardware configuration information on AlphaServer models DS10, DS10L, DS20, DS20E, DS25, ES40, ES45, GS80, GS160, GS320, and GS1280 where RCM from the WEBES kit is installed. This detailed hardware configuration information is called the *Configuration Tree*. This detailed configuration tree can be viewed on the OpenVMS system using the `frudump` utility. For more information, refer to Chapter 4, *Viewing the Configuration Tree Data*.

The RCM Data Collector can collect Storage Area Network (SAN) switch configuration information from HP supported switches in an accessible SAN, if required.

The RCM Collector can also collect data from EVA SAN controllers using the HP StorageWorks Storage System Scripting utility (SSSU) which is included with the RCM kit.

The collected data for each node is written to a file with the filename, `RCMO-<nodename>-<yyyymmdd-mmhhss>.TXT`. A HTML version is also generated for each selected node. This gives the user a convenient method of browsing the collected data. A .LIF file is also generated for each node. This is used by the RCM Server to request a ProPatch report which may be viewed through the *Electronic Site Management Guide* (eSMG).

The RCM Server incorporates a web-based user interface that enables authorized personnel in HP Services to view detailed configuration and change reports. Customers with premium service contracts are able to view these configuration and change reports through the eSMG.

Further information on using the RCM Server is available to HP Services personnel in the *RCM Server User Guide*.

SAN switch collection

The RCM collector will optionally collect configuration information from HP-supported switches in an accessible Storage Area Network (SAN).

If you specify that SAN switch information is to be collected, the collector issues a passive request for data to each designated switch *via* the Simple Network Management Protocol (SNMP) protocol. Switch IP addresses are entered with the SNMP community string for each switch.

SAN switch information is collected and transported to the RCM Server. This information includes the switch Local Name Server information, indicating the items of equipment that are connected to the various ports on the switch by means of their World Wide Names (WWN).

These WWNs are used during the creation of SAN configuration reports in order to determine the Host Bus Adapters and Storage Controllers in collections from the other hosts that are connected to the switch. Because these reports are compiled from multiple collections, it is important to configure correctly the collectors on a group of machines connected to the same SAN.

Firstly, you need to set up only one of the machines to collect switch data; setting up multiple nodes to report switch data only increases the load on the RCM Server without generating additional useful information. If all the systems are in an OpenVMS Cluster, RCM will collect the SAN switch information on only the node on which the RCM collection was started.

Note: Because the data collection is done *via* SNMP over IP, the switches must be connected to the IP network and assigned IP addresses. This also implies that the machine collecting the switch data does not actually have to be physically connected to the SAN.

Secondly, in order to ensure the most accurate picture of the SAN you should configure the machine or cluster doing the switch collection to be the last machine in the sequence to do its collection. This is necessary because the analysis required for the SAN configuration report is done immediately on receipt of a collection containing switch data. If the switch data is received, for example, in the middle of a batch from a group of machines connected to a SAN, then the data from the last machines in the batch will not be included in the report, resulting in either the appearance of unknown devices or the use of data from older collections.

Note that SAN switch collection on OpenVMS is done only on systems running HP TCP/IP Services for OpenVMS because it uses the TCPIP\$SNMP_REQUEST tool.

Described below are some scenarios for collecting SAN switch information on a hypothetical configuration of OpenVMS systems..

In this example of a configuration, all nodes are connected to the SAN switches:

- Cluster nodes A, B, C, D
- Standalone node E
- Standalone node F
- Standalone node G

Any of the nodes can be used to collect the SAN switch information but the RCM collection on that node or cluster should be carried out after RCM collections on the other systems.

Scenario 1:

Using the cluster nodes for the SAN switch collection:

1. Collect RCM data on the other systems (E, F, G) first.
2. Configure RCM\$DATA:SWITCHES.DAT on the cluster.
3. Carry out an RCM collection on the cluster. The switch data will be collected on the node on which you started the RCM collection.

Scenario 2:

Using node F for the SAN switch collection:

1. Collect RCM data on the cluster nodes and on nodes E and G first.
2. Collect RCM data and SAN switch data on node F.

OpenVMS systems supported by RCM

RCM supports the following systems, running OpenVMS Version 6.2-1 to 7.3-1 and higher:

- All VAX systems
- All AlphaServer systems

Note: For machines running OpenVMS V6.2-1, you must first install the following patch kit in order to update the OpenVMS PCSI Utility:

VMS62TO71U2_PCSI-V0200

AlphaServer models DS10, DS10L, DS20, DS20E, DS25, ES40, ES45, GS80, GS160, and GS320, require RCM to be installed from the WEBES kit. For details of WEBES, see the following URL:

<http://h18023.www1.hp.com/support/svctools/webes/>

SAN switches supported by RCM

The following SAN switches are supported by RCM:

