RSTS/E™ Software Dispatch Review
August 1990

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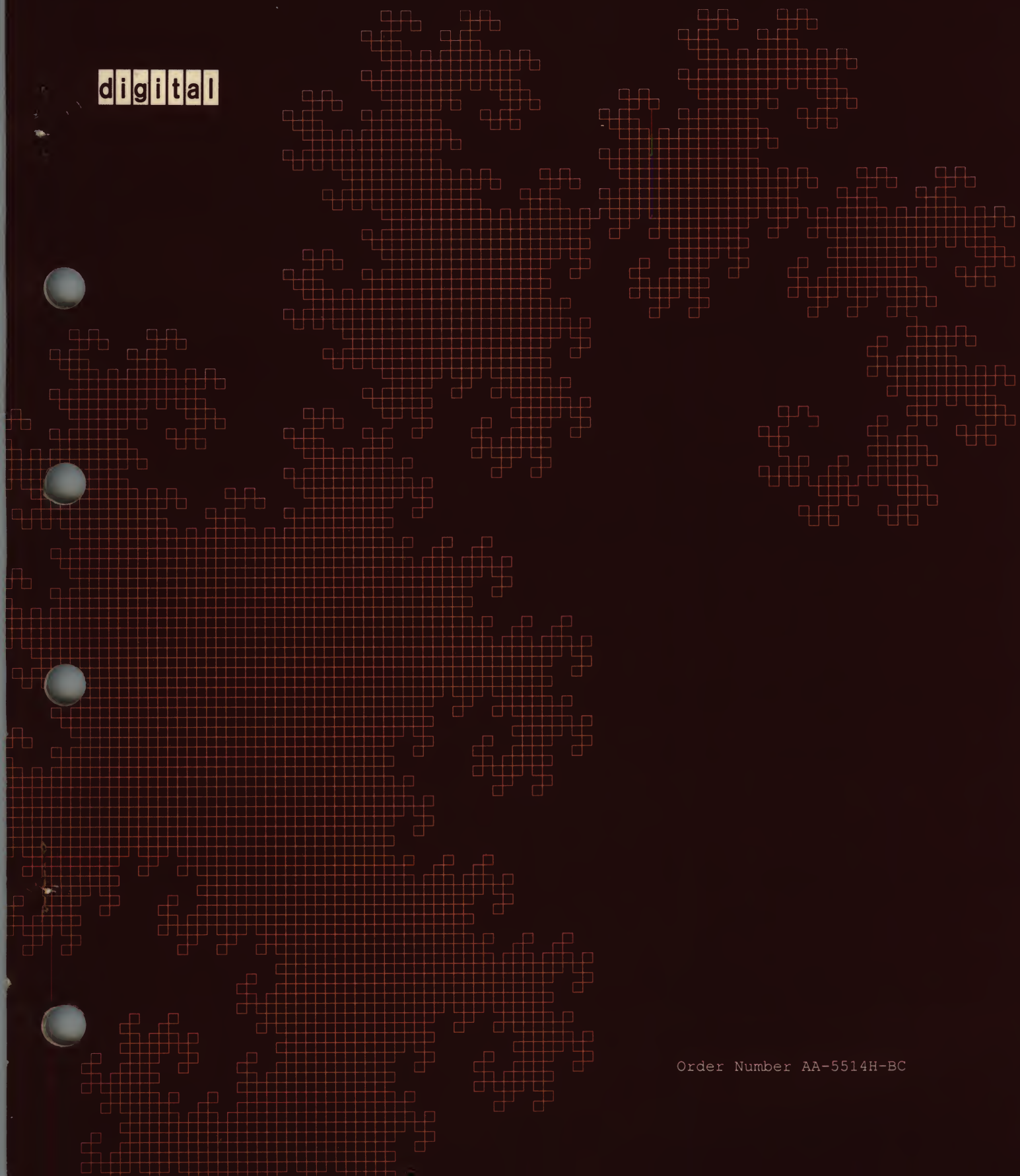

Order Number AA-5514H-BC

RSTS/E™ Software Dispatch Review

August 1990

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RSTS/E Software Dispatch Review

Published by
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Patricia Callahan, Editor

Contents

Announcing PDP-11 C for RSTS/E Version 1.0

RSTS/E
PDP-11 C V1.0

Micro Systems Development (MSD) Languages and Tools announces the release of its first version of the popular C compiler for the PDP-11™ computer family with support for RSTS/E™ operating systems.

Product Description

PDP-11 C for RSTS/E is a reliable C language processor for Digital's major proprietary operating systems on the PDP-11. It is highly compatible with the American National Standards Institute (ANSI) Standard X3J11/90-014, dated February 14, 1990. PDP-11 C can be used for writing operating system code, system software, and computation-intensive data modeling applications. The product consists of a compiler, a run-time library, and documentation.

The PDP-11 C compiler runs on RSTS/E operating systems. The compiler produces PDP-11 object modules that can be linked with operating system-specific libraries to create programs that run on the RSTS/E PDP-11 systems.

Product Features

PDP-11 C is highly compatible with the ANSI standard and has several extensions beyond the ANSI requirements designed for the PDP-11 family of central processors. It is also highly compatible with VAX C.

PDP-11 C supports instruction and data (I&D) space, extended instruction set (EIS), or floating-point unit (FPU) code generation, integrated preprocessor, and access to RMS-11,™ FCS-11, and operating system services.

PDP-11 C is an alternative to MACRO-11. PDP-11 C can be used to program system applications that allow users to develop code for inclusion into resident libraries, device drivers, and other low-level system routines.

PDP-11 C facilitates writing programs for international markets by meeting key Digital standards for software product internationalization.

PDP-11 C provides an Installation Verification Procedure (IVP) to verify the installation of PDP-11 C and its run-time libraries. The tests include compile-time error reporting.

PDP-11 C protects application programming investments. Applications written using PDP-11 C will run on PDP-11 systems, will be easy to maintain, and will be easy to migrate onto VAX™ systems now or in the future.

Additional Information

For additional product information, refer to Software Product Description (SPD) No. 09.32.00, PDP-11 C for RSTS/E, Version 1.0.

Ordering Information

PDP-11 C follows the established PDP-11 layered product pricing tiers.

PDP-11 C Licenses

Model No. QYV66-UZ, PDP-11 C, RSTS/E, Class L, single CPU.
Model No. QJV66-UZ, PDP-11 C, RSTS/E, Class H, single CPU.

Software Product Services

Available services include Software Revision Right-to-Copy, Documentation-Only, Installation Service, the traditional DECsupport,™ Basic, and Self-Maintenance Services, and the new portfolio Layered Product Services.

Availability

PDP-11 C Version 1.0 is available now.

RSTS/E V10.0 Cumulative Index

This section is an index to all articles included in the original *RSTS/E Maintenance Notebook*. This index will be updated monthly as new articles are published in the *RSTS/E Software Dispatch*. Missing sequence numbers may pertain to problems unique to other versions of the same product or other major operating systems.

Unassigned articles are indicated: RESERVED.

Flags are currently being installed for all articles. The flags and definitions are as follows.

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- *N = Note.* These articles provide explanatory information that supplements the manual set and provide more detailed information about a program or package. They also provide procedural information to make it easier to use a program or package.
- *- Article appeared in RSTS/E Software Dispatch Review, August 1990.*
- ** Article appeared in RSTS/E V10.0 Maintenance Notebook, August 1990.*

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Software Performance Report Submissions for U.S. Software Contract Customers

As part of Digital's continuing effort to improve customer satisfaction, U.S. Software Product Services (SPS) has changed the process for U.S. customers to submit Software Performance Reports (SPRs). These customers should report their software problems by calling their Customer Support Center (CSC) or by accessing the Digital Software Information Network (DSIN).

The CSCs have the technical expertise to quickly respond to many of our customers' problems without requiring Engineering intervention. Because many SPRs are duplicates of problems that have already been addressed by Engineering, the CSCs can immediately respond to many inquiries.

If you do not have access to a CSC, submit an SPR by following the instruction page attached to the front of the SPR form.

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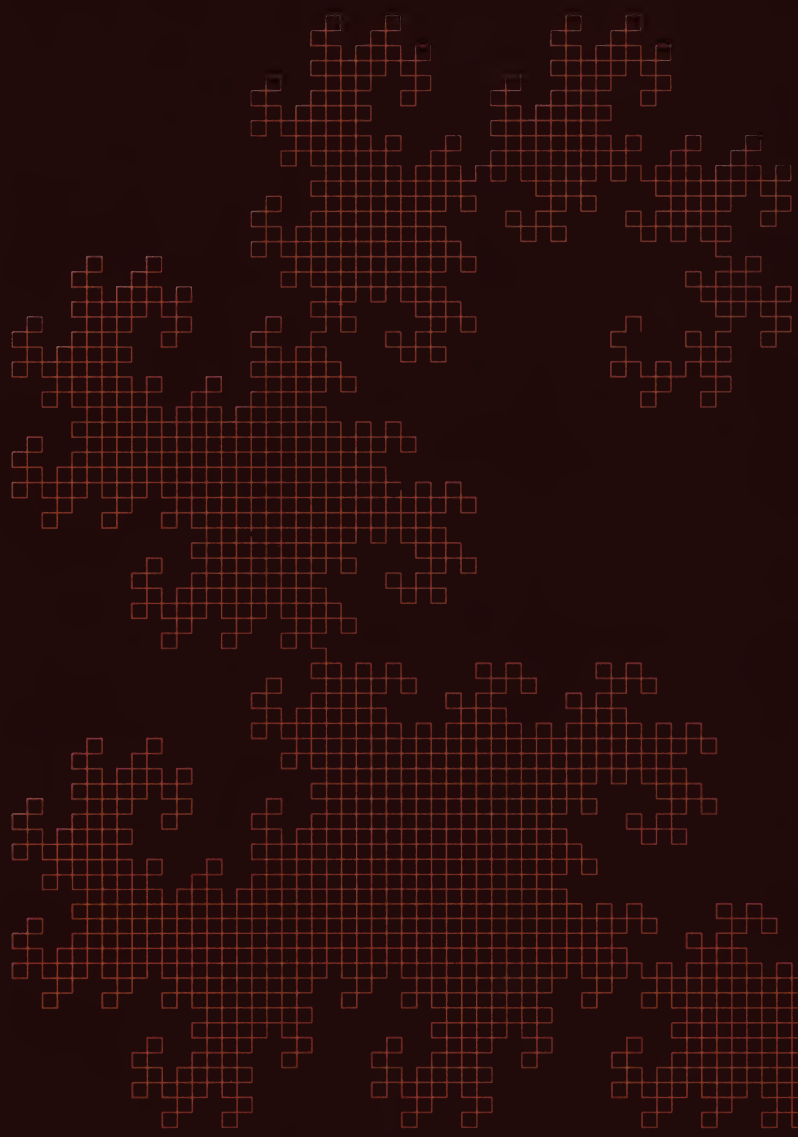

Fractal by Peter Van Roy
Dynamic Software

Digital Equipment Corporation
Printed in U.S.A.

RSTS/E Software Dispatch
September 1990

digital

Order Number AD-5514H-B1

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September 1990

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RSTS/E Software Dispatch

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The *RSTS/E Software Dispatch* complements the *RSTS/E Software Dispatch Review*. New and revised Software Product Descriptions (SPDs), programming notes, software problems and solutions, and documentation corrections are published here. Much of the material is developed from Software Performance Report (SPR) answers significant to the general audience and is printed here to supplement the maintenance notebook (established by the Software Dispatch Review).

Distribution
The *RSTS/E Software Dispatch* is directed to one software contact for each software product. No mailing will be made to addresses without a software contact name. **Address change requests should be sent to the nearest Digital field office. Include the new address and mailing label from the most recently received publication.**

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Patricia Callahan, Editor

Contents

Product Availability Dates

The following list contains the date and version of the latest release of supported software products. Customers who have a Software Product Services (SPS) agreement during the month the product becomes available are eligible to receive the new release. Eligible customers who have not received the new release should contact their local Digital office.

Product	Version	Available
ADE/RSTS	2.4 RETIRED	Apr 87
BASIC-PLUS-2 for RSTS/E,PDP-11	2.6	Aug 89
COBOL,PDP-11	4.4 RETIRED	Sep 88
COBOL-81/RSTS/E	3.0	Apr 89
DATATRIEVE-11	3.3A	Feb 90
DECdx/RSTS	1.0	Nov 84
DECmail-11 for RSTS/E and Micro/RSTS	3.1	Dec 87
DECnet/E	4.1	Jan 89
DECtap	1.5A RETIRED	Jun 88
DECWORD/DP	1.2 RETIRED	Apr 89
DMS-500	2.1 RETIRED	Aug 87
FMS-11/RSTS	2.1	Jan 88
FORTRAN IV/RSTS/E	2.8	Dec 88
PDP-11 SYMBOLIC DEBUGGER/RSTS (formerly FORTRAN-77 DEBUG/RSTS/E, PDP-11)	2.1	Dec 88
PDP-11 C for RSTS/E	1.0	Jun 90
FORTRAN-77/RSTS/E, PDP-11	5.3	Oct 88
GIGI Software	1.0 RETIRED	Feb 86
INDENT	1.4 RETIRED	Oct 87
MENU-11/RSTS	2.0	Dec 83
Message Router for RSTS/E	1.0 RETIRED	Mar 87
RPG II, PDP-11	8.8 RETIRED	Jan 87
RSTS Smart Mailer	1.1 RETIRED	Dec 85
RSTS/E	9.7	Aug 89
RSTS/E DECgraph-11	1.2 RETIRED	Aug 87
RSTS/E DIBOL	6.1	Aug 89
RSTS/E High Performance 2780/3780 Emulator	1.1 RETIRED	Mar 86
RSTS/E V8.0 UPDATE	G	Apr 85
RSTS/E 3271 Protocol Emulator	2.1 RETIRED	Mar 86

Announcing RSTS/E Version 10.0

RSTS/E V9.7
General Notes
System Notes

Digital announces its continued commitment in providing quality PDP-11 software to enhance your investment with the release of RSTS/E Version 10.0 (Q*430). This latest version supports the new Micro PDP-11/93 and PDP-11/94 processors as well as adding features that enhance the capability and reliability of RSTS/E.

Product Description

RSTS/E Version 10.0 is a new release that updates and supports the hardware and software features of RSTS/E Version 9.7. This release contains corrections to known problems that were found in Version 9.7 and prior versions, plus the addition of several new features.

New Features for Version 10.0

Command Line Editing and Command Recall

RSTS/E Version 10.0 provides VMS-compatible Command Line Editing and Command Recall. Command Line Editing allows full editing of your current command line, while Command Recall allows you to recall your most recently entered commands. Both features are available from DIGITAL Command Language (DCL), from other run-time systems, or from within a user program. The combination of these two features significantly improves productivity by reducing the keystrokes required to enter commands or correct typing errors.

Operator/Message Services

The Operator/Message Services (OMS) package represents a significant enhancement to the overall management of RSTS/E systems. Combined with the Print/Batch Services (PBS) package and the BACKUP/RESTORE package, OMS functionally replaces the OPSER package. (The OPSER package will still be included for customers that need to continue using it.)

BACKUP/IMAGE

BACKUP/IMAGE is a new feature that allows for asynchronous copying of a file-structured RSTS/E disk to a newly-initialized disk. You can use this feature to perform disk-to-disk backups or to copy a disk's data to a newer disk when upgrading your hardware.

A related new command, BACKUP/COPY, allows users to perform high-speed file or account transfers from one disk to another.

Improved Terminal Server Support

RSTS/E Version 10.0 supports host-initiated local area transport (LAT) connections. With this feature, system programs such as PBS, and user applications can now access printers, modems, or other devices connected to LAT Terminal Servers.

PBS Enhancements

Several enhancements to PBS make the package easier to use and also help achieve the goal of replacing the OPSER package.

DCL Enhancements

Many new DCL commands have been added to support the new features and capabilities introduced with Version 10.0. Most enhancements center around VMS compatibility.

Extended Logicals

Version 10.0 lifts several longstanding restrictions around the use of logicals. Users can now define significantly more user logicals than before. In addition, both system and user logical names can now be up to 15 characters long and can include underscore characters.

Key Benefits of Version 10.0

The key benefits of RSTS/E Version 10.0 include the following:

- Better productivity through Command Line Editing and Command recall
- Easier system management through OMS, improvements to the BACKUP/RESTORE package, and enhancements to PBS
- Simpler installation, especially when performing upgrades from earlier versions
- Improved performance and reliability in areas such as LOGIN and MSCP disk input/output (I/O)
- Many new features and enhancements
- Revised documentation, plus a new *RSTS/E Version 10.0 Internals and Data Structures Manual* included in the documentation set

Documentation

The documentation for RSTS/E Version 10.0 consists of a new *RSTS/E Version 10.0 Internals and Data Structures Manual*. This is a significant addition to the RSTS/E documentation set, as it provides excellent technical information about the internal data structures and operation of the RSTS/E operating system. This manual will prove invaluable to RSTS/E technical support people and system programmers.

Version 10.0 includes new versions of the most commonly used manuals in the RSTS/E documentation set.

New binders and dividers are also included with Version 10.0 to give your RSTS/E documentation set a new look.

Availability/Ordering

RSTS/E Version 10.0 is available now. For specific service availability and ordering information, contact your local Business Account Specialist.

DCL May Overflow Its Stack—Mandatory Patch

RSTS/E V9.7
DCL Run-time System and Utilities
DCL.RTS

Problem

Under certain circumstances, DCL may print "??Stack overflow" upon execution of a command that does not accept any qualifiers. An example of this type of command is the SET NOVERIFY command.

After DCL's stack has overflowed, several other problems may result, including problems with DCL's symbol table. These problems will often result in "??Odd address trap" errors in DCL.

Solution

The following patch procedure corrects this problem in RSTS/E Version 9.7.

This problem was corrected for RSTS/E Version 10.0.

Procedure

1. This is a required patch to the DCL run-time system.
2. The patch described in step 4 can be installed using the PATCH option of INIT.SYS:

```
Option: PATCH
File to patch? DCL.RTS          (DCL run-time system name)
```

3. This patch can be installed using ONLPAT, the online patching program:

```
RUN $ONLPAT
Command File Name? <CR>         (RETURN for manual patch installation)
File to patch? [0,1]DCL.RTS     (DCL run-time system name)
File found in account [0,1]
```

4. The patch is as follows:

```
Base address? CUIPAR
Offset address? 412
 Base    Offest  Old     New?
??????  000412  005712  ? 1436
??????  000414  001435  ? 5712
??????  000416  016246  ? 1434
??????  000420  000000  ? 11246
??????  000422  004567  ? ^Z    (CTRL/Z for new offset)
Offset address? 506
 Base    Offest  Old     New?
??????  000506  000741  ? 742
??????  000510  005000  ? ^C    (up-arrow/C to exit; CTRL/C for INIT)
```

5. If the patch was installed using ONLPAT, it will take effect the next time the run-time system is reloaded. Execute the following command to reload the run-time system:

```
$ UNLOAD/RUNTIME_SYSTEM DCL
```

NOTE

The UNLOAD command will not remove the run-time system, but simply instructs the monitor to reload it the next time a job requests it.

Inserting Duplicate Records into New RMS-11 File from VMS Can Erase File—Mandatory Patch

RSTS/E V9.7
DECnet/E Utilities V4.1 for RSTS/E V9.7
FAL.TSK

Problem

If you run a program on a VMS system to create an RMS-11 indexed file on a RSTS/E system, then insert duplicate records and immediately close the file, the file will be erased.

This problem lies within the File Access Listener utility (FAL.TSK) on RSTS/E. When a duplicate record is inserted into an indexed file, RMS-11 reports the operation's status to be "conditional success." FAL misinterprets this exit status as a serious failure. If no other successful record operations are performed before the file is closed, then FAL erases the file.

Solution

The following patching procedure corrects the problem.

Procedure

1. This is a mandatory patch to FAL.TSK.
2. This patch can be installed using ONLPAT, the online patching program:

```
$ RUN $ONLPAT
Command file name? <CR>          (RETURN for manual installation)
File to patch? DECNET$:FAL.TSK
File found in account [0,12]
Base address? PUTDAT
Offset address? 116
Base   Offset  Old      New?
?????? 000116  001402   ? 101402
?????? 000120  000167   ? ^C    (up-arrow/C to exit)
```

RSTS/E V9.7 Cumulative Index

This is a complete listing of all articles for RSTS/E V9.7 and layered products. Missing sequence numbers may pertain to problems unique to other versions of the same product or other major operating systems.

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- *- = Article is being republished.*

Sequence	Title	Released	Corrected	Mon/Yr
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0.1.35 N	Cooperative Promotional Agreement Signed with Northwest Digital Software, Inc.	V9.7	N/A	Jun 90
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0.1.38 N	Announcing New Hardware Support for RA90 Disks	V9.7	N/A	Dec 89
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2.2.2 R	Online Monitor Installation May Get Unexpected Error	V9.7	N/A	Jan 90

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3.1.10 M	Problem with CTRL/C While Using Supervisor Mode RMS	V9.7	N/A	Nov 89
3.1.11 M	Crash Code Does Not Save MMU Registers Correctly — Mandatory Patch	V9.7	V10.0	Jul 90
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3.3.25 M	Infinite Loop May Occur When Processing LOGIN.COM — Mandatory Patch	V9.6/V9.7	N/A	Jan 90
3.3.26 M	Fix Memory Corruption Problem When Using AUTOPROMPT Suppression — Mandatory Terminal Service Patch	V9.7	N/A	Mar 90
3.3.27 M	Spawning a Logged In Job May Cause System to Crash — Mandatory Patch	V9.7	N/A	Apr 90
3.3.28 M	Failure to Autobaud on Dialup Lines — Mandatory Patch	V9.7	N/A	Aug 90
3.3.29 M	System May Crash When Reattaching — Mandatory Patch	V9.7	N/A	Aug 90
File Processor Patches				
3.5.17 M	KMCUT Status Command Will Corrupt Memory	V9.6/V9.7	N/A	Oct 89
3.5.18 M	Asynchronous I/O May Cause File to Grow Too Large — Mandatory Patch	V9.6/V9.7	N/A	Dec 89
3.5.19 M	Detach from Dynamic Keyboard May Cause System to Crash — Mandatory Patch	V9.7	N/A	May 90 -
3.5.20 M	Issuing the Swap Console Directive May Crash System — Mandatory Patch	V9.7	N/A	Aug 90
Print/Batch Services Package (PB$)				
PBS.TSK				
15.3.6 M	START/SERVER/PAGE Does Not Start on New Page — Mandatory Patch	V9.7	V9.7	May 90
15.3.7 M	Possible Security Problem in PBS — Mandatory Patch	V9.7	V10.0	Jun 90
Run-Time Systems Support				
DCL Run-Time System and Utilities				
DCL.RTS				
20.1.12 M	DCL May Overflow Its Stack — Mandatory Patch	V9.7	V10.0	Sep 90
DECnet/E V4.1				
Utilities				
FAL.TSK				
31.5.1 M	Inserting Duplicate Records into New RMS-11 File from VMS Can Erase File — Mandatory Patch	V9.7	N/A	Sep 90

Sequence	Title	Released	Corrected	Mon/Yr
DECnet/E V2.n				
Utilities				
NFT.TSK				
31.11.1 M	NFT May Hang During Wildcard Copy in Block Mode	V9.7	N/A	Oct 89
DATATRIEVE for RSTS/E V9.7				
44.2.1 M	DATATRIEVE V3.3 DDMF Fails on Non-Supervisor Mode Systems — Mandatory Patch	N/A	N/A	Apr 90

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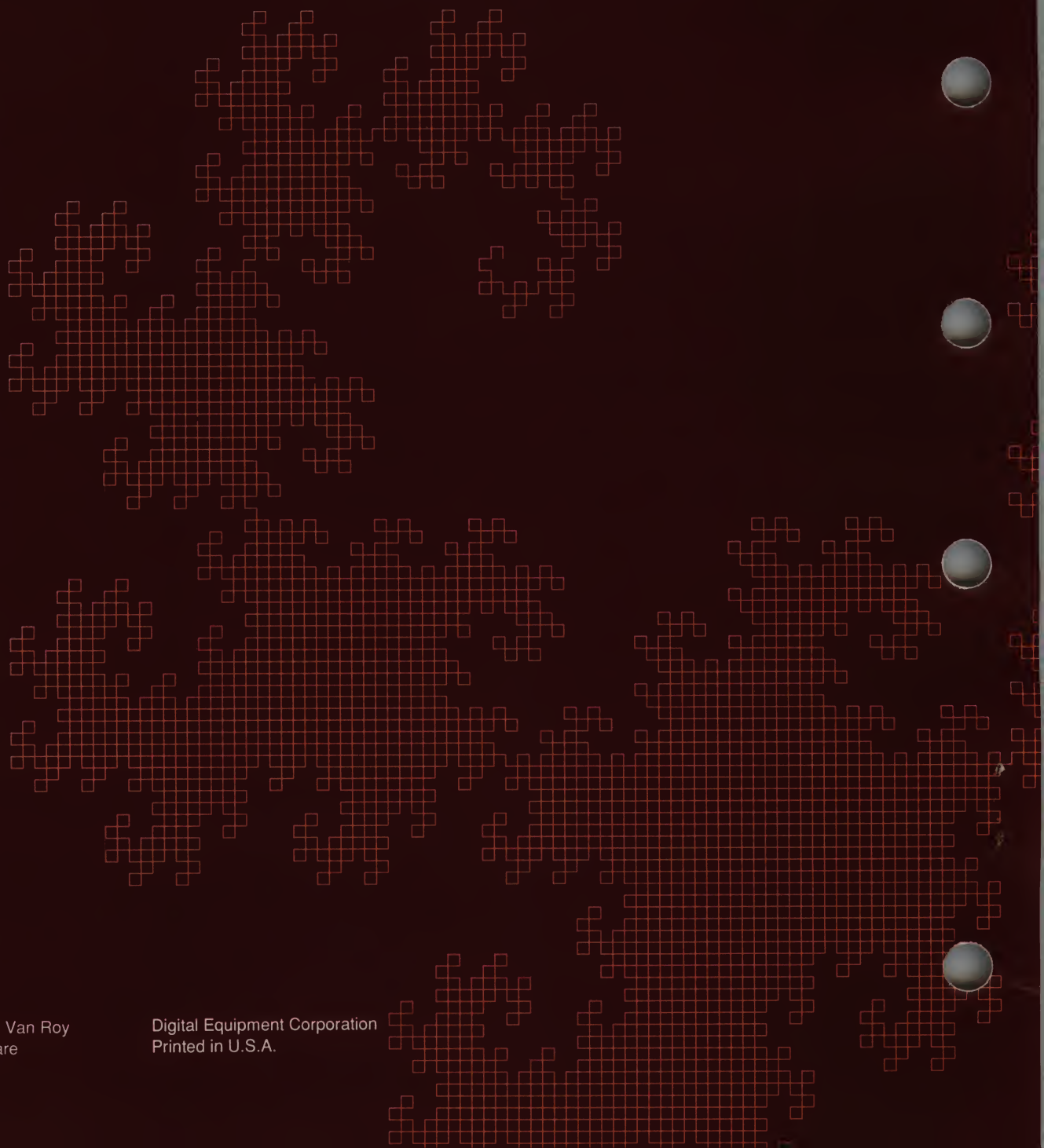

Fractal by Peter Van Roy
Dynamic Software

Digital Equipment Corporation
Printed in U.S.A.

RSTS/E Software Dispatch
October 1990

digital

Order Number AD–5514H–B2

RSTS/E Software Dispatch
October 1990

Order Number: AD-5514H-B2

ODT Hangs Accessing RA82 and RA90 Disks in Non-File-Structured Mode

RSTS/E V9.7
Auxiliary Library Package (AUXLIB$)
ODT Restriction

ODT.TSK will stay in a run state when accessing RA82 and RA90 disks in non-file-structured mode. If you experience this problem, you can type CTRL/C to exit from ODT.TSK. ODT.TSK will work correctly in file-structured mode when used to access the contents of individual files on RA82 or RA90 disks.

The problem on RA82 disks is corrected in RSTS/E Version 10.0 and later.

The problem on RA90 disks may be corrected in a future release of RSTS/E.

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Communications

The flow of information among users, as well as between users and Digital, is the primary goal of DECUS. Various publications are published by DECUS to support this communication. They include chapter newsletters and *The Proceedings*, a technical volume published after each symposium.

DECUS also publishes the Special Interest Groups *SIGs Newsletter* on a monthly basis. The newsletter is divided into Special Interest Group sections and provides specialized information pertaining to specific Digital products. The monthly newsletter and *The Proceedings* are available through the DECUS Subscription Service.

Seminars

DECUS recognizes the need for ongoing training opportunities that help members keep pace with the changing technologies of the computer industry. To that end, DECUS sponsors 1-day technical seminars throughout the year in various locations. These seminars are developed and presented by DECUS members who are experienced industry professionals.

Program Library

The DECUS Program Library is the main vehicle for the exchange of public domain software among users of all Digital systems. The library contains over 1000 software programs written and voluntarily submitted by users. These programs include compilers, editors, utilities, numerical and statistical functions, as well as games and graphic routines. The library publishes a software catalog on an annual basis that lists and describes all the DECUS programs.

DECUServe

DECUServe is an electronic conferencing system based on VAX Notes. The network is available to all U.S. members 24 hours a day, 7 days a week for an annual subscription fee.

Joining DECUS

You are cordially invited to join with over 100,000 other users of Digital products around the world and begin to share your experiences, both the successes and problems.

For more information, contact the appropriate DECUS Chapter Office.

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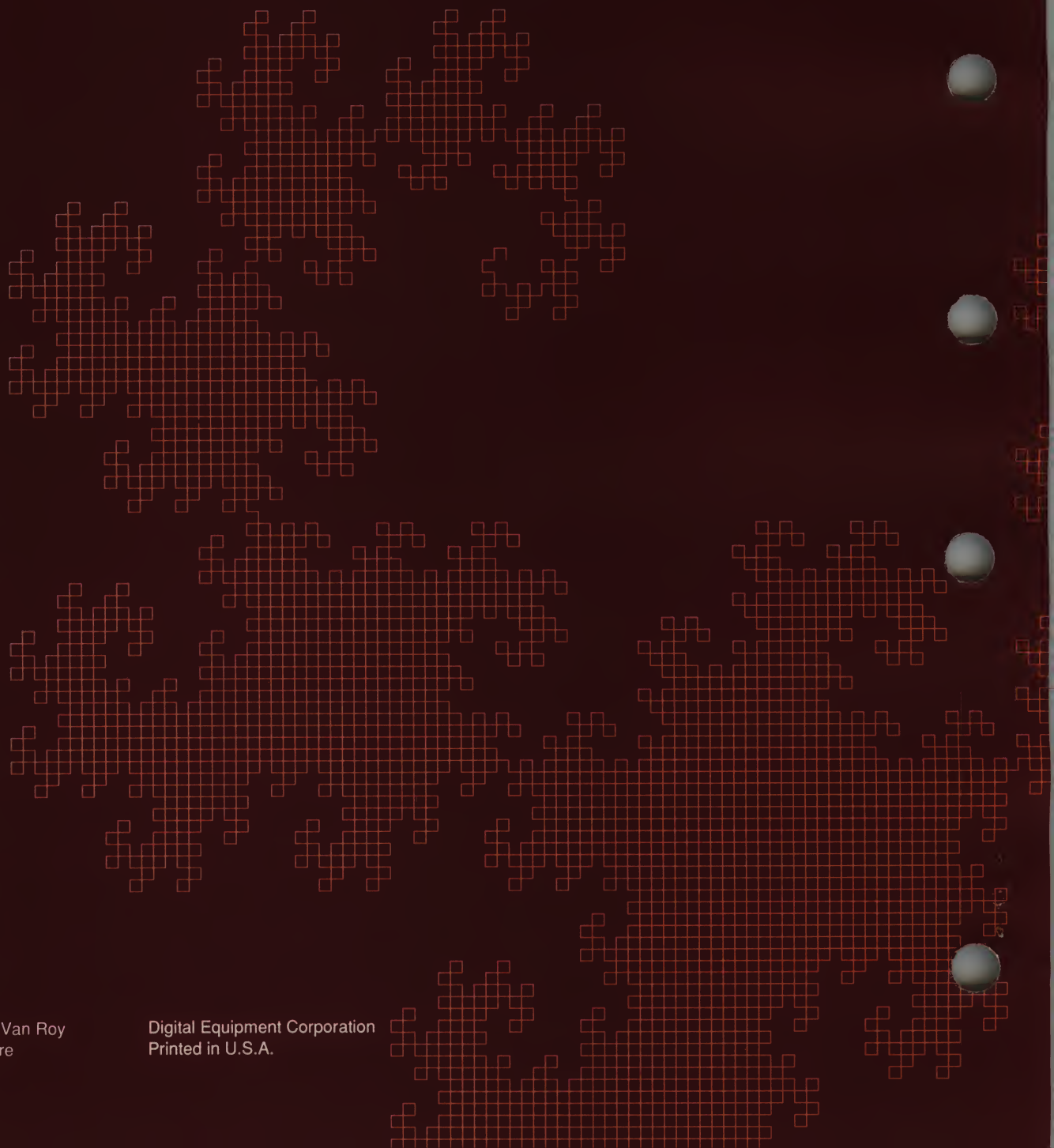

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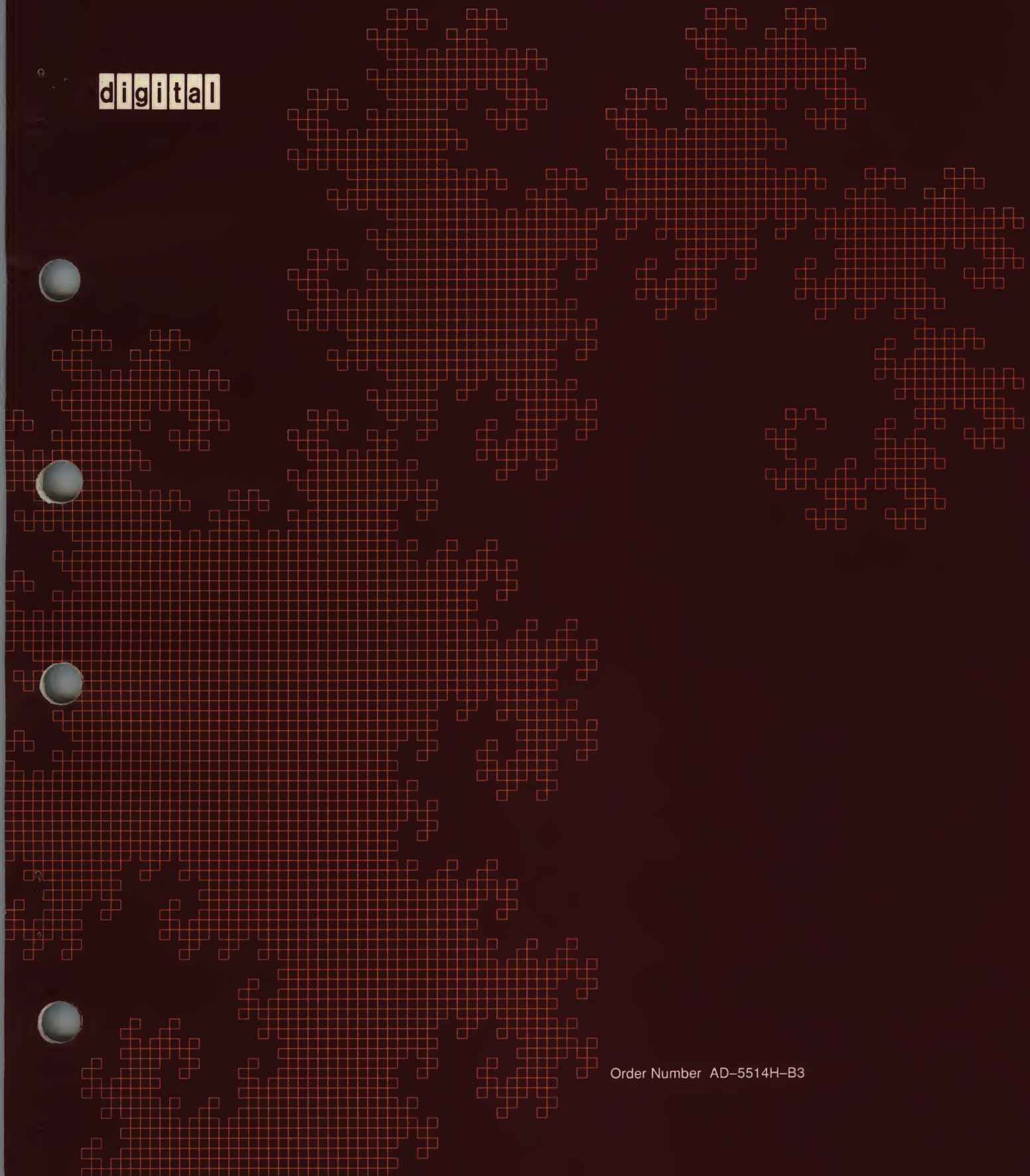

Order Number AD–5514H–B3

RSTS/E Software Dispatch

November 1990

Order Number: AD-5514H-B3

Product Availability Dates

The following list contains the date and version of the latest release of supported software products. Customers who have a Software Product Services (SPS) agreement during the month the product becomes available are eligible to receive the new release. Eligible customers who have not received the new release should contact their local Digital office.

