

DG/UX Real-time Performance Monitor (UX/RPM) Release Notice
Revision 3.00
Model Number R058A
October 1994
085-001447-00

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1. INTRODUCTION

This release notice provides you with information about revision 3.00 of UX/RPM that is not available in the product documentation or has changed since the last release.

This product consists of the following parts:

Part Description -----	Part Number -----
1. UX/RPM release notice	085-001447-00
2. UX/RPM release media	See Section 7 of this release notice

This printed release notice always accompanies the software. You can print additional copies of this notice after you have installed the product. It is included in the DG/UX software release management release area in `"/usr/release/085001447_00"`. A link file named `"/usr/release/rpm_3.00_rn"` also resolves to the same release notice text file.

Please read the entire release notice before installing UX/RPM. Installation directions are in section 8.

2. PRODUCT DESCRIPTION

UX/RPM for AViiON Systems (referred to as UX/RPM throughout this document) is a Real-time Performance Monitor developed by Data General's SEPAC organization to allow DG/UX system administrators to view and measure key DG/UX performance statistics at a glance.

Easy to use, UX/RPM provides a quick and efficient way to identify the user processes impacting DG/UX system performance.

UX/RPM features:

- o Highlights key performance statistics on a single DG/UX system.
- o Helps to quickly identify performance bottlenecks.
- o Displays data over short or long periods of time.
- o Shows maximum and minimum values and when they occurred.
- o Displays process information - sorted by CPU, memory and priority.
- o Saves screen images to disk for later evaluation.
- o Collects performance data to disk for later playback or conversion.

- o Converts collected data to DIF (Data Interchange Format) for use by spreadsheets and databases.

3. ENVIRONMENT

3.1 Hardware

UX/RPM runs on any AViiON System and is designed to run on most display devices. All UX/RPM functions can be accessed through single ASCII key strokes or through function keys on terminals that support function key use. UX/RPM uses a general purpose library to handle the screen and understand function keys on your terminal. The TERM environment variable must be set correctly for UX/RPM to operate correctly on your terminal. An incorrectly set TERM variable may result in unrecognizable data being written to the screen. Pressing "q" will allow you to exit UX/RPM if you find yourself in this situation. Being unable to use the full width of the screen is also a symptom of the TERM variable not being set correctly.

3.2 Software

DG/UX revision 5.4 release 2 or later is required.

Several features new to UX/RPM Rev 3.0 require DG/UX 5.4R3.0 or later. Values which are only available on a more recent version of DG/UX than you are using with UX/RPM will show as "n/a".

4. ENHANCEMENTS AND CHANGES

4.1 Enhancements

4.1.1 Virtual Disk Information

DG/UX 5.4R3.0 introduces virtual disks. These are similar in concept to the logical disks that were supported by earlier release of DG/UX. UX/RPM can collect statistics on virtual disks just like physical disks. The virtual disk screens are otherwise identical to the physical disk screens. Virtual disk data may also be exported to DIF files. The DIF files holding data for virtual disks are called uxrpmvin.dif and uxrpmvum.dif. Their contents are similar to uxrpmdin.dif and uxrpm dum.dif.

4.1.2 Process screen enhancements

The process screen has been enhanced. Pressing the w key displays a pop-up menu which lists the available display types. The user may select a display type from the following:

- s Standard display. This is the display seen in UX/RPM 2.00
- a Display process arguments. This devotes more screen area to displaying the full command line.
- c CPU display. This display shows the User and System CPU time as well as a percentage of the available CPU used. A system with multiple processors will treat all of the processors taken together to equal 100% of the available CPU. Thus a process consuming all of the available CPU from one processor on a four-processor system would show 25% of available CPU used.
- m Memory display. This display shows the Swap space, Memory address and Wait address for each process.
- p Process scheduling display. This shows information new for DG/UX 5.4R3.0. Most elements shown here relate to the scheduling of an individual process.
- v Process virtual memory display. This shows information new for DG/UX 5.4R3.0. These numbers provide detailed information about memory use by a process.
- w Wide display. This display shows extensive information about each process. It is most suitable on wide displays (≥ 132 columns).

All of the process displays will use the full width of the screen to display as much of the process command line as will fit. If you are using a resizable display, such as an xterm window, you must resize the window to the desired width before beginning UX/RPM to utilize the extra width properly. In addition, the TERM definition you are using must be able to make use of the extended width. UX/RPM places function key labels at the bottom of the screen. The right-most label is on the far right side of the screen. This can be used to immediately tell if the TERM environment variable is set properly to take advantage of the full width of the display. If it is not, the LINES and COLUMNS environment variables may need to be set to the correct size of the display.