- HP StorageWorks Fibre Channel SAN Switch/8
- HP StorageWorks Fibre Channel SAN Switch/16
- HP StorageWorks Fibre Channel SAN Switch 2/16
- HP StorageWorks Fibre Channel SAN Switch 8-EL
- HP StorageWorks Fibre Channel SAN Switch 16-EL
- HP StorageWorks SAN Switch Integrated/32
- HP StorageWorks SAN Switch Integrated/64
- HP StorageWorks Fibre Channel Arbitrated Loop Switch 8 (FC-AL)
- Brocade SilkWorm Models 2400, 2800, 2050, 2250, 3800, or 6400

EVA SAN data collection

The RCM Data Collector for OpenVMS has been extended to collect information from HP Enterprise Virtual Array (EVA, also known as HSV) storage systems. The currently supported EVA storage system is the HP StorageWorks Enterprise Virtual Array 5000 (EVA5000), but it is expected that HP EVA3000 systems can also be supported.

To collect the HSV information, RCM uses the SSSU to communicate with the HP Command View EVA (also known as, Element Manager). Command View EVA is a graphical user interface for controlling and monitoring a storage system. Command View EVA must be correctly configured in the SAN Appliance Manager to manage any associated HSV controllers. SSSU is bundled with the RCM kit.

In order for RCM to successfully communicate with Command View EVA, RCM needs the following information for each SAN Appliance Manager:

- IP address of the SAN Appliance Manager.
- Remote access username and password with privileges that allows RCM to communicate with Command View EVA installed at the specified IP address.

This information is stored in a file called `rcm$data:eva.ini`, which allows the RCM Data Collector for OpenVMS to collect EVA storage system data.

It is important to know what version of Command View EVA is installed on the SAN Appliance Manager; there are currently two supported versions, as follows:

- Command View EVA Version 2, which is also known as Element Manager.
You must use SSSU Version 2 with this version of Command View EVA.
- Command View EVA Version 3.
You must use SSSU Version 3 with this version of Command View EVA.

To collect EVA data, do the following:

1. Set the `[EVA DATA COLLECTION]` option in the RCM configuration file to `Y`.
2. Create a file, `RCM$DATA:EVA.INI`, using the provided template file `RCM$DIR:EVA_TEMPLATE.INI` as a guide.

Appendix C – Format of EVA.INI, provides an example of a typical `EVA_TEMPLATE.INI` file that is provided with the RCM kit.

The IP address of each EVA controller, and valid administrator account details, must be entered in the `EVA.INI` file.

SSSU Version 2 controller information should be entered in the `[SSSU v2]` section and SSSU V3 information should be entered in the `[SSSU v3]` section.

The output from the SSSU is included in the RCM raw data file and sent to the RCM server in HP.

To view the data, use your normal source (for example, eSMG) and request a report for the server upon which you ran RCM. The new EVA sections are included in the report.

Installing the RCM Data Collector for OpenVMS

This chapter describes how you install and deinstall the Revision and Configuration Management Data Collector for an OpenVMS system. It contains the following sections:

- RCM data collection prerequisites
- Skills required to use RCM
- Installing the RCM Data Collector
- Installing DEEvent
- Deinstalling the RCM Data Collector for OpenVMS

RCM data collection prerequisites

The following table lists the requirements for installing and running the RCM Data Collector on an OpenVMS system. Requirements may vary according to system.

| Area | Requirements |
|--------------------------|--|
| Disk Space | 5000 blocks of free disk space for each node on which you run the data collection. |
| Privileges | <ul style="list-style-type: none"> ▪ OPER ▪ DIAGNOSE ▪ SYSPRV ▪ CMKRNL ▪ SYSLCK ▪ PHY_IO |
| Minimum Software Version | <ul style="list-style-type: none"> ▪ RCM Data Collector for OpenVMS kit Version 5.0 Note: If your version of HP OpenVMS is earlier than Version V7.1-2, you must install the following patch kit: VMS62TO71U2_PCSI-V0200 ▪ DEEvent Version 3.4 installed on AlphaServer systems with FRU4 support ▪ DSNlink Version 2.2 or higher if DSNlink is to be used as a transport mechanism ▪ MFM Version 3.1 or higher if MFM is to be used as a transport mechanism Note: The HP communications tool, WorldWire Version 3.1, is a prerequisite for MFM. |
| HSG Information | To collect HSG information the Command Console LUN (CCL) should be enabled by the following Array Controller command: SET THIS_CONTROLLER COMMAND_CONSOLE_LUN |

Installing the RCM Data Collector for OpenVMS

Note: If you are running OpenVMS Alpha V7.1-2, it is important to have the latest patches installed, in particular, the VMS712_PTHREADS-V0300 patch. If this patch is not installed, the data collection from HSZ/G devices may fail with an error similar to the following:

```
%DCL-W-ACTIMAGE, error activating image CMA$TIS_SHR-CLI-E-  
IMGNAME, image file  
$1$DKC0:[SYS0.SYSCOMMON.][SYSLIB]CMA$TIS_SHR.EXE-SYSTEM-F-  
SHRIDMISMAT, ident mismatch with shareable image
```

The latest version of the RCM Data Collector software is available from the following URL:

<http://h18000.www1.hp.com/support/svctools/rcm/>

For a list of files included with the RCM Data Collector kit, see:
Appendix A – Files Included in the Data Collector kit.