Product	Version	Available
ADE/RSTS	2.4 RETIRED	Apr 87
BASIC-PLUS-2 for RSTS/E,PDP-11	2.6	Aug 89
COBOL,PDP-11	4.4 RETIRED	Sep 88
COBOL-81/RSTS/E	3.0	Apr 89
DATATRIEVE-11	3.3A	Feb 90
DECdx/RSTS	1.0	Nov 84
DECmail-11 for RSTS/E and Micro/RSTS	3.1	Dec 87
DECnet/E	4.1	Jan 89
DECtap	1.5A RETIRED	Jun 88
DECWORD/DP	1.2 RETIRED	Apr 89
DMS-500	2.1 RETIRED	Aug 87
FMS-11/RSTS	2.1	Jan 88
FORTRAN IV/RSTS/E	2.8	Dec 88
PDP-11 SYMBOLIC DEBUGGER/RSTS (formerly FORTRAN-77 DEBUG/RSTS/E, PDP-11)	2.1	Dec 88
PDP-11 C for RSTS/E	1.0	Jun 90
FORTRAN-77/RSTS/E, PDP-11	5.3	Oct 88
GIGI Software	1.0 RETIRED	Feb 86
INDENT	1.4 RETIRED	Oct 87
MENU-11/RSTS	2.0	Dec 83
Message Router for RSTS/E	1.0 RETIRED	Mar 87
RPG II, PDP-11	8.8 RETIRED	Jan 87
RSTS Smart Mailer	1.1 RETIRED	Dec 85
RSTS/E	9.7	Aug 89
RSTS/E DECgraph-11	1.2 RETIRED	Aug 87
RSTS/E DIBOL	6.1	Aug 89
RSTS/E High Performance 2780/3780 Emulator	1.1 RETIRED	Mar 86
RSTS/E V8.0 UPDATE	G	Apr 85
RSTS/E 3271 Protocol Emulator	2.1 RETIRED	Mar 86

Micro/RSTS V2.2 Support Termination Notice

RSTS/E V9.7
General Notes

Digital's support policy for retired products is to maintain support for an 18 month period after retirement.

Micro/RSTS Version 2.2 and its layered products were officially retired on March 6, 1989. Support for these products ended on October 30, 1990.

Micro/RSTS is a subset of RSTS/E and, therefore, customer applications designed for Micro/RSTS can, in most cases, be ported to RSTS/E with no changes.

Micro/RSTS customers are automatically granted a Class L license for RSTS/E. Those customers need only order the appropriate media kit for their system.

RSTS/E V9.7 Cumulative Index

This is a complete listing of all articles for RSTS/E V9.7 and layered products. Missing sequence numbers may pertain to problems unique to other versions of the same product or other major operating systems.

Unassigned articles are indicated: RESERVED.

Flags are currently being installed for all articles. The flags and definitions are as follows.

- *M = Mandatory Patch.* These patches correct errors in the software product. All users are required to apply these patches to maintain consistent "user level" unless the accompanying article specifies otherwise.
- *F = Optional Feature Patch.* These patches extend or configure functionality into the product. These functions will be treated as a supported part of the product for the duration of the current release and may be incorporated in a future release.
- *R = Restriction.* These articles discuss areas that will not be patched in the current release because they require major modification or because they are not consistent with the design of the product. Restrictions, except those described as permanent, are reviewed and modified when possible as part of the normal release cycle.
- *N = Note.* These articles provide explanatory information that supplements the manual set and provide more detailed information about a program or package. They also provide procedural information to make it easier to use a program or package.
- *- = Article is being republished.*

Sequence	Title	Released	Corrected	Mon/Yr
General Notes				
System Notes				
0.1.35 N	Cooperative Promotional Agreement Signed with Northwest Digital Software, Inc.	V9.7	N/A	Jun 90
0.1.37 N	Announcing New Hardware Support for RA70 Disks	V9.7	N/A	Dec 89
0.1.38 N	Announcing New Hardware Support for RA90 Disks	V9.7	N/A	Dec 89
0.1.39 N	RSTS/E Version 9.6 Support Termination Notice	V9.7	N/A	Feb 90
0.1.40 N	Announcing Support for MicroPDP-11/93 Processors	V9.7	N/A	Aug 90
0.1.41 N	Announcing Support for PDP-11/94 Processors	V9.7	N/A	Aug 90
0.1.42 N	Announcing RSTS/E Version 10.0	N/A	N/A	Sep 90
0.1.43 N	Micro/RSTS Version 2.2 Support Termination Notice	N/A	N/A	Nov 90
Initialization				
INIT.SYS Program Patches				
1.1.15 M	DEQNA/DELQA Vector Address of 400 or Greater Will Cause System Crash	V9.6/V9.7	N/A	Oct 89
1.1.16 F	Parity Memory Handling for MicroPDP-11/93 and PDP-11/94 Systems	V9.7	N/A	Aug 90
System Installation and Update				
Installation/Update .COM files				
2.2.1 R	Installation Procedure Does Not Use Reassigned Package Logicals	V9.7	N/A	Nov 89

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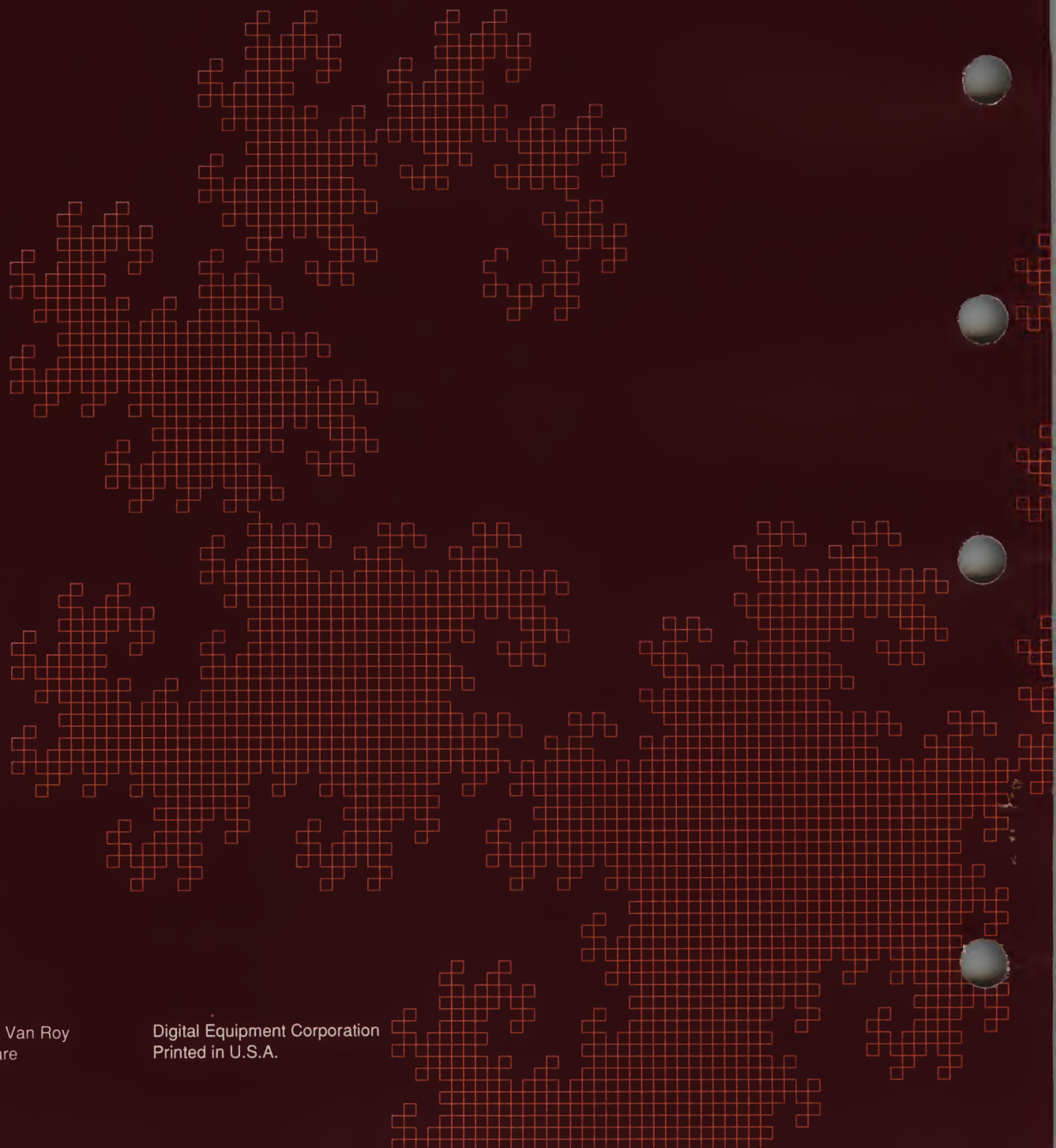

Fractal by Peter Van Roy
Dynamic Software

Digital Equipment Corporation
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RSTS/E Software Dispatch
December 1990

digital

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RSTS/E Software Dispatch

December 1990

Order Number: AD-5514H-B4

RSTS/E Software Dispatch

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The *RSTS/E Software Dispatch* complements the *RSTS/E Software Dispatch Review*. New and revised Software Product Descriptions (SPDs), programming notes, software problems and solutions, and documentation corrections are published here. Much of the material is developed from Software Performance Report (SPR) answers significant to the general audience and is printed here to supplement the maintenance notebook (established by the Software Dispatch Review).

Distribution
The *RSTS/E Software Dispatch* is directed to one software contact for each software product. No mailing will be made to addresses without a software contact name. **Address change requests should be sent to the nearest Digital field office. Include the new address and mailing label from the most recently received publication.**

The prerequisite to using Digital software is the appropriate license. The standard Terms and Conditions and Digital Business Agreement (DBA) contain the license terms for all software other than DECsystem-10.

Patricia Callahan, Editor

Contents

Product Availability Dates

The following list contains the date and version of the latest release of supported software products. Customers who have a Software Product Services (SPS) agreement during the month the product becomes available are eligible to receive the new release. Eligible customers who have not received the new release should contact their local Digital office.

Product	Version	Available
ADE/RSTS	2.4 RETIRED	Apr 87
BASIC-PLUS-2 for RSTS/E,PDP-11	2.6	Aug 89
COBOL,PDP-11	4.4 RETIRED	Sep 88
COBOL-81/RSTS/E	3.0	Apr 89
DATATRIEVE-11	3.3A	Feb 90
DECdx/RSTS	1.0	Nov 84
DECmail-11 for RSTS/E and Micro/RSTS	3.1	Dec 87
DECnet/E	4.1	Jan 89
DECtap	1.5A RETIRED	Jun 88
DECWORD/DP	1.2 RETIRED	Apr 89
DMS-500	2.1 RETIRED	Aug 87
FMS-11/RSTS	2.1	Jan 88
FORTRAN IV/RSTS/E	2.8	Dec 88
PDP-11 SYMBOLIC DEBUGGER/RSTS (formerly FORTRAN-77 DEBUG/RSTS/E, PDP-11)	2.1	Dec 88
PDP-11 C for RSTS/E	1.0	Jun 90
FORTRAN-77/RSTS/E, PDP-11	5.3	Oct 88
GIGI Software	1.0 RETIRED	Feb 86
INDENT	1.4 RETIRED	Oct 87
MENU-11/RSTS	2.0	Dec 83
Message Router for RSTS/E	1.0 RETIRED	Mar 87
RPG II, PDP-11	8.8 RETIRED	Jan 87
RSTS Smart Mailer	1.1 RETIRED	Dec 85
RSTS/E	9.7	Aug 89
RSTS/E DECgraph-11	1.2 RETIRED	Aug 87
RSTS/E DIBOL	6.1	Aug 89
RSTS/E High Performance 2780/3780 Emulator	1.1 RETIRED	Mar 86
RSTS/E V8.0 UPDATE	G	Apr 85
RSTS/E 3271 Protocol Emulator	2.1 RETIRED	Mar 86

RSTS/E V9

4. The patch is as follows:

```
Module name? OVR
Base address? LOG2
Offset address? 402
 Base   Offset  Old     New?
??????  000402  ??????  ? 4737
??????  000404  ??????  ? FIPPAT
??????  000406  010446  ? ^Z    (CTRL/Z for new offset)
Offset address? 742
 Base   Offset  Old     New?
??????  000742  105261  ? 4737
??????  000744  000006  ? FIPPAT+34
??????  000746  077014  ? ^Z    (CTRL/Z for new offset)
Offset address? ^Z              (CTRL/Z for new base)
Base address? ^Z                (CTRL/Z for new module)
Module name? FIP
Base address? FIPPAT@OVR
Offset address? 0
 Base   Offset  Old     New?
??????  000000  ??????  ? 16502
??????  000002  ??????  ? JOBTBL@OVR
??????  000004  ??????  ? 4537
??????  000006  ??????  ? REGSCR@OVR
??????  000010  ??????  ? 10401
??????  000012  ??????  ? 14302
??????  000014  ??????  ? 16604
??????  000016  ??????  ? 4
??????  000020  ??????  ? 12700
??????  000022  ??????  ? 20
??????  000024  ??????  ? 5005
??????  000026  ??????  ? 4737
??????  000030  ??????  ? 120734
??????  000032  ??????  ? 207
??????  000034  ??????  ? 5705
??????  000036  ??????  ? BEQ+2
??????  000040  ??????  ? 105261
??????  000042  000000  ? 6
??????  000044  000000  ? 207
??????  000046  ??????  ? ^Z    (CTRL/Z for new offset)
Offset address? ^Z              (CTRL/Z for new base)
Base address? ^Z                (CTRL/Z for new module)
Module name? RSTS
Base address? $$0305
Offset address? 2
 Base   Offset  Old     New?
??????  000002  ??????  ? Q!10
??????  000004  ??????  ? ^C    (up-arrow/C to exit;CTRL/C for INIT)
```

RSTS/E V9.7 Cumulative Index

This is a complete listing of all articles for RSTS/E V9.7 and layered products. Missing sequence numbers may pertain to problems unique to other versions of the same product or other major operating systems.

Unassigned articles are indicated: RESERVED.

Flags are currently being installed for all articles. The flags and definitions are as follows.

- *M = Mandatory Patch.* These patches correct errors in the software product. All users are required to apply these patches to maintain consistent "user level" unless the accompanying article specifies otherwise.
- *F = Optional Feature Patch.* These patches extend or configure functionality into the product. These functions will be treated as a supported part of the product for the duration of the current release and may be incorporated in a future release.
- *R = Restriction.* These articles discuss areas that will not be patched in the current release because they require major modification or because they are not consistent with the design of the product. Restrictions, except those described as permanent, are reviewed and modified when possible as part of the normal release cycle.
- *N = Note.* These articles provide explanatory information that supplements the manual set and provide more detailed information about a program or package. They also provide procedural information to make it easier to use a program or package.
- *- = Article is being republished.*

Sequence	Title	Released	Corrected	Mon/Yr
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System Notes				
0.1.35 N	Cooperative Promotional Agreement Signed with Northwest Digital Software, Inc.	V9.7	N/A	Jun 90
0.1.37 N	Announcing New Hardware Support for RA70 Disks	V9.7	N/A	Dec 89
0.1.38 N	Announcing New Hardware Support for RA90 Disks	V9.7	N/A	Dec 89
0.1.39 N	RSTS/E Version 9.6 Support Termination Notice	V9.7	N/A	Feb 90
0.1.40 N	Announcing Support for MicroPDP-11/93 Processors	V9.7	N/A	Aug 90
0.1.41 N	Announcing Support for PDP-11/94 Processors	V9.7	N/A	Aug 90
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Utilities				
NFT.TSK				
31.11.1 M	NFT May Hang During Wildcard Copy in Block Mode	V9.7	N/A	Oct 89
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RSTS/E Version 10.0 Installation Procedure Restrictions

RSTS/E V10.0
System Installation and Update
Installation/Update Restrictions

Problem

The following restrictions exist in the RSTS/E Version 10.0 installation procedure:

1. During installation, if you answer **NO** to any of the "Do you want to proceed" prompts, when you do *proceed*, the installation will assume that the installation kit is on the device that was used to originally install RSTS/E on your system. It will override the device you may have already specified to the installation procedure.

   If you know that you will be answering **NO** to any of the "Do you want to proceed" prompts, then ensure that the installation kit is on the device used to originally install RSTS/E on your system. This device will be the default for the "Installation device" prompt.

2. If you are installing the SORT/MERGE package to a target disk, that is, a disk other than the system disk, the system logical LB: will be assigned to the target disk. The logical will be reassigned back to its original assignment after SORT/MERGE is installed, but it can cause problems for the other users on the system during the installation. Also, if the installation is aborted, then the logical may not be reassigned back to its original assignment.

   If you are going to install the SORT/MERGE package to a target disk, inform your users that the system logical LB: will not be available. After the installation is complete, ensure that the logical is assigned to its original assignment.

Host-Initiated LAT Connections May Crash System - Mandatory Patch

RSTS/E V10.0
Executive
Terminal Service Patches

Problem

An attempt to establish a LAT connection from your RSTS/E system (a Host-Initiated Connection) to a busy port on a terminal server may crash the system.

Solution

The following patch procedure corrects the problem.

Procedure

1. This is a required patch to the RSTS/E Version 10.0 executive. It must be installed in all target monitor save image libraries (SILs).
2. The patch described in step 4 can be installed using the PATCH option of INIT.SYS:

```
Option: PATCH
File to patch? <CR>          (RETURN for installed monitor SIL)
```

3. This patch can be installed using ONLPAT, the online patching program. Note, however, that if the patch is applied on line to the installed monitor SIL, it will not take effect until the system is rebooted.

```
RUN $ONLPAT
Command File Name? <CR>      (RETURN for patch installation)
File to patch? <CR>          (RETURN for installed monitor SIL)
File found in account [0,1]
```

4. The patch is as follows:

```
Module name? LAT
Base address? LATAPP@OVR
Offset address? 2200
 Base    Offset  Old      New?
??????  002200  077067  ? 77072
??????  002202  000137  ? ^Z     (CTRL/Z for new offset)
Offset address? ^Z               (CTRL/Z for new base)
Base address? ^Z                 (CTRL/Z for new module)
Module name? RSTS
Base address? $$0304
Offset address? 0
 Base    Offset  Old      New?
??????  000000  ??????  ? Q!4
??????  000002  ??????  ? ^C     (up-arrow/C to exit;CTRL/C for INIT)
```

Attaching to a Detached Job May Crash System - Mandatory Patch

RSTS/E V10.0
Executive
File Processor Patches

Problem

An attempt to attach to a detached job that originated from a LAT connection may crash the system.

Solution

The following patch procedure corrects the problem.

Procedure

1. This is a required patch to the RSTS/E Version 10.0 executive. It must be installed in all target monitor save image libraries (SILs).
2. The patch described in step 4 can be installed using the PATCH option of INIT.SYS:

```
Option: PATCH
File to patch? <CR>          (RETURN for installed monitor SIL)
```

3. This patch can be installed using ONLPAT, the online patching program. Note, however, if the patch is applied on line to the installed monitor SIL, it will take effect immediately unless you installed the overlay file. If you installed the overlay file, then you must remove and reinstall the file for the patch to take effect. (See step 5.)

```
RUN $ONLPAT
Command File Name? <CR>      (RETURN for patch installation)
File to patch? <CR>          (RETURN for installed monitor SIL)
File found in account [0,1]
```

4. The patch is as follows:

```
Module name? OVR
Base address? LOG3
Offset address? 410
 Base    Offset  Old      New?
??????   000410  016146   ? 10546
??????   000412  000006   ? 5005
??????   000414  014302   ? ^Z     (CTRL/Z for new offset)
Offset address? 426
 Base    Offset  Old      New?
??????   000426  012661   ? 12605
??????   000430  000006   ? 240
??????   000432  016502   ? ^Z     (CTRL/Z for new offset)
Offset address? 750
 Base    Offset  Old      New?
??????   000750  105261   ? 4767
??????   000752  000006   ? 760-754
??????   000754  077014   ? ^Z     (CTRL/Z for new offset)
```

```
Offset address? 760
 Base    Offset  Old     New?
??????  000760  000000  ? 5705
??????  000762  000000  ? BEQ+2
??????  000764  000000  ? 105261
??????  000766  000000  ? 6
??????  000770  000000  ? 207
??????  000772  ??????  ? ^Z     (CTRL/Z for new offset)
Offset address? ^Z               (CTRL/Z for new base)
Base address? LOG3SI
Offset address? 0
 Base    Offset  Old     New?
??????  000000  000760  ? 772
??????  000002  ??????  ? ^Z     (CTRL/Z for new offset)
Offset address? ^Z               (CTRL/Z for new base)
Base address? ^Z                 (CTRL/Z for new module)
Module name? RSTS
Base address? $$0307
Offset address? 0
 Base    Offset  Old     New?
??????  000000  ??????  ? Q!1
??????  000002  ??????  ? ^C     (up-arrow/C to exit;CTRL/C for INIT)
```

5. **If you used the $ INSTALL/OVERLAY command, then you must issue the following commands for the patch to take effect:**

```
$ REMOVE/OVERLAY<CR>
$ INSTALL/OVERLAY filespec<CR>
```

RSTS/E V10.0 Cumulative Index

This is a complete listing of all articles for RSTS/E V10 and layered products. Missing sequence numbers may pertain to problems unique to other versions of the same product or other major operating systems.

Unassigned articles are indicated: RESERVED.

Flags are currently being installed for all articles. The flags and definitions are as follows.

- *M = Mandatory Patch.* These patches correct errors in the software product. All users are required to apply these patches to maintain consistent "user level" unless the accompanying article specifies otherwise.
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- *N = Note.* These articles provide explanatory information that supplements the manual set and provide more detailed information about a program or package. They also provide procedural information to make it easier to use a program or package.
- ** = Article appeared in the RSTS/E V10.0 Maintenance Notebook, August 1990.*
- *+ = Article appeared in the RSTS/E Software Dispatch Review, August 1990.*
- *- = Article is being republished.*

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3.7.1 N	Attaching to a Detached Job May Crash System — Mandatory Patch	V10.0	N/A	Dec 90
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Digital Equipment Computer Users Society

Benefits of Belonging

The Digital Equipment Computer Users Society (DECUS) is one of the largest and most respected users groups in the computer industry today. Membership in DECUS, which is free and voluntary, affords the individual user information and services not found anywhere else.

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Symposia

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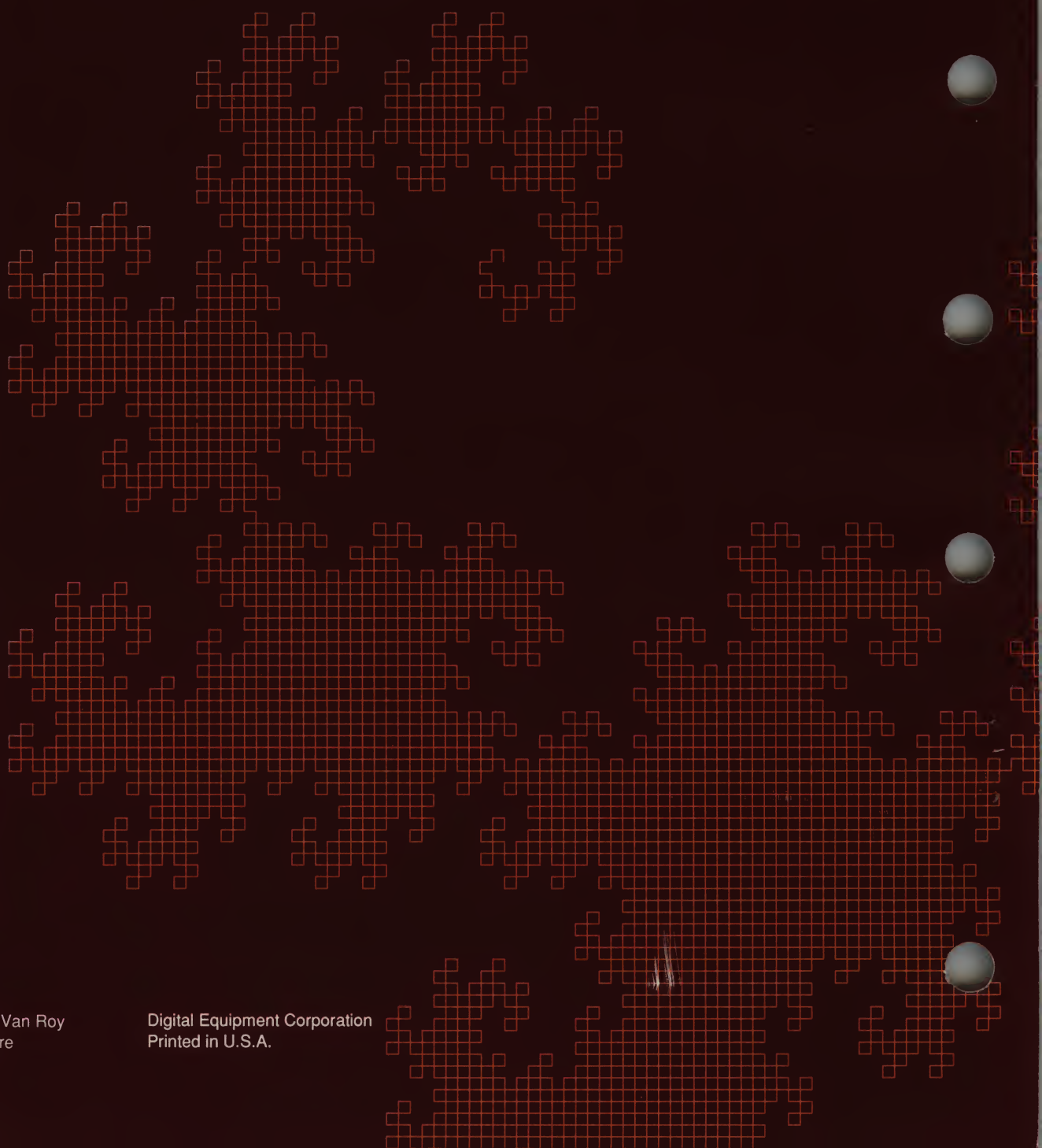

Fractal by Peter Van Roy
Dynamic Software

Digital Equipment Corporation
Printed in U.S.A.

RSTS/E Software Dispatch
January 1991

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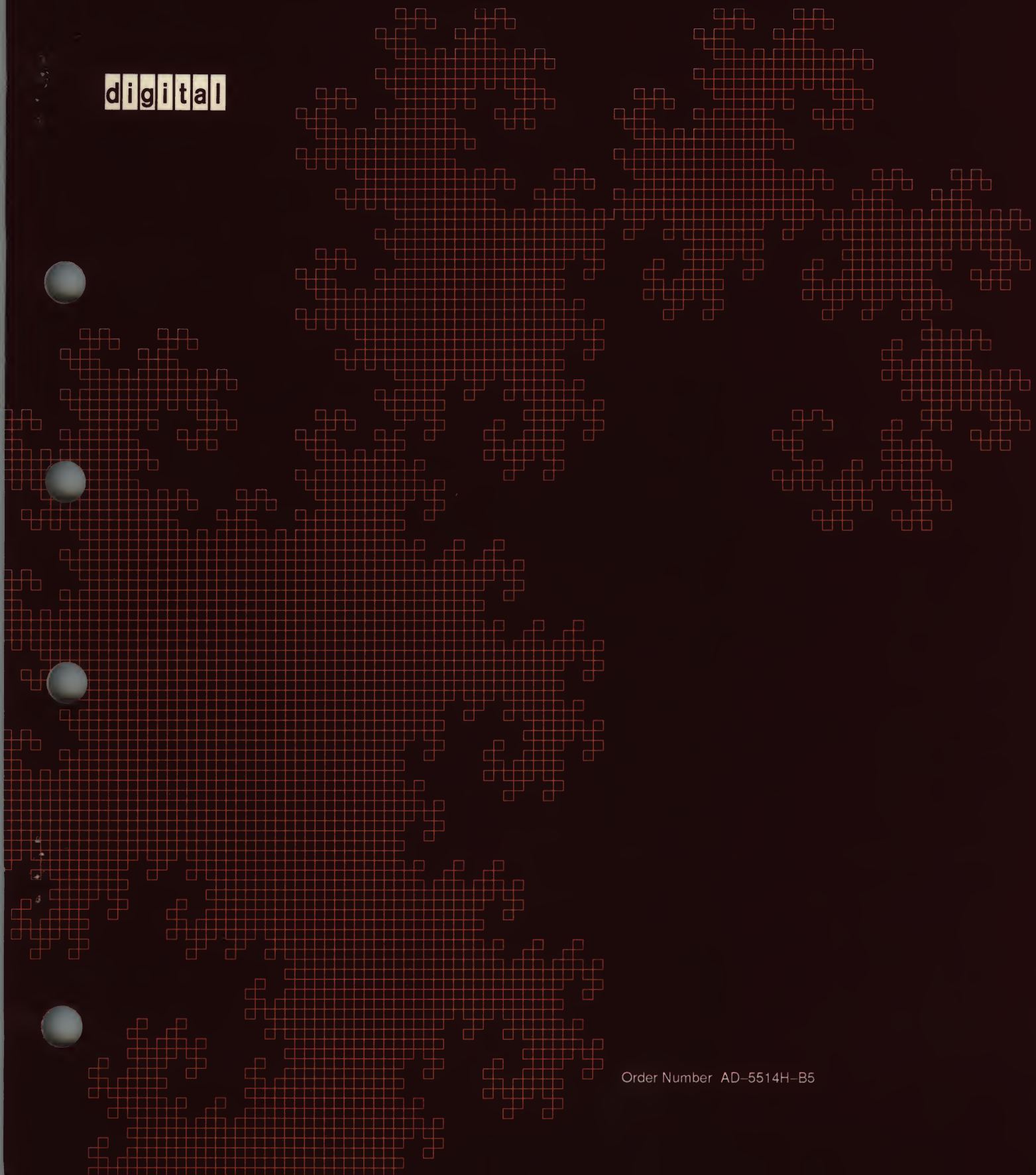

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RSTS/E Software Dispatch

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RSTS/E Software Dispatch

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The *RSTS/E Software Dispatch* complements the *RSTS/E Software Dispatch Review*. New and revised Software Product Descriptions (SPDs), programming notes, software problems and solutions, and documentation corrections are published here. Much of the material is developed from Software Performance Report (SPR) answers significant to the general audience and is printed here to supplement the maintenance notebook (established by the Software Dispatch Review).

Distribution
The *RSTS/E Software Dispatch* is directed to one software contact for each software product. No mailing will be made to addresses without a software contact name. **Address change requests should be sent to the nearest Digital field office. Include the new address and mailing label from the most recently received publication.**

The prerequisite to using Digital software is the appropriate license. The standard Terms and Conditions and Digital Business Agreement (DBA) contain the license terms for all software other than DECsystem-10.

Patricia Callahan, Editor

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From the Editor

Dear Readers,

In December, we sent you a questionnaire regarding the quality and usefulness of the *RSTS/E Software Dispatch*. If you have not already, please take a few minutes to complete the questionnaire and return it in the envelope provided.

Thank you,

Patricia Callahan

Patricia Callahan
Editor, *RSTS/E Software Dispatch*

Product Availability Dates

The following list contains the date and version of the latest release of supported software products. Customers who have a Software Product Services (SPS) agreement during the month the product becomes available are eligible to receive the new release. Eligible customers who have not received the new release should contact their local Digital office.