4.1.3 Virtual Memory Screen enhancements

The virtual memory screen has been enhanced. Pressing the w key displays a pop-up menu. The user may select a display type from the following:

- s Standard display. This is an updated version of the display seen in UX/RPM 2.10.
- o Paging Operations per second.
- p Pages involved in paging activities per second.
- r The Ratio of pages per paging operation.

The windows selected by pressing o, p or r are new in this release and specific to DG/UX 5.4R3.0. They present a grid of information. The following columns are present: Kernel Anonymous, User Private, User Shared, Program File Buffering, Data File Buffering. The following rows are present: Hard Faults, Hard Non-Faults, Soft Faults, Soft Non-Faults, Copy On Write Faults, Replace Dirty, Replace Clean, Forced Clean, Unforced Clean. There is also an extra row across the bottom which shows the total number of pages which are present for each of the columns.

These numbers are not output to DIF files.

4.1.4 Contrib directory

A new directory /usr/opt/rpm/contrib has been added to the distribution. It contains software which may be of some use with UX/RPM. It is distributed as is. No support will be provided for anything in the contrib directory. Use any software found there at your own risk.

4.2 Changes

4.2.1 Display of Key Commands

During playback of log files, the Key Commands section of the menu was not updated to display the available key choices. This has been fixed.

4.2.2 The 'l' and 'L' command keys and -L switch

Previously UX/RPM generated incorrect data for the disk screens. UX/RPM also did not conform to the behavior described in the manual regarding the rpm.lst file. It would truncate any existing rpm.lst file. If the user removed the rpm.lst file after UX/RPM had written to it and while UX/RPM continued to run, requesting additional screen dumps did not create another file. UX/RPM now opens rpm.lst each time a screen dump is requested. Data written will be appended to any existing data.

4.2.3 The 't' command key

The 't' command key would not allow the user to change the date portion of the target time. When viewing data from a log file which crossed midnight, this made it impossible to move directly to data on the other side of midnight from the current position. This has been fixed.

4.2.4 Playback of logfiles collected in a different timezone

UX/RPM now stores timezone information into the log file. This allows UX/RPM to later use that information to set the timezone for the playback session. The data displayed will show the correct local time for the recorded events for the timezone in effect when the data was collected.

5. NOTES AND WARNINGS

5.1 Calculation of Number of Users

UX/RPM uses a different means to count users than the who command does. UX/RPM counts the number of tty devices which have a process attached to them. This will tend to include a number of ttymon processes. The who utility counts entries in /etc/utmp and therefore depends on /etc/utmp being correct. Not all programs which should update /etc/utmp actually do so correctly. The result is an inaccurate user count from the who command.

5.2 Creating entries in /dev/pdsk and /dev/dsk

UX/RPM uses the entries in /dev/pdsk to determine what disks can be monitored. The program expects all the entries in this directory to have been created by DG/UX. If additional entries are created in this directory, other than by DG/UX, they may have unpredictable affect on UX/RPM, including causing the program to terminate abnormally. Presence of non-DG/UX created entries in this directory is not supported by UX/RPM.

5.3 Free swap has been replaced by Free Anonymous

The free swap field has been replaced by by the free anonymous field. Free swap reported the amount of swap space on disk which had not been written to. Free anonymous reports the amount of virtual memory which has not been allocated yet. It was possible for a DG/UX system to report that it was out of swap space with a non-zero free swap value. The free anonymous number is typically smaller and is the value used by DG/UX to determine when virtual memory has been exhausted.

6. DOCUMENTATION

6.1 Manuals

Part Number	Title
-----	-----
093-000874-02	DG/UX Real-time Performance Monitor (UX/RPM) Reference Manual
093-701129-02	Analyzing DG/UX System Performance

Please note that the manual includes a quick reference card with several examples showing normal usage of UX/RPM.

7. SOFTWARE

7.1 Media

Model Number	Part Number	Description
-----	-----	-----
R058A-A	079-000624-00	QIC150 TAPE
R058A-D	068-003082-00	CD-ROM

7.2 Organization

The tape organization is as follows:

Vol	File	Name	Size	Type
---	----	----	----	----
1	1	0.reserved	16384	Empty
1	2	1.xdrtoc	512	toc
1	3	2.rpm	3702784	tar

CD-ROM organization has a base directory, which includes a copy of the Release Notice. There is a subdirectory to the base directory, which contains:

- QIC tape files as listed
- A DESC file containing a product description that sysadm uses.