Skills required to use RCM

To collect RCM data and generate RCM reports, you should have practical experience in the following areas:

- Performing system administration tasks
- Using a web browser application

Installing the RCM Data Collector

The RCM collector should normally only be installed on one node in a Cluster and data can be collected from all nodes that can access the collection disk. For Clusters with multiple system disks, it is recommended that RCM be installed on each system disk.

Note: For HP AlphaServer systems with FRU 5, you also need to install the mandatory components from the latest WEBES kit to gather the hardware information. This is because RCM on FRU 5 machines depends on the services of the WEBES common components to read the FRU 5 hardware information. The following systems are the FRU 5 systems supported by RCM: DS10, DS10L, DS20, DS20E, DS25, ES40, ES45, GS80, GS160, GS320, and GS1280. If you are installing RCM on these models, please see the *Web-Based Enterprise Services Installation Guide* available from the following URL:

<http://h18023.www1.hp.com/support/svctools/webes/>

The RCM Data Collector for OpenVMS kit Version 5.0 is in a self-extracting executable format, and once extracted, it uses PCSI as the installation method. To install the Data Collector, follow these steps:

1. Extract the self-extracting executable file using the following command:

```
$ RUN <kitname>
```

For example: `RUN RCM_AXPVMS_V0500-585.EXE`

This creates the .PCSI kit file called DEC-AXPVMS-RCM-V0500-585.PCSI. The build number at the end of the kit name may change.

2. Decide where you want to install RCM.

Note: It must be installed on a disk that is accessible by all the nodes from which data will be collected.

3. To install RCM, enter the following command:

```
$ PRODUCT INSTALL RCM /DESTINATION = <disk><dir>  
/SOURCE=<disk><dir> /HELP
```

Replace the destination <disk><dir> with the area you want to install the kit in, and replace the source <disk><dir> with the location of the extracted PCSI file. If the destination area is not specified, then RCM will be installed to the following area:

```
SYS$SYSDEVICE:[VMS$COMMON]
```

Note: The installation process will create a subdirectory [.RCM] in the destination area.

Installing DECevent

For the following AlphaServer (1200, 4X00, 8X00, GS60, GS140) systems, you should ensure that DECevent is installed. For help during this installation, refer to the DECevent documentation, available from the following URL:

<http://h18023.www1.hp.com/support/svctools/decevent/>

Deinstalling the RCM Data Collector for OpenVMS

To deinstall the RCM Data Collector for OpenVMS, do the following:

1. Enter the following command:

```
$ product remove rcm
```
2. Follow the instructions displayed on the screen.
3. For information on deinstalling DECevent, refer to the DECevent documentation, available from the following URL:

<http://h18023.www1.hp.com/support/svctools/decevent/>

Note: During the deinstallation, the RCM configuration file is saved as SYS\$SYSTEM:RCMCONFIG.CFG, so that it can be automatically restored if RCM is reinstalled.

Performing an RCM data collection

This chapter describes how you can schedule and execute an RCM data collection for an OpenVMS system. It contains the following sections:

- Scheduling and executing the RCM data collection
- Transferring RCM data indirectly
- Using DSNlink or MFM with RCM

Scheduling and executing the RCM data collection

This section describes how to configure the RCM data collection, including configuring the data collection schedule, and how to execute and monitor the data collection. It describes the following topics:

- Configuring and scheduling the data collection
- Executing the data collection manually
- Monitoring the data collection
- Stopping a data collection

Note: Each time an RCM data collection runs on a system, the results of any previous collections are archived in the RCM\$ARCHIVE directory. By default, the 10 previous collections are stored in this directory. You can change the directory and the number of collections that are stored by modifying the MAX ARCHIVES option in the configuration file.