Product	Version	Available
ADE/RSTS	2.4 RETIRED	Apr 87
BASIC-PLUS-2 for RSTS/E,PDP-11	2.6	Aug 89
COBOL,PDP-11	4.4 RETIRED	Sep 88
COBOL-81/RSTS/E	3.0	Apr 89
DATATRIEVE-11	3.3A	Feb 90
DECdx/RSTS	1.0	Nov 84
DECmail-11 for RSTS/E and Micro/RSTS	3.1	Dec 87
DECnet/E	4.1	Jan 89
DECtap	1.5A RETIRED	Jun 88
DECWORD/DP	1.2 RETIRED	Apr 89
DMS-500	2.1 RETIRED	Aug 87
FMS-11/RSTS	2.1	Jan 88
FORTRAN IV/RSTS/E	2.8	Dec 88
PDP-11 SYMBOLIC DEBUGGER/RSTS (formerly FORTRAN-77 DEBUG/RSTS/E, PDP-11)	2.1	Dec 88
PDP-11 C for RSTS/E	1.0	Jun 90
FORTRAN-77/RSTS/E, PDP-11	5.3	Oct 88
GIGI Software	1.0 RETIRED	Feb 86
INDENT	1.4 RETIRED	Oct 87
MENU-11/RSTS	2.0	Dec 83
Message Router for RSTS/E	1.0 RETIRED	Mar 87
RPG II, PDP-11	8.8 RETIRED	Jan 87
RSTS Smart Mailer	1.1 RETIRED	Dec 85
RSTS/E	9.7	Aug 89
RSTS/E DECgraph-11	1.2 RETIRED	Aug 87
RSTS/E DIBOL	6.1	Aug 89
RSTS/E High Performance 2780/3780 Emulator	1.1 RETIRED	Mar 86
RSTS/E V8.0 UPDATE	G	Apr 85
RSTS/E 3271 Protocol Emulator	2.1 RETIRED	Mar 86

RSTS/E V9

INIT Can Fail During Some RQDX Controller Accesses — Mandatory Patch

RSTS/E V9.7
Initialization
INIT.SYS Program Patches

Problem

During some accesses of disks on RQDX controllers, INIT can hang. This can occur during the DSKINT option, during rebuilding of a disk, or after a power failure.

Solution

The following patching procedure corrects the problem. This problem will be corrected in a future release.

Procedure

1. This is a required patch to the RSTS/E INIT.SYS Program. Since patching the distribution medium is not recommended, the patch must be installed every time the COPY option is used to copy INIT.SYS from the distribution medium. Any copy of the *patched* INIT.SYS will propagate the fix.
2. The patch described in step 4 can be installed using the PATCH option of INIT.SYS:

```
Option: PATCH
File to patch? INIT.SYS
```

3. This patch can also be installed using ONLPAT, the online patching program:

```
RUN $ONLPAT
Command File Name? <CR>        (RETURN for manual patch installation)
File to patch? INIT.SYS
File found in account [0,1]
```

4. The patch is as follows:

```
Base address? GETPAC
Offset address? 44
 Base   Offset  Old     New?
127422  000044  004770  ? 4737
127422  000046  000006  ? PATCH+20
127422  000050  103021  ? ^Z     (CTRL/Z for new offset)
Offset address? ^Z              (CTRL/Z for new base)
Base address? PATCH
Offset address? 20
 Base   Offset  Old     New?
044306  000020  000000  ? 4770
044306  000022  000000  ? 6
044306  000024  000000  ? 103005
044306  000026  000000  ? 4537
044306  000030  000000  ? REGSCR
044306  000032  000000  ? 4737
044306  000034  000000  ? GETCLK
```

```
044306  000036  000000  ? 261
044306  000040  000000  ? 207
044306  000042  000000  ? TST+04
044306  000044  000000  ? BNE+2
044306  000046  000000  ? MOV+6504
044306  000050  000000  ? 24
044306  000052  000000  ? MOVB+6405
044306  000054  000000  ? 2
044306  000056  000000  ? 207
044306  000060  000000  ? TST+66
044306  000062  000000  ? 6
044306  000064  000000  ? BEQ+2
044306  000066  000000  ? 137
044306  000070  000000  ? INIDSK+2366
044306  000072  000000  ? 207
044306  000074  ??????  ? ^Z     (CTRL/Z for new offset)
Offset address? ^Z              (CTRL/Z for new base)
Base address? INIDSK
Offset address? 2010
 Base   Offset  Old     New?
120620  002010  116405  ? 4737
120620  002012  000002  ? PATCH+42
120620  002014  116404  ? ^Z     (CTRL/Z for new offset)
Offset address? 2244
 Base   Offset  Old     New?
120620  002244  004767  ? 4737
120620  002246  000116  ? PATCH+60
120620  002250  004737  ? ^Z     (CTRL/Z for new offset)
Offset address? ^Z              (CTRL/Z for new base)
Base address? $$0101
Offset address? 2
 Base   Offset  Old     New?
151264  000002  ??????  ? Q!1
151264  000004  ??????  ? ^C     (up-arrow/C to exit;CTRL/C for INIT)
```

Dynamic Region Creation Can Crash System — Mandatory Patch

RSTS/E V9.7
Executive
File Processor Patches

Problem

Use of the UU.RTS directive to create a dynamic region can cause a memory corruption that will, at some later time, cause the system to crash.

Solution

The following patching procedure corrects the problem. This problem will also be corrected in a future release.

Procedure

1. This is a required patch to the RSTS/E Version 9.7 executives. It must be installed in all target monitor save image libraries (SILs).
2. The patch described in step 4 below can be installed using the PATCH option of INIT.SYS:

```
Option: PATCH
File to patch? <CR>          (RETURN for installed monitor SIL)
```

3. This patch can be installed using ONLPAT, the online patching program. Note, however, that if the patch is applied on line to the installed monitor SIL, it will take effect immediately (see step 5).

```
RUN $ONLPAT
Command File Name? <CR>      (RETURN for patch installation)
File to patch? <CR>          (RETURN for installed monitor SIL)
File found in account [0,1]
```

4. The patch is as follows:

```
Module name? OVR
Base address? RTS1
Offset address? 440
 Base    Offset  Old      New?
??????  000440  016246  ? 42762
??????  000442  000006  ? 174000
??????  000444  042726  ? 6
??????  000446  174000  ? 240
??????  000450  001005  ? ^C     (up-arrow/C to exit;CTRL/C for INIT)
```

```
File to patch?                    (same as step 2/3 above)
Module name? OVR
Base address? RTS6
Offset address? 154
 Base    Offset  Old      New?
??????  000154  103001  ? 4767
??????  000156  000420  ? 522
??????  000160  032762  ? ^Z     (CTRL/Z for new offset)
Offset address? 702
 Base    Offset  Old      New?
??????  000702  000000  ? BHIS+12
??????  000704  000000  ? 5737
??????  000706  000000  ? TYPCRE
??????  000710  000000  ? BEQ+12
??????  000712  000000  ? 160537
??????  000714  000000  ? REGMAX+2
??????  000716  000000  ? 13705
??????  000720  000000  ? REGMAX
??????  000722  000000  ? 163705
??????  000724  000000  ? REGMAX+2
??????  000726  000000  ? BLE+3
??????  000730  000000  ? 10562
??????  000732  000000  ? 6
??????  000734  000000  ? 207
??????  000736  000000  ? 5126
??????  000740  000000  ? 207
??????  000742  ??????  ? ^Z     (CTRL/Z for new offset)
Offset address? ^Z               (CTRL/Z for new base)
Base address? RTS6SI
Offset address? 0
 Base    Offset  Old      New?
??????  000000  000702  ? 742
??????  000002  ??????  ? ^Z     (CTRL/Z for new offset)
Offset address? ^Z               (CTRL/Z for new base)
Base address? ^Z                 (CTRL/Z for new module)
Module name? RSTS
Base address? $$0305
Offset address? 2
 Base    Offset  Old      New?
??????  000002  ??????  ? Q!40
??????  000004  ??????  ? ^C     (up-arrow/C to exit;CTRL/C for INIT)
```

5. If you used the $ INSTALL/OVERLAY command, then you must issue the following commands for the patch to take effect:

```
$ REMOVE/OVERLAY<CR>
$ INSTALL/OVERLAY filespec<CR>
```

Instructions Missing in DATATRIEVE-11 V3.3 Installation Guide

DATATRIEVE-11 for RSTS/E V9.7
DDMF

Problem

There are no instructions in the *DATATRIEVE-11 V3.3 Installation Guide* that describe the procedure to restart the DTR-11 task DDMF after a system shutdown.

Solution

The DATATRIEVE-11 task images will reside in the directory [1,2]. If your system shuts down, make sure DECnet is running on your system, then you can restart the DDMF task image with the following commands:

```
$ RUN DECNET$:NCP
NCP> DEFINE OBJECT 30 FILE SY:[1,2]DDMF.TSK NAME DDMF
NCP> SET OBJECT 30 FILE SY:[1,2]DDMF.TSK NAME DDMF
```

You can include these commands in the startup file, [0,1]START.COM, along with the command in Section 4.3.5, Restart After Shutdown, in the *Installation Guide*:

```
$ DEFINE/COMMAND/SYSTEM DTR $DTR.TSK
```

RSTS/E V9.7 Cumulative Index

This is a complete listing of all articles for RSTS/E V9.7 and layered products. Missing sequence numbers may pertain to problems unique to other versions of the same product or other major operating systems.

Unassigned articles are indicated: RESERVED.

Flags are currently being installed for all articles. The flags and definitions are as follows.

- *M = Mandatory Patch.* These patches correct errors in the software product. All users are required to apply these patches to maintain consistent "user level" unless the accompanying article specifies otherwise.
- *F = Optional Feature Patch.* These patches extend or configure functionality into the product. These functions will be treated as a supported part of the product for the duration of the current release and may be incorporated in a future release.
- *R = Restriction.* These articles discuss areas that will not be patched in the current release because they require major modification or because they are not consistent with the design of the product. Restrictions, except those described as permanent, are reviewed and modified when possible as part of the normal release cycle.
- *N = Note.* These articles provide explanatory information that supplements the manual set and provide more detailed information about a program or package. They also provide procedural information to make it easier to use a program or package.
- *- = Article is being republished.*

Sequence	Title	Released	Corrected	Mon/Yr
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0.1.35 N	Cooperative Promotional Agreement Signed with Northwest Digital Software, Inc.	V9.7	N/A	Jun 90
0.1.37 N	Announcing New Hardware Support for RA70 Disks	V9.7	N/A	Dec 89
0.1.38 N	Announcing New Hardware Support for RA90 Disks	V9.7	N/A	Dec 89
0.1.39 N	RSTS/E Version 9.6 Support Termination Notice	V9.7	N/A	Feb 90
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0.1.42 N	Announcing RSTS/E Version 10.0	N/A	N/A	Sep 90
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RSTS/E V10

INIT Can Fail During Some RQDX Controller Accesses — Mandatory Patch

RSTS/E V10.0
Initialization
INIT.SYS Program Patches

Problem

During some accesses of disks on RQDX controllers, INIT can hang or abort with an unexpected trap through vector 4. This can occur during the DSKINT option, during rebuilding of a disk, or after a power failure.

Solution

The following patching procedure corrects the problem. This problem will be corrected in a future release.

Procedure

1. This is a required patch to the RSTS/E INIT.SYS Program. Since patching the distribution medium is not recommended, the patch must be installed every time the COPY option is used to copy INIT.SYS from the distribution medium. Any copy of the *patched* INIT.SYS will propagate the fix.
2. The patch described in step 4 can be installed using the PATCH option of INIT.SYS:

```
Option: PATCH
File to patch? INIT.SYS
```

3. This patch can also be installed using ONLPAT, the online patching program:

```
RUN $ONLPAT
Command File Name? <CR>        (RETURN for manual patch installation)
File to patch? INIT.SYS
File found in account [0,1]
```

4. The patch is as follows:

```
Base address? PATCH
Offset address? 4
 Base   Offset  Old     New?
045352  000004  103003  ? 103005
045352  000006  004737  ? 10046
045352  000010  005226  ? 4737
045352  000012  000261  ? GETCLK
045352  000014  000207  ? 12600
045352  000016  000000  ? 261
045352  000020  000000  ? 207
045352  000022  ??????  ? ^Z     (CTRL/Z for new offset)
Offset address? ^Z               (CTRL/Z for new base)
```

```
Base address? $$0101
Offset address? 0
 Base    Offset  Old      New?
152034  000000  ??????  ? Q!1
152034  000002  ??????  ? ^C    (up-arrow/C to exit;CTRL/C for INIT)
```

Dynamic Region Creation Can Crash System — Mandatory Patch

RSTS/E V10.0
Executive
File Processor Patches

Problem

Use of the UU.RTS directive to create a dynamic region can cause a memory corruption that will, at some later time, cause the system to crash.

Solution

The following patching procedure corrects the problem. This problem will also be corrected in a future release.

Procedure

1. This is a required patch to the RSTS/E Version 10.0 executives. It must be installed in all target monitor save image libraries (SILs).
2. The patch described in step 4 can be installed using the PATCH option of INIT.SYS:

```
Option: PATCH
File to patch? <CR>          (RETURN for installed monitor SIL)
```

3. This patch can be installed using ONLPAT, the online patching program. Note, however, that if the patch is applied on line to the installed monitor SIL, it will take effect immediately (see step 5).

```
RUN $ONLPAT
Command File Name? <CR>      (RETURN for patch installation)
File to patch? <CR>          (RETURN for installed monitor SIL)
File found in account [0,1]
```

4. The patch is as follows:

```
Module name? OVR
Base address? RTS1
Offset address? 440
 Base    Offset  Old      New?
??????  000440  016246  ? 42762
??????  000442  000006  ? 174000
??????  000444  042726  ? 6
??????  000446  174000  ? 240
??????  000450  001005  ? ^C     (up-arrow/C to exit;CTRL/C for INIT)
```

```
File to patch?                    (same as step 2/3 above)
Module name? OVR
Base address? RTS6
Offset address? 156
 Base    Offset  Old      New?
??????  000156  005767  ? 5737
??????  000160  ??????  ? TYPCRE
??????  000162  001431  ? ^Z     (CTRL/Z for new offset)
Offset address? 200
 Base    Offset  Old      New?
??????  000200  003422  ? 4767
??????  000202  110562  ? 524
??????  000204  000006  ? 240
??????  000206  032762  ? ^Z     (CTRL/Z for new offset)
Offset address? 730
 Base    Offset  Old      New?
??????  000730  000000  ? BLE+3
??????  000732  000000  ? 10562
??????  000734  000000  ? 6
??????  000736  000000  ? 207
??????  000740  000000  ? 5126
??????  000742  000000  ? 207
??????  000744  000000  ? ^Z     (CTRL/Z for new offset)
Offset address? ^Z               (CTRL/Z for new base)
Base address? RTS6SI
Offset address? 0
 Base    Offset  Old      New?
??????  000000  000730  ? 744
??????  000002  ??????  ? ^Z     (CTRL/Z for new offset)
Offset address? ^Z               (CTRL/Z for new base)
Base address? ^Z                 (CTRL/Z for new module)
Module name? RSTS
Base address? $$0307
Offset address? 0
 Base    Offset  Old      New?
??????  000000  ??????  ? Q!2
??????  000002  ??????  ? ^C     (up-arrow/C to exit;CTRL/C for INIT)
```

5. If you used the $ INSTALL/OVERLAY command, then you must issue the following commands for the patch to take effect:

```
$ REMOVE/OVERLAY<CR>
$ INSTALL/OVERLAY filespec<CR>
```

DATE% Is Now a Reserved Keyword — Mandatory Patch

RSTS/E V10.0
BASIC-PLUS
BASIC-PLUS Patches

Problem

RSTS/E Version 10.0 BASIC-PLUS now reserves the keyword DATE%. Attempting to OLD a BASIC-PLUS program that contains the variable DATE% or the integer array DATE%( ) under RSTS/E Version 10.0 BASIC-PLUS will result in the error "?Arguments don't match". Already compiled BASIC-PLUS programs that use the keyword DATE% will continue to function as before.

Solution

Because this is an incompatibility with previous versions of BASIC-PLUS, applying the following patch will change the reserved keyword DATE% to D?TE%. Once this patch is applied, programs containing the variable DATE% or the integer array DATE%( ) can be OLDed without an error.

Procedure

1. This is a required patch to the BASIC-PLUS run-time system. It must be installed in all BASIC-PLUS run-time systems.
2. The patch described in step 4 can be installed using the PATCH option of INIT.SYS:

```
Option: PATCH
File to patch? BASIC.RTS          (BASIC-PLUS run-time system name)
```

3. This patch can be installed using ONLPAT, the online patching program:

```
RUN $ONLPAT
Command File Name? <CR>           (RETURN for manual patch installation)
File to patch? [0,1]BASIC.RTS     (BASIC-PLUS run-time system name)
File found in account [0,1]
```

4. The patch is as follows:

```
Base address? LA
Offset address? 634
 Base    Offset  Old      New?
??????  000634  005101   ? 5077
??????  000636  ??????   ? ^C     (up-arrow/C to exit;CTRL/C for INIT)
```

RSTS/E V10.0 Cumulative Index

This is a complete listing of all articles for RSTS/E V10 and layered products. Missing sequence numbers may pertain to problems unique to other versions of the same product or other major operating systems.

Unassigned articles are indicated: RESERVED.

Flags are currently being installed for all articles. The flags and definitions are as follows.

- *M = Mandatory Patch.* These patches correct errors in the software product. All users are required to apply these patches to maintain consistent "user level" unless the accompanying article specifies otherwise.
- *F = Optional Feature Patch.* These patches extend or configure functionality into the product. These functions will be treated as a supported part of the product for the duration of the current release and may be incorporated in a future release.
- *R = Restriction.* These articles discuss areas that will not be patched in the current release because they require major modification or because they are not consistent with the design of the product. Restrictions, except those described as permanent, are reviewed and modified when possible as part of the normal release cycle.
- *N = Note.* These articles provide explanatory information that supplements the manual set and provide more detailed information about a program or package. They also provide procedural information to make it easier to use a program or package.
- ** = Article appeared in the RSTS/E V10.0 Maintenance Notebook, August 1990.*
- *+ = Article appeared in the RSTS/E Software Dispatch Review, August 1990.*
- *- = Article is being republished.*

Sequence	Title	Released	Corrected	Mon/Yr
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Initialization				
INIT.SYS Program Patches				
1.1.1 M	INIT Can Fail During Some RQDX Controller Accesses — Mandatory Patch	V10.0	N/A	Jan 91
Initialization				
INIT.SYS Notes				
1.2.1 N	Unnecessary Error Message When Booting 800 bpi Tape on TM02	V10.0	N/A	Aug 90 *
INIT.SYS Restrictions				
1.3.1 R	First TMSCP Drive on System Must Be Unit 0	V10.0	N/A	Aug 90 *
1.3.2 R	MT/MM Tapes Must Be Booted From Unit 0	V10.0	N/A	Aug 90 *
System Installation and Update				
Installation/Update Notes				

Sequence	Title	Released	Corrected	Mon/Yr
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Terminal Service Patches				
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3.5.2 N	Unexpected Abort from Captive Command File Will Not Hang Up Dialup Line	V10.0	N/A	Aug 90 *
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3.7.1 N	Attaching to a Detached Job May Crash System — Mandatory Patch	V10.0	N/A	Dec 90
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3.12.2 R	Swapping MSCP/TMSCP Unit Numbers May Cause Crash	V10.0	N/A	Aug 90 *
BASIC-PLUS				
BASIC-PLUS Patches				
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4.1.2 F	Default SCALE Factor	V10.0	N/A	Aug 90 *
4.1.3 F	Omitting SCALE Factor Warning Message	V10.0	N/A	Aug 90 *
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4.1.5 F	Immediate Mode from .BAS File	V10.0	N/A	Aug 90 *
4.1.6 F	Disabling the CCL SYS Call	V10.0	N/A	Aug 90 *
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28.2.1 R	RSX-11 Utilities Do Not Handle All RSTS/E File Specifications	V10.0	N/A	Aug 90 *
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29.1.1 N	Use of Underscore in RT-11 Utilities	V10.0	N/A	Aug 90 *
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29.2.1 R	Disk Unit Numbers Greater Than Nine May Not Be Displayed Correctly	V10.0	N/A	Aug 90 *

Sequence	Title	Released	Corrected	Mon/Yr
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31.2.2 R	SHOW NODE Command May Fail	V10.0	N/A	Aug 90 *
31.2.3 R	Network Parameter File Will Not Hold More Than 26,000 Nodes	V10.0	N/A	Aug 90 *
31.2.4 R	SET HOST May Give Erroneous Error Message	V10.0	N/A	Aug 90 *
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49.1.1 N	Instructions Missing in DATATRIEVE-11 V3.3 Installation Guide	N/A	N/A	Jan 91

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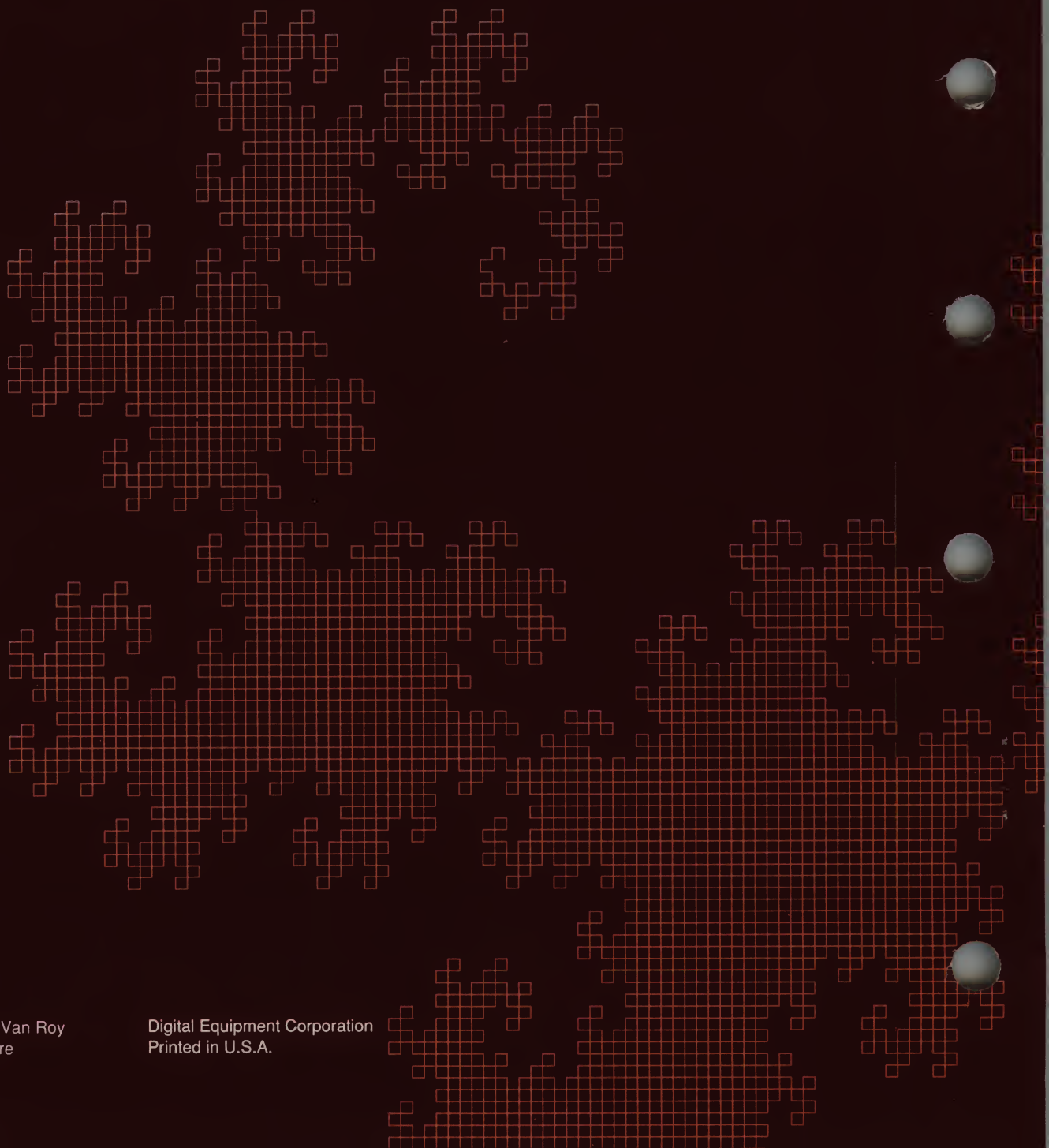

Fractal by Peter Van Roy
Dynamic Software

Digital Equipment Corporation
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The *RSTS/E Software Dispatch* complements the *RSTS/E Software Dispatch Review*. New and revised Software Product Descriptions (SPDs), programming notes, software problems and solutions, and documentation corrections are published here. Much of the material is developed from Software Performance Report (SPR) answers significant to the general audience and is printed here to supplement the maintenance notebook (established by the Software Dispatch Review).

Distribution
The *RSTS/E Software Dispatch* is directed to one software contact for each software product. No mailing will be made to addresses without a software contact name. **Address change requests should be sent to the nearest Digital field office. Include the new address and mailing label from the most recently received publication.**

The prerequisite to using Digital software is the appropriate license. The standard Terms and Conditions and Digital Business Agreement (DBA) contain the license terms for all software other than DECsystem-10.

Patricia Callahan, Editor

Contents

Product Availability Dates

The following list contains the date and version of the latest release of supported software products. Customers who have a Software Product Services (SPS) agreement during the month the product becomes available are eligible to receive the new release. Eligible customers who have not received the new release should contact their local Digital office.

Product	Version	Available
ADE/RSTS	2.4 RETIRED	Apr 87
BASIC-PLUS-2 for RSTS/E,PDP-11	2.6	Aug 89
COBOL,PDP-11	4.4 RETIRED	Sep 88
COBOL-81/RSTS/E	3.0	Apr 89
DATATRIEVE-11	3.3A	Feb 90
DECdx/RSTS	1.0	Nov 84
DECmail-11 for RSTS/E and Micro/RSTS	3.1	Dec 87
DECnet/E	4.1	Jan 89
DECtap	1.5A RETIRED	Jun 88
DECWORD/DP	1.2 RETIRED	Apr 89
DMS-500	2.1 RETIRED	Aug 87
FMS-11/RSTS	2.1	Jan 88
FORTRAN IV/RSTS/E	2.8	Dec 88
PDP-11 SYMBOLIC DEBUGGER/RSTS (formerly FORTRAN-77 DEBUG/RSTS/E, PDP-11)	2.1	Dec 88
PDP-11 C for RSTS/E	1.0	Jun 90
FORTRAN-77/RSTS/E, PDP-11	5.3	Oct 88
GIGI Software	1.0 RETIRED	Feb 86
INDENT	1.4 RETIRED	Oct 87
MENU-11/RSTS	2.0	Dec 83
Message Router for RSTS/E	1.0 RETIRED	Mar 87
RPG II, PDP-11	8.8 RETIRED	Jan 87
RSTS Smart Mailer	1.1 RETIRED	Dec 85
RSTS/E	9.7	Aug 89
RSTS/E DECgraph-11	1.2 RETIRED	Aug 87
RSTS/E DIBOL	6.1	Aug 89
RSTS/E High Performance 2780/3780 Emulator	1.1 RETIRED	Mar 86
RSTS/E V8.0 UPDATE	G	Apr 85
RSTS/E 3271 Protocol Emulator	2.1 RETIRED	Mar 86

RSTS/E V9

Cannot Mount Disks at the Beginning of the Installation Procedure

RSTS/E V10.0
System Installation and Update
Installation/Update Restrictions

Problem

When you update an earlier version of RSTS/E to RSTS/E Version 10.0, the installation procedure prompts you, "Are you ready to proceed?". Previously, you could have answered "NO" to this prompt to allow you to issue the DCL MOUNT command to mount auxiliary disks before continuing the installation.

In Version 10.0, the disk MOUNT function has been moved from the DIGITAL Command Language (DCL) run-time system (DCL.RTS) to the DCLAUX.TSK program.

As a result of this change, you can no longer mount disks after answering "NO" to the first "Are you ready to proceed?" prompt, because the DCLAUX program has not yet been restored at this point in the installation. Instead, you must wait until the required _SY:[1,2] components (including DCLAUX) have been restored. It will be restored after the first "Are you ready to proceed?" prompt. This means that you will be allowed to mount auxiliary disks at the next "Are you ready to proceed?" prompt, which is after the Monitor section.

Once your system has been updated to RSTS/E Version 10.0, this problem will not occur. This restriction will be lifted in a future release of RSTS/E.

```
??????  000010  000000  ? 5764
??????  000012  000000  ? 30
??????  000014  000000  ? 1004
??????  000016  000000  ? 12716
??????  000020  000000  ? CLRLOG@OVR-76
??????  000022  000000  ? 12746
??????  000024  000000  ? CLRLOG@OVR
??????  000026  000000  ? 207
??????  000030  ??????  ? ^Z     (CTRL/Z for new offset)
Offset address? ^Z              (CTRL/Z for new base)
Base address? FSS@OVR
Offset address? 6056
 Base   Offset  Old     New?
??????  006056  005764  ? 4737
??????  006060  000030  ? EMTPAT@OVR+10
??????  006062  001352  ? ^Z     (CTRL/Z for new offset)
Offset address? ^Z              (CTRL/Z for new base)
Base address? ^Z                (CTRL/Z for new module)
Module name? RSTS
Base address? $$0301
Offset address? 0
 Base   Offset  Old     New?
??????  000000  ??????  ? Q!1
??????  000002  ??????  ? ^C     (up-arrow/C to exit;CTRL/C for INIT)
```

RAD% Is Now a Reserved Keyword - BASIC-PLUS Feature Patch

RSTS/E V10.0
BASIC-PLUS
BASIC-PLUS Patches

Problem

RSTS/E Version 10.0 BASIC-PLUS now contains a new function RAD%. (See article 4.2.1 N for a description of the new function.) An attempt to OLD a BASIC-PLUS program that contains the variable RAD% or the integer array RAD%( ) under RSTS/E Version 10.0 BASIC-PLUS will result in the error "?Arguments don't match". Already compiled BASIC-PLUS programs that use the keyword RAD% will continue to function as before.

Solution

Because this is an incompatibility with previous versions of BASIC-PLUS, applying the following patch will change the reserved keyword RAD% to R?D%. Once this patch is applied, programs containing the variable RAD% or the integer array RAD%( ) can be OLDed without an error.

If you do not have programs that use the variable RAD% or the integer array RAD%( ), then do not apply this feature patch.

Procedure

1. This is a feature patch to the BASIC-PLUS run-time system. It can be installed in any BASIC-PLUS run-time system.
2. The patch described in step 4 can be installed using the PATCH option of INIT.SYS:

```
Option: PATCH
File to patch? BASIC.RTS            (BASIC-PLUS run-time system name)
```

3. This patch can be installed using ONLPAT, the online patching program:

```
RUN $ONLPAT
Command File Name? <CR>             (RETURN for manual patch installation)
File to patch? [0,1]BASIC.RTS       (BASIC-PLUS run-time system name)
File found in account [0,1]
```

4. The patch is as follows:

```
Base address? LA
Offset address? 1742
 Base    Offset  Old     New?
??????  001742  040504  ? 37504
??????  001744  ??????  ? ^C    (up-arrow/C to exit;CTRL/C for INIT)
```

5. If the patch was installed using ONLPAT, it will take effect the next time the run-time system is reloaded. If the run-time system has been INSTALLED, execute the following command:

```
$ UNLOAD/RUNTIME BASIC<CR>          (BASIC-PLUS run-time system name)
```

NOTE

The UNLOAD command will not remove the run-time system but will instruct the monitor to reload it the next time a job requests it.

New BASIC-PLUS Function - RAD%

RSTS/E V10.0
BASIC-PLUS
BASIC-PLUS Notes

RSTS/E Version 10.0 BASIC-PLUS contains a new function, RAD%. This function provides the complement of the RAD$ function, that is, it will convert a 3-character string of RAD-50 characters into its integer equivalence.

Because the *BASIC-PLUS Language Manual* was not updated for RSTS/E Version 10.0, this function is described in this article. Also, the online help for BASIC-PLUS functions does not describe this function.

A related article, 4.1.8 F, describes how to change the reserved keyword RAD% to R?D% to avoid compatibility problems with existing BASIC-PLUS programs, if necessary.

Format:

```
int-exp = RAD%(str-exp)
```

Syntax Rules:

1. RAD% only converts the first three characters of the specified string. The remainder of the string is ignored.
2. The first three characters of the string must be RAD-50 characters. If any of the three characters are not RAD-50 characters, then the error "%Illegal argument" will result. Note that lowercase letters will also generate the "%Illegal argument" error, as they are not considered to be RAD-50 characters. Appendix D of the *RSTS/E Programming Manual* describes the RAD-50 character set.
3. If the string is less than three characters in length, then the function will convert it as a 3-character string with trailing spaces.

   Example:

```
PRINT RAD%("ABC")
 1683

Ready
```

BACKUP Can Fail to Back Up Some File Data - Mandatory Patch

RSTS/E V10.0
System Files
BACKUP.TSK

Problem

Under certain conditions involving system loading, BACKUP can fail to back up some file data. Failure indications are:

- "?Some file data may be missing..."
- Errors during a BACKUP/DIRECTORY or RESTORE
- Verification errors during a verify pass

Solution

The following patching procedure corrects this problem. This problem will be corrected in a future release.

Procedure

1. This is a required patch to [0,1]BACKUP.TSK.
2. The patch described in step 4 can be installed using the PATCH option of INIT.SYS:

```
Option: PATCH
File to patch? BACKUP.TSK/N
```

3. This patch can be installed using ONLPAT, the online patching program:

```
RUN $ONLPAT
Command File Name? <CR>        (RETURN for patch installation)
File to patch? [0,1]BACKUP.TSK/N
File found in account [0,1]
```

4. The patch is as follows:

```
Base address? 74:10512
Offset address? 1340
 Base    Offset  Old     New?
010512  001340  012767  ? 137
010512  001342  001000  ? 41156
010512  001344  003700  ? 240
010512  001346  012746  ? ^Z    (CTRL/Z for new offset)
Offset address? 2506
 Base    Offset  Old     New?
010512  002506  004767  ? 13700
010512  002510  001660  ? 41204
010512  002512  012701  ? ^Z    (CTRL/Z for new offset)
Offset address? ^Z              (CTRL/Z for new base)
Base address? 3:0
Offset address? 41156
 Base    Offset  Old     New?
000000  041156  000000  ? 12701
```

```
000000  041160  000000  ? 34
000000  041162  000000  ? 4737
000000  041164  000000  ? 105060
000000  041166  000000  ? 12737
000000  041170  000000  ? 1000
000000  041172  000000  ? 105734
000000  041174  000000  ? 10037
000000  041176  000000  ? 41204
000000  041200  000000  ? 137
000000  041202  000000  ? 102034
000000  041204  000000  ? -1
000000  041206  000000  ? ^C    (up-arrow/C to exit;CTRL/C for INIT)
```

RSTS/E V10.0 Cumulative Index

This is a complete listing of all articles for RSTS/E V10 and layered products. Missing sequence numbers may pertain to problems unique to other versions of the same product or other major operating systems.

Unassigned articles are indicated: RESERVED.

Flags are currently being installed for all articles. The flags and definitions are as follows.