7.3 Files

UX/RPM files are listed in `"/usr/release/rpm_3.00.fl"`.

8. INSTALLATION INSTRUCTIONS

UX/RPM is distributed as a DG/UX Software Package. Use the `sysadm(1m)` utility to install the distribution media on your system. See the man page or the manual "Installing and Managing the DG/UX System" for details.

UX/RPM installation may be done with the system in multi-user mode; it will not affect normal operation of the system. UX/RPM takes about 4 MB of disk space and installs into /usr/opt/rpm. If you choose you may create a logical or virtual disk to hold UX/RPM and mount it at that location before installing UX/RPM. This is not required. If you use the rpm_setup script to automatically collect performance data, you must have a place for the data to be stored. Depending on the log level you select, the number of snapshots collected and the number of days this data is retained, the data collected may be quite large. By default /var/spool/rpm is used for this data. You may wish to create a logical or virtual disk for this purpose and mount the virtual disk on /var/spool/rpm. This can be done after UX/RPM has been installed. The reason for making this a separate file system is to prevent other important file systems, such as root, from being filled up by log files and interfering with normal system operation.

8.2 Licensing UX/RPM to Run

UX/RPM is licensed either by cpu id or by an expiration date. The rpm_license program, found in /usr/opt/rpm/sbin, allows you to enter a date key or cpu key and is automatically executed when the UX/RPM package setup script is run. Distributed with UX/RPM is a temporary license sheet that contains a date key.

If this is a demo copy of UX/RPM no other action is necessary. If this is a fully licensed copy of UX/RPM then copy down the cpu id displayed by rpm_license and call or fax the cpu id to Data General's SEPAC organization. The phone numbers for SEPAC are displayed by rpm_license.

If the display is garbled, your TERM environment variable may be set incorrectly. If you experience difficulties because your terminal type is set incorrectly (TERM environment variable), please set your terminal type to match the terminal you are using. If you were unable to enter your date key earlier please run /usr/opt/rpm/sbin/rpm_license. This will allow you to enter your date key as described above.

8.2 Upgrading from a previous release of UX/RPM

If you are upgrading from a previous release of UX/RPM, your existing license file is preserved and rpm_license is not run during installation.

9. PREPARING A SOFTWARE TROUBLE REPORT (STR)

The UX/RPM software is constantly being reviewed and updated. If there are requests for enhancements, suggestions concerning the product, or if an error is found in the UX/RPM software or its documentation, please fill out and return a Data General SEPAC Software Trouble Report (STR). You may alert SEPAC at (404) 705-2520 of your finding. To help expedite processing, include only one problem or suggestion on each STR form. Use the following guidelines when filling out your STR.

1. Decide the type of STR to be submitted:

Enhancement -- describe the proposed enhancement clearly and why it is requested. The better the description, the easier it will be for SEPAC to evaluate the suggestion.

Documentation error -- give the page and section or paragraph, and describe the error.

Software problem -- clearly and specifically state the problem so that support personnel can try to reproduce it. Avoid phrases such as "the program does not work" or "fails".

2. On the STR form provide all of the following information:

Date
Revision of UX/RPM software
Revision of the operating system

3. If the problem occurred soon after installing a new revision of the operating system, UX/RPM or new hardware, note this.

SEPAC Software Trouble Report

Originator Information

Originator STR #:	SEPAC Control #:
STR Originator:	Phone:
Company Name:	
Address:	

Problem Information

Product Name: UX/RPM	Component (if known):
DG/UX Revision:	UX/RPM Revision:
Detailed problem description:	

Attachments

<input type="checkbox"/> Magnetic Tape	<input type="checkbox"/> Notes
<input type="checkbox"/> Additional Pages	<input type="checkbox"/> Plots
<input type="checkbox"/> Listing	<input type="checkbox"/> Other:

Problem Status

<input type="checkbox"/> Cannot work around problem	<input type="checkbox"/> Can work around problem
<input type="checkbox"/> Non-critical	<input type="checkbox"/> Request for enhancement

Frequency

<input type="checkbox"/> Reproducible	<input type="checkbox"/> Erratic
<input type="checkbox"/> Rare	<input type="checkbox"/> Possible Hardware

10. Contacting SEPAC

For additional information on performance products and/or services contact Data General's SEPAC at:

Data General SEPAC
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Atlanta, GA 30319

Phone: 404/705-2520

Fax : 404/705-2660

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End of Release Notice