Configuring and scheduling the data collection

To configure and schedule the data collection, execute the RCM\$DIR:RCM_START.COM procedure, optionally supplying the name of a configuration file by entering the following command in the directory where you want the collected RCM data to be stored:

```
$ @RCM$DIR:RCM_START <ConfigurationFileName>.CFG
```

Performing an RCM data collection

The configuration file may be generated in two ways:

1. Before you invoke RCM_START, you can edit the configuration file, `<filename.CFG>`, using `RCM$DEFAULTS.CFG` as a template, or
2. Invoke RCM_START and you are prompted for the following configuration information:

| Prompt | Description |
|---------------------------|---|
| COMPANY NAME | The name of the company owning the system. |
| CONTACT NAME | The name of your contact in the company owning the system. |
| CONTACT TELEPHONE | The telephone number of your contact in the company owning the system. |
| CONTACT EMAIL | The e-mail address of your contact in the company owning the system. It is important to enter a valid e-mail address as this address is used as a reply-to address if the RCM data is e-mailed to the RCM Server in HP (this applies only to systems running TCP/IP Services for OpenVMS Version 5.1 ECO 3 or later). |
| TECHNICAL ACCOUNT MANAGER | The name of the technical account manager. |
| ACCOUNT MANAGER EMAIL | The mail address of the technical account manager (must end with 'compaq.com' or 'hp.com'). |
| CUSTOMER ACCESS ID | The RCM access identifier for this system. This is supplied by your HP Services representative. |
| TRANSPORT OPTION | <p>The method for returning the collected data to HP Services. You can specify one of the following:</p> <ul style="list-style-type: none">F – automatically FTP the data. This is the default.E – automatically e-mail the data.D – automatically send the data using DSNlink or MFM. For more information, see <i>the Using DSNlink or MFM with RCM</i> section.M – do not automatically transport the data. If you wish to manually transfer collected data to HP Services, please see the <i>Transferring RCM data indirectly</i> section. <p>Note: Due to anti-spamming restrictions within HP, servers that are used to e-mail RCM Data Collections to HP must have domain names with an “A” or an “MX” record in public DNS. Therefore, received e-mails that do not meet these requirements are rejected.</p> |

| Prompt | Description |
|--|---|
| COLLECTION FREQUENCY | <p>The frequency at which you want to schedule data collections. Enter one of the following:</p> <p>N – run a single collection. (a collection will be started immediately)</p> <p>D – run the collection daily.</p> <p>W – run the collection weekly.</p> <p>M – run the collection monthly. This is the default.</p> <p>Q – run the collection quarterly.</p> <p>Where an option other than N is specified, RCM collections will run at the specified intervals. For each collection, a detached scheduling process called RCM will be started. This process will hibernate until the next scheduled collection time. In order to survive system reboots, an entry is made to the SYSMAN STARTUP database that will restart the RCM scheduling process on system startup. The entry can be seen by using the following command:</p> <p>MCR SYSMAN STARTUP SHOW FILE</p> |
| NEXT COLLECTION TIME | Time to run the next data collection in the format dd-mm-yyyy hh:mm. To run a collection immediately, enter N. |
| MAX ARCHIVES | The number of collections to keep in the RCM Archive area. Default value is 10. |
| ARCHIVE DIRECTORY | Default is : RCM\$ROOT:[RCM_ARCHIVE] |
| COLLECTION DIRECTORY | Specify directory to use for RCM Collections. Default is RCM\$ROOT:[DATA] |
| LOCAL SITE | <p>Answer Y to have collected data copied to a local system. Default is N.</p> <p>If answer is Y, you will be prompted for Local Transport option:</p> |
| Local Transport Option (EMAIL/FTP/DECnet): | <p>If FTP (default) is specified, the following additional prompts are displayed:</p> <pre>Local FTP Hostname : Local FTP Login Username : Password : Local FTP Directory : Local FTP Procedure :</pre> <p>If DECnet is specified, the following additional prompts are displayed:</p> <pre>Local DECnet Hostname : Local DECnet Username : Password : Local DECnet Directory :</pre> <p>Note: The local FTP or DECnet password is used only for the local transport of the collected data within the client environment and is stored in encrypted form in the configuration file. It is removed from the configuration file before the collected data is sent to HP.</p> <p>If Email is specified as the Local Transport Option, the following prompt is displayed:</p> <pre>Local EMAIL Address :</pre> |