- *M = Mandatory Patch.* These patches correct errors in the software product. All users are required to apply these patches to maintain consistent "user level" unless the accompanying article specifies otherwise.
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- *R = Restriction.* These articles discuss areas that will not be patched in the current release because they require major modification or because they are not consistent with the design of the product. Restrictions, except those described as permanent, are reviewed and modified when possible as part of the normal release cycle.
- *N = Note.* These articles provide explanatory information that supplements the manual set and provide more detailed information about a program or package. They also provide procedural information to make it easier to use a program or package.
- * = *Article appeared in the RSTS/E V10.0 Maintenance Notebook, August 1990.*
- + = *Article appeared in the RSTS/E Software Dispatch Review, August 1990.*
- - = *Article is being republished.*

Sequence	Title	Released	Corrected	Mon/Yr
General Notes				
System Notes				
0.1.1 N	RSTS/E V10.0 Component Summary	V10.0	N/A	Aug 90 *
Initialization				
INIT.SYS Program Patches				
1.1.1 M	INIT Can Fail During Some RQDX Controller Accesses — Mandatory Patch	V10.0	N/A	Jan 91
Initialization				
INIT.SYS Notes				
1.2.1 N	Unnecessary Error Message When Booting 800 bpi Tape on TM02	V10.0	N/A	Aug 90 *
INIT.SYS Restrictions				
1.3.1 R	First TMSCP Drive on System Must Be Unit 0	V10.0	N/A	Aug 90 *
1.3.2 R	MT/MM Tapes Must Be Booted From Unit 0	V10.0	N/A	Aug 90 *

System Installation and Update

Installation/Update Notes

2.1.1 N	Installation Flag Files	V10.0	N/A	Aug 90 *

Installation/Update Restrictions

2.3.1 R	RSTS/E Version 10.0 Installation Procedure Restrictions	V10.0	N/A	Dec 90
2.3.2 R	Cannot Mount Disks at the Beginning of the Installation Procedure	V10.0	N/A	Feb 91
2.3.3 R	Monitor Installation on Target Disk Uses System Disk for Template	V10.0	N/A	Feb 91

Executive

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3.1.1 M	DEASSIGN SYS Call Can Crash System — Mandatory Patch	V10.0	N/A	Feb 91

Monitor Restrictions

3.3.1 R	DCL Log File Corruption on Full Disk	V10.0	N/A	Aug 90 *

Terminal Service Patches

3.4.1 F	Changing Special Login Terminal	V10.0	N/A	Aug 90 *
3.4.2 F	Input Escape Sequence Handling	V10.0	N/A	Aug 90 *
3.4.3 M	Host-Initiated LAT Connections May Crash System — Mandatory Patch	V10.0	N/A	Dec 90

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3.5.1 N	Modem Support on RSTS/E	V10.0	N/A	Aug 90 *
3.5.2 N	Unexpected Abort from Captive Command File Will Not Hang Up Dialup Line	V10.0	N/A	Aug 90 *

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3.7.1 N	Attaching to a Detached Job May Crash System — Mandatory Patch	V10.0	N/A	Dec 90
3.7.2 M	Dynamic Region Creation Can Crash System — Mandatory Patch	V10.0	N/A	Jan 91

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3.12.1 R	DB/DR Driver May Log Errors for Wrong Unit	V10.0	N/A	Aug 90 *
3.12.2 R	Swapping MSCP/TMSCP Unit Numbers May Cause Crash	V10.0	N/A	Aug 90 *

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BASIC-PLUS Patches

4.1.1 F	Special PRINT-USING Characters	V10.0	N/A	Aug 90 *
4.1.2 F	Default SCALE Factor	V10.0	N/A	Aug 90 *
4.1.3 F	Omitting SCALE Factor Warning Message	V10.0	N/A	Aug 90 *
4.1.4 F	Default to NOEXTEND Mode	V10.0	N/A	Aug 90 *
4.1.5 F	Immediate Mode from .BAS File	V10.0	N/A	Aug 90 *
4.1.6 F	Disabling the CCL SYS Call	V10.0	N/A	Aug 90 *
4.1.7 M	DATE% Is Now a Reserved Keyword — Mandatory Patch	V10.0	N/A	Jan 91
4.1.8 F	RAD% Is Now a Reserved Keyword — BASIC-PLUS Feature Patch	V10.0	N/A	Feb 91

BASIC-PLUS Notes

4.2.1 N	New BASIC-PLUS Function — RAD%	V10.0	N/A	Feb 91

Optional BASIC-PLUS Features

4.11.1 N	The BASIC-PLUS DEBUG Facility	V10.0	N/A	Aug 90 *
4.11.2 N	The BASIC-PLUS DUMP Facility	V10.0	N/A	Aug 90 *

Sequence	Title	Released	Corrected	Mon/Yr
4.11.3 F	Enabling DUMP from Compiled Files for Nonprivileged Users	V10.0	N/A	Aug 90 *
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BACKUP.TSK				
6.3.1 M	BACKUP Can Fail to Back Up Some File Data — Mandatory Patch	V10.0	N/A	Feb 91

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System Library ($)				
Library Restrictions				
10.2.1 R	PIP Sometimes Loops When Copying Files into Themselves	V10.0	N/A	Aug 90 *
Auxiliary Library (AUXLIB$)				
Library Restrictions				
11.2.1 R	ODT Displays Large Addresses Incorrectly	V10.0	N/A	Aug 90 *
Error Logging Package (ERROR$)				
Package Restrictions				
12.2.1 R	ANALYS Incorrectly Shows Virtual Disk as Locked Out	V10.0	N/A	Aug 90 *
Operator Services and Spooling Package (OPSER$)				
Package Notes				
14.1.1 N	Notes on the Use of Serial Printers	V10.0	N/A	Aug 90 *
Print/Batch Services Package (PBS$)				
Package Notes				
15.1.1 N	Notes on the Use of Serial Printers	V10.0	N/A	Aug 90 *
RMS-11 V2.0 (RMS$)				
Package Restrictions				
22.2.1 R	RMS-11 Does Not Correctly Handle Underscores	V10.0	N/A	Aug 90 *
22.2.2 R	RMS-11 May Incorrectly Report Error on Remote Access of Indexed File	V10.0	N/A	Aug 90 *

Sequence	Title	Released	Corrected	Mon/Yr
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DCL Run-time System and Utilities				
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27.1.1 N	Attributes Are Lost When RMS File Is Copied to DOS Format Tape	V10.0	N/A	Aug 90 *
27.1.2 N	Exclamation Marks in BROADCAST Commands	V10.0	N/A	Aug 90 *
Package Restrictions				
27.2.1 R	MOUNT Command with /OVERRIDE Qualifier	V10.0	N/A	Aug 90 *
RSX-11 Emulator and Utilities				
Package Notes				
28.1.1 N	Using the RSX-11 CRF Utility	V10.0	N/A	Aug 90 *
Package Restrictions				
28.2.1 R	RSX-11 Utilities Do Not Handle All RSTS/E File Specifications	V10.0	N/A	Aug 90 *
RT-11 Emulator and Utilities				
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29.1.1 N	Use of Underscore in RT-11 Utilities	V10.0	N/A	Aug 90 *
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29.2.1 R	Disk Unit Numbers Greater Than Nine May Not Be Displayed Correctly	V10.0	N/A	Aug 90 *
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31.2.1 R	SET EXECUTOR SEGMENT BUFFER SIZE May Fail Without Warning	V10.0	N/A	Aug 90 *
31.2.2 R	SHOW NODE Command May Fail	V10.0	N/A	Aug 90 *
31.2.3 R	Network Parameter File Will Not Hold More Than 26,000 Nodes	V10.0	N/A	Aug 90 *
31.2.4 R	SET HOST May Give Erroneous Error Message	V10.0	N/A	Aug 90 *
31.2.5 R	Network File Transfers May Not Correctly Preserve Protection Codes	V10.0	N/A	Aug 90 *
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33.0.1 N	Announcing PDP-11 C for RSTS/E V1.0	N/A	N/A	Aug 90 +
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49.1.1 N	Instructions Missing in DATATRIEVE-11 V3.3 Installation Guide	N/A	N/A	Jan 91

RSTS/E V10

RSTS/E V9.7 Cumulative Index

This is a complete listing of all articles for RSTS/E V9.7 and layered products. Missing sequence numbers may pertain to problems unique to other versions of the same product or other major operating systems.

Unassigned articles are indicated: RESERVED.

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Sequence	Title	Released	Corrected	Mon/Yr
General Notes				
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0.1.35 N	Cooperative Promotional Agreement Signed with Northwest Digital Software, Inc.	V9.7	N/A	Jun 90
0.1.37 N	Announcing New Hardware Support for RA70 Disks	V9.7	N/A	Dec 89
0.1.38 N	Announcing New Hardware Support for RA90 Disks	V9.7	N/A	Dec 89
0.1.39 N	RSTS/E Version 9.6 Support Termination Notice	V9.7	N/A	Feb 90
0.1.40 N	Announcing Support for MicroPDP-11/93 Processors	V9.7	N/A	Aug 90
0.1.41 N	Announcing Support for PDP-11/94 Processors	V9.7	N/A	Aug 90
0.1.42 N	Announcing RSTS/E Version 10.0	N/A	N/A	Sep 90
0.1.43 N	Micro/RSTS Version 2.2 Support Termination Notice	N/A	N/A	Nov 90
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1.1.15 M	DEQNA/DELQA Vector Address of 400 or Greater Will Cause System Crash	V9.6/V9.7	N/A	Oct 89
1.1.16 F	Parity Memory Handling for MicroPDP-11/93 and PDP-11/94 Systems	V9.7	N/A	Aug 90
1.1.17 M	INIT Can Fail During Some RQDX Controller Accesses — Mandatory Patch	V9.7	N/A	Jan 91

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2.2.1 R	Installation Procedure Does Not Use Reassigned Package Logicals	V9.7	N/A	Nov 89
2.2.2 R	Online Monitor Installation May Get Unexpected Error	V9.7	N/A	Jan 90

Executive

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3.1.10 M	Problem with CTRL/C While Using Supervisor Mode RMS	V9.7	N/A	Nov 89
3.1.11 M	Crash Code Does Not Save MMU Registers Correctly — Mandatory Patch	V9.7	V10.0	Jul 90
3.1.12 F	Parity Memory Handling for MicroPDP-11/93 and PDP-11/94 Systems	V9.7	N/A	Aug 90

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3.3.25 M	Infinite Loop May Occur When Processing LOGIN.COM — Mandatory Patch	V9.6/V9.7	N/A	Jan 90
3.3.26 M	Fix Memory Corruption Problem When Using AUTOPROMPT Suppression — Mandatory Terminal Service Patch	V9.7	N/A	Mar 90
3.3.27 M	Spawning a Logged In Job May Cause System to Crash — Mandatory Patch	V9.7	N/A	Apr 90
3.3.28 M	Failure to Autobaud on Dialup Lines — Mandatory Patch	V9.7	N/A	Aug 90
3.3.29 M	System May Crash When Reattaching — Mandatory Patch	V9.7	N/A	Aug 90

File Processor Patches

3.5.17 M	KMCUT Status Command Will Corrupt Memory	V9.6/V9.7	N/A	Oct 89
3.5.18 M	Asynchronous I/O May Cause File to Grow Too Large — Mandatory Patch	V9.6/V9.7	N/A	Dec 89
3.5.19 M	Detach from Dynamic Keyboard May Cause System to Crash — Mandatory Patch	V9.7	N/A	May 90 -
3.5.20 M	Swap Console and Attach Directives May Crash System — Mandatory Patch	V9.7	N/A	Dec 90 -
3.5.21 M	Terminal Modes, Delimiters, Input Lost on Reattach — Mandatory Patch	V9.7	V10.0	Nov 90
3.5.22 M	Dynamic Region Creation Can Crash System — Mandatory Patch	V9.7	N/A	Jan 91

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11.10.1 R	ODT Hangs Accessing RA82 and RA90 Disks in Non-File-Structured Mode	V9.7	V10.0	Oct 90

Print/Batch Services Package (PB$)

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15.3.6 M	START/SERVER/PAGE Does Not Start on New Page — Mandatory Patch	V9.7	V9.7	May 90
15.3.7 M	Possible Security Problem in PBS — Mandatory Patch	V9.7	V10.0	Jun 90

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31.11.1 M	NFT May Hang During Wildcard Copy in Block Mode	V9.7	N/A	Oct 89
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44.2.1 M	DATATRIEVE V3.3 DDMF Fails on Non-Supervisor Mode Systems — Mandatory Patch	N/A	N/A	Apr 90
44.2.2 N	Instructions Missing in DATATRIEVE-11 V3.3 Installation Guide	N/A	N/A	Jan 91

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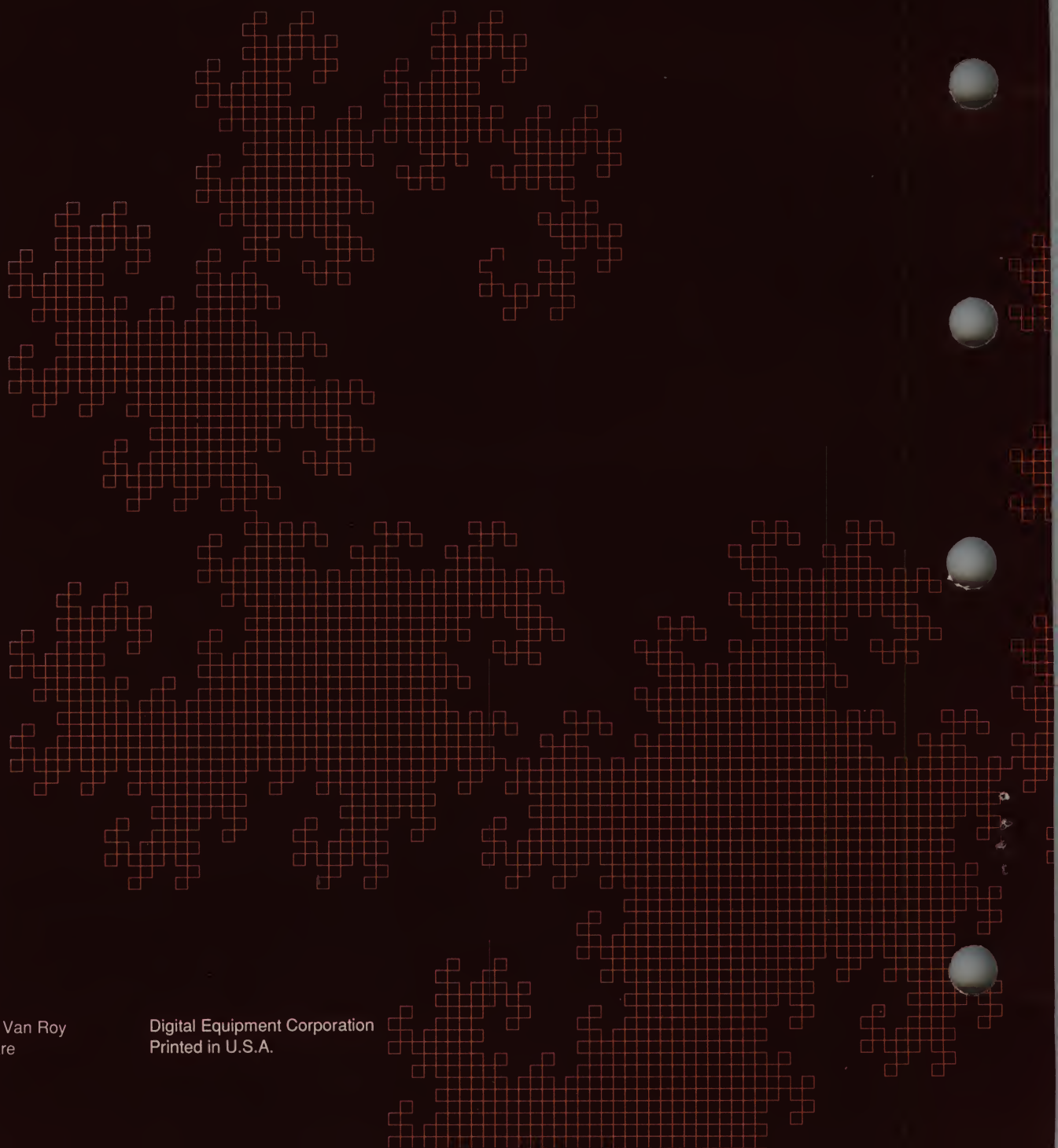

Fractal by Peter Van Roy
Dynamic Software

Digital Equipment Corporation
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RSTS/E Software Dispatch

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The *RSTS/E Software Dispatch* complements the *RSTS/E Software Dispatch Review*. New and revised Software Product Descriptions (SPDs), programming notes, software problems and solutions, and documentation corrections are published here. Much of the material is developed from Software Performance Report (SPR) answers significant to the general audience and is printed here to supplement the maintenance notebook (established by the Software Dispatch Review).

Distribution
The *RSTS/E Software Dispatch* is directed to one software contact for each software product. No mailing will be made to addresses without a software contact name. **Address change requests should be sent to the nearest Digital field office. Include the new address and mailing label from the most recently received publication.**

The prerequisite to using Digital software is the appropriate license. The standard Terms and Conditions and Digital Business Agreement (DBA) contain the license terms for all software other than DECsystem-10.

Patricia Callahan, Editor

Contents

Product Availability Dates

The following list contains the date and version of the latest release of supported software products. Customers who have a Software Product Services (SPS) agreement during the month the product becomes available are eligible to receive the new release. Eligible customers who have not received the new release should contact their local Digital office.

Product	Version	Available
ADE/RSTS	2.4 RETIRED	Apr 87
BASIC-PLUS-2 for RSTS/E,PDP-11	2.6	Aug 89
COBOL,PDP-11	4.4 RETIRED	Sep 88
COBOL-81/RSTS/E	3.1	Jan 91
DATATRIEVE-11	3.3A	Feb 90
DECdx/RSTS	1.0	Nov 84
DECmail-11 for RSTS/E and Micro/RSTS	3.1	Dec 87
DECnet/E	4.1	Jan 89
DECtap	1.5A RETIRED	Jun 88
DECWORD/DP	1.2 RETIRED	Apr 89
DMS-500	2.1 RETIRED	Aug 87
FMS-11/RSTS	2.1	Jan 88
FORTRAN IV/RSTS/E	2.8	Dec 88
PDP-11 SYMBOLIC DEBUGGER/RSTS (formerly FORTRAN-77 DEBUG/RSTS/E, PDP-11)	2.2	Jan 91
PDP-11 C for RSTS/E	1.0	Jun 90
FORTRAN-77/RSTS/E, PDP-11	5.3	Oct 88
GIGI Software	1.0 RETIRED	Feb 86
INDENT	1.4 RETIRED	Oct 87
MENU-11/RSTS	2.0	Dec 83
Message Router for RSTS/E	1.0 RETIRED	Mar 87
RPG II, PDP-11	8.8 RETIRED	Jan 87
RSTS Smart Mailer	1.1 RETIRED	Dec 85
RSTS/E	10.0	Dec 90
RSTS/E DECgraph-11	1.2 RETIRED	Aug 87
RSTS/E DIBOL	6.1	Aug 89
RSTS/E High Performance 2780/3780 Emulator	1.1 RETIRED	Mar 86
RSTS/E V8.0 UPDATE	G	Apr 85
RSTS/E 3271 Protocol Emulator	2.1 RETIRED	Mar 86

RSTS/E V9

RESTORE/VERIFY/NOREPLACE Can Enter Infinite Sleep State

RSTS/E V9.7
System Files
BACKUP.TSK

Problem

If /NOREPLACE and /VERIFY are both specified on the RESTORE command, and there are many files that are "not replaced," BACKUP can enter an infinite sleep state.

The reason this happens is that whenever a file is not replaced, it is added to a list kept in dynamic memory space, so that the verify operation will know not to do the verify on those files. With a large number of files not replaced, BACKUP eventually runs out of dynamic memory space and sleeps.

The workaround to this problem is to specify either /NOREPLACE or /VERIFY, but not both in any one operation if there is going to be a large number of files "not replaced."

This is a restriction for Version 9.7.

System Installation and Update

Installation/Update .COM files

2.2.1 R	Installation Procedure Does Not Use Reassigned Package Logicals	V9.7	N/A	Nov 89
2.2.2 R	Online Monitor Installation May Get Unexpected Error	V9.7	N/A	Jan 90

Executive

Monitor Patches

3.1.9 M	Enhanced Hardware Fault Tolerance	V9.7	N/A	Sep 89
3.1.10 M	Problem with CTRL/C While Using Supervisor Mode RMS	V9.7	N/A	Nov 89
3.1.11 M	Crash Code Does Not Save MMU Registers Correctly — Mandatory Patch	V9.7	V10.0	Jul 90
3.1.12 F	Parity Memory Handling for MicroPDP-11/93 and PDP-11/94 Systems	V9.7	N/A	Aug 90

Terminal Services Patches

3.3.25 M	Infinite Loop May Occur When Processing LOGIN.COM — Mandatory Patch	V9.6/V9.7	N/A	Jan 90
3.3.26 M	Fix Memory Corruption Problem When Using AUTOPROMPT Suppression — Mandatory Terminal Service Patch	V9.7	N/A	Mar 90
3.3.27 M	Spawning a Logged In Job May Cause System to Crash — Mandatory Patch	V9.7	N/A	Apr 90
3.3.28 M	Failure to Autobaud on Dialup Lines — Mandatory Patch	V9.7	N/A	Aug 90
3.3.29 M	System May Crash When Reattaching — Mandatory Patch	V9.7	N/A	Aug 90

File Processor Patches

3.5.17 M	KMCUT Status Command Will Corrupt Memory	V9.6/V9.7	N/A	Oct 89
3.5.18 M	Asynchronous I/O May Cause File to Grow Too Large — Mandatory Patch	V9.6/V9.7	N/A	Dec 89
3.5.19 M	Detach from Dynamic Keyboard May Cause System to Crash — Mandatory Patch	V9.7	N/A	May 90 -
3.5.20 M	Swap Console and Attach Directives May Crash System — Mandatory Patch	V9.7	N/A	Dec 90 -
3.5.21 M	Terminal Modes, Delimiters, Input Lost on Reattach — Mandatory Patch	V9.7	V10.0	Nov 90
3.5.22 M	Dynamic Region Creation Can Crash System — Mandatory Patch	V9.7	N/A	Jan 91

System Files

BACKUP.TSK

6.2.5 R	RESTORE/VERIFY/NOREPLACE Can Enter Infinite Sleep State	V9.7	N/A	Mar 91

Auxiliary Library Package (AUXLIB$)

ODT Restriction

11.10.1 R	ODT Hangs Accessing RA82 and RA90 Disks in Non-File-Structured Mode	V9.7	V10.0	Oct 90

Print/Batch Services Package (PB$)

PBS.TSK

15.3.6 M	START/SERVER/PAGE Does Not Start on New Page — Mandatory Patch	V9.7	V9.7	May 90
15.3.7 M	Possible Security Problem in PBS — Mandatory Patch	V9.7	V10.0	Jun 90

Sequence	Title	Released	Corrected	Mon/Yr
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DCL Run-Time System and Utilities				
DCL.RTS				
20.1.12 M	DCL May Overflow Its Stack — Mandatory Patch	V9.7	V10.0	Sep 90
DECnet/E V4.1				
Utilities				
FAL.TSK				
31.5.1 M	Inserting Duplicate Records into New RMS-11 File from VMS Can Erase File — Mandatory Patch	V9.7	V10.0	Nov 90 -
DECnet/E V2.n				
Utilities				
NFT.TSK				
31.11.1 M	NFT May Hang During Wildcard Copy in Block Mode	V9.7	N/A	Oct 89
DATATRIEVE-11 for RSTS/E V9.7				
44.2.1 M	DATATRIEVE V3.3 DDMF Fails on Non-Supervisor Mode Systems — Mandatory Patch	N/A	N/A	Apr 90
44.2.2 N	Instructions Missing in DATATRIEVE-11 V3.3 Installation Guide	N/A	N/A	Jan 91

RSTS/E V10

Three Problems in Terminal Service — Mandatory Patch

RSTS/E V10.0
Executive
Terminal Service Patches

Problem

Three problems were discovered in terminal service for Version 10.0. They are as follows:

1. If a terminal is closed while output is being sent to the terminal, and is then reopened before the output completes, some terminal attributes may be lost after the OPEN occurs. The terminal attributes that may be lost include the terminal open modes, private delimiters, and terminal characteristics.

   For example, if output is sent to the terminal, followed by a CLOSE, then the terminal is opened in transparent controls mode, it is possible that the mode will be lost before a read from the terminal takes place. Furthermore, the setting of one or more private delimiters or terminal characteristics after the OPEN can be lost, because of the buffered output continuing to be sent to the terminal after the OPEN occurs.

2. Under certain conditions, command line editing and command recall through the use of the arrow and functions keys can become disabled at the DIGITAL Command Language (DCL) level, even though the terminal characteristics indicate these features are enabled. The function keys (for example, F12), and the arrow keys cause an escape sequence to be displayed on the screen instead of performing their line editing and command recall functions.

3. On certain central processing units (CPUs), commands entered at the RSX keyboard monitor are treated as "program input" for purposes of command line recall, instead of "keyboard monitor" commands. As a result, switching to another keyboard monitor from RSX will cause any saved RSX commands to be erased. Levels of command line recall are described in the *RSTS/E Version 10.0 System User's Guide*, page 1-14.

Solution

The following patching procedure corrects these problems. They will be corrected in a future release.

Procedure

1. This is a required patch to the RSTS/E Version 10.0 executive. It must be installed in all target monitor save image libraries (SILs).

2. The patch described in step 4 can be installed using the PATCH option of INIT.SYS:

```
Option: PATCH
File to patch? <CR>                (RETURN for installed monitor SIL)
```

BACKUP/INITIALIZE Can Exit with Error — Mandatory Patch

RSTS/E V10.0
System File Corrections
BACKUP.TSK

Problem

If the /INITIALIZE qualifier is specified with any of the BACKUP commands (BACKUP, RESTORE, BACKUP/COPY, BACKUP/IMAGE), and if the disk to be initialized has a large number of bad blocks, then BACKUP can exit with the following error after you respond with a "Y" to the prompt "Proceed (Y or N)?":

```
?Unexpected error 31 in BCKSUB at 62404
```

Solution

The following patching procedure corrects this problem. It will be corrected in a future release.

Procedure

1. This is a required patch to [0,1]BACKUP.TSK.
2. The patch described in step 4 can be installed using the PATCH option of INIT.SYS:

```
Option: PATCH
File to patch? BACKUP.TSK/N
```

3. This patch can be installed using ONLPAT, the online patching program:

```
RUN $ONLPAT
Command File Name? <CR>        (RETURN for patch installation)
File to patch? [0,1]BACKUP.TSK/N
File found in account [0,1]
```

4. The patch is as follows:

```
Base address? 45:5060
Offset address? 14014
 Base   Offset  Old     New?
005060  014014  063767  ? 4737
005060  014016  000444  ? 41206
005060  014020  005200  ? 240
005060  014022  000732  ? ^Z     (CTRL/Z for new offset)
Offset address? ^Z               (CTRL/Z for new base)
Base address? 3:0
Offset address? 41206
 Base   Offset  Old     New?
000000  041206  000000  ? 63737
000000  041210  000000  ? 444
000000  041212  000000  ? 67636
000000  041214  000000  ? 23727
000000  041216  000000  ? 67636
000000  041220  000000  ? 1000
000000  041222  000000  ? 2402
```

```
000000  041224  000000  ? 4737
000000  041226  000000  ? 63034
000000  041230  000000  ? 207
000000  041232  ??????  ? ^C    (up-arrow/C to exit;CTRL/C for INIT)
```

RSTS/E V10.0 Cumulative Index

This is a complete listing of all articles for RSTS/E V10 and layered products. Missing sequence numbers may pertain to problems unique to other versions of the same product or other major operating systems.

Unassigned articles are indicated: RESERVED.

Flags are currently being installed for all articles. The flags and definitions are as follows.

- *M = Mandatory Patch.* These patches correct errors in the software product. All users are required to apply these patches to maintain consistent "user level" unless the accompanying article specifies otherwise.
- *F = Optional Feature Patch.* These patches extend or configure functionality into the product. These functions will be treated as a supported part of the product for the duration of the current release and may be incorporated in a future release.
- *R = Restriction.* These articles discuss areas that will not be patched in the current release because they require major modification or because they are not consistent with the design of the product. Restrictions, except those described as permanent, are reviewed and modified when possible as part of the normal release cycle.
- *N = Note.* These articles provide explanatory information that supplements the manual set and provide more detailed information about a program or package. They also provide procedural information to make it easier to use a program or package.
- ** = Article appeared in the RSTS/E V10.0 Maintenance Notebook, August 1990.*
- *+ = Article appeared in the RSTS/E Software Dispatch Review, August 1990.*
- *- = Article is being republished.*

Sequence	Title	Released	Corrected	Mon/Yr
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0.1.1 N	RSTS/E V10.0 Component Summary	V10.0	N/A	Aug 90 *
Initialization				
INIT.SYS Program Patches				
1.1.1 M	INIT Can Fail During Some RQDX Controller Accesses — Mandatory Patch	V10.0	N/A	Jan 91
Initialization				
INIT.SYS Notes				
1.2.1 N	Unnecessary Error Message When Booting 800 bpi Tape on TM02	V10.0	N/A	Aug 90 *
INIT.SYS Restrictions				
1.3.1 R	First TMSCP Drive on System Must Be Unit 0	V10.0	N/A	Aug 90 *
1.3.2 R	MT/MM Tapes Must Be Booted From Unit 0	V10.0	N/A	Aug 90 *

System Installation and Update

Installation/Update Notes

2.1.1 N	Installation Flag Files	V10.0	N/A	Aug 90 *

Installation/Update Restrictions

2.3.1 R	RSTS/E Version 10.0 Installation Procedure Restrictions	V10.0	N/A	Dec 90
2.3.2 R	Cannot Mount Disks at the Beginning of the Installation Procedure	V10.0	N/A	Feb 91
2.3.3 R	Monitor Installation on Target Disk Uses System Disk for Template	V10.0	N/A	Feb 91

Executive

Monitor Patches

3.1.1 M	DEASSIGN SYS Call Can Crash System — Mandatory Patch	V10.0	N/A	Feb 91

Monitor Restrictions

3.3.1 R	DCL Log File Corruption on Full Disk	V10.0	N/A	Aug 90 *

Terminal Service Patches

3.4.1 F	Changing Special Login Terminal	V10.0	N/A	Aug 90 *
3.4.2 F	Input Escape Sequence Handling	V10.0	N/A	Aug 90 *
3.4.3 M	Host-Initiated LAT Connections May Crash System — Mandatory Patch	V10.0	N/A	Dec 90
3.4.4 M	Three Problems in Terminal Service — Mandatory Patch	V10.0	N/A	Mar 91

Terminal Service Notes

3.5.1 N	Modem Support on RSTS/E	V10.0	N/A	Aug 90 *
3.5.2 N	Unexpected Abort from Captive Command File Will Not Hang Up Dialup Line	V10.0	N/A	Aug 90 *

File Processor Patches

3.7.1 N	Attaching to a Detached Job May Crash System — Mandatory Patch	V10.0	N/A	Dec 90
3.7.2 M	Dynamic Region Creation Can Crash System — Mandatory Patch	V10.0	N/A	Jan 91

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3.12.1 R	DB/DR Driver May Log Errors for Wrong Unit	V10.0	N/A	Aug 90 *
3.12.2 R	Swapping MSCP/TMSCP Unit Numbers May Cause Crash	V10.0	N/A	Aug 90 *

BASIC-PLUS

BASIC-PLUS Patches

4.1.1 F	Special PRINT-USING Characters	V10.0	N/A	Aug 90 *
4.1.2 F	Default SCALE Factor	V10.0	N/A	Aug 90 *
4.1.3 F	Omitting SCALE Factor Warning Message	V10.0	N/A	Aug 90 *
4.1.4 F	Default to NOEXTEND Mode	V10.0	N/A	Aug 90 *
4.1.5 F	Immediate Mode from .BAS File	V10.0	N/A	Aug 90 *
4.1.6 F	Disabling the CCL SYS Call	V10.0	N/A	Aug 90 *
4.1.7 M	DATE% Is Now a Reserved Keyword — Mandatory Patch	V10.0	N/A	Jan 91
4.1.8 F	RAD% Is Now a Reserved Keyword — BASIC-PLUS Feature Patch	V10.0	N/A	Feb 91

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4.2.1 N	New BASIC-PLUS Function — RAD%	V10.0	N/A	Feb 91

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4.11.2 N	The BASIC-PLUS DUMP Facility	V10.0	N/A	Aug 90 *

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6.3.1 M	BACKUP Can Fail to Back Up Some File Data — Mandatory Patch	V10.0	N/A	Feb 91
6.3.2 M	BACKUP/INITIALIZE Can Exit with Error — Mandatory Patch	V10.0	N/A	Mar 91

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28.2.1 R	RSX-11 Utilities Do Not Handle All RSTS/E File Specifications	V10.0	N/A	Aug 90 *
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49.1.1 N	Instructions Missing in DATATRIEVE-11 V3.3 Installation Guide	N/A	N/A	Jan 91

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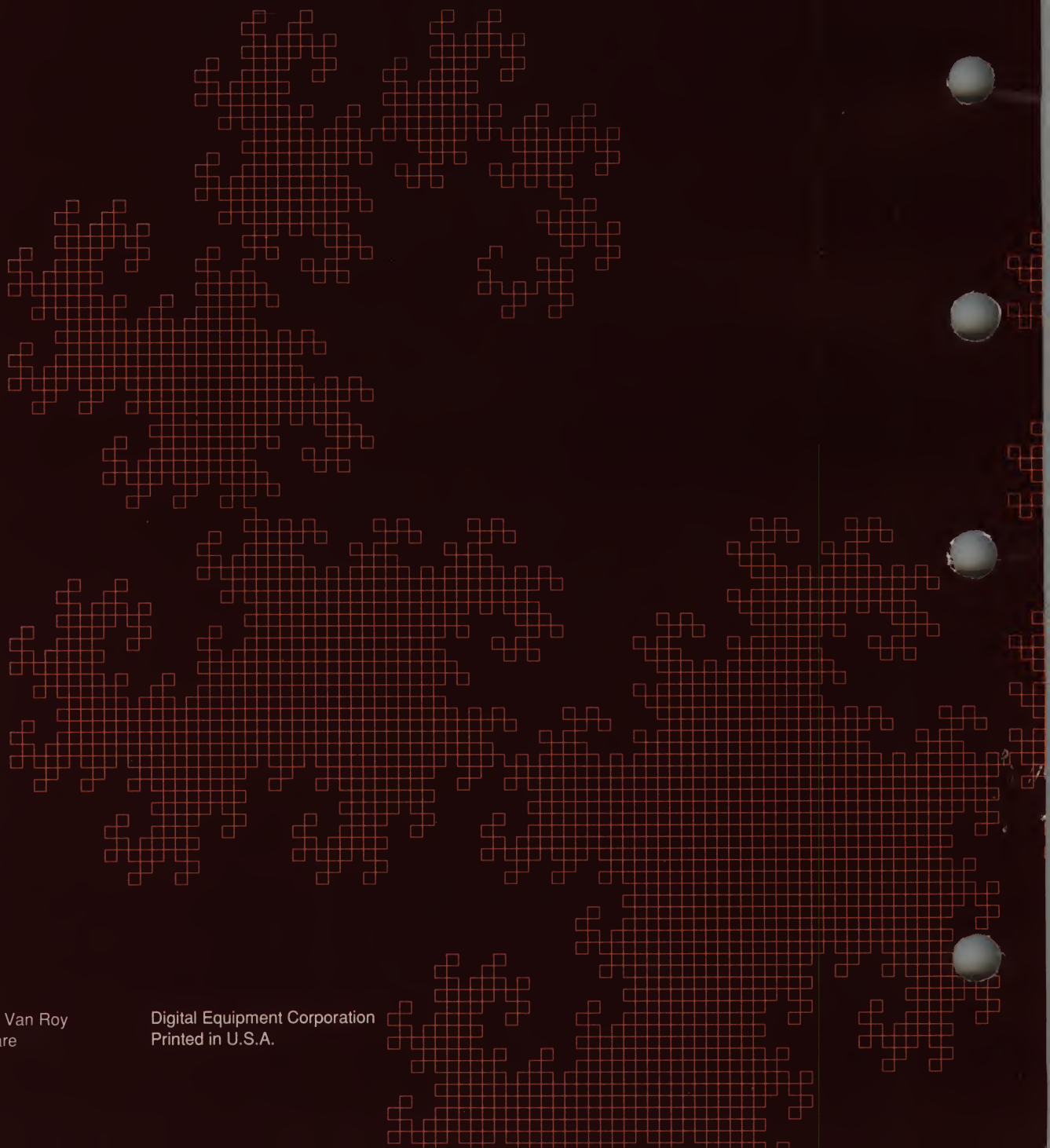

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The Software Dispatch

RSTS/E

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RSTS/E SOFTWARE DISPATCH

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The RSTS/E Software Dispatch complements the RSTS/E Software Dispatch Review. New and revised Software Product Descriptions, programming notes, software problems and solutions, and documentation corrections are published here. Much of the material is developed from Software Performance Report (SPR) answers significant to the general audience and is printed here to supplement the maintenance notebook (established by the Software Dispatch Review).