Performing an RCM data collection

| Prompt | Description |
|-----------------------------|---|
| SAN SWITCH DATA COLLECTION | <p>Answer Y to collect SAN switch data. By default, this is set to N.</p> <p>Note: If this option is selected, you will need to add the switch information to <code>RCM\$DATA:SWITCHES.DAT</code> using the <code>RCM\$DIR:SWITCHES_template.DAT</code> as a template.</p> |
| EVA SAN DATA COLLECTION | <p>Answer Y to collect EVA data or, if an RCM configuration (.CFG) file already exists, you can edit this file and change the [EVA DATA COLLECTION] option to Y.</p> <p>You must also create a file called <code>RCM\$DATA:EVA.INI</code> using the <code>RCM\$DIR:EVA_TEMPLATE.INI</code> file as a template. In the <code>EVA.INI</code> file, you must provide an IP address for each EVA controller as well as account details (username and password) of an administrator. You must also establish whether the EVA controller uses SSSU Version 2 or Version 3, and enter the EVA details in the appropriate section of <code>EVA.INI</code> file.</p> |
| RUN ON REBOOT | <p>Answer Y to configure RCM to run automatically when the system reboots. Default is N.</p> |
| NODES | <p>If you are running the collection in a cluster environment, the software detects each node on the system. You select if you want the data collection to run on each node. The node you run the <code>RCM\$DIR:RCM_START</code> command on is automatically selected. Only nodes which have the collection disk mounted can be selected.</p> |
| <node> SYSTEM SERIAL NUMBER | <p>The serial number of each node on which you are running the data collection. If the Data Collector software does not detect this number, then you will be prompted to enter it.</p> |

If you selected to run a single, once-off data collection, the data collection will start immediately as a background process. If you set up a schedule for collection, the data collection will begin at the next scheduled interval that you selected.

When the data collection is complete, the data is sent to HP Services, using the transport method you specified.

The configuration details are saved in a configuration file using the file name you provided. If you want to change any details, you can run `RCM_START.COM` again, providing the same file name, or you can edit the configuration file. If you edit the configuration file, you will see the following additional configuration options:

| Configuration option | Description |
|------------------------------|--|
| FTP AREA | The default is <code>rcm.support.compaq.com/to_rcm/</code> |
| FTP PROCEDURE | This is a feature that allows a client to use a custom FTP Command procedure in order to send the collected data to HP. If you want to use a custom DCL procedure to transfer the data, specify the location of the procedure using this option. RCM will pass the RCM Zip file as parameter P1. |
| EMAIL ADDRESS | The default is rcm.data@hp.com |
| LOCAL FTP PROCEDURE | This is a feature that allows a client to use a custom FTP Command procedure in order to copy the collected data to a local system. |
| SUPPRESS IP ADDRESSES | This is set to N by default. If this is set to Y then client IP addresses are not collected. |
| FCT BINARY IMAGE | The default is N. If it is set to Y, then the Configuration Tree 5.0 or 6.0 data is written to a binary file called <code><node>.CT5</code> . This would normally be set to Y, in consultation with your Technical Account manager, as HP Services use it for debugging purposes. |
| DATA FOR ANALYSIS | This option allows only LIF data to be sent from the customer site. Permitted values are: Full, Lif or None. The default is F, which means all RCM data is sent to HP. Setting this option to L means only the LIF files are sent and the only reports available will be the ProPatch reports. |
| SAN SWITCH SNMP WALK_TIMEOUT | If you chose to collect SAN switch data, you can set the timeout period in the configuration file, that is, the number of minutes that the SNMPWALK utility waits before timing out. The default value is 15. |

Note: The `FTP PROCEDURE` and the `LOCAL FTP PROCEDURE` items in the preceding table are used to specify custom DCL procedures. These procedures enable you to use FTP to transport collected data when the RCM supported methods do not work. RCM currently supports both HP TCP/IP products and Process Software's Multinet TCP/IP products.

Executing the data collection manually

If you set up a schedule for data collection when you entered configuration information, the data collection automatically executes at the scheduled times. You can also execute a once-off data collection that will start immediately.

To execute a once-off data collection, enter the following command in the directory where you want the collected RCM data to be stored:

```
$ @RCM$DIR:RCM_START -now
```

This executes the data collection using the most recent configuration file. If you have not already configured the RCM Data Collector, you will be prompted for the required information, as described above. The data collection will begin immediately.

To collect data only on the node that you are currently logged into, enter the following command:

```
$ @RCM$DIR:RCM_START -now -thisnode
```

When the data collection is complete, the transfer method you selected during the configuration process is executed. A local version of the collected data is created in the installation directory. You can view this data in two formats:

```
RCMO-<nodename>-<timestamp>.html or
```

```
RCMO-<nodename>-<timestamp>.txt
```

Please note that this HTML file is provided for convenience but is not the official RCM report, which must be obtained from the RCM server or from the eSMG.

Monitoring the data collection

To monitor the data collection while it is executing, enter the following command:

```
$ @RCM$DIR:RCM_STATUS
```

For each node on which the data collection is running, the progress of the data collection is displayed. RCM_STATUS will loop every 30 seconds until the data collection is completed on all nodes. These data files can be transported to HP Services automatically, or you may transfer them manually, depending on the configuration options you selected.

- If you selected to automatically transport the data to HP Services, the status of the transport action is displayed.
- If you selected to manually transport the data to HP Services, instructions on how to do this are displayed.

If you want to check the status of a collection that has finished, and the result of the data transport, you can check the RCM\$DATA:RCMO-<node name>-<timestamp>-MASTER.LOG file.

If the data collection is paused for an unusually long period of time, or some of the collection log files are growing extremely large, or the disk is filling with log information, you may stop the data collection by entering the following command:

```
$ @RCM$DIR:RCM_STOP
```

This command displays each RCM process running on each node in the cluster, and prompts you if you want to kill each process in turn.

Stopping a data collection

You can stop all RCM processes by executing the following command:

```
RCM$DIR:RCM_STOP
```

This will show any RCM_COLLECT processes that are currently active and ask you if you wish to stop them. This should only be necessary if problems occur and the collection process seems to be taking too long.

If the RCM scheduling process is active, you will be asked if you wish to stop it. Stopping this process will remove the entry in the SYSMAN STARTUP database and the RCM scheduling process will not restart on a system reboot.

To start RCM collections again, RCM_START must be run.

Transferring RCM data indirectly

This section describes how to indirectly transfer data collected by RCM back to HP Services for analysis. It describes the following topics:

- Why transfer data indirectly
- Manually transferring data
- Sending data to HP Services

Why transfer data indirectly?

Some systems running RCM do not have a direct connection to the Internet. For example, the target system (or systems) may be one of the following:

- A standalone system with no Internet connection.
- A system on a network, where no other system on the network has a direct Internet connection.
- A system on a network, where another system on the network has a direct Internet connection.

In these situations, you can manually transfer the collected data to a system that has a direct Internet connection. After the data is transferred, you need to send the data to HP Services for analysis.

The method for manually transferring the data and the methods for sending the data to HP Services are described in the following sections.

Manually transferring data

When the data collection is completed, the collected data is saved into the following files:

```
RCMO-<nodename>-<timestamp>.ZIP (zipped file)
```

```
RCMO-<nodename>-<timestamp>.UUE (uencoded file, if e-mail is used)
```

You can copy these files to a machine with a direct Internet connection.

Note: Do not change the name of the files, or their extensions.

Sending data to HP Services

When you have moved the files containing the collected RCM data to a machine with an Internet connection, you can send the data to HP Services using one of the following options:

- Microsoft® Exchange
- DSNlink or MFM
- FTP
- VMSMAIL

Note: Due to anti-spamming restrictions within HP, servers that are used to e-mail RCM Data Collections to HP must have domain names with an “A” or an “MX” record in public DNS. Therefore, received e-mails that do not meet these requirements are rejected.

Each of these methods is described as follows:

Microsoft Exchange

To mail the data using Microsoft Exchange; using FTP, send the zipped (.ZIP) file in binary mode to the PC and e-mail the (.ZIP) file, as an attachment, to the following address:

rcm.data@hp.com

DSNlink or MFM

To send the data using either DSNlink or MFM, enter the following command:

```
$ DSN COPY/TOOL=RCM RCMO-<nodename>-<timestamp>.ZIP
```

Note: To check the requirements for using either DSNlink or MFM, see the *Using DSNlink or MFM with RCM* section.

FTP

To FTP the data, send the zipped (.ZIP) file in binary mode, using anonymous FTP, to the following location:

[rcm.support.compaq.com/to_rcm/](ftp://rcm.support.compaq.com/to_rcm/)

VMSMail

To mail the data using VMSMAIL, mail the uuencoded (.UUE) file to the following address:

rcm.data@hp.com

Using DSNlink or MFM with RCM

You can use either DSNlink or MFM to send RCM data to HP Services, if you are transferring data automatically, or if you are transferring data manually.

MFM, in conjunction with the HP communications tool WorldWire, is the replacement for DSNlink (which may be no longer supported in your geographical location). The main benefit to RCM users is that MFM provides a fully secure transport mechanism (all data is encrypted before being transported). To avoid any disruption to users, MFM replicates the DSNlink command line interface, which means that all DSNlink instructions are also valid for MFM installations.

In order to use DSNlink to transfer RCM data, you must have DSNlink Version 2.x or higher installed on the system from which you want to transfer the data. If you are transferring data automatically, DSNlink must be installed on the machine where you installed the RCM Data Collector.

In order to use MFM to transfer RCM data, you must have MFM Version 3.1 or higher installed on the system from which you want to transfer the data. If you are transferring data automatically, MFM must be installed on the machine where you installed the Data Collector. In addition, a WorldWire Version 3.1 or higher communications link must be available between the customer site and HP.

Viewing Configuration Tree data

This chapter describes the Configuration Tree, how to collect it, and how to view it using a browser. It contains the following sections:

- What are the Configuration Tree and the Reader?
- Collecting Configuration Tree data
- Viewing Configuration Tree data

What are the Configuration Tree and the Reader?