PRODUCTS SUPPORTED in the RSTS/E SOFTWARE DISPATCH

ADE/RSTS
BASIC-PLUS-2 for RSTS/E, PDP-11
COBOL, PDP-11
COBOL-81/RSTS/E
DATATRIEVE-11
DECAL
DECgraph-11
DECmail/RSTS
DECnet/E
DECWORD/DP
DMS-500
FMS-11/RSTS
FORTRAN IV/RSTS/E
FORTRAN-77 DEBUG, PDP-11
FORTRAN-77/RSTS/E, PDP-11
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MENU-11/RSTS
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Barbara Scollan, Editor

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EDITOR'S NOTE

Starting with this issue, the RSTS/E Software Dispatch no longer maintains separate indexes for each release of RSTS/E. Instead, it maintains a single "Version 9" cumulative index. This index contains all articles published since the release of RSTS/E V9.0. To make the cumulative index easier to use, each article is listed with the following information:

- Sequence - A number which uniquely identifies the article. Sequence numbers are of the form "aa.bb.cc," where "aa" is the component number, "bb" the subcomponent number, and "cc" the sequence number for that component-subcomponent combination. See Section 2.0 of the RSTS/E Maintenance Notebook for a complete list of the component.subcomponent numbers.

- Type - Following each article's sequence number is a single-letter flag indicating the type of article published:

  M = mandatory patch
  F = feature patch
  R = restriction
  N = note

  See the cover page of the Cumulative Index for a complete description of these flags.

- Title - The article's title. In some cases, a sequence number may be unassigned. In such cases, the word "RESERVED" will appear in this column.

- Released - The version of RSTS/E that was current when the article was published. In the case of a problem description, this column indicates the earliest supported version of RSTS/E where the problem appeared. Note that the same problem may exist on earlier versions that are no longer supported.

- Corrected - The version of RSTS/E when the problem described is fully corrected. This can apply to mandatory patches or restrictions which are eliminated by later versions of the software. Notes and feature patches generally apply to all versions and usually contains "N/A" (not applicable) in this column.

- Mon/Yr - The month and year of the Software Dispatch containing the article. One or more flags may appear after the month/year, providing some additional information about the article's publication date:

  * = article appeared in Maintenance Notebook (June 1985)
  + = article appeared in Dispatch Review (June 1985)
  - = article was republished

See the cover page of the Cumulative Index for further details.

PRODUCT AVAILABILITY DATES - RSTS/E

JUNE 1986

The following list contains date and version of the latest release of supported software products. Customers who are in warranty or have a software product service agreement during the month the product became available, are eligible to receive the new release. Eligible customers who have not received the new release should contact their local DIGITAL office.

PRODUCT	VERSION	AVAILABLE
ADE/RSTS	2.4	JUL 85
BASIC-PLUS-2 for RSTS/E,PDP-11	2.3	JUN 85
COBOL,PDP-11	4.4	MAY 82
COBOL-81/RSTS/E	2.3	APR 85
DATATRIEVE-11	3.1	SEP 84
DECdx/RSTS	1.0	NOV 84
DECmail-11 for RSTS/E and Micro/RSTS	2.0	MAR 84
DECnet/E	2.1	JUN 85
DECtap	1.5	MAR 86
DECWORD/DP	1.2 (SPD ONLY)	MAY 85
DMS-500	2.1	JUL 82
FMS-11/RSTS	1.5	APR 85
FORTRAN IV/RSTS/E	2.6	JUN 83
PDP-11 SYMBOLIC DEBUGGER/RSTS (formerly FORTRAN-77 DEBUG/RSTS/E, PDP-11)	2.0	APR 86
FORTRAN-77/RSTS/E,PDP-11	5.0	OCT 83
GIGI Software	1.0	NOV 82
INDENT	1.4	JUN 85
MENU-11/RSTS	2.0	DEC 83
Message Router for RSTS/E	1.0	AUG 84
RPG II,PDP-11	8.8	JUL 83
RSTS Smart Mailer	1.1	NOV 84
RSTS/E	9.1	JAN 86
RSTS/E DECgraph-11	1.2	NOV 84
RSTS/E DIBOL	5.2	FEB 86
RSTS/E High Performance 2780/3780 Emulator	1.1	MAR 86 - RETIRED
RSTS/E V8.0 UPDATE	G	APR 85
RSTS/E 3271 Protocol Emulator	2.1	MAR 86 - RETIRED

RSTS/E V9

ANNOUNCING RSTS/E V9.1--SUPPORT FOR TK50 AND RD53

RSTS/E V9.1 is the first in a series of Version 9 minireleases. These minireleases include software maintenance, new hardware support, and new features, but are timed to replace the previous maintenance-only "updates."

New in RSTS/E V9.1:

Tape:	- TK50 cartridge tape support - TMSCP Driver - 6250 BPI density tape support - automatic maximum/minimum tape density selection
Disk:	- RD53 with the RQDX2 controller - the maximum number of MSCP devices supported on each system has doubled
Distribution:	- RSTS/E will now be distributed on TK50 cartridge tapes, service offerings associated with this media will also be available
Modem:	- DF112, except autodial on a DH11
Performance:	- significant improvements in the file processor can increase throughput significantly for file I/O intensive jobs
Sources:	- updates are available for RSTS/E sources on magtape and microfiche

Ordering/Availability Information

RSTS/E Version 9.1 is scheduled to be released this month. For specific service availability and pricing information, please contact your local DIGITAL account manager.

ANNOUNCING Micro/RSTS VERSION 2.0

With the introduction of Version 2.0, Micro/RSTS is now synchronized with Version 9.1 of its parent operating system, RSTS/E. In addition to many new software features, Version 2.0 provides support for a variety of new devices and packages that are especially important to our MicroPDP-11 customers. Of special note are:

Processors:	- MicroPDP-11/83, in addition to the MicroPDP-11/73 and MicroPDP-11/23
Disks:	- RA80/81/60 with the KDA50 controller - RD53 with the RQDX2 and RQDX3 controllers
Tapes:	- TK50 for Micro/RSTS distribution and for data
Modem:	- DF112

Should You Buy Micro/RSTS or RSTS/E?

Micro/RSTS is designed to meet the needs of customers whose primary use of the system is to run applications. For these customers, Micro/RSTS:

- provides lower-cost system kits
- provides lower-cost services
- offers very simple installation procedures that optimize the system for the MicroPDP-11 environment
- provides a documentation set better suited to the customer needing the operating system primarily as an "application engine"
- uses an MSCP-type disk (RD5x,RAxx) as a system disk

In addition, although both RSTS/E and Micro/RSTS are distributed on TK50 cartridge tapes, only Micro/RSTS is available on RX50 floppies. Micro/RSTS does not support DECnet communications.

Using the Advanced Programmer's Kit, Micro/RSTS can be expanded to meet the needs of customers requiring a powerful program development environment, but, in most cases, these customers should purchase RSTS/E and use the TK50 distribution. This is because RSTS/E provides:

- a broader range of program development tools
- more flexibility to support hardware configurations
- more flexibility to optimize for specialized software
- more in-depth technical documentation
- support for DECnet communications
- support for RJ2780
- a wider range of services and layered products
- support for more than 20 users
- support for a wide variety of disks as a system disk

Product Description

Fast and Easy Installation

A key design goal of Micro/RSTS V2.0 is that it can be installed by someone without specialized knowledge in less than 1 hour. Much testing effort was dedicated to assure that this goal was met.

DCL is Extended to the Entire RSTS/E System

Over 100 modifications to DCL make Micro/RSTS a truly integrated system, from the point of view of user and lead operator or system manager. Examples include complete DCL-based account management, terminal control and status, print and batch services, and BACKUP commands.

A complete HELP command provides users with on-line answers to their DCL questions. HELP is delivered one screen at a time and leads the user from topic to subtopic.

DCL Command File Processing

This feature allows users to automate many individual and system managment tasks and to customize their environment by defining personal commands and command procedures using the DCL commands that they already know.

The RSTS/E DCL command file processor is subset compatible with the VMS and MicroVMS command file processor. Many command procedures can be moved from a RSTS/E system to a VMS system and back again without major modifications. Using this feature can help customers to use both RSTS and VMS based systems in the same operations.

LOGIN.COM files are now supported and are used to customize the environment for groups or individual users.

New BACKUP Offers Increased Throughput and VMS Compatibility

The new BACKUP command includes three main areas of improvement: support for streaming tape drives such as the TK50 and TSV05, added capabilities, and save sets that are subset compatible with VMS and MicroVMS BACKUP.

Security Enhancements

Micro/RSTS, like RSTS/E, is used primarily for commercial, administrative, and financial applications, where its users are particularly concerned with security. New security improvements include:

- multiple privilege attributes by account
- up to 14-character passwords
- hashed (unable to be looked up) passwords
- system password
- enhanced disk quota checking and enforcement
- enhanced CPU and file system usage quotas
- captive and guest accounts

Separate I and D Space Support for User Programs

Standard PDP-11, 16-bit addressing allows user programs to grow to 32KW before overlaying is required. With Micro/RSTS V2.0, users running the MicroPDP-11/73 and MicroPDP-11/83 can now address up to a maximum of 64KW. This can substantially improve performance and lessen support requirements. Programs written in MACRO-11, BASIC-PLUS-2, and FORTRAN-77 can take advantage of this feature.

Virtual Disk

System managers can allocate a portion of contiguous, unused memory to be a virtual disk. This memory is considered to be a file-structured device and can be accessed by users and programs in the same way that other disks are accessed, except that data accesses occur at memory speeds rather than disk speeds.

Autobaud Detection

Autobaud detection support includes rates from 110 to 9600 baud. Speeds can be detected for both dial-up and directly-connected terminals.

Ordering/Availability Information

Micro/RSTS Version 2.0 is scheduled to be released this month.

For specific service availability and pricing information, please contact your local DIGITAL account manager.

FPJ11 FLOATING-POINT ACCELERATOR WITH PDP-11/84 AND MicroPDP-11/83 SYSTEMS

Because of a hardware microcode problem, RSTS/E and Micro/RSTS temporarily do not support the FPJ11 floating point accelerator (FPA) used on PDP-11/84 and MicroPDP-11/83 systems.

To satisify customer demand, these systems will temporarily ship without the FPJ11 if RSTS/E is included on the system order. If an operating system is not included on the system order, the FPJ11 chip must be removed from the processor module in the field. The removal of the FPA chip is a requirement for DIGITAL hardware and software support on RSTS/E systems.

The situation stems from the interaction between the DCJ11 chip set and the FPJ11 and impacts software that uses the alternate register set. Removing the FPJ11 chip eliminates the problem and provides a suitable short-term solution for our RSTS/E customers. An Engineering Change Order (ECO) to the DCJ11 microcode provides the basis for our long-term solution to the problem. This ECO has been defined and is currently in production. Field implementation of an upgrade solution is expected to begin in the March/April/May time frame. There will be no charges associated with this process for our RSTS/E customers.

The short-term impact of the DCJ11/FPJ11 situation is performance related only, and can only be determined by the extent to which customers use floating-point code in their applications. Customers will have full floating-point functionality because the floating-point instruction set is implemented in the DCJ11 chip set.

Customers who ordered RSTS/E with their systems and were not shipped the FPJ11 will automatically receive the upgrade. Customers who order/ordered their software independent of their 11/84 and 11/83 systems must remove the FPJ11 Chip if they run RSTS/E. All customers should contact their local DIGITAL Field Service office to be scheduled for installation of the upgrade as soon as it becomes available.

In an effort to aid RSTS customers in detection and short-term solution of the above-mentioned problems, two error messages have been added to the RSTS/E V9.1 Initialization (INIT) code. The first error message occurs in the case of the original FPJ11 chip, in which floating-point exceptions and interrupts caused the next memory write to not happen. It reads:

"The floating point exception ECO is missing from the FPJ11."

The short-term solution is to remove the FPJ11 chip.

The second error message will be seen if INIT detects a problem caused by the DCJ11 data chip not being able to use register set one, often referred to as the alternate register set (ARS), in conjunction with the FPJ11 chip. It reads:

"This DCJ11 cannot be used in conjunction with an FPJ11 accelerator."

The short-term solution is to remove the FPJ11 chip until the new DCJ11 chips are available. When the new DCJ11 chip is installed, the FPJ11 chip can be put back in the system.

These error messages only appear on PDP-11/73, PDP-11/83, and PDP-11/84 systems with an FPJ11 floating-point chip installed if the FPJ11 fails the test for these problems. INIT will continue but the START option will be invalid.

ANNOUNCING RSTS/E VERSION 9.2

RSTS/E V9.2 is the second in a series of Version 9 minireleases. These minireleases include software maintenance, new hardware support, and new features, but are timed to replace the previous maintenance-only "updates."

In addition to maintenance, the following new hardware support was recently announced for V9.1 and continues with V9.2:

TU81 - The TU81 is now supported on RSTS/E systems for densities ranging up to 6250 bpi.

The TU81 is the first group code recording (GCR) (6250 bpi) tape drive supported by DIGITAL for use on PDP-11 systems. Customers who have UNIBUS systems running RSTS with large on-line disk storage, such as the RA81, will benefit by significantly reducing the time and number of tapes required to back up their data.

The TU81 includes features to maximize performance available from a streaming tape subsystem. Internal performance testing indicates that transfer rates of up to 12 megabytes (MB) per minute can be achieved on RSTS/E V9.2-based systems. Actual performance at a given installation will depend upon the configuration and the system's load during the transfer period. This compares to a maximum transfer rate of 8 MB per minute for the same configuration, but using a TU80.

In addition to a significant increase in performance, operator and media costs are reduced as a result of an increase in the tape's maximum density to 6250 bpi. Using 6250 bpi, the TU81 can back up a completely full RA81 disk onto only four reels of tape, rather than the twelve reels required to do the same job using a 1600-bpi drive.

11/83 - RSTS/E support for the PDP-11/83 was announced with the system announcement. RSTS/E V9.2, the first release after the system announcement, updates the documentation to reflect this support.

The RQDX3 controller found in PDP-11/83 systems is also supported in RSTS/E V9.2.

TUK50 - RSTS/E V9.2 can use the UNIBUS controller supporting the TK50 streaming cartridge tape drive. The TK50 can be used as a distribution, data, and data interchange device on the full range of UNIBUS and Q-bus systems.

Ordering/Availability Information

RSTS/E Version 9.2 is scheduled to be released this month. Updates for RSTS/E sources will be available on magtape and microfiche.

For specific service availability and pricing information, please contact your local DIGITAL account manager.

TMSCP DRIVES ARE NOT MARKED AS AVAILABLE AFTER REWIND-OFFLINE OPERATIONS

PROBLEM:

The TK50 and TU81 tape drives are not marked as available once a rewind-offline operation has been issued to the drive from INIT.SYS. This can result in inability to access second and successive volumes of a magnetic tape save set from SAVRES. Additionally, any other operation attempted to the drive after a rewind-offline is performed will fail.

SOLUTION:

The following patch corrects this problem. Note that this patch must be applied in conjunction with the patch given in article Seq. No. 1.1.6 for multivolume saves to function properly. Also, note that this problem only occurs in the INIT.SYS off-line environment and not under timesharing.

PROCEDURE:

1. This is a required patch to the RSTS/E INIT.SYS Program. Since patching the distribution medium is not recommended, the patch must be installed every time the COPY option is used to copy INIT.SYS from the distribution medium. Any copy of the patched INIT.SYS will propagate the fix.

2. The patch described in step 4 below can be installed using the PATCH option of INIT.SYS:

   ```
   Option: PATCH
   File to patch? INIT.SYS
   ```

3. This patch can be installed manually using ONLPAT, the on-line patching program:

   ```
   RUN $ONLPAT
   Command File Name? <cr>          (RETURN for manual patch installation)
   File to patch? INIT.SYS
   File found in account [0,1]
   ```

4. The patch is as follows:

```
Base address? MUDVRM
Offset address? 3774
 Base   Offset  Old      New?
??????  003774  016104   ? 4737
??????  003776  000000   ? MCPPAT+66
??????  004000  122764   ? ^Z          (CTRL/Z for new offset)
Offset address? ^Z                     (CTRL/Z for new base)
Base address? MCPPAT
Offset address? 66
 Base   Offset  Old      New?
??????  000066  000000   ? 16104
??????  000070  000000   ? 0
??????  000072  000000   ? 105764
??????  000074  000000   ? 20
??????  000076  000000   ? 1007
??????  000100  000000   ? 10146
??????  000102  000000   ? 16101
??????  000104  000000   ? 2
??????  000106  000000   ? 12761
??????  000110  000000   ? 1
??????  000112  000000   ? 2
??????  000114  000000   ? 12601
??????  000116  000000   ? 207
??????  000120  ??????   ? ^Z          (CTRL/Z for new offset)
Offset address? ^Z                     (CTRL/Z for new base)
Base address? $$0101
Offset address? 0
 Base   Offset  Old      New?
??????  000000  ??????   ? Q!100
??????  000002  ??????   ? ^C          (up-arrow/C to exit;CTRL/C for INIT)
```

OFF-LINE SAVRES INVALIDATES ALL BUT LAST VOLUME OF MULTIVOLUME MAGTAPE SAVE SET

PROBLEM:

When performing an off-line SAve operation to magnetic tape, if the save set consists of multiple volumes, all volumes but the last will be invalid.

SOLUTION:

The following patch corrects the problem for all configurations except where the magnetic tape in question is the TMSCP type (i.e., TK50 and TU81). For TMSCP configurations, this patch must be applied in conjunction with the patch given in article Seq. No. 1.1.5.

PROCEDURE:

1. This is a required patch to the RSTS/E INIT.SYS Program. Since patching the distribution medium is not recommended, the patch must be installed every time the COPY option is used to copy INIT.SYS from the distribution medium. Any copy of the patched INIT.SYS will propagate the fix.

2. The patch described in step 4 below can be installed using the PATCH option of INIT.SYS:

   ```
   Option: PATCH
   File to patch? INIT.SYS
   ```

3. This patch can be installed manually using ONLPAT, the on-line patching program:

   ```
   RUN $ONLPAT
   Command File Name? <cr>          (RETURN for manual patch installation)
   File to patch? INIT.SYS
   File found in account [0,1]
   ```

4. The patch is as follows:

```
File to patch? INIT.SYS
Base address? SAV
Offset address? 11650
 Base   Offset  Old     New?
113002  011650  004767  ? 137
113002  011652  177720  ? SAVPAT
113002  011654  004737  ? ^Z          (CTRL/Z for new offset)
Offset address? ^Z                   (CTRL/Z for new base)
Base address? SAVPAT
Offset address? 0
 Base   Offset  Old     New?
152540  000000  000000  ? 32737
152540  000002  000000  ? 100
152540  000004  000000  ? MNTFLG
152540  000006  000000  ? 1404
152540  000010  000000  ? 4737
152540  000012  000000  ? SAV+11574
152540  000014  000000  ? 137
152540  000016  000000  ? SAV+11654
152540  000020  000000  ? 137
152540  000022  000000  ? SAV+11702
152540  000024  ??????  ? ^Z          (CTRL/Z for new offset)
Offset address? ^Z                   (CTRL/Z for new base)
Base address? $$0101
Offset address? 0
 Base   Offset  Old     New?
??????  000000  ??????  ? Q!200
??????  000002  ??????  ? ^C          (up-arrow/C to exit;CTRL/C for INIT)
```

RSTS/E V9.1 Seq. No. 1.1.7 M
Initialization
INIT.SYS Program Patches 1 of 2

INIT SAV/RES TO TMSCP TAPE MAY ABORT WITH "TRAP THROUGH 4"

PROBLEM:

On systems having TMSCP tapes (TK50 or TU81), but no MSCP disks (RA60/80/81, RC25, or RD51/52), INIT SAV/RES may fail with an unexpected "Trap through 4."

SOLUTION:

The patching procedure detailed below corrects the above problem.

PROCEDURE:

1. This is a required patch to the RSTS/E INIT.SYS Program. Since patching the distribution medium is not recommended, the patch must be installed every time the COPY option is used to copy INIT.SYS from the distribution medium. Any copy of the patched INIT.SYS will propagate the fix.

2. The patch described in step 4 below can be installed using the PATCH option of INIT.SYS:

   Option: PATCH
   File to patch? INIT.SYS

3. This patch can be installed manually using ONLPAT, the on-line patching program:

   RUN $ONLPAT
   Command File Name? <cr> (RETURN for manual patch installation)
   File to patch? INIT.SYS
   File found in account [0,1]

   This problem is corrected in source for RSTS/E V9.2.

4. The patch is as follows:

```
File to patch? INIT.SYS
Base address? MURSET
Offset address? 26
 Base   Offset  Old     New?
125470  000026  001410  ? 1407
125470  000030  116746  ? ^Z        (CTRL/Z for new offset)
Offset address? ^Z                  (CTRL/Z for new base)
Base address? $$0101
Offset address? 0
 Base   Offset  Old     New?
133706  000000  ??????  ? Q!100
133706  000002  ??????  ? ^C        (up-arrow/C to exit;CTRL/C for INIT)
```

RSTS/E V9.0 Seq. No. 3.3.5 M
Executive
Terminal Service Patches 1 of 2

CORRECT AUTOBAUD DETECTION PROBLEM - MANDATORY TERMINAL SERVICE PATCH

PROBLEM:

The autobaud detection feature of the RSTS/E terminal driver is designed to reset a terminal line set to autobaud to a default speed of 9600 baud after a 3-second timeout if there is no activity on the logged-out terminal. Under certain circumstances, the speed is incorrectly being set to 600 baud rather than 9600 baud. This renders the line unusable unless the terminal is set to 600 baud, the line is reset to 9600 baud by issuing a SET TERMINAL command, or by rebooting the system.

SOLUTION:

The above problem is corrected by the patch procedure outlined below.

PROCEDURE:

1. This is a required patch to the RSTS/E V9.0 executive. It must be installed in all target monitor SILs.

2. The patch described in step 4 below can be installed using the PATCH option of INIT.SYS:

   Option: PATCH
   File to patch? <lf> (LINE FEED for installed monitor SIL)

3. This patch can be installed manually using ONLPAT, the on-line patching program. Note, however, that if the patch is applied on line to the installed monitor SIL, it will not take effect until the system is rebooted.

   RUN $ONLPAT
   Command File Name? <cr> (RETURN for manual patch installation)
   File to patch? <lf> (LINE FEED for installed monitor SIL)
   File found in account [0,1]

   This problem will be corrected in source for RSTS/E V9.2.

4. The patch is as follows:

```
Module name? TER
Base address? TMOKB
Offset address? 146
 Base    Offset  Old      New?
??????  000146  004767  ? 142761
??????  000150  ??????  ? 140
??????  000152  012737  ? TTFCNT
??????  000154  034140  ? 4737
??????  000156  177776  ? AUTSPD
??????  000160  012603  ? 12737
??????  000162  142761  ? PR3
??????  000164  000140  ? PS
??????  000166  ??????  ? 12603
??????  000170  072227  ? ^Z          (CTRL/Z for new offset)
Offset address? ^Z                   (CTRL/Z for new base)
Base address? ^Z                     (CTRL/Z for new module)
Module name? RSTS
Base address? $$0303
Offset address? 0
 Base    Offset  Old      New?
??????  000000  ??????  ? Q!20
??????  000002  ??????  ? ^C          (up-arrow/C to exit;CTRL/C for INIT)
```

RSTS/E V9.1 Seq. No. 3.3.6 M
Executive
Terminal Service Patches 1 of 2

CORRECT AUTOBAUD DETECTION PROBLEM - MANDATORY TERMINAL SERVICE PATCH

PROBLEM:

The autobaud detection feature of the RSTS/E terminal driver is designed to reset a terminal line set to autobaud to a default speed of 9600 baud after a 3-second timeout if there is no activity on the logged-out terminal. Under certain circumstances, the speed is incorrectly being set to 600 baud rather than 9600 baud. This renders the line unusable unless the terminal is set to 600 baud, the line is set to 9600 baud by issuing a SET TERMINAL command, or by rebooting the system.

SOLUTION:

The above problem is corrected by the patch procedure outlined below.

PROCEDURE:

1. This is a required patch to the RSTS/E V9.1 executive. It must be installed in all target monitor SILs.

2. The patch described in step 4 below can be installed using the PATCH option of INIT.SYS:

   Option: PATCH
   File to patch? <lf> (LINE FEED for installed monitor SIL)

3. This patch can be installed manually using ONLPAT, the on-line patching program. Note, however, that if the patch is applied on line to the installed monitor SIL, it will not take effect until the system is rebooted.

   RUN $ONLPAT
   Command File Name? <cr> (RETURN for manual patch installation)
   File to patch? <lf> (LINE FEED for installed monitor SIL)
   File found in account [0,1]

   This problem will be corrected in source for RSTS/E V9.2.

4. The patch is as follows:

```
Module name? TER
Base address? TMOMKB
Offset address? 146
 Base   Offset  Old     New?
??????  000146  004767  ? 142761
??????  000150  ??????  ? 140
??????  000152  012737  ? TTFCNT
??????  000154  034140  ? 4737
??????  000156  177776  ? AUTOBD+302
??????  000160  012603  ? 12737
??????  000162  142761  ? PR3
??????  000164  000140  ? PS
??????  000166  ??????  ? 12603
??????  000170  072227  ? ^Z        (CTRL/Z for new offset)
Offset address? ^Z                 (CTRL/Z for new base)
Base address? ^Z                   (CTRL/Z for new module)
Module name? RSTS
Base address? $$0303
Offset address? 0
 Base   Offset  Old     New?
??????  000000  ??????  ? Q!40
??????  000002  ??????  ? ^C        (up-arrow/C to exit;CTRL/C for INIT)
```

RSTS/E V9.1 Seq. No. 3.4.3 N
Executive
Terminal Service Notes 1 of 4

*** Supersedes RSTS/E V9.1 January 1986 Software Dispatch Seq. No. 3.3.1 N ***

MODEM SUPPORT ON RSTS/E

RSTS/E V9.1 now supports the DF224 Scholar Modem as well as the DF112-AA and DF03 modems.

The DF224 Scholar Modem is a high performance, high speed, full-duplex modem capable of transmitting data at 300 baud asynchronously and 1200 or 2400 baud asynchronously or synchronously. The DF224 offers autodial functionality using either the DF03 or the DF224 autodial protocol. Selecting the DF03 autodial mode allows the Scholar Modem to be used with existing DF03 auto call software.

When using the Scholar Modem on a RSTS/E system, RSTS requires that the Modem Response option be set to abbreviated. Failing to set the response option to abbreviated may cause speed select problems with modems connected to a terminal line set to autobaud.

RSTS also suggests that the Input Character Echo option be disabled when using the DF224 autodial feature. Disabling this feature will prevent text intended for the modem, i.e., the telephone number, from being echoed back to the program.

The state of both these features can be altered by either changing a switch setting on the switchpack located internally on the module or through the "soft select" menu. If you alter the state of these features by using the menu, the settings will revert back to their default state if the unit is powered down. Therefore, RSTS recommends that the states be changed by changing the internal switch settings. To do this, you must set the S1 switch in the OFF position to disable the Input Character Echoing, and the S3 switch in the OFF position to set the Modem Response to abbreviated. Please refer to the Scholar 2400 Modem Owner's Manual (EK-DF224-OM-PRE), page A-3, for a diagram of the switchpack and its factory default settings.

NOTE

RSTS/E will only support Scholar Modems of rev level B1 or later. Determining the rev level of your modem can be done by looking for a small white sticker on the underside of the enclosure. This sticker should read "C.S. REV.

B1 ECO." Older versions of the DF224 have experienced over-speed problems which resulted in intermittent loss of characters. This problem was corrected in rev level B1.

The Scholar Modem also sends garbage characters to the terminal just prior to sending the "disconnect" message after the remote modem drops carrier. This is the way the Scholar Modem operates and not a problem with RSTS/E. Therefore, please do not submit SPRs to RSTS/E Engineering on this problem.

Please, also note that the DF224 Owner's Manual states that the Scholar Modem is capable of transmitting data at 600 baud. The Scholar Modem with rev level B1 does not support 600 baud.

The DF112-AA modem is a replacement for the DF03. It provides full-duplex asynchronous mode for terminal data communication and synchronous mode for network data communication. The DF112 has autodial capability and operates at both 300 and 1200 baud.

When the DF112 is connected to a DZ11 interface, the BUSY jumper or switch on the EIA distribution panel, for the line on which the modem is connected, must be disconnected. Interfaces other than the DZ11 do not require any special setup for dial-in communications.

Autodial (Dial-Out) Feature Notes

RSTS/E requires the modem to be active before allowing communication with it. Therefore, the program doing the dialing must first issue the "Hang up a Dataset" sys call to set DTR on that keyboard prior to dialing.

For Example:

```
10    S$=SYS(CHR$(6%)+CHR$(-9%)+CHR$(45%)+CHR$(-1%))
                                        !SET DTR ON KB45:
20    OPEN 'KB45:' AS FILE #1%          !OPEN THE KEYBOARD
```

NOTE

> It is important that the "Hang up a Dataset" sys call be called prior to opening the terminal. This sys call will cause certain values in the device's DDB to be reset.

Once DTR is established, the phone number can be passed to the modem and communication can begin. Please refer to the owner's manual that accompanied your modem for any programming considerations.

DF03 Modem

When connecting the DF03 to DH11s using DM11-BB or DHV11/DHU11s, observe the following procedure:

> Since these interfaces implement full modem control, strict modem control rules must be broken during the dialing process. RSTS/E will not send the phone number to the interface since the DF03 has not requested data via the clear to send (CTS) signal. To allow the data to be sent to the interface, the CTS line should be tied high in the DF03 modem. This can be done by turning S2-10 (jumper W30) on, as described in the DF03 Modem Family User Guide (EK-ODF03-UG-002), page 5-15, or the DF03 Modem User Guide (EK-ODF03-UG-001), page 6-6.

DF112 Modem

As is the case with the DF03 modems on DHU11/DHV11 interfaces, strict modem control rules must be broken during the dialing process. RSTS/E will not send the phone number to the modem until the modem has requested data via the CTS signal. To allow data communication to occur, the CTS line must be tied high. However, unlike the DF03 modem, the DF112 does not have a switchpack setting to set CTS high. Therefore, the signal must be set high by strapping pin 5 to pin 4 within the cable connector that plugs into the modem.

RSTS/E does not support autodial capability on the DH11 interface for the DF112 modem. Unlike the DHV11/DHU11-type interface, attempting to set the CTS signal high by tying to an existing signal will cause that signal to go low. The modem can be used, however, on DH11 interfaces for dial-in purposes only.

DF224 Scholar Modem

The DF224 Scholar Modem does not require you to raise the CTS signal, it is raised by the modem when data terminal ready (DTR) is raised. Therefore, other than disabling the Input Character Echo option and the abbreviated Modem Response option described above, no other changes are required.

RSTS/E V9.1 Seq. No. 3.7.2 M
Executive
Device Driver Patches 1 of 2

ACCESSING TMSCP TAPES MAY CAUSE SYSTEM TO CRASH

PROBLEM:

On systems containing TMSCP tapes (TK50 or TU81), but no MSCP disks (RA60/80/81, RC25, or RD51/52), accessing any of the TMSCP tapes during timesharing may cause the system to crash.

SOLUTION:

The patching procedure detailed below corrects the above problem.

PROCEDURE:

1. This is a required patch to the RSTS/E V9.1 executive. It must be installed in all target monitor SILs that include support for TMSCP tapes and/or MSCP disks.

   If you apply this patch to a monitor SIL that does not include support for MSCP disks or TMSCP tapes, the patch procedure will fail with a "Module not found in SIL" error.

2. The patch described in step 4 below can be installed using the PATCH option of INIT.SYS:

   ```
   Option: PATCH
   File to patch? <lf>                (LINE FEED for installed monitor SIL)
   ```

3. This patch can be installed manually using ONLPAT, the on-line patching program. Note, however, that if the patch is applied on line to the installed monitor SIL, it will not take effect until the system is rebooted.

   ```
   RUN $ONLPAT
   Command File Name? <cr>            (RETURN for manual patch installation)
   File to patch? <lf>                (LINE FEED for installed monitor SIL)
   File found in account [0,1]
   ```

   This problem is corrected in source for RSTS/E V9.2.

4. The patch is as follows:

```
Module name? MCP
Base address? CPH
Offset address? 5670
 Base    Offset  Old     New?
??????  005670  012705  ? 4737
??????  005672  140000  ? MCPPAT+72
??????  005674  012701  ? ^Z          (CTRL/Z for new offset)
Offset address? ^Z                    (CTRL/Z for new base)
Base address? MCPPAT
Offset address? 72
 Base    Offset  Old     New?
120050  000072  000000  ? 012705
120050  000074  000000  ? 140000
120050  000076  000000  ? 105737
120050  000100  000000  ? CMT+CM.DCT
120050  000102  000000  ? 001002
120050  000104  000000  ? 062716
120050  000106  000000  ? 000016
120050  000110  000000  ? 207
120050  000112  000000  ? ^Z          (CTRL/Z for new offset)
Offset address? ^Z                    (CTRL/Z for new base)
Base address? ^Z                      (CTRL/Z for new module)
Module name? RSTS
Base address? $$0307
Offset address? 0
 Base    Offset  Old     New?
100506  000000  ??????  ? Q!2
100506  000002  ??????  ? ^C          (up-arrow/C to exit;CTRL/C for INIT)
```

DECmail-11 V2.0
for RSTS/E V9.0

Seq. No. 36.1.1 N

USING EDT V3.0 FOR DECmail-11 V2.0

DECmail-11 V2.0 for RSTS/E uses a modified EDT V2.0 as its default editor. This editor resides in the MAIL: account. For those users of DECmail-11 V2.0 on RSTS/E V9.0 needing or wishing to use the current EDT Version 3.0 , change your default MAIL editor to EDT V3.0 by entering the following command at the DECmail-11 command prompt:

```
Command > SET EDITOR EDT$:EDT.TSK
```

RSTS/E VERSION 9
CUMULATIVE INDEX
JUNE 1986

This is a complete listing of all articles for RSTS/E V9.0 and all subsequent point releases, and layered products. Missing sequence numbers may pertain to problems unique to other versions of the same product or other major operating systems.

IMPORTANT!

The following numerical system has been grouped in logical order denoted by the first digit (X.X.X). The second digit (X.X.X.) refers to the subcomponent and the third digit (X.X.X) denotes the issue number or sequential order.

Unassigned articles are indicated: RESERVED.

Flags are currently being installed for all articles. The flags and definitions are as follows.

M = Mandatory Patch. These patches correct errors in the software product. All users are required to apply these patches to maintain consistent "user level" unless the accompanying article specifies otherwise.

F = Optional Feature Patch. These patches extend or configure functionality into the product. These functions will be treated as a supported part of the product for the duration of the current release and may be incorporated in a future release.

R = Restriction. These articles discuss areas that will not be patched in the current release because they require major modification or because they are not consistent with the design of the product. Restrictions, except those described as permanent, are reviewed and modified when possible as part of the normal release cycle.

N = Note. These articles provide explanatory information that supplements the manual set and provide more detailed information about a program or package. They also provide procedural information to make it easier to use a program or package.

+ = Article appeared in the RSTS/E Software Dispatch Review (Order No. AA-5514G-BC), June 1985.

* = Article appeared in the RSTS/E V9.0 Maintenance Notebook (Order No. AA-L997D-TC), June 1985.

- = Article is being republished.

Sequence	Title	Released	Corrected	Mon/Yr
	RSTS/E V9			
	General Notes			
	System Notes			
0.1.1 N	RSTS/E V9.0 COMPONENT SUMMARY	V9.0	N/A	Jun 85 *
0.1.2 N	ANNOUNCING RSTS/E V9.0	V9.0	N/A	Jun 85 *
0.1.3 N	UNDERSTANDING ?NO ROOM FOR USER ON DEVICE ERRORS	V9.0	N/A	Jul 85
0.1.4 N	WARNING ON USE OF THE PEEK() FUNCTION	V9.0	N/A	Nov 85
0.1.5 N	FPJ11 FLOATING-POINT ACCELERATOR WITH PDP-11/84 AND MicroPDP-11/83 SYSTEMS	V9.0	N/A	Jan 86
0.1.6 N	ANNOUNCING NEW HARDWARE SUPPORT IN RSTS/E	V9.0	N/A	Apr 86
0.1.7 N	ANNOUNCING RSTS/E V9.1--SUPPORT FOR TK50 AND RD53	V9.1	N/A	Jun 86 -
0.1.8 N	ANNOUNCING Micro/RSTS VERSION 2.0	V9.1	N/A	Jun 86 -
0.1.9 N	FPJ11 FLOATING-POINT ACCELERATOR WITH PDP-11/84 AND Micro PDP-11/83 SYSTEMS	V9.1		Jun 86 -
0.1.10 N	ANNOUNCING RSTS/E VERSION 9.2	V9.2	N/A	Jun 86 -
	System Management Guidelines			
0.2.1 N	USING SAVE/RESTORE ON A TWO-DISK SYSTEM	V9.0	N/A	Jun 85 *
	Initialization			
	INIT.SYS Program Patches			
1.1.1	RESERVED			
1.1.2	RESERVED			
1.1.3	RESERVED			
1.1.4 M	DSKINT OPTION OF INIT.SYS MAY NOT DETECT BAD BLOCKS	V9.0	V9.1	Oct 85 -
1.1.5 M	TMSCP DRIVES ARE NOT MARKED AS AVAILABLE AFTER REWIND-OFFLINE OPERATIONS	V9.1	V9.2	Jun 86 -
1.1.6 M	OFF-LINE SAVRES INVALIDATES ALL BUT LAST VOLUME OF MULTIVOLUME MAGTAPE SAVE SET	V9.1	V9.2	Jun 86 -
1.1.7 M	INIT SAV/RES TO TMSCP TAPE MAY ABORT WITH "TRAP THROUGH 4"	V9.1	V9.2	Jun 86
	INIT.SYS Program Notes			
1.2.1 N	DEVICES WITH NON-STANDARD UNIBUS ADDRESSES AND VECTORS	V9.0	N/A	Jun 85 *
	System Installation and Update			
	Installation/Update Notes			
2.1.1 N	CSPLIB.TSK AND CSPLIB.STB MISSING FROM V9.0 KIT	V9.0	V9.1	Sep 85
2.1.2 N	PBUILD.TSK SHOULD NOT BE INCLUDED IN V9.0 KIT	V9.0	V9.1	Sep 85
	Executive			
	Monitor Patches			
3.1.1 F	DISABLING THE USE OF DATA SPACE	V9.0	N/A	Jun 85 *
	Terminal Services Patches			
3.3.1 F	CHANGING SPECIAL LOGIN TERMINAL	V9.0	N/A	Jun 85 *
3.3.2 F	INPUT ESCAPE SEQUENCE HANDLING	V9.0	N/A	Jun 85 *
3.3.3	RESERVED			
3.3.4	RESERVED			
3.3.5 M	CORRECT AUTOBAUD DETECTION PROBLEM	V9.0	V9.2	Jun 86
3.3.6 M	CORRECT AUTOBAUD DETECTION PROBLEM	V9.1	V9.2	Jun 86

Sequence	Title	Released	Corrected	Mon/Yr
	Terminal Service Notes			
3.4.1 N	UNDERSTANDING TERMINAL PARITY AND STOP BIT SETTINGS	V9.0	N/A	Jun 85 *
3.4.2 N	MODEM CONTROL ON PRIVATE, LEASED LINES	V9.0	N/A	Jun 85 *
3.4.3 N	MODEM SUPPORT ON RSTS/E	V9.0	N/A	Jun 86
	File Processor Patches			
3.5.1 F	CONTROLLING EMT LOGGING	V9.0	N/A	Jun 85 *
3.5.2 M	SET TERMINAL CHARACTERISTICS SYS CALL MAY HANG THE SYSTEM	V9.0	V9.1	Sep 85
3.5.3 M	ERROR IN HANDLING OF PUBLIC DISKS	V9.0	V9.1	Sep 85
3.5.4 M	FIX CORRUPTION OF LOW-CORE LOCATIONS	V9.0	V9.2	Jan 86
	Device Driver Patches			
3.7.1 F	USING THE CSS PAPER TAPE READER ON RSTS/E	V9.0	N/A	Jun 85 *
3.7.2 M	ACCESSING TMSCP TAPES MAY CAUSE SYSTEM TO CRASH	V9.1	V9.2	Jun 86
	BASIC-PLUS			
	BASIC-PLUS Patches			
4.1.1 F	SPECIAL PRINT-USING CHARACTERS	V9.0	N/A	Jun 85 *
4.1.2 F	DEFAULT SCALE FACTOR	V9.0	N/A	Jun 85 *
4.1.3 F	OMITTING SCALE FACTOR WARNING MESSAGE	V9.0	N/A	Jun 85 *
4.1.4 F	DEFAULT TO NOEXTEND MODE	V9.0	N/A	Jun 85 *
4.1.5 F	IMMEDIATE MODE FROM .BAS FILE	V9.0	N/A	Jun 85 *
4.1.6 F	NO PPN'S IN CATALOG COMMAND	V9.0	N/A	Jun 85 *
4.1.7 F	DISABLING THE CCL SYS CALL	V9.0	N/A	Jun 85 *
4.1.8 F	CLEAR I/O BUFFERS USED BY OPEN STATEMENTS	V9.0	N/A	Jun 85 *
4.1.9 F	FORCE "ILLEGAL STATEMENT" ERROR WHEN USING OBSOLETE SEND/RECEIVE	V9.0	N/A	Jun 85 *
	Non-Standard BASIC-PLUS Features			
4.10.1 N	THE BASIC-PLUS DEBUG FACILITY	V9.0	N/A	Jun 85 *
4.10.2 N	THE BASIC-PLUS DUMP FACILITY	V9.0	N/A	Jun 85 *
4.10.3 F	CHANGING THE BASIC-PLUS DEBUG KEYWORDS	V9.0	N/A	Jun 85 *
4.10.4 F	ENABLING THE BASIC-PLUS DUMP FEATURE	V9.0	N/A	Jun 85 *
4.10.5 F	ENABLING DUMP FROM COMPILED FILES FOR NON-PRIVILEGED USERS	V9.0	N/A	Jun 85 *
4.10.6 F	CHANGING THE BASIC-PLUS D?MP KEYWORD	V9.0	N/A	Jun 85 *
	RSTS/E 2780 DEVICE DRIVER			
	2780 Device Driver Patches			
5.1.1 M	BUFFER LIMIT CHECKING	V9.0		Jun 85 *
5.1.2 M	DISCONNECT COMMAND HANDLING	V9.0		Jun 85 *
5.1.3 M	DP11 TRANSMIT HANG CONDITION	V9.0		Jun 85 *
5.1.4 M	DU11/DP11 TRANSMIT HANG CONDITION	V9.0		Jun 85 *
5.1.5 M	LOSS OR DUPLICATION OF DATA	V9.0		Jun 85 *
5.1.6 M	DOUBLE CLOSE ALTERS MONITOF	V9.0		Jun 85 *
5.1.7 M	GET/PUT INTERLOCK PROBLEM	V9.0		Jun 85 *
5.1.8 M	2780 HANDLER FAILURE PROBLEM	V9.0		Jun 85 *
5.1.9 M	LOCAL BINARY TRANSMIT PROBLEM	V9.0		Jun 85 *
	2780 Device Notes			
5.2.1 N	INSTALLING AND TROUBLE-SHOOTING 2780's	V9.0	N/A	Jun 85 *

Sequence	Title	Released	Corrected	Mon/Yr
	RSTS/E UTILITIES			
	Error Control Package (ERROR$)			
	Package Notes			
12.1.1 N	UNDERSTANDING "PA MEMORY SYSTEM" ERROR LOGS	V9.0	N/A	Jun 85 *
	Operator Services and Spooling Package (OPSER$)			
	Package Notes			
14.1.1 N	NOTES ON USE OF THE SERIAL LA180 (LA180S) TERMINAL	V9.0	N/A	Jun 85 *
14.1.2 N	USING TWO OR MORE PRINTERS TO SERVE A QUEUE	V9.0	N/A	Jun 85 *
	Print/Batch Services Package (PB$)			
	Package Notes			
15.1.1 R	PBS MUST BE STARTED FROM A PRIVILEGED ACCOUNT	V9.1	V9.2	Feb 86
	RSTS/E DOCUMENTATION			
	Documentation			
	Installation and Update Guide			
19.4.1 N	PBUILD.TSK NO LONGER INCLUDED IN RSTS/E	V9.0	N/A	Sep 85
	System Manager's Guide			
19.5.1 N	ACCOUNT [0,200] NOT AVAILABLE FOR CUSTOMER USE	V9.0	N/A	Sep 85
	RUN-TIME SYSTEMS SUPPORT			
	DCL			
	Package Notes			
20.1.1 N	FILE SPECIFICATIONS IN DCL	V9.0	N/A	Jun 85 *
20.1.2 N	SETTING UP THE DCL LINK COMMAND	V9.0	N/A	Jun 85 *
	RSX Utilities			
	Package Notes			
21.1.1 N	USING RTSODT FOR DEBUGGING RUN-TIME SYSTEMS	V9.0	N/A	Jun 85 *
	CRF.TSK			
21.2.1 N	USING THE RSX CRF UTILITY	V9.0	N/A	Jun 85 *
	RT-11 Run-time System and Utilities			
	Package Notes			
22.1.1 N	USE OF UNDERSCORE IN RT-11 EMULATOR UTILITIES	V9.0	N/A	Jun 85 *
22.1.2 N	USING RTSODT FOR DEBUGGING RUN-TIME SYSTEMS	V9.0	N/A	Jun 85 *
	HOOK.SAV			
22.3.1 N	NOTES ON HOOK.SAV	V9.0	N/A	Jun 85 *

Sequence	Title	Released	Corrected	Mon/Yr
	OPTIONAL SOFTWARE			
	RSTS/E 2780 Package V3.0			
	RJ2780			
25.2.1 M	FAILURE TO CLEAR `JOB ACTIVE' ON ATTACH	V9.0		Jun 85 *
25.2.2 M	LOCAL BINARY TRANSMIT FAILURE	V9.0		Jun 85 *
	DECnet/E V2.0			
	Utilities			
	NFT SUBMIT			
31.21.1 R	REMOTE BATCH CONTROL FILES BEING DELETED BEFORE EXECUTING	V9.2	V9.3	Apr 86
	DECmail-11 V2.0			
36.1.1 N	USING EDT V3.0 FOR DECmail-11 V2.0	V9.0	N/A	Jun 86
	DIBOL V5.2			
	Announcement			
39.1.1 N	ANNOUNCING RSTS/E DIBOL V5.2	V9.0	N/A	Jan 86
	ADE V2.4			
	Package Notes			
47.1.1 N	ANNOUNCING ADE V2.4 FOR RSTS/E V9.0 AND Micro/RSTS V1.1	V9.0	N/A	Jul 85
	FORTRAN IV/RSTS/E V2.6			
55.3.1 N	CALL ASSIGN CARRIAGE CONTROL ARGUMENT DOES NOT WORK PROPERLY	V9.0	V9.0	Jun 85 +
55.3.2 N	DSIN YIELDS RESULTS WITH THE WRONG SIGN FOR NEGATIVE ANGLES	V9.0	V9.0	Jun 85 +
55.3.3 N	INSTALLING FORTRAN-IV V2.6 ON RSTS/E V9.n	V9.0	N/A	Jun 85 +
	DECWORD/DP V1.2			
	Package Notes			
69.1.1 N	NEW DECWORD INSTALLATION/UPDATE CONTROL FILE ON RSTS/E V9.0	V9.0	N/A	Jun 85 +
69.1.2 N	DECWORD V1.2 CBI FILES MAY BE DELETED TO SAVE DISK SPACE	V9.0	N/A	Jun 85 +
69.1.3 N	DECWORD V1.2 COMMUNICATIONS FILES MAY BE DELETED TO SAVE DISK SPACE	V9.0	N/A	Jun 85 +
69.1.4 N	ANNOUNCING AVAILABILITY OF DECWORD FOR Micro/RSTS	V9.0	N/A	Jun 85 +

Sequence	Title	Released	Corrected	Mon/Yr
69.1.5 N	DECWORD/DP V1.2 SUPPORT FOR LN03 LASER PRINTER	V9.0	N/A	Sep 85
69.1.6 N	INFORMATION ON RUNNING DECWORD/DP V1.2 ON RSTS/E V9.0	V9.0	N/A	Sep 85
	WPSMEN			
69.2.0 M	REPLACEMENT MODULE ISSUED FOR WPSMEN	V9.0	V9.0	Jun 85 +
	WPSUDK			
69.3.0 M	REPLACEMENT MODULE ISSUED FOR WPSUDK	V9.0	V9.0	Jun 85 +
	RMS-11 V2.0			
	Access Methods			
75.2.1 M	INDEX FILE CORRUPTION IN ALTERNATE KEY PATH	V9.0	V9.1	Apr 86
75.2.2 M	CORRUPTION IN VERY LARGE FILES	V9.0	V9.1	Sep 85
	BASIC-PLUS-2 V2.3			
79.2.1 N	PROBLEM WITH PRINT USING	V9.0		Jan 86
	FORTRAN IV/RSX V2.6			
	OTS			
90.1.1 N	LIST-DIRECTED READ	V9.0		Jan 86

Software Product Descriptions (SPDs)

Below is a list of the revised SPDs which appear on the following pages:

12.79.01	PDP-11 Symbolic Debugger/RSTS/E, Version 2.0
18.11.01	Micro/RSTS PDP-11 Symbolic Debugger, Version 2.0

Software Product Description

PRODUCT NAME: PDP-11 Symbolic Debugger/RSTS/E, Version 2.0 **SPD 12.79.01**
(Formerly PDP-11 FORTRAN-77 DEBUG/RSTS/E)

DESCRIPTION

PDP-11 Symbolic Debugger is a fully symbolic debugger for FORTRAN-77, COBOL-81, and MACRO-11 programs running on RSTS/E. PDP-11 Symbolic Debugger is a tool to aid in locating programming errors in successfully compiled programs that do not execute properly.

PDP-11 Symbolic Debugger runs as a two-task debugger. A small portion of the code, necessary to debug applications, is linked with the user task and the major portion of the debugger runs as a separate task.

PDP-11 Symbolic Debugger provides access to program symbols by reading the symbol table file produced by the task builder. PDP-11 Symbolic Debugger can understand symbols produced by FORTRAN-77, COBOL-81, and MACRO-11.

Features

- DEPOSIT and EXAMINE of all data types supported by COBOL-81 and FORTRAN-77 (except virtual array elements)
- Full tracepoint and breakpoint functionality (except the WHEN qualifier for COBOL-81) for monitoring the execution of user applications, including the ability to delay the activation of a tracepoint or breakpoint until after it has been encountered a specified number of times. The user also has the ability to specify an action to perform on encountering a tracepoint or breakpoint.
- Control of execution using STEP by LINE or INSTRUCTION, STEP INTO routines or OVER routines, and the GO command
- Computation of the value of source language expressions or of address expressions using the EVALUATE command
- Full support for overlaid code, including the ability to set tracepoints and breakpoints on locations not currently resident. PDP-11 Symbolic Debugger can distinguish among multiple copies of modules located at different points in the overlay structure.
- The ability to drive a debugging session using indirect command files and to record the results of a debugging session by command logging. PDP-11 Symbolic Debugger can be used interactively or in batch mode.
- On-line HELP that allows the user to receive information about the commands accepted by PDP-11 Symbolic Debugger during a debugging session
- A SET LANGUAGE command allows the user to set the default language of the debugger to the language of the program to be debugged
- Instruction and data space support for user tasks on systems where both the hardware and software support this feature

At Compile Time

To enable debugging of FORTRAN-77 programs, the user must specify a switch in the compiler command line. This switch specifies that information about the symbols in the FORTRAN-77 application will be put into the object file created by the compiler.

To enable debugging of COBOL-81 programs, the user must specify a switch in the compiler command line. This switch specified that information about the symbols in the COBOL-81 application will be put into the object file.

A switch must also be specified in the BLDODL utility. This switch instructs the BLDODL utility to include references in the program's ODL file.

To enable debugging of MACRO-11 programs, the user must specify a switch in the assembler command line. This causes information about the symbols in the assembly language program to be available to PDP-11 Symbolic Debugger.

At Taskbuild Time

When taskbuilding the application which will be run under control of PDP-11 Symbolic Debugger, the user must modify the taskbuilder command line and overlay description file.

MINIMUM HARDWARE REQUIRED

Any valid mapped RSTS/E system configuration with the following:

- Floating Point Processor (FPP), if the application being debugged exercises floating point arithmetic

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digital software

- At least 64K bytes of user memory
- At least 4K bytes of memory in the user's task space
- Up to 400 contiguous disk blocks for the debugger task

OPTIONAL HARDWARE

None

PREREQUISITE SOFTWARE

RSTS/E Operating System

Refer to the RSTS/E Optional Software Cross Reference Table (SPD 20.97.xx) for the required versions.

OPTIONAL SOFTWARE

Any of the following languages can be used to write applications that can be debugged by PDP-11 Symbolic Debugger:

- PDP-11 FORTRAN-77/RSTS
- COBOL-81/RSTS
- MACRO-11 (included as part of the prerequisite operating system)

A single application program composed of modules written in either FORTRAN-77 and MACRO-11 or COBOL-81 and MACRO-11 can be debugged using PDP-11 Symbolic Debugger.

SOFTWARE WARRANTY

Warranty for this software product is provided by DIGITAL with the purchase of a license for the product as defined in the Software Warranty Addendum of this SPD.

INSTALLATION

This software product can be installed by the customer using the step-by-step documentation available for this product. Optionally you can purchase DIGITAL Installation Services which provide for the installation of the software product by an experienced DIGITAL Software Specialist.

Courtesy Installation

This software product will be installed by DIGITAL at no additional charge if you purchase it concurrent with a Start-Up Service Package that includes Installation Service. Both the host operating system and this product must be installed concurrently.

ORDERING INFORMATION

Single-Use licensed software is furnished under the licensing provisions of DIGITAL's Standard Terms and Conditions of Sale, which provide in part that the software and any part thereof may be used on only the single CPU on which the software is first installed, and may be copied, in whole or in part (with the proper inclusion of DIGITAL's copyright notice and any proprietary notices on the software) for use on that same CPU.

You will need a separate license for each CPU on which you will be using the software product (except as otherwise specified by DIGITAL). Then, Materials and Service Options are selected to utilize the product effectively. **THE LICENSE OPTIONS ARE DESCRIBED BELOW. IF YOU ARE NOT FAMILIAR WITH THE SERVICE OPTIONS, YOU MAY OBTAIN THE APPROPRIATE SOFTWARE PRODUCT SERVICE DESCRIPTION(S) FROM YOUR LOCAL DIGITAL OFFICE.** If you are already familiar with these options, you may obtain the ordering information directly from the Software Options Chart.

LICENSE OPTIONS

Single-Use License Option

The Single-Use License is your right to use the software product on a single CPU.

For your first installation of this software product you must purchase as a **minimum:**

- Single-Use License option, and
- Distribution and Documentation option

The license gives you the right to use the software on a single CPU and the Distribution and Documentation option provides the machine-readable software and related documentation.

To use this software product on additional CPUs, for each CPU you must purchase as a **minimum:**

- Single-Use License option

In addition to the right to use, the license gives you the one-time right to copy the software from your original CPU installation to the additional CPU. Therefore, the Distribution and Documentation option is not required, but optional.

Distribution and Documentation Option

The Distribution and Documentation option provides the machine readable software and the basic documentation. You must have, or order, a Single-Use License to obtain this option. You will need this option to install the software for the first time. When revised versions of this software product become available, they may also be obtained by purchasing this option again.

Software Revision Right-To-Copy Option

The Right-To-Copy option allows a customer with multiple CPUs to copy a revised version of a software product from one CPU to another. Each CPU must be licensed for that product. You first install the revised software on one CPU; then you can make copies for additional CPUs by purchasing the Right-To-Copy option for each additional CPU.

Documentation-Only Option

The Documentation-Only option provides one copy of the basic documentation.

Software Product Services

A variety of service options are available. For more information on these or other services, please contact your local DIGITAL office.

SOFTWARE OPTIONS CHART

The distribution Media Codes used in the Software Options Chart are described below. You specify the desired Media Code at the end of the Order Number, e.g., QY233-HH = binaries on RL02 Disk Cartridge.

5 = TK50 Tape Cartridge
D = 9-track 800 BPI Magtape (NRZI)
H = RL02 Disk Cartridge
M = 9-track 1600 BPI Magtape (PE)
V = RK07 Disk Cartridge
Z = No hardware dependency

NOTE: The availability of these software product options and services may vary by country. Customers should contact their local DIGITAL office for information on availability.

OPTIONS	ORDER NUMBER CLASS L SYSTEMS[1]	ORDER NUMBER CLASS H SYSTEMS[2]
LICENSE OPTIONS: A LICENSE IS REQUIRED FOR EACH CPU.		
Single-Use License	QY233-UZ	QP233-UZ
MATERIALS AND SERVICE OPTIONS:		
Distribution and Documentation Option	QY233-H5 QY233-HH QY233-HM	QP233-H5 QP233-HD QP233-HH QP233-HM QP233-HV
Software Revision Right-To-Copy Option	QY233-HZ	QP233-HZ
Documentation Only Option	QY233-GZ	QP233-GZ
Installation Service Option	QY233-I5 QY233-IH QY233-IM	QP233-I5 QP233-ID QP233-IH QP233-IM QP233-IV
DECsupport Service	QY233-95 QY233-9H QY233-9M	QP233-95 QP233-9D QP233-9H QP233-9M QP233-9V
Basic Service	QY233-85 QY233-8H QY233-8M	QP233-85 QP233-8D QP233-8H QP233-8M QP233-8V
Self-Maintenance Service	QY233-35 QY233-3H QY233-3M	QP233-35 QP233-3D QP233-3H QP233-3M QP233-3V

[1] *Class L Systems*

— All Q-BUS models and systems except MicroPDP-11/83

— KD11, KDF11, KDJ11 CPU modules

— DCT11, DCF11, DCJ11 microprocessor chips

[2] *Class H Systems*

— All UNIBUS models and systems

— MicroPDP-11/83

Software Product Description

PRODUCT NAME: Micro/RSTS PDP-11 Symbolic Debugger, Version 2.0 **SPD 18.11.01**
(Formerly Micro/RSTS FORTRAN-77 DEBUG)

DESCRIPTION

Micro/RSTS PDP-11 Symbolic Debugger is a fully symbolic debugger for FORTRAN-77, COBOL-81, and MACRO-11 programs running on Micro/RSTS. Micro/RSTS PDP-11 Symbolic Debugger is a tool to aid in locating programming errors in successfully compiled programs that do not execute properly.

Micro/RSTS PDP-11 Symbolic Debugger runs as a two-task debugger. A small portion of the code necessary to debug applications is linked with the user task and the major portion of the debugger runs as a separate task.

Micro/RSTS PDP-11 Symbolic Debugger provides access to program symbols by reading the symbol table file produced by the Taskbuilder. Micro/RSTS PDP-11 Symbolic Debugger can understand symbols produced by Micro/RSTS FORTRAN-77, Micro/RSTS COBOL-81, and MACRO-11.

Features

- DEPOSIT and EXAMINE of all data types supported by Micro/RSTS FORTRAN-77 and Micro/RSTS COBOL-81 (except virtual array elements)
- Full tracepoint and breakpoint functionality (except for the WHEN qualifier for COBOL-81) for monitoring the execution of user applications, including the ability to delay the activation of a tracepoint or breakpoint until after it has been encountered a specified number of times. The user also has the ability to specify an action to perform on encountering a tracepoint or breakpoint.
- Control of execution using STEP by LINE or INSTRUCTION, STEP INTO routines or OVER routines, and the GO command
- Computation of the value of source language expressions or of address expressions using the EVALUATE command
- Full support for overlaid code, including the ability to set tracepoint and breakpoints on locations not currently resident. Micro/RSTS PDP-11 Symbolic Debugger can distinguish among multiple copies of modules located at different points in the overlay structure
- The ability to drive a debugging session using indirect command files and to record the results of a debugging session by command logging. Micro/RSTS PDP-11 Symbolic Debugger is used interactively
- On-line HELP that allows the user to receive information about the commands accepted by Micro/RSTS PDP-11 Symbolic Debugger during a debugging session
- A SET LANGUAGE command allows the user to set the default language of the debugger to the language of the program to be debugged
- Instruction and data space support for user tasks on systems where both the hardware and software support this feature

At Compile Time

To enable debugging of FORTRAN-77 programs, the user must specify a switch in the compiler command line. This switch specifies that information about the symbols in the FORTRAN-77 application will be put into the object file created by the compiler.

To enable debugging of COBOL-81 programs the user must specify a switch in the compiler command line. This switch specifies that information about the symbols in the COBOL-81 application will be put into the object file.

A switch must also be specified in the BLDODL utility. This switch instructs the BLDODL utility to include debug references in the program's ODL file.

To enable debugging of MACRO-11 programs, the user must specify a switch in the assembler command line. This causes information about the symbols in the user's assembly language program to be available to Micro/RSTS PDP-11 Symbolic Debugger.

At Taskbuild Time

When taskbuilding the application which will be run under control of PDP-11 Symbolic Debugger, the user must modify the taskbuilder command line and overlay description file.

MINIMUM HARDWARE REQUIRED

A valid MicroPDP-11 Computer System with:

February 1986
AE-BP39B-TC

digital software

- KEF11-AA Floating Point Chip Option, if the application being debugged exercises floating point arithmetic
- At least 64K bytes of user memory
- At least 4K bytes of memory in the user's task space
- Up to 400 contiguous disk blocks for the debugger task

OPTIONAL HARDWARE

None

PREREQUISITE SOFTWARE

Micro/RSTS Base Kit

Micro/RSTS Application Development Kit

Refer to the Micro/RSTS Optional Software Cross Reference Table (SPD 20.94.xx) for the required version.

OPTIONAL SOFTWARE

Micro/RSTS FORTRAN-77

Micro/RSTS COBOL-81

MACRO-11 (included with Micro/RSTS Application Development Kit)

A single application program composed of modules written in either FORTRAN-77 and MACRO-11 or COBOL-81 and MACRO-11 can be debugged using PDP-11 Symbolic Debugger.

SOFTWARE WARRANTY

Warranty for this software product is provided by DIGITAL with the purchase of a license for the product as defined in the Software Warranty Addendum of this SPD.

INSTALLATION

This software product can be installed by the customer using the step-by-step documentation available for this product. Optionally you can purchase DIGITAL Installation Services which provide for the installation of the software product by an experienced DIGITAL Software Specialist.

Courtesy Installation

This software product will be installed by DIGITAL at no additional charge if you purchase it concurrent with a Start-Up Service Package that includes Installation Service. Both the host operating system and this product must be installed concurrently.

ORDERING INFORMATION

Single-Use licensed software is furnished under the licensing provisions of DIGITAL's Standard Terms and Conditions of Sale, which provide in part that the software and any part thereof may be used on only the single CPU on which the software is first installed, and may be copied, in whole or in part (with the proper inclusion of DIGITAL's copyright notice and any proprietary notices on the software) for use on that same CPU.

You will need a separate license for each CPU on which you will be using the software product (except as otherwise specified by DIGITAL). Then, Materials and Service Options are selected to utilize the product effectively. **THE LICENSE OPTIONS ARE DESCRIBED BELOW. IF YOU ARE NOT FAMILIAR WITH THE SERVICE OPTIONS, YOU MAY OBTAIN THE APPROPRIATE SOFTWARE PRODUCT SERVICE DESCRIPTION(S) FROM YOUR LOCAL DIGITAL OFFICE.** If you are already familiar with these options, you may obtain the ordering information directly from the Software Options Chart.

LICENSE OPTIONS

Single-Use License Option

The Single-Use License is your right to use the software product on a single CPU.

For your first installation of this software product you must purchase as a **minimum:**

- Single-Use License option, and
- Distribution and Documentation option

The license gives you the right to use the software on a single CPU and the Distribution and Documentation option provides the machine-readable software and related documentation.

To use this software product on additional CPUs, for each CPU you must purchase as a **minimum:**

- Single-Use License option

In addition to the right to use, the license gives you the one-time right to copy the software from your original CPU installation to the additional CPU. Therefore, the Distribution and Documentation option is not required, but optional.

Distribution and Documentation Option

The Distribution and Documentation option provides the machine readable software and the basic documentation. You must have, or order, a Single-Use License to obtain this option. You will need this option to install the software for the first time. When revised versions of this software product become available, they may also be obtained by purchasing this option again.

Software Revision Right-To-Copy Option

The Right-To-Copy option allows a customer with multiple CPUs to copy a revised version of a software product from one CPU to another. Each CPU must be licensed for that product. You first install the revised software on one CPU; then you can make copies for additional CPUs by purchasing the Right-To-Copy option for each additional CPU.

Documentation-Only Option

The Documentation-Only option provides one copy of the basic documentation.

Software Product Services

A variety of service options are available. For more information on these or other services, please contact your local DIGITAL office.

SOFTWARE OPTIONS CHART

The distribution Media Codes used in the Software Options Chart are described below. You specify the desired Media Code at the end of the Order Number, e.g., QY811-H3 = binaries on RX50 Floppy Diskette.

3 = RX50 Floppy Diskette
5 = TK50 Tape Cartridge
Z = No hardware dependency

NOTE: The availability of these software product options and services may vary by country. Customers should contact their local DIGITAL office for information on availability.

OPTIONS	ORDER NUMBER
LICENSE OPTIONS: A LICENSE IS REQUIRED FOR EACH CPU.	
Single-Use License for Class L Systems[1]	QY811-UZ
Single-Use License for Class H Systems[2]	QP811-UZ
MATERIALS AND SERVICE OPTIONS:	
Distribution and Documentation Option	QY811-H3 QY811-H5
Software Revision Right-To-Copy Option	QY811-HZ
Documentation Only Option	QY811-GZ
Installation Service Option	QY811-I3 QY811-I5
DECsupport Service	QY811-93 QY811-95
Basic Service	QY811-83 QY811-85
Self-Maintenance Service	QY811-33 QY811-35

[1] *Class L Systems*

— All Q-BUS models and systems except MicroPDP-11/83

— KD11, KDF11, KDJ11 CPU modules

— DCT11, DCF11, DCJ11 microprocessor chips

[2] *Class H Systems*

— All UNIBUS models and systems

— MicroPDP-11/83

SOFTWARE PERFORMANCE REPORT (SPR) SUBMISSIONS

Digital Equipment Corporation guarantees a response to every SPR submitted by DIGITAL specialists and customers who purchase software product service agreements.

Blank SPR forms are available upon request in desired quantities from SPR Administration, P.O. Box F, Maynard, MA 01754, or your local DIGITAL office.

Inquiries on the progress of submitted SPRs should be directed to your local DIGITAL office or SPR Administration at (617) 493-4722.

An SPR Answer Survey Card is enclosed with each SPR response. Please complete the survey card; it provides essential feedback for monitoring the quality of our SPR responses.

Completing an SPR Form

Complete the entire form by either typing or printing clearly. Remove "Customer File Copy" for your records. Leave carbon in tact.

Include customer name and **complete** mailing address.

To expedite the processing of your SPR, enter your **Customer Number** in the space provided. This number is located in the upper left-hand corner of your Dispatch label. It can also be obtained from your local DIGITAL office or by calling SPR Administration at (617) 493-6683.