The Configuration Tree describes the hardware in an AlphaServer system for models DS10, DS10L, DS20, DS20E, DS25, ES40, ES45, GS80, GS160, GS320, and GS1280. It is created and maintained by the SRM console code and always represents the current configuration of the system.

The Configuration Tree is read from memory and converted to human-readable format by the Configuration Tree Reader. The RCM Data Collector installs the Configuration Tree Reader the first time the RCM Data Collector is executed.

The syntax of the command is as follows:

```
@rcm$root:[ct5.bin] frudump [-i imagefile] [-v]
```

The following options are available:

- `-i imagefile` this enables the *CT Reader* to read from an image file, rather than from memory. The full path and filename must be specified as `imagefile`. This option is typically only used in complex troubleshooting situations.
- `-v` returns the current version of the tool.

Collecting Configuration Tree data

To collect the Configuration Tree data, do the following:

1. Execute the command:

```
@RCM$ROOT : [CT5 . BIN] FRUDUMP
```

2. The data is captured from memory and written to two files in the directory RCM\$ROOT : [CT5 . OUTPUT] These files are called <NODENAME>_<DATE>_<TIME>_HARDWARE . HTML and <NODENAME>_<DATE>_<TIME>_TREE . HTML where:

- <NODENAME> is the node name of the system on which the FCT Reader was run
- <DATE> is the date the FCT Reader was run (using the format yyyyymmdd)
- <TIME> is the time the FCT Reader was run (using the format hhmmss).

The above filename convention is used to:

- Allow a common directory to be used in a clustered environment.
- Allow a means of examining differences between two collections for a node.

Viewing Configuration Tree data

This section describes how you use a browser to view Configuration Tree data.

Software prerequisite

You must have one of the following browsers installed on the machine where you intend to view the data:

- Internet Explorer Version 4.0 or higher
- Netscape Navigator Version 4.0 or higher

Viewing data on the system

To view Configuration Tree data on the system where FRUDUMP was executed, do the following:

1. Copy the node/date/time specific files to HARDWARE . HTML and TREE_MAIN . HTML. For example, if you are interested in node X, date Y, and time Z then do the following:
 - a) Copy the file X_Y_Z_HARDWARE . HTML to HARDWARE . HTML
 - b) Copy the file X_Y_Z_TREE . HTML to TREE_MAIN . HTML
2. Open a browser.
3. Open the file TREE_MAIN . HTML in the directory RCM\$ROOT : [CT5 . OUTPUT]
4. The data is displayed in the browser.

The next time you run the `FRUDUMP` command, you need to copy the new `NODENAME_X_Y_Z_TREE.HTML` and `NODENAME_X_Y_Z_HARDWARE.HTML` files as indicated above.

Viewing data on a different system

You can view the Configuration Tree data on a different system from the machine where `FRUDUMP` was executed. For example, you may want to view it on a Windows®-based system. The first time you view the data, do the following:

1. Create a `temp` directory for which the browser has read access on the different machine.
2. Copy all the files from the directory `RCM$ROOT:[CT5.OUTPUT]` to this `temp` directory.
3. Copy the node/date/time specific files to `HARDWARE.HTML` and `TREE_MAIN.HTML`. For example, if you are interested in node X, on date Y, and time Z, then do the following:

Copy the file `X_Y_Z_HARDWARE.HTML` to `HARDWARE.HTML`

Copy the file `X_Y_Z_TREE.HTML` to `TREE_MAIN.HTML`

4. Open a browser.
5. Open the file `TREE_MAIN.HTML` from the `temp` directory.

The next time you run the `FRUDUMP` command, the new `NODENAME_X_Y_Z_TREE.HTML` and `NODENAME_X_Y_Z_HARDWARE.HTML` files need to be copied to the `temp` directory. Then repeat steps 3, 4 and 5 to view the new information.

RCM technical support

This chapter provides information on accessing RCM technical support resources. It contains the following sections:

- RCM technical support
- Contact the RCM team

RCM technical support

If you have a problem using any aspect of RCM including the Data Collectors, data transport or the user interface, please contact us, at the following address:

rcm.support@hp.com

To help us resolve any problems quickly, please send us the following information:

- Your name, RCM user name (registration name), and contact details.
- The access ID (entered during data collector installation), hostname, and serial number of the system on which you collected data.
- The platform, system serial number, operating system version, and data collection utility versions and build numbers.
- The platform, operating system name and version, and browser name and version on the system from which you accessed the RCM Server.
- Details of the problem, including any log files, error files, or messages generated by the system.

Contact the RCM team

The RCM team welcomes any queries or comments that you may have about RCM. If you have questions or comments, or you would like to participate in future field tests or early release programs, contact Kevin McManus.

rcm.feedback@hp.com

A

Appendix A – Files Included in the Data Collector kit

The RCM OpenVMS Data Collector kit contains the following files:

| File | Details |
|----------------------------|--|
| RCM_START.COM | DCL procedure to start the RCM Collection. |
| RCM_COLLECT.COM | DCL procedure that is run on each selected node. |
| RCM_STATUS.COM | DCL procedure to check status of collection. |
| RCM_STOP.COM | DCL procedure to abort an RCM Collection. |
| RCM_HTML.COM | DCL procedure to generate the local HTML files. |
| RCM_PROPATCH.COM | DCL procedure to generate LIF files for ProPatch |
| ZIP-ALPHA.EXE | Info-ZIP ZIP utility for OpenVMS Alpha. |
| ZIP-VAX.EXE | Info-ZIP ZIP utility for OpenVMS VAX. |
| RCM\$DEFAULTS.CFG | Template configuration file. |
| RCMVMS_V4_UG.TXT | A text version of this User Guide. |
| HSDSA-SCRIPT-ALPHA.EXE | Utility to collect HSJ/HSD information on OpenVMS Alpha. |
| HSDSA-SCRIPT-VAX.EXE | Utility to collect HSJ/HSD information on OpenVMS VAX. |
| RCMHS.EXE | Utility to read HSZ/G data |
| RCM\$LICS_ALPHA.LIST | Modified version of DASC\$LICS.LIST file from DASC V5.4. |
| RCM\$LICS_VAX.LIST | Modified version of DASC\$LICS.LIST file from DASC V5.4. |
| RCM\$SOFT_ALPHA.LIST V5.4. | Modified version of DASC\$SOFT.LIST file from DASC |
| RCM\$SOFT_VAX.LIST | Modified version of DASC\$SOFT.LIST file from DASC V5.4. |
| UUENCODE_ALPHA.OBJ | UUencode utility object file for Alpha |
| UUENCODE_VAX.OBJ | UUencode utility object file for VAX |
| FRU.OBJ | Extracts FRU Table 4 from memory for DECevent to read. |
| RCM_SETUP.COM | Procedure used by PCSI when installing RCM. |
| RCM_DEINSTALL.COM | Procedure used by PCSI when removing RCM. |
| RCM.RELEASE_NOTES | Release Notes. Renamed at installation to SYS\$HELP:RCM040.RELEASE_NOTES |

Appendix A – Files Included in the Data Collector kit

| File | Details |
|-----------------------|---|
| CT5170_OVMS.EXE | OpenVMS Alpha self-extracting executable with CT5 reader. |
| RCM_SANSNMP.COM | RCM procedure to read SAN switch data using the following file: <code>sys\$system:TCPIP\$SNMP_REQUEST.EXE</code> |
| SWITCHES_TEMPLATE.DAT | Template file to show the format to be used in SWITCHES.DAT for switch information if SAN switch data is to be collected. |
| RCM_EVA.COM | RCM procedure to get the EVA data. |
| SSSU_V2.EXE | SSSU V2 executable for HP AlphaServer systems running HP OpenVMS. |
| SSSU_V3.EXE | SSSU V3 executable for HP AlphaServer systems running HP OpenVMS. |
| EVA_TEMPLATE.INI | Template file to show the format of EVA.INI. |

B

Appendix B – Format of SWITCHES.DAT

This appendix provides the template for RCM\$DATA:SWITCHES.DAT, which is read by the RCM Data Collector to establish the IP address and community string of the switches from which it will obtain information.

The RCM Data Collector needs the community string since it uses SNMP tools to retrieve information.

The file is based on the following grammar:

- `line ::= comment | data`
- `comment ::= '#' characters`
- `characters ::= character characters`
- `character ::= 0-9a-zA-Z`
- `data ::= IP:community`
- `IP ::= dd.dd.dd.dd`
- `community ::= characters`
- `dd ::= 0-255`

Notes:

1. A community string *must* be specified. Defaults are not allowed in this file.
2. If there is a '#' character at the start of a line, the rest of the line is ignored.

Examples of valid lines are as follows:

- `16.209.134.63:public`
- `16.209.134.63:private`

C

Appendix C – Format of EVA . INI

This appendix provides the template for RCM\$DATA:EVA . INI which is read by the RCM Data Collector to establish the IP address and administrator account details for the EVA controllers from which data is to be collected.

The following text provides an example of the content of a typical EVA.INI template file:

```
#Use this format to specify EVA SAN Appliance  
Information for RCM.
```

```
#[SSSU v2]  
#<IPAddress>:<username>:<password>  
#<IPAddress>:<username>:<password>
```

```
#[SSSU v3]  
#<IPAddress>:<username>:<password>  
#<IPAddress>:<username>:<password>
```

```
#example:
```

```
[SSSU v2]  
16.209.134.1 admin secret  
16.209.134.4 admin password
```

```
[SSSU v3]
```