If you do not want your SPR to be published, check the "DO NOT PUBLISH" box on the SPR form. However, if the SPR is determined to be of universal value and it does not describe a security problem, DIGITAL may elect to publish it. For SPRs which describe security problems, it is imperative that the "DO NOT PUBLISH" box be marked.

Describe one problem per SPR form. If an SPR is submitted with more than one problem, it can lengthen the turnaround time.

State the problem clearly. If necessary, summarize the problem, then describe in detail.

Include all the information needed to reproduce the problem. The easiest problems to fix are those reported in statements similar to the following: if you do X, Y happens when Z should.

State all version numbers and all inserted patches. The problem can be fixed sooner if the version is known. Please include the operating system version even on operating system SPRs, since operating system bugs sometimes manifest themselves as "bugs" in other programs. A statement of patches inserted in the relevant software is also helpful. State the type of terminal or work station on which the software is running, e.g., VT100, VT220, PRO 350, DECmate.

Include as much information as possible; too much information is better than not enough. Send all information in machine-readable format if it occupies more than half a page. Please include the following:

1. Program causing the problems
2. All necessary auxiliary files, such as DBMS or LIBRARY files
3. Assembly switches which are on (if applicable)
4. Switches handed to the software, since different switches cause different sections of the code to be executed
5. All necessary run-time files for language run-time problems
6. A directory listing of media, when included; label media carefully

SUGGESTIONS FOR SUBMITTING TAPES WITH SPRs

To insure timely processing of SPRs submitted with tapes, please follow the suggestions below:

1. Use either a floppy or a magnetic tape.
2. If a magnetic tape is used, it should be either 800, 1600, or 6250 bpi.
3. Include a directory with each tape submitted.
4. Label each tape with the following information:
   a. Customer name
   b. Tape format
   c. bpi
   d. Track
   e. Preprinted number of the SPR submitted with the tape
5. Remove from the tape any unnecessary or confidential files.

Thank you.

SOFTWARE PROBLEMS OR ENHANCEMENTS

Questions and problems regarding, and enhancements to, DIGITAL software should be reported on a Software Performance Report (SPR) form and mailed to the SPR Center at one of the following DIGITAL offices (SPR forms are available from the SPR Center):

AREAS COVERED	SPR CENTER
United States	Corporate Administrative Services Group P.O. Box F Maynard, MA 01754
Canada	Digital Equipment of Canada, Ltd. P.O. Box 13000 Kanata, Ontario Canada, K2K 2A6
Mexico	Digital Equipment de Mexico S.A. de C.V. Apartado Postal 12-1009 Mexico 12, O.F. Mexico
Puerto Rico	Digital Equipment Latin America P.O. Box 11038 Fernandez Juncos Station Santurce 00910 Puerto Rico
Australia, New Zealand	Digital Equipment Aust Pty Ltd 754 Pacific Hwy 1st floor M/SSNH/B-1 Chatswood, New South Wales 2067 Australia
Brazil	Digital Equipment Comercio e Industria Ltda. Avenida Augusto Severo, 156-A 20021 Rio de Janeiro, RJ Brazil
China	Digital Equipment Hong Kong Ltd. 5-7th Floor Intercontinental Plaza 94 Granville Road Tsimshatsui East Kowloon Hong Kong
Remainder of General International District (GID)	Digital Equipment Corp. General International District - SWS 100 Nagog Park Acton, MA 01720-3499 United States
United Kingdom, Bahrein, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Qatar, Oman, Saudi Arabia, Syria, United Arab Emirates, Yemen Arab Republic	Digital Equipment Co. Ltd. Jays Close Basingstoke, Hampshire RG22 4DE England
France	Digital Equipment France Zone Industrielle Bois de L'Epine 11 Avenue Joliot Curie BP 202 91007 Evry Cedex France

AREAS COVERED	SPR CENTER
Italy	Digital Equipment S.p.A. Viale Fulvio Testi, 11 Ang. Via Gorki 105 1-20092 Cinisello Balsamo Milan Italy
Japan	Nihon Digital Equipment Corp. Sunshine 60, P.O. Box 1135 1-1 Higashi Ikebukuro 3-Chome, Toshima-Ku, Tokyo, 170 Japan
Belgium, Luxemburg	Digital Equipment N.V./S.A. Rue De L'Aeronef 1 B-1140 Brussels Belgium
Holland	Digital Equipment B.V. Kaap Hoorndreef 38 NL-3563 AV Utrecht Holland
Sweden	Digital Equipment AB SPR Admin. M-B Duff/CSC Allen 6 S-172 89 Sundbyberg Sweden
Denmark	Digital Equipment Corp. A/S Sandtoften 9 DK-2820 Gentofte Denmark
Finland	Digital Equipment Corp. OY Box 16 02201 ESPOO Finland
Norway	Digital Equipment Corp. A/S Ammerudveien 22 N-0958 Oslo 9 Norway
Austria, East Germany, West Germany, Poland, Hungary, Rumania, Czechoslovakia, Russia, Bulgaria	Digital Equipment Corp. GmbH SPR Centre - D2 Freischuetzstrasse 91 8000 Muenchen 81 West Germany
Israel	Digital Equipment Ltd. Digital House Acadia Junction Herzlia 46 733 Israel
Greece, Portugal, Spain, Switzerland, Yugoslavia, (Morocco, Algeria, Tunisia, Cyprus, Turkey, Malta)	Digital Equipment Corp. AG Kanalstrasse 21 CH-8152 Glattbrugg (Zurich) Switzerland

DIGITAL SOFTWARE LICENSING

digital

DATA SHEET

This data sheet explains what software licenses are and why customers must obtain a software license to run any item of DIGITAL proprietary software.

DIGITAL does not sell software; DIGITAL offers software under a license agreement. DIGITAL has a license agreement for source software and object software. Since DIGITAL software programs are made available primarily in object code, this data sheet focuses on the purchase of object programs.

Introduction to Software Licensing

When DIGITAL hardware is purchased, all rights of ownership (legally called "title") to the hardware pass to the customer. This is not the case with software. DIGITAL regards software as proprietary information. Since software is easily reproduced, it must be legally protected from improper copying. Therefore, DIGITAL uses a combination of trade secret and copyright legal protection for software. DIGITAL protects its investment by retaining title to its software at all times and requires anyone wishing to use it to obtain a license.

How DIGITAL Licenses Software

The license agreement for object programs is contained in DIGITAL's standard Terms and Conditions of Sale and Corporate Volume Purchase Agreements instead of as a separate agreement. Therefore, when software products are purchased under DIGITAL's Terms of Sale, the software license agreement is made at the same time.

Key Principles of the License Agreement

Object code is licensed for single use. This means obtaining a license for a product allows the associated software to be used on the "single" CPU on which it was first installed. Other key points are as follows:

- If the licensed CPU temporarily malfunctions, the software may be run on another machine while the CPU is down.
- Copies of the software may be made for backup purposes if appropriate proprietary and copyright notices are included.
- The software may be modified or merged with other software if appropriate proprietary and copyright notices are included.
- The software may be used by the customer's employees and its agents directly concerned with the internal use, but may not be made available to anyone else.

Modification to the Software Product

Any modification to licensed software does not exempt the product from DIGITAL license terms. Every line of code from a software product falls under the terms of the license. Only those modifications that are not part of the original software are the customer's property. It is important to note that warranty on the product is limited to the original software supplied by DIGITAL.

Transferability of Licensed Software Products

License Transfer - A license agreement does not automatically allow transfer of licensed software to another party or another CPU. If the customer intends to sell the licensed CPU and pass on the software with the sale or move the software onto another CPU, permission must be obtained from DIGITAL. A case-by-case License Transfer is required to relicense the software.

Software Sublicensing - DIGITAL customers with a purchase agreement authorizing sublicensing, such as OEMs, may transfer licensed object products to their customers without a License Transfer. A valid sublicense, executed by an OEM with its customer, gives the OEM's customer the same license rights and responsibilities as a license agreement made directly with DIGITAL.

Source Software

Sources are only available for selected products. A license agreement for source software must be separately executed for each facility/location which intends to purchase sources in machine-readable, listing, or microfiche form. Further information and availability of sources can be found in the applicable Software Product Description (SPD).

Software Warranty

Each licensed software product offered has an SPD describing the warranty commitment for the product. Software products under DIGITAL warranty must conform to the description provided for a 90-day period, which generally begins upon product installation or 30 days after delivery. All other products are provided AS IS, without warranty. The SPD clearly states under which warranty category the product falls.

Purchasing the License for the Software Product

A license must be obtained for each CPU on which the licensed software will be used (unless otherwise specified by DIGITAL).

A Single-use License for object code is generally ordered according to the type/classifcation of the CPU or system configuration intended to run the product. Further information and availability can be found in the applicable SPD.

Software Product

A license is a prerequisite to purchase the associated software. The Media and Documentation Option for a product is ordered according to media type. Further information and availability of media can be found in the applicable SPD.

Purchasing Software Product Revisions/Updated Versions

If a licensed customer is not covered by a product service agreement, updated versions can be purchased when they are made generally available. Updated versions are ordered according to media type. A customer can also choose to run updated versions on additional CPUs, but not purchase multiple media distributions. If this is the case, the Software Revision Right-to-Copy option must be purchased for each CPU which runs the updated version.

Software Product Services

A licensed customer can purchase annual product service agreements to receive updated versions on media when available. A customer may choose to copy updated versions onto additional CPUs during this service agreement period. In this case, the software Service Right-to-Copy must be purchased for each CPU which runs the updated version. Further information and availability can be found in the applicable SPD. Your local DIGITAL office can be contacted for additional assistance.

DIGITAL EQUIPMENT COMPUTER USERS SOCIETY

BENEFITS OF BELONGING

The Digital Equipment Computer Users Society (DECUS) is one of the largest and most respected users groups in the computer industry today. Membership in DECUS, which is free and voluntary, provides the individual user with information and services not found anywhere else.

DECUS provides an environment where users of Digital Equipment Corporation products can share information with other users and with DIGITAL. Members can find out the latest news on DIGITAL's hardware, software, and educational products. The feedback exchange with DIGITAL allows the users of DIGITAL's products to have a voice in the company's future.

Founded in 1961, DECUS now has three autonomous areas worldwide - DECUS U.S., DECUS Europe, made up of eight independent chapters, and DECUS GIA (General International Area), made up of four independent chapters. DECUS services and activities are shared between these chapters through mutual agreements.

All DECUS services promote the exchange of information in a noncommercial environment. Included in these services are:

Special Interest Groups (SIGs)

These groups, formed around an area of common interest, exist for a variety of hardware, operating systems, languages, applications, and marketing areas. Participation in these groups allows fellow users to exchange information and share technical expertise in the areas of most interest to the users.

Local Users Groups (LUGs) and National Users Groups (NUGs)

LUGs and NUGs are licensed groups of individuals who gather to share information with other users on a periodic basis. Not only do they have common professional interest, but they also have geographic and cultural ties. DIGITAL representatives attending these meetings often unveil new products and services and supply updates on existing policies and procedures.

Symposia

DECUS holds symposia each year in the different chapters, two per year in the U.S. These meetings provide a unique opportunity for users with a wide spectrum of experience to meet for up to five days of intensive technical exchange. Symposium activities include workshops, clinics, panels, tutorials, and formal paper presentations. DIGITAL participates in symposia by sending Product Group managers and developers to discuss strategies, products, problems, and solutions.

Publications

The flow of information among users, as well as between users and DIGITAL, is the primary goal of DECUS. Various publications generated by DECUS support this communication. They include chapter newsletters and *The Proceedings*, a technical volume published after each symposium. DECUS also publishes Special Interest Groups' newsletters that provide information pertaining to specific DIGITAL products.

Program Library

The DECUS Program Library is the main vehicle for the exchange of software among users of all DIGITAL systems. The Library contains over 1000 software programs written and voluntarily submitted by users. These programs include compilers, editors, utilities, numerical and statistical functions, as well as games and graphic routines. The Library publishes an annual software catalog that lists and describes all the DECUS programs available to all users for a minimal charge.

You are cordially invited to join over 60,000 other users of DIGITAL products around the world and begin to share your experiences, both successes and problems.

For more information, contact the appropriate DECUS chapter office listed here.

DECUS CHAPTER OFFICES — WORLDWIDE

DECUS U.S.

DECUS, U.S. Chapter
219 Boston Post Road (BPO2)
Marlborough, Massachusetts 01752
U.S. Activities: (617) 480-3259 (3302)
Library: (617) 480-3521
Finance and Administration: (617) 480-3634

DECUS Europe

DECUS At Large (in Europe)
C.P. 510
CH-1213 PETIT-LANCY 1/GE
Switzerland

DECUS Denmark
Digital Equipment Corp. A/S
Sandtoften 9
DK-2820 Gentofte
Denmark

DECUS France
BP. 136
F-91004 EVRY CEDEX

DECUS Holland
Kaap Hoorndreef 38
NL-3563 AV UTRECHT
The Netherlands

DECUS Muenchen
Freischuetzstrasse 91
D-8000 MUENCHEN 81
Federal Republic of Germany

DECUS Italia
Viale Fulvio Testi 11
I-20092 CINISELLO BALSAMO

DECUS Norway
Digital Equipment Corp. A/S
Ammerudveien 22
N-0958 Oslo 9
Norway

DECUS Sweden
S-172 89 SUNDBYBERG
Sweden

DECUS U.K., Ireland and
Middle East
P.O. Box 53
READING, RG2 OTW
U.K.

DECUS Switzerland
Schaffhauserstrasse 144
8302 Kloten
Switzerland

DECUS GIA (General International Area)

DECUS Australia
Northern Tower, Chatswood Plaza
Railway Street
Chatswood, New South Wales 2067
Australia
Phone: (02) 412.5237

DECUS Canada
100 Herzberg Road
P.O. Box 13000
Kanata, Ontario K2K 2A6
Canada
Phone: (613) 592-5111, ext. 2115

DECUS Japan
Nihon Digital Equipment KK
Sunshine 60, P.O. Box 1135
1-1, Higashi Ikeburo 3-Chome
Toshima-ku, Tokyo 170
Japan
Phone: [81]-(3)-9897111

DECUS GIC
100 Nagog Park AKO1-1/B11
Acton, Massachusetts 01720
U.S.A.
Phone: (617) 264-6561

DECUS

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The Software Dispatch

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software

The Software Dispatch

RSTS/E

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RSTS/E SOFTWARE DISPATCH

Published by
Corporate Administrative Services Group, Software Services
Digital Equipment Corporation
129 Parker Street (PKO2/E49)
Maynard, MA 01754

The RSTS/E Software Dispatch complements the RSTS/E Software Dispatch Review. New and revised Software Product Descriptions, programming notes, software problems and solutions, and documentation corrections are published here. Much of the material is developed from Software Performance Report (SPR) answers significant to the general audience and is printed here to supplement the maintenance notebook (established by the Software Dispatch Review).

PRODUCTS SUPPORTED In the RSTS/E SOFTWARE DISPATCH

ADE/RSTS
BASIC-PLUS-2 for RSTS/E, PDP-11
COBOL, PDP-11
COBOL-81/RSTS/E
DATATRIEVE-11
DECAL
DECgraph-11
DECmail/RSTS
DECnet/E
DECWORD/DP
DMS-500
FMS-11/RSTS
FORTRAN IV/RSTS/E
FORTRAN-77 DEBUG, PDP-11
FORTRAN-77/RSTS/E, PDP-11
GIGI Software
INDENT
MENU-11/RSTS
RPG II, PDP-11
RSTS Smart Mailer
RSTS/E DIBOL
RSTS/E
RSTS/E 3271 Protocol Emulator
RSTS/E High Performance 2780/3780 Emulator
RSTS/E-2780
SORT-11

DISTRIBUTION

The RSTS/E Software Dispatch is directed to one software contact for each software product. No mailing will be made to addresses without a software contact name. **Address change requests should be sent to the nearest DIGITAL field office. Include the new address and mailing label from the most recently received publication.**

Software binary and sources are provided under licenses only. The standard Terms and Conditions, OEM Agreement, and/or Quantity Discount Agreement contain the licenses for all binaries other than DECsystem-10.

Barbara Scollan, Editor

TABLE OF CONTENTS

PRODUCT AVAILABILITY DATES - RSTS/E

AUGUST 1986

The following list contains date and version of the latest release of supported software products. Customers who are in warranty or have a software product service agreement during the month the product became available, are eligible to receive the new release. Eligible customers who have not received the new release should contact their local DIGITAL office.

PRODUCT	VERSION	AVAILABLE
ADE/RSTS	2.4	JUL 85
BASIC-PLUS-2 for RSTS/E,PDP-11	2.3	JUN 85
COBOL,PDP-11	4.4	MAY 82
COBOL-81/RSTS/E	2.4	MAY 86
DATATRIEVE-11	3.1	SEP 84
DECdx/RSTS	1.0	NOV 84
DECmail-11 for RSTS/E and Micro/RSTS	2.0	MAR 84
DECnet/E	2.1	JUN 85
DECtap	1.5	MAR 86
DECWORD/DP	1.2 SPD ONLY	MAY 85
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RSTS/E V9

HARDWARE PROBLEM USING TK50 TAPE DRIVE ON SOME Q-BUS SYSTEMS

A hardware problem was recently discovered on the following Q-BUS systems containing a TK50 cartridge tape drive:

- o MicroPDP-11/53
- o MicroPDP-11/23
- o 11/23-PLUS

In some instances where heavy bus activity occurred--using BACKUP or RESTORE to back up or restore a disk using a TK50 tape--memory could become corrupted, causing the system to crash or behave in an unpredictable way.

This problem is caused by the bus interaction between the TK50 tape controller and the PDP-11/53 (KDJ11-D) and PDP-11/23 (KDF11-B) processors; it does not exist with any other supported processor type.

NOTE

The LSI-11/23 (KDF11-A) and LSI-11/73 (KDJ11-A) processors also exhibit this problem. Neither of these processors are supported by RSTS/E.

The problem is corrected by a hardware update to the Q-BUS TK50 controller module (M7546). There is no software solution to this problem.

To prevent the possible occurrence of this problem, RSTS/E V9.2 and all later versions do the following:

1. Upon boot on all Q-BUS systems, INIT.SYS will check for the presence of any TK50 controllers lacking the necessary hardware update. If it finds any, it displays the following warning:

   ```
   MUx: is missing the following ECO:
     Module M7546: ECO #6
   ```

   where x is the TK50 drive's unit number. INIT repeats the message for each TK50 controller found lacking the update, regardless of processor type.

2. If INIT finds any TK50 controllers without the update, and the system's processor type is a PDP-11/53 (KDJ11-D) or PDP-11/23 (KDF11-B), then INIT adds the following message:

   INIT will continue, but timesharing cannot be started.

   Under these conditions, you can continue to access any TK50 drives while running under INIT (to perform off-line SAVRES backups, for example), but you cannot start timesharing.

3. If you attempt to start timesharing on a MicroPDP-11/53, 11/23-PLUS, or MicroPDP-11/23 system with any TK50 controllers lacking the required hardware update, then INIT displays the error message:

   Timesharing cannot be started due to problems discovered
   during the boot/autosizing process.

   and returns to its Option: prompt. You must either disable the TK50 controller (via the HARDWR DISABLE option of INIT), or physically remove it from your system before you can start timesharing.

These steps are taken to prevent the memory corruption problem described above, by recognizing the hardware configuration responsible for it. As such, this action does not solve the problem, but only prevents its occurrence. The correct solution is to replace the Q-BUS TK50 controller module (M7546) with one at revision level F or later. Once the replacement module is installed, INIT will no longer display the diagnostic messages, and you can use your TK50 tape drive in its normal manner.

If your distribution kit is a TK50 cartridge tape, do not attempt to install RSTS/E V9.2 or later on a MicroPDP-11/53, 11/23-PLUS or MicroPDP-11/23 system containing a Q-BUS TK50 controller module earlier than revision level F. If you do, the INIT portion of the installation (initializing the system disk, copying various required files into account [0,1], etc.) will succeed, but you will not be able to start timesharing to complete the installation, because of the checks described above.

If your distribution kit is not a TK50 cartridge tape, then you can complete the installation of RSTS/E V9.2 or later by answering NO to the Start Timesharing? prompt and then using the HARDWR DISABLE option of INIT to disable the TK50 controller. However, if your distribution kit is TK50, then the necessary Engineering change order (ECO) must first be installed before starting the RSTS/E installation.

All Digital-supplied MicroPDP-11/53, 11/23-PLUS, and MicroPDP-11/23 systems containing a TK50 cartridge tape shipped after 30 June 1986 include the latest TK50 controller hardware update.

Contact your local Digital field office for further details.

RSTS/E V9.2
General Notes
System Notes

Seq. No. 0.1.12 N

1 of 1

RSTS/E V9.0 SUPPORT TERMINATED

DIGITAL's support policy for RSTS/E software products is to maintain each version for a period of 6 months after the release of a newer version.

RSTS/E V9.1 was officially released 20 January 1986. Therefore, support for RSTS/E V9.0 was terminated 31 July 1986.

All customers are expected to have installed V9.1 software on their systems if they are to be supported after that date.

ANNOUNCING Micro/RSTS VERSION 2.1

Micro/RSTS V2.1 is a maintenance release of Micro/RSTS, based on V9.2 of RSTS/E. This release is primarily focused on maintenance to correct most of the RSTS/E and Micro/RSTS software problems discovered since the last release. Version 2.1 will be the first release of Micro/RSTS which will provide support for the new Micro/PDP-11/53. Any previous version of Micro/RSTS will not support the 11/53. In addition to the Micro/PDP-11/53, Micro/RSTS V2.1 provides support for the following new hardware:

RX33 - Installation can be performed with a Micro/RSTS RX50 distribution kit on the RX33 single unit half-height drive using double-sided 5.25-inch RX33 diskettes. Micro/RSTS V2.1 does not support online formatting of the RX33 diskettes which are not shipped preformatted, so you must either preformat your RX33 diskettes using the offline diagnostic to obtain the benefit of RX33 format, or use preformatted RX50 diskettes.

RD31 - The RD31 is a fixed disk in a single half-height unit that contains a double-sided 5.25-inch nonremovable hard disk, enclosed in a sealed assembly. The RD31 can store up to 20 megabytes (MB) of formatted data.

DF224 - The DF224 Scholar modem is supported by Micro/RSTS V2.1. Micro/RSTS only supports Scholar modems of rev level B1 or later. Also note, to use the modem on a Micro/RSTS system, you must set the modem response option to "abbreviated" to prevent speed selection problems when connected to terminal lines set to autobaud.

Service Options

Software product services are available for this product. For more information on these or other services, please contact your local Digital account representative.

Availability

Micro/RSTS V2.1 will begin shipping in the U.S. this month.

FIX PROBLEMS WITH USING PRINT DEVICES ON TERMINAL LINES

PROBLEM:

The state of the XOFF flag in the device's DDB is being lost and the line characteristics are prematurely being reset when the device is closed or deallocated. These problems may cause data overruns or data loss to occur if there is still pending output during the time of the close or deallocation. These problems might appear when using the PBS package to print to terminal printers which are marked as SHAREABLE.

SOLUTION:

The patch procedures outlined below will correct the loss of the XOFF flag. However, it will not correct the problem of the premature changing of the line characteristics. We suggest for the time being, when using print devices connected to terminal lines, that the current line characteristics be the same as the permanent characteristics. This will avoid the line resetting problem and possible loss of data or data sent at an incorrect speed.

Both the loss of the XOFF flag and the premature changing of the line characteristics will be corrected in RSTS/E V9.3.

PROCEDURE:

1. This is a required patch to the RSTS/E V9.0, V9.1 and V9.2 executive. It must be installed in all target monitor SILs. Note that the patch for V9.0 is different than the one for V9.1 and V9.2. Be sure to select the patch that corresponds to your version of RSTS/E.

2. The patch described in steps 4 and 5 below can be installed using the PATCH option of INIT.SYS:

   Option: PATCH
   File to patch? <lf> (LINE FEED for installed monitor SIL)

3. This patch can be installed manually using ONLPAT, the on-line patching program. Note, however, that if the patch is applied on line to the installed monitor SIL, it will not take effect until the system is rebooted.

```
RUN $ONLPAT
Command File Name? <cr>            (RETURN for manual patch installation)
File to patch? <lf>                (LINE FEED for installed monitor SIL)
File found in account [0,1]
```

4. For RSTS/E V9.0 executives, the patch is as follows:

```
Module name? TER
Base address? DEA$KB
Offset address? 20
 Base   Offset  Old     New?
??????  000020  004767  ? 4737
??????  000022  ??????  ? PATCH
??????  000024  012737  ? ^Z        (CTRL/Z for new offset)
Offset address? ^Z                 (CTRL/Z for new base)
Base address? ^Z                   (CTRL/Z for new module)
Module name? RSTS
Base address? PATCH
Offset address? 0
 Base   Offset  Old     New?
??????  000000  000000  ? 16146
??????  000002  000000  ? DDFLAG
??????  000004  000000  ? 42716
??????  000006  000000  ? 77777
??????  000010  000000  ? 4737
??????  000012  000000  ? DDBSET@TER
??????  000014  000000  ? 52661
??????  000016  000000  ? DDFLAG
??????  000020  000000  ? 207
??????  000022  ??????  ? ^Z        (CTRL/Z for new offset)
Offset address? ^Z                 (CTRL/Z for new base)
Base address? $$0303
Offset address? 0
 Base   Offset  Old     New?
??????  000000  ??????  ? Q!200
??????  000002  ??????  ? ^C        (up-arrow/C to exit;CTRL/C for INIT)
```

5. For RSTS/E V9.1 and V9.2 executives, the patch is as follows:

```
Module name? TER
Base address? DEAMKB
Offset address? 20
```

```
 Base   Offset  Old     New?
??????  000020  004767  ? 4737
??????  000022  ??????  ? PATCH
??????  000024  012737  ? ^Z        (CTRL/Z for new offset)
Offset address? ^Z                  (CTRL/Z for new base)
Base address? ^Z                    (CTRL/Z for new module)
Module name? RSTS
Base address? PATCH
Offset address? 0
 Base   Offset  Old     New?
??????  000000  000000  ? 16146
??????  000002  000000  ? DDFLAG
??????  000004  000000  ? 42716
??????  000006  000000  ? 77777
??????  000010  000000  ? 4737
??????  000012  000000  ? DDBSET@TER
??????  000014  000000  ? 52661
??????  000016  000000  ? DDFLAG
??????  000020  000000  ? 207
??????  000022  ??????  ? ^Z        (CTRL/Z for new offset)
Offset address? ^Z                  (CTRL/Z for new base)
Base address? $$0303
Offset address? 0
 Base   Offset  Old     New?
??????  000000  ??????  ? Q!200
??????  000002  ??????  ? ^C        (up-arrow/C to exit;CTRL/C for INIT)
```

ALLOW MULTIPLE OPENS ON NONMOUNTED NFS DISK

PROBLEM:

Attempts by one user to open a nonmounted disk in nonfile-structured mode on multiple channels, or attempts by more than one user to open the same nonmounted disk in nonfile-structured mode fail with "?Protection violation" (ERR=10).

SOLUTION:

The patching procedure detailed below corrects the above problem.

PROCEDURE:

1. This is a required patch to the RSTS/E V9.0, V9.1, and V9.2 executives. It must be installed in all target monitor SILs.

   This problem will be fixed in source for RSTS/E V9.3.

2. The patch described in step 4 below can be installed using the PATCH option of INIT.SYS:

   ```
   Option: PATCH
   File to patch? <lf>                (LINE FEED for installed monitor SIL)
   ```

3. This patch can be installed manually using ONLPAT, the on-line patching program. Note, however, that if the patch is applied on line to the installed monitor SIL, it will not take effect until the system is rebooted.

   ```
   RUN $ONLPAT
   Command File Name? <cr>            (RETURN for manual patch installation)
   File to patch? <lf>                (LINE FEED for installed monitor SIL)
   File found in account [0,1]
   ```

4. For RSTS/E V9.0 executives, the patch is as follows:

```
Module name? OPN
Base address? OPL@OVR
Offset address? 3150
 Base   Offset  Old     New?
??????  003150  001015  ? 1012
??????  003152  032764  ? ^Z        (CTRL/Z for new offset)
Offset address? ^Z                  (CTRL/Z for new base)
Base address? ^Z                    (CTRL/Z for new module)
Module name? RSTS
Base address? $$0305
Offset address? 0
 Base   Offset  Old     New?
??????  000000  ??????  ? Q!20
??????  000002  ??????  ? ^C        (up-arrow/C to exit;CTRL/C for INIT)
```

5. For RSTS/E V9.1 and V9.2 executives, the patch is as follows:

```
Module name? OPN
Base address? OPL@OVR
Offset address? 3144
 Base   Offset  Old     New?
??????  003144  001015  ? 1012
??????  003146  032764  ? ^Z        (CTRL/Z for new offset)
Offset address? ^Z                  (CTRL/Z for new base)
Base address? ^Z                    (CTRL/Z for new module)
Module name? RSTS
Base address? $$0305
Offset address? 0
 Base   Offset  Old     New?
??????  000000  ??????  ? Q!20
??????  000002  ??????  ? ^C        (up-arrow/C to exit;CTRL/C for INIT)
```

RSTS/E VERSION 9
CUMULATIVE INDEX
AUGUST 1986

This is a complete listing of all articles for RSTS/E V9.0 and all subsequent point releases, and layered products. Missing sequence numbers may pertain to problems unique to other versions of the same product or other major operating systems.

IMPORTANT!

The following numerical system has been grouped in logical order denoted by the first digit (X.X.X). The second digit (X.X.X.) refers to the subcomponent and the third digit (X.X.X) denotes the issue number or sequential order.

Unassigned articles are indicated: RESERVED.

Flags are currently being installed for all articles. The flags and definitions are as follows.

M = Mandatory Patch. These patches correct errors in the software product. All users are required to apply these patches to maintain consistent "user level" unless the accompanying article specifies otherwise.

F = Optional Feature Patch. These patches extend or configure functionality into the product. These functions will be treated as a supported part of the product for the duration of the current release and may be incorporated in a future release.

R = Restriction. These articles discuss areas that will not be patched in the current release because they require major modification or because they are not consistent with the design of the product. Restrictions, except those described as permanent, are reviewed and modified when possible as part of the normal release cycle.

N = Note. These articles provide explanatory information that supplements the manual set and provide more detailed information about a program or package. They also provide procedural information to make it easier to use a program or package.

+ = Article appeared in the RSTS/E Software Dispatch Review (Order No. AA-5514G-BC), June 1985.

* = Article appeared in the RSTS/E V9.0 Maintenance Notebook (Order No. AA-L997D-TC), June 1985.

- = Article is being republished.

Sequence	Title	Released	Corrected	Mon/Yr
	RSTS/E V9			
	General Notes			
	System Notes			
0.1.1 N	RSTS/E V9.0 COMPONENT SUMMARY	V9.0	N/A	Jun 85 *
0.1.2 N	ANNOUNCING RSTS/E V9.0	V9.0	N/A	Jun 85 *
0.1.3 N	UNDERSTANDING ?NO ROOM FOR USER ON DEVICE ERRORS	V9.0	N/A	Jul 85
0.1.4 N	WARNING ON USE OF THE PEEK() FUNCTION	V9.0	N/A	Nov 85
0.1.5 N	FPJ11 FLOATING-POINT ACCELERATOR WITH PDP-11/84 AND MicroPDP-11/83 SYSTEMS	V9.0	N/A	Jan 86
0.1.6 N	ANNOUNCING NEW HARDWARE SUPPORT IN RSTS/E	V9.0	N/A	Apr 86
0.1.7 N	ANNOUNCING RSTS/E V9.1--SUPPORT FOR TK50 AND RD53	V9.1	N/A	Jun 86 -
0.1.8 N	ANNOUNCING Micro/RSTS VERSION 2.0	V9.1	N/A	Jun 86 -
0.1.9 N	FPJ11 FLOATING-POINT ACCELERATOR WITH PDP-11/84 AND Micro PDP-11/83 SYSTEMS	V9.1		Jun 86 -
0.1.10 N	ANNOUNCING RSTS/E VERSION 9.2	V9.2	N/A	Jun 86 -
0.1.11 N	HARDWARE PROBLEM USING TK50 TAPE DRIVE ON SOME Q-BUS SYSTEMS	V9.2	N/A	Aug 86
0.1.12 N	RSTS/E V9.0 SUPPORT TERMINATED	V9.0	N/A	Aug 86
0.1.13 N	ANNOUNCING Micro/RSTS VERSION 2.1	V9.2	N/A	Aug 86
	System Management Guidelines			
0.2.1 N	USING SAVE/RESTORE ON A TWO-DISK SYSTEM	V9.0	N/A	Jun 85 *
	Initialization			
	INIT.SYS Program Patches			
1.1.1	RESERVED			
1.1.2	RESERVED			
1.1.3	RESERVED			
1.1.4 M	DSKINT OPTION OF INIT.SYS MAY NOT DETECT BAD BLOCKS	V9.0	V9.1	Oct 85 -
1.1.5 M	TMSCP DRIVES ARE NOT MARKED AS AVAILABLE AFTER REWIND-OFFLINE OPERATIONS	V9.1	V9.2	Jun 86 -
1.1.6 M	OFF-LINE SAVRES INVALIDATES ALL BUT LAST VOLUME OF MULTIVOLUME MAGTAPE SAVE SET	V9.1	V9.2	Jun 86 -
1.1.7 M	INIT SAV/RES TO TMSCP TAPE MAY ABORT WITH "TRAP THROUGH 4"	V9.1	V9.2	Jun 86
	INIT.SYS Program Notes			
1.2.1 N	DEVICES WITH NON-STANDARD UNIBUS ADDRESSES AND VECTORS	V9.0	N/A	Jun 85 *
	System Installation and Update			
	Installation/Update Notes			
2.1.1 N	CSPLIB.TSK AND CSPLIB.STB MISSING FROM V9.0 KIT	V9.0	V9.1	Sep 85
2.1.2 N	PBUILD.TSK SHOULD NOT BE INCLUDED IN V9.0 KIT	V9.0	V9.1	Sep 85
	Executive			
	Monitor Patches			
3.1.1 F	DISABLING THE USE OF DATA SPACE	V9.0	N/A	Jun 85 *
	Terminal Services Patches			
3.3.1 F	CHANGING SPECIAL LOGIN TERMINAL	V9.0	N/A	Jun 85 *
3.3.2 F	INPUT ESCAPE SEQUENCE HANDLING	V9.0	N/A	Jun 85 *

Sequence	Title	Released	Corrected	Mon/Yr
3.3.3	RESERVED			
3.3.4	RESERVED			
3.3.5 M	CORRECT AUTOBAUD DETECTION PROBLEM	V9.0	V9.2	Jun 86
3.3.6 M	CORRECT AUTOBAUD DETECTION PROBLEM	V9.1	V9.2	Jun 86
3.3.7 M	FIX CONTROL/O PROBLEM - MANDATORY TERMINAL SERVICE PATCH	V9.0	V9.3	Jul 86
3.3.8 M	FIX PROBLEMS WITH USING PRINT DEVICES ON TERMINAL LINES	V9.0	V9.3	Aug 86
	Terminal Service Notes			
3.4.1 N	UNDERSTANDING TERMINAL PARITY AND STOP BIT SETTINGS	V9.0	N/A	Jun 85 *
3.4.2 N	MODEM CONTROL ON PRIVATE, LEASED LINES	V9.0	N/A	Jun 85 *
3.4.3 N	MODEM SUPPORT ON RSTS/E	V9.0	N/A	Jun 86
	File Processor Patches			
3.5.1 F	CONTROLLING EMT LOGGING	V9.0	N/A	Jun 85 *
3.5.2 M	SET TERMINAL CHARACTERISTICS SYS CALL MAY HANG THE SYSTEM	V9.0	V9.1	Sep 85
3.5.3 M	ERROR IN HANDLING OF PUBLIC DISKS	V9.0	V9.1	Sep 85
3.5.4 M	FIX CORRUPTION OF LOW-CORE LOCATIONS	V9.0	V9.2	Jan 86
3.5.5 M	ALLOW MULTIPLE OPENS ON NONMOUNTED NFS DISK	V9.0	V9.3	Aug 86
	Device Driver Patches			
3.7.1 F	USING THE CSS PAPER TAPE READER ON RSTS/E	V9.0	N/A	Jun 85 *
3.7.2 M	ACCESSING TMSCP TAPES MAY CAUSE SYSTEM TO CRASH	V9.1	V9.2	Jun 86
	BASIC-PLUS			
	BASIC-PLUS Patches			
4.1.1 F	SPECIAL PRINT-USING CHARACTERS	V9.0	N/A	Jun 85 *
4.1.2 F	DEFAULT SCALE FACTOR	V9.0	N/A	Jun 85 *
4.1.3 F	OMITTING SCALE FACTOR WARNING MESSAGE	V9.0	N/A	Jun 85 *
4.1.4 F	DEFAULT TO NOEXTEND MODE	V9.0	N/A	Jun 85 *
4.1.5 F	IMMEDIATE MODE FROM .BAS FILE	V9.0	N/A	Jun 85 *
4.1.6 F	NO PPN'S IN CATALOG COMMAND	V9.0	N/A	Jun 85 *
4.1.7 F	DISABLING THE CCL SYS CALL	V9.0	N/A	Jun 85 *
4.1.8 F	CLEAR I/O BUFFERS USED BY OPEN STATEMENTS	V9.0	N/A	Jun 85 *
4.1.9 F	FORCE "ILLEGAL STATEMENT" ERROR WHEN USING OBSOLETE SEND/RECEIVE	V9.0	N/A	Jun 85 *
	Non-Standard BASIC-PLUS Features			
4.10.1 N	THE BASIC-PLUS DEBUG FACILITY	V9.0	N/A	Jun 85 *
4.10.2 N	THE BASIC-PLUS DUMP FACILITY	V9.0	N/A	Jun 85 *
4.10.3 F	CHANGING THE BASIC-PLUS DEBUG KEYWORDS	V9.0	N/A	Jun 85 *
4.10.4 F	ENABLING THE BASIC-PLUS DUMP FEATURE	V9.0	N/A	Jun 85 *
4.10.5 F	ENABLING DUMP FROM COMPILED FILES FOR NON-PRIVILEGED USERS	V9.0	N/A	Jun 85 *
4.10.6 F	CHANGING THE BASIC-PLUS D?MP KEYWORD	V9.0	N/A	Jun 85 *
	RSTS/E 2780 DEVICE DRIVER			
	2780 Device Driver Patches			
5.1.1 M	BUFFER LIMIT CHECKING	V9.0		Jun 85 *
5.1.2 M	DISCONNECT COMMAND HANDLING	V9.0		Jun 85 *

Sequence	Title	Released	Corrected	Mon/Yr
5.1.3 M	DP11 TRANSMIT HANG CONDITION	V9.0		Jun 85 *
5.1.4 M	DU11/DP11 TRANSMIT HANG CONDITION	V9.0		Jun 85 *
5.1.5 M	LOSS OR DUPLICATION OF DATA	V9.0		Jun 85 *
5.1.6 M	DOUBLE CLOSE ALTERS MONITOR	V9.0		Jun 85 *
5.1.7 M	GET/PUT INTERLOCK PROBLEM	V9.0		Jun 85 *
5.1.8 M	2780 HANDLER FAILURE PROBLEM	V9.0		Jun 85 *
5.1.9 M	LOCAL BINARY TRANSMIT PROBLEM	V9.0		Jun 85 *
	2780 Device Notes			
5.2.1 N	INSTALLING AND TROUBLE-SHOOTING 2780's	V9.0	N/A	Jun 85 *
	RSTS/E UTILITIES			
	System Library ($)			
	DSKINT.TSK			
10.5.1 M	MANDATORY PATCH FOR DCL INITIALIZE COMMAND	V9.2	V9.3	Jul 86
	Error Control Package (ERROR$)			
	Package Notes			
12.1.1 N	UNDERSTANDING "PA MEMORY SYSTEM" ERROR LOGS	V9.0	N/A	Jun 85 *
	Operator Services and Spooling Package (OPSER$)			
	Package Notes			
14.1.1 N	NOTES ON USE OF THE SERIAL LA180 (LA180S) TERMINAL	V9.0	N/A	Jun 85 *
14.1.2 N	USING TWO OR MORE PRINTERS TO SERVE A QUEUE	V9.0	N/A	Jun 85 *
	Print/Batch Services Package (PB$)			
	Package Notes			
15.1.1 R	PBS MUST BE STARTED FROM A PRIVILEGED ACCOUNT	V9.1	V9.2	Feb 86
	RSTS/E DOCUMENTATION			
	Documentation			
	Installation and Update Guide			
19.4.1 N	PBUILD.TSK NO LONGER INCLUDED IN RSTS/E	V9.0	N/A	Sep 85
	System Manager's Guide			
19.5.1 N	ACCOUNT [0,200] NOT AVAILABLE FOR CUSTOMER USE	V9.0	N/A	Sep 85
	RUN-TIME SYSTEMS SUPPORT			
	DCL			
	Package Notes			
20.1.1 N	FILE SPECIFICATIONS IN DCL	V9.0	N/A	Jun 85 *
20.1.2 N	SETTING UP THE DCL LINK COMMAND	V9.0	N/A	Jun 85 *
	RSX Utilities			
	Package Notes			
21.1.1 N	USING RTSODT FOR DEBUGGING RUN-TIME SYSTEMS	V9.0	N/A	Jun 85 *

Sequence	Title	Released	Corrected	Mon/Yr
	CRF.TSK			
21.2.1 N	USING THE RSX CRF UTILITY	V9.0	N/A	Jun 85 *
	RT-11 Run-time System and Utilities			
	Package Notes			
22.1.1 N	USE OF UNDERSCORE IN RT-11 EMULATOR UTILITIES	V9.0	N/A	Jun 85 *
22.1.2 N	USING RTSODT FOR DEBUGGING RUN-TIME SYSTEMS	V9.0	N/A	Jun 85 *
	HOOK.SAV			
22.3.1 N	NOTES ON HOOK.SAV	V9.0	N/A	Jun 85 *
	OPTIONAL SOFTWARE			
	RSTS/E 2780 Package V3.0			
	RJ2780			
25.2.1 M	FAILURE TO CLEAR `JOB ACTIVE' ON ATTACH	V9.0		Jun 85 *
25.2.2 M	LOCAL BINARY TRANSMIT FAILURE	V9.0		Jun 85 *
	DECnet/E V2.0			
	Utilities			
	NFT SUBMIT			
31.21.1 R	REMOTE BATCH CONTROL FILES BEING DELETED BEFORE EXECUTING	V9.2	V9.3	Apr 86
	DECmail-11 V2.0			
36.1.1 N	USING EDT V3.0 FOR DECmail-11 V2.0	V9.0	N/A	Jun 86
	DIBOL V5.2			
	Announcement			
39.1.1 N	ANNOUNCING RSTS/E DIBOL V5.2	V9.0	N/A	Jan 86
	ADE V2.4			
	Package Notes			
47.1.1 N	ANNOUNCING ADE V2.4 FOR RSTS/E V9.0 AND Micro/RSTS V1.1	V9.0	N/A	Jul 85
	FORTRAN IV/RSTS/E V2.6			
55.3.1 N	CALL ASSIGN CARRIAGE CONTROL ARGUMENT DOES NOT WORK PROPERLY	V9.0	V9.0	Jun 85 +
55.3.2 N	DSIN YIELDS RESULTS WITH THE WRONG SIGN FOR NEGATIVE ANGLES	V9.0	V9.0	Jun 85 +
55.3.3 N	INSTALLING FORTRAN-IV V2.6 ON RSTS/E V9.n	V9.0	N/A	Jun 85 +

Sequence	Title	Released	Corrected	Mon/Yr
	DECWORD/DP V1.2			
	Package Notes			
69.1.1 N	NEW DECWORD INSTALLATION/UPDATE CONTROL FILE ON RSTS/E V9.0	V9.0	N/A	Jun 85 +
69.1.2 N	DECWORD V1.2 CBI FILES MAY BE DELETED TO SAVE DISK SPACE	V9.0	N/A	Jun 85 +
69.1.3 N	DECWORD V1.2 COMMUNICATIONS FILES MAY BE DELETED TO SAVE DISK SPACE	V9.0	N/A	Jun 85 +
69.1.4 N	ANNOUNCING AVAILABILITY OF DECWORD FOR Micro/RSTS	V9.0	N/A	Jun 85 +
69.1.5 N	DECWORD/DP V1.2 SUPPORT FOR LN03 LASER PRINTER	V9.0	N/A	Sep 85
69.1.6 N	INFORMATION ON RUNNING DECWORD/DP V1.2 ON RSTS/E V9.0	V9.0	N/A	Sep 85
	WPSMEN			
69.2.0 M	REPLACEMENT MODULE ISSUED FOR WPSMEN	V9.0	V9.0	Jun 85 +
	WPSUDK			
69.3.0 M	REPLACEMENT MODULE ISSUED FOR WPSUDK	V9.0	V9.0	Jun 85 +
	RMS-11 V2.0			
	Access Methods			
75.2.1 M	INDEX FILE CORRUPTION IN ALTERNATE KEY PATH	V9.0	V9.1	Apr 86
75.2.2 M	CORRUPTION IN VERY LARGE FILES	V9.0	V9.1	Sep 85
	BASIC-PLUS-2 V2.3			
79.2.1 N	PROBLEM WITH PRINT USING	V9.0		Jan 86
	FORTRAN IV/RSX V2.6			
	OTS			
90.1.1 N	LIST-DIRECTED READ	V9.0		Jan 86

Software Product Descriptions (SPDs)

Below is a revised SPD which appears on the following pages:

13.16.09 COBOL-81/RSTS/E, Version 2.4

Software Product Description

PRODUCT NAME: COBOL-81/RSTS/E, Version 2.4 **SPD 13.16.09**

DESCRIPTION

COBOL-81/RSTS/E is a high level language for business data processing that operates under control of the RSTS/E Operating System. It is based upon the 1974 ANSI COBOL Standard X3.23-1974 and includes some of the features planned for the next COBOL standard. COBOL-81/RSTS/E is a subset of VAX COBOL and includes various DIGITAL extensions to COBOL, including screen handling at the source language level.

COBOL-81/RSTS/E meets the low-intermediate level requirements of the United States government, as described in FIPS PUB21-1. Many of the individual modules are designed to meet the high level requirements, as described below:

ANS-74 MODULE	Level Supported by COBOL-81	FIPS PUB21-1 Requirements for High Level
Nucleus	2*	2
Table Handling	2	2
Sequential I/O	2	2
Relative I/O	2	2
Indexed I/O	2	2
Segmentation	2**	2
Library	1†	2
Debug	***	2
Interprogram Communication	1	2
SORT/MERGE	2	2
Communication	-	2

* The Nucleus module complies at level 2, except that the ALTER statement and the ALPHABET IS literal clause are not included.

** The Segmentation module complies at level 2, except that independent segments from level 1 are not included.

*** COBOL-81 uses the PDP-11 Interactive Symbolic Debugger, which may be substituted for the Debug module at all but the high level.

† The Library module includes a partial level 2 REPLACING facility.

VAX COBOL and COBOL-81 share many common features. These features are implemented with the same syntax and semantics on both compilers. In this way, source code developed using COBOL-81 may be migrated to VAX COBOL. Additionally, a VAX/VMS system may be used to develop source code that will eventually be compiled using COBOL-81.

The following DIGITAL extensions to COBOL are implemented in COBOL-81:

- Screen handling is implemented as extensions to the DISPLAY and ACCEPT statements. The DISPLAY statement enables the programmer to display information or prompts anywhere on a video screen. The ACCEPT statement takes information typed anywhere on the screen and returns the value to a running COBOL-81 program. If requested, the ACCEPT statement can convert data to a numeric format. Supported terminal-types are recognized at run-time from information provided by the operating system.
- RMS-STS and RMS-STV special registers may be examined to assist debugging. These registers contain status values from the RMS file system.
- File sharing features enable more than one user to access data at the same time.

The following utilities are provided to assist the COBOL-81 programmer:

- BLDODL (BuiLD ODL), which merges Skeleton Overlay Descriptor Language (SKL) files generated by COBOL compilation into a single Overlay Descriptor Language (ODL) file.
- RFM (ReForMat), a utility that converts source programs from terminal format to conventional ANS COBOI and vice-versa.

COBOL-81 consists of a compiler and an Object Time System/Library. The compiler produces an object module from a source program. The compiler is capable of producing a source listing with embedded diagnostics indicating the line and position of a source-code error, a data-name map, a procedure-name map, and a cross-reference listing in alphabetical order.

digital software

March 1986
AE-L880J-TC

Object modules produced by the compiler can be linked with other object modules produced by either the MACRO-11 or COBOL-81 language processor. These subprograms are accessed with the CALL statement.

COBOL-81 file I/O operations are controlled through the RMS data management software. This method of record I/O supports sequential, relative and indexed file operations.

COBOL-81 also supports the Commercial Instruction Set (CIS).

MINIMUM HARDWARE REQUIRED

Any valid RSTS/E system configuration that includes the following:

- A user area of at least 48K bytes of memory if using an RMS resident library, 52K bytes for all other applications
- At least 5000 free blocks of on-line storage on the public disk structure, plus additional space for user programs and data files

OPTIONAL HARDWARE

- Any mass storage or terminal device supported by the prerequisite software, except TU56 DECtape and TU58 DECtape II
- KEF11-BB Commercial Instruction Set for PDP-11/24
- KE44-A Commercial Instruction Set for PDP-11/44
- A VT200 family, VT100 family, VT52 or Professional terminal is required for the screen handling extensions to the ACCEPT and DISPLAY statements.

PREREQUISITE SOFTWARE

RSTS/E Operating System

Refer to the RSTS/E Optional Software Cross Reference Table (SPD 20.97.xx) for the required version.

OPTIONAL SOFTWARE

PDP-11 Symoblic Debugger, Version 2.0

SOFTWARE WARRANTY

Warranty for this software product is provided by DIGITAL with the purchase of a license for the product as defined in the Software Warranty Addendum of this SPD.

INSTALLATION

This software product can be installed by the customer using the step-by-step documentation available for this product. Optionally you can purchase DIGITAL Installation Services which provide for the installation of the software product by an experienced DIGITAL Software Specialist.

Courtesy Installation Service

This software product will be installed by DIGITAL at no additional charge if you purchase it concurrent with a Startup Service Package that includes installation service. Both the operating system and this product must be installed concurrently.

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For your first installation of this software product you must purchase as a **minimum:**

- Single-Use License Option, and
- Distribution and Documentation Option

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- Migration Option, and

- Distribution and Documentation Option

To use this software product on additional CPUs currently licensed for PDP-11 COBOL, you must purchase for each CPU as a **minimum:**

- Migration Option

Migration Option

COBOL-81/RSTS/E offers a special Migration Option. This special license allows currently licensed users of PDP-11 COBOL to upgrade to COBOL-81 at a reduced cost. A translator utility is provided to help make the transition from PDP-11 COBOL to COBOL-81 as smooth as possible.

Distribution and Documentation Option

The Distribution and Documentation option provides the machine-readable software and the basic documentation. You must have, or order, a Single-Use License to obtain this option. You will need this option to install the software for the first time. When revised versions of this software product become available, they may also be obtained by purchasing this option again.

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The Right-To-Copy Option allows a customer with multiple CPUs to copy a revised version of a software product from one CPU to another. Each CPU must be licensed for that product. You first install the revised software on one CPU; then you can make copies for additional CPUs by purchasing the Right-To-Copy Option for each additional CPU.

Documentation-Only Option

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Software Product Services

A variety of service options are available. For more information on these or other services, please contact your local Digital office.

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A licensed customer can purchase annual product service agreements to receive updated versions on media when available. A customer may choose to copy updated versions onto additional CPUs during this service agreement period. In this case, the software Service Right-to-Copy must be purchased for each CPU which runs the updated version. Further information and availability can be found in the applicable SPD. Your local DIGITAL office can be contacted for additional assistance.

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The Digital Equipment Computer Users Society (DECUS) is one of the largest and most respected users groups in the computer industry today. Membership in DECUS, which is free and voluntary, provides the individual user with information and services not found anywhere else.

DECUS provides an environment where users of Digital Equipment Corporation products can share information with other users and with DIGITAL. Members can find out the latest news on DIGITAL's hardware, software, and educational products. The feedback exchange with DIGITAL allows the users of DIGITAL's products to have a voice in the company's future.

Founded in 1961, DECUS now has three autonomous areas worldwide - DECUS U.S., DECUS Europe, made up of eight independent chapters, and DECUS GIA (General International Area), made up of four independent chapters. DECUS services and activities are shared between these chapters through mutual agreements.

All DECUS services promote the exchange of information in a noncommercial environment. Included in these services are:

Special Interest Groups (SIGs)

These groups, formed around an area of common interest, exist for a variety of hardware, operating systems, languages, applications, and marketing areas. Participation in these groups allows fellow users to exchange information and share technical expertise in the areas of most interest to the users.

Local Users Groups (LUGs) and National Users Groups (NUGs)

LUGs and NUGs are licensed groups of individuals who gather to share information with other users on a periodic basis. Not only do they have common professional interest, but they also have geographic and cultural ties. DIGITAL representatives attending these meetings often unveil new products and services and supply updates on existing policies and procedures.

Symposia

DECUS holds symposia each year in the different chapters, two per year in the U.S. These meetings provide a unique opportunity for users with a wide spectrum of experience to meet for up to five days of intensive technical exchange. Symposium activities include workshops, clinics, panels, tutorials, and formal paper presentations. DIGITAL participates in symposia by sending Product Group managers and developers to discuss strategies, products, problems, and solutions.

Publications

The flow of information among users, as well as between users and DIGITAL, is the primary goal of DECUS. Various publications generated by DECUS support this communication. They include chapter newsletters and *The Proceedings*, a technical volume published after each symposium. DECUS also publishes Special Interest Groups' newsletters that provide information pertaining to specific DIGITAL products.

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The DECUS Program Library is the main vehicle for the exchange of software among users of all DIGITAL systems. The Library contains over 1000 software programs written and voluntarily submitted by users. These programs include compilers, editors, utilities, numerical and statistical functions, as well as games and graphic routines. The Library publishes an annual software catalog that lists and describes all the DECUS programs available to all users for a minimal charge.

You are cordially invited to join over 60,000 other users of DIGITAL products around the world and begin to share your experiences, both successes and problems.

For more information, contact the appropriate DECUS chapter office listed here.

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The Software Dispatch

RSTS/E

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RSTS/E SOFTWARE DISPATCH

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The RSTS/E Software Dispatch complements the RSTS/E Software Dispatch Review. New and revised Software Product Descriptions, programming notes, software problems and solutions, and documentation corrections are published here. Much of the material is developed from Software Performance Report (SPR) answers significant to the general audience and is printed here to supplement the maintenance notebook (established by the Software Dispatch Review).

PRODUCTS SUPPORTED in the RSTS/E SOFTWARE DISPATCH

ADE/RSTS
BASIC-PLUS-2 for RSTS/E, PDP-11
COBOL, PDP-11
COBOL-81/RSTS/E
DATATRIEVE-11
DECAL
DECgraph-11
DECmail/RSTS
DECnet/E
DECWORD/DP
DMS-500
FMS-11/RSTS
FORTRAN IV/RSTS/E
FORTRAN-77 DEBUG, PDP-11
FORTRAN-77/RSTS/E, PDP-11
GIGI Software
INDENT
MENU-11/RSTS
RPG II, PDP-11
RSTS Smart Mailer
RSTS/E DIBOL
RSTS/E
RSTS/E 3271 Protocol Emulator
RSTS/E High Performance 2780/3780 Emulator
RSTS/E-2780
SORT-11

DISTRIBUTION

The RSTS/E Software Dispatch is directed to one software contact for each software product. No mailing will be made to addresses without a software contact name. **Address change requests should be sent to the nearest DIGITAL field office. Include the new address and mailing label from the most recently received publication.**

Software binary and sources are provided under licenses only. The standard Terms and Conditions, OEM Agreement, and/or Quantity Discount Agreement contain the licenses for all binaries other than DECsystem-10.

Barbara Scollan, Editor

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PRODUCT AVAILABILITY DATES - RSTS/E

SEPTEMBER 1986

The following list contains date and version of the latest release of supported software products. Customers who are in warranty or have a software product service agreement during the month the product became available, are eligible to receive the new release. Eligible customers who have not received the new release should contact their local DIGITAL office.

PRODUCT	VERSION	AVAILABLE
ADE/RSTS	2.4	JUL 85
BASIC-PLUS-2 for RSTS/E,PDP-11	2.3	JUN 85
COBOL,PDP-11	4.4	MAY 82
COBOL-81/RSTS/E	2.4	MAY 86
DATATRIEVE-11	3.1	SEP 84
DECdx/RSTS	1.0	NOV 84
DECmail-11 for RSTS/E and Micro/RSTS	2.0	MAR 84
DECnet/E	2.1	JUN 85
DECtap	1.5	MAR 86
DECWORD/DP	1.2 SPD ONLY	MAY 85
DMS-500	2.1	JUL 82
FMS-11/RSTS	1.5	APR 85
FORTRAN IV/RSTS/E	2.6	JUN 83
PDP-11 SYMBOLIC DEBUGGER/RSTS (formerly FORTRAN-77 DEBUG/RSTS/E, PDP-11)	2.0	APR 86
FORTRAN-77/RSTS/E,PDP-11	5.0	OCT 83
GIGI Software	1.0	NOV 82
INDENT	1.4	JUN 85
MENU-11/RSTS	2.0	DEC 83
Message Router for RSTS/E	1.0	AUG 84
RPG II,PDP-11	8.8	JUL 83
RSTS Smart Mailer	1.1	NOV 84
RSTS/E	9.2	JUN 86
RSTS/E DECgraph-11	1.2	NOV 84
RSTS/E DIBOL	5.2 SPD ONLY	MAY 86
RSTS/E High Performance 2780/3780 Emulator	1.1 RETIRED	MAR 86
RSTS/E V8.0 UPDATE	G	APR 85
RSTS/E 3271 Protocol Emulator	2.1 RETIRED	MAR 86

RSTS/E V9

UPGRADING RQDX1 AND RQDX2 CONTROLLERS TO RQDX3

Users with Micro/PDP-11 systems that include an RQDX1 or RQDX2 controller need to be aware that replacement of either of those controllers with a newer RQDX3 controller requires reformatting of any fixed RD-type disks (RD51, RD52, etc.) connected to those controllers, thereby destroying any data currently on those disks.

NOTE

> RX50 flexible diskettes are not affected, as they are format-compatible with all types of RQDX controllers.

If it becomes necessary to replace your RQDX1 or RQDX2 controller because of a hardware problem, be sure that Field Service replaces the controller with one of the same type. This procedure is consistent with standard Field Service policy.

Should you choose to upgrade your RQDX1 or RQDX2 controller with an RQDX3, you must first save all of the data on any fixed RD-type disks connected to the controller. It is recommended that you use the BACKUP command to do so, as BACKUP provides the best data reliability of all the backup tools available on RSTS/E and Micro/RSTS. You can use RX50 flexible diskettes as the backup medium, since these are not affected by the RQDX3 upgrade.

Once the RQDX3 controller has been installed, Field Service will reformat the affected disks. Use the RESTORE command to restore your saved data onto the reformatted disks.

DISK MODE 8 IS IGNORED - MANDATORY FILE PROCESSOR PATCH

PROBLEM:

In RSTS/E Versions 9.0 and 9.1, the file processor ignores Disk Mode 8 (special extend mode). As a result, programs using this mode to ensure data integrity in the event of a system crash are unable to do so.

EDT uses Mode 8 for its journal file. Because of this problem, EDT journal files sometimes do not contain all of the changes from an aborted editing session.

RMS-11 uses this feature for indexed files. Because of this problem, RMS-11 indexed files that are open at the time of a system crash might become corrupted.

SOLUTION:

The patch procedures outlined below correct the problem in RSTS/E Versions 9.0 and 9.1.

This problem is corrected in source for RSTS/E V9.2.

PROCEDURE:

1. This is a required patch to the RSTS/E V9.0 and RSTS/E V9.1 executives. It must be installed in all target monitor SILs. Note that the patch for V9.0 is different than the one for V9.1. Be sure to select the patch that corresponds to your version of RSTS/E.

2. The patch described in steps 4 and 5 below can be installed using the PATCH option of INIT.SYS:

   Option: PATCH
   File to patch? <lf> (LINE FEED for installed monitor SIL)

3. This patch can be installed manually using ONLPAT, the on-line patching program. Note, however, that if the patch is applied on line to the installed monitor SIL, it will not take effect until the system is rebooted.

```
RUN $ONLPAT
Command File Name? <cr>          (RETURN for manual patch installation)
File to patch? <lf>              (LINE FEED for installed monitor SIL)
File found in account [0,1]
```

4. For RSTS/E V9.0 executives, the patch is as follows:

```
Module name? OPN
Base address? EXL@OVR
Offset address? 156
 Base   Offset  Old     New?
??????  000156  001425  ? 1421
??????  000160  011546  ? ^Z
Offset address? ^Z
Base address? ^Z
Module name? RSTS
Base address? $$0305
Offset address? 0
 Base   Offset  Old     New?
??????  000000  ??????  ? Q!40
??????  000002  ??????  ? ^C
```

5. For RSTS/E V9.1 executives, the patch is as follows:

```
Module name? OPN
Base address? EXL@OVR
Offset address? 154
 Base   Offset  Old     New?
??????  000154  001425  ? 1421
??????  000156  011546  ? ^Z        (CTRL/Z for new offset)
Offset address? ^Z                  (CTRL/Z for new base)
Base address? ^Z                    (CTRL/Z for new module)
Module name? RSTS
Base address? $$0305
Offset address? 0
 Base   Offset  Old     New?
??????  000000  ??????  ? Q!40
??????  000002  ??????  ? ^C        (up-arrow/C to exit;CTRL/C for INIT)
```

ACCOUNTS MAY BECOME UNDELETABLE - MANDATORY FILE PROCESSOR PATCH

PROBLEM:

If a file is created using a preextension size (using the FILESIZE modifier in BASIC-PLUS), but the extension fails for any reason other than the lack of disk space (quota exceeded, disk errors accessing the directory structure, etc.) the file will be left in a partially created state. The most common way for this to occur is from quota-exceeded errors. Note that both the COPY and RESTORE commands use the file preextension feature.

This partially created file does not show up in directory listings, nor does it use any disk space. It will be correctly deleted when the disk is rebuilt.

The presence of this file, however, causes the monitor to be unable to delete an account, returning an error indicating that the account is still in use.

NOTE

> This problem exists in RSTS/E V9.0, V9.1, and V9.2. However, in V9.0, quota-exceeded errors during creation of a file did not leave the file in a partially created state as described above; only a disk error or other abnormal error accessing the file's directory could cause such a result.

SOLUTION:

The patching procedure outlined below will correct the problem in V9.1 and V9.2. No patch is available for V9.0.

It is advised that you rebuild all your disks after the installation of this patch to remove any partially created files which may exist in the directory structure.

This problem is corrected in source for RSTS/E V9.3.

PROCEDURE:

1. This is a required patch to the RSTS/E V9.1 and RSTS/E V9.2 executives. It must be installed in all target monitor SILs.

2. The patch described in step 4 below can be installed using the PATCH option of INIT.SYS:

```
Option: PATCH
File to patch? <lf>                (LINE FEED for installed monitor SIL)
```

3. This patch can be installed manually using ONLPAT, the on-line patching program. Note, however, that if the patch is applied on line to the installed monitor SIL, it will not take effect until the system is rebooted.

```
RUN $ONLPAT
Command File Name? <cr>            (RETURN for manual patch installation)
File to patch? <lf>                (LINE FEED for installed monitor SIL)
File found in account [0,1]
```

4. The patch is as follows:

```
Module name? OPN
Base address? EXL@OVR
Offset address? 4
 Base   Offset  Old     New?
??????  000004  012737  ? <LF>      (no change; verify only)
??????  000006  ??????  ? OPNPAT@OVR
??????  000010  ??????  ? ^Z        (CTRL/Z for new offset)
Offset address? 1360
 Base   Offset  Old     New?
??????  001360  004737  ? ^Z        (CTRL/Z for new offset)
Offset address? ^Z                  (CTRL/Z for new base)
Base address? OPNPAT@OVR
Offset address? 0
 Base   Offset  Old     New?
??????  000000  000000  ? 13706
??????  000002  000000  ? FIPESP@OVR
??????  000004  000000  ? 5726
??????  000006  000000  ? 4537
??????  000010  000000  ? REGRES@OVR
??????  000012  000000  ? 137
??????  000014  000000  ? EXL@OVR+1360
??????  000016  ??????  ? ^Z        (CTRL/Z for new offset)
Offset address? ^Z                  (CTRL/Z for new base)
Base address? ^Z                    (CTRL/Z for new module)
```

```
Module name? RSTS
Base address? $$0305
Offset address? 0
 Base   Offset  Old     New?
??????  000000  ??????  ? Q!100
??????  000002  ??????  ? ^C        (up-arrow/C to exit;CTRL/C for INIT)
```

RSTS/E V9.2 Seq. No. 3.6.1 N
Executive
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PENDING SET TERMINAL CHARACTERISTICS SYS CALL CHANGE

A change is being made in the Set Terminal Characteristics SYS call for a future release of RSTS/E. Currently, this sys call allows you to issue the call to set and/or read the line characteristics of a disabled line. This is inconsistent with other functions such as opening the device, where the error "?Device not available" is returned. With this change, if you issue the Set Terminal Characteristics SYS call to set and/or read the line characteristics of a disabled line, it too will return the same error (ERR = 8, Mnemonic = NOTAVL).

If you have any software which issues this call, it should be updated to trap this error and take whatever action is appropriate for that particular application. Note that you can update any such applications now, in anticipation of this future change.

RMS-11 V2.0
for RSTS/E V2.0

Seq. No. 75.2.3 M

RMS-11 INDEXED FILE CORRUPTION

PROBLEM:

RMS-11 indexed files may be corrupted in RSTS/E Versions 9.0 and 9.1. RMS-11 uses Disk Mode 8 to ensure that directory retrieval pointers are updated immediately, thus reflecting the actual contents of the indexed file as it exists on the disk. Unfortunately, because of a problem in the file processor, Mode 8 is currently ignored. If you open a file and write to it such that RMS-11 forces an extension of the file and your system then crashes, there may be buckets that have been written to disk without a corresponding update to the disk's directory structure. This form of corruption would make any further accesses questionable.

Possible visible signs of this form of corruption are:

- When trying to insert a new record, the program loops in RMS
- A program may return an end-of-file error when it attempts to store a new record
- A program may return a duplicate-key error when it attempts to store a new record, even though it did an initial read to make sure no duplicates were present

SOLUTION:

If you have had crashes during RMS-11 file extensions, it is recommended that you reload your file using RMSIFL after applying the Mode 8 patch (Seq. No. 3.5.6 M, RSTS/E Software Dispatch, September 1986, page 5). In the worst case, you may not be able to reload the file. If you succeed in reloading, you should still check for missing data.

RSTS/E VERSION 9
CUMULATIVE INDEX
SEPTEMBER 1986

This is a complete listing of all articles for RSTS/E V9.0 and all subsequent point releases, and layered products. Missing sequence numbers may pertain to problems unique to other versions of the same product or other major operating systems.

IMPORTANT!

The following numerical system has been grouped in logical order denoted by the first digit (X.X.X). The second digit (X.X.X.) refers to the subcomponent and the third digit (X.X.X) denotes the issue number or sequential order.

Unassigned articles are indicated: RESERVED.

Flags are currently being installed for all articles. The flags and definitions are as follows.

M = Mandatory Patch. These patches correct errors in the software product. All users are required to apply these patches to maintain consistent "user level" unless the accompanying article specifies otherwise.

F = Optional Feature Patch. These patches extend or configure functionality into the product. These functions will be treated as a supported part of the product for the duration of the current release and may be incorporated in a future release.

R = Restriction. These articles discuss areas that will not be patched in the current release because they require major modification or because they are not consistent with the design of the product. Restrictions, except those described as permanent, are reviewed and modified when possible as part of the normal release cycle.

N = Note. These articles provide explanatory information that supplements the manual set and provide more detailed information about a program or package. They also provide procedural information to make it easier to use a program or package.

+ = Article appeared in the RSTS/E Software Dispatch Review (Order No. AA-5514G-BC), June 1985.

* = Article appeared in the RSTS/E V9.0 Maintenance Notebook (Order No. AA-L997D-TC), June 1985.

- = Article is being republished.

Sequence	Title	Released	Corrected	Mon/Yr
	RSTS/E V9			
	General Notes			
	System Notes			
0.1.1 N	RSTS/E V9.0 COMPONENT SUMMARY	V9.0	N/A	Jun 85 *
0.1.2 N	ANNOUNCING RSTS/E V9.0	V9.0	N/A	Jun 85 *
0.1.3 N	UNDERSTANDING ?NO ROOM FOR USER ON DEVICE ERRORS	V9.0	N/A	Jul 85
0.1.4 N	WARNING ON USE OF THE PEEK() FUNCTION	V9.0	N/A	Nov 85
0.1.5 N	FPJ11 FLOATING-POINT ACCELERATOR WITH PDP-11/84 AND MicroPDP-11/83 SYSTEMS	V9.0	N/A	Jan 86
0.1.6 N	ANNOUNCING NEW HARDWARE SUPPORT IN RSTS/E	V9.0	N/A	Apr 86
0.1.7 N	ANNOUNCING RSTS/E V9.1--SUPPORT FOR TK50 AND RD53	V9.1	N/A	Jun 86 -
0.1.8 N	ANNOUNCING Micro/RSTS VERSION 2.0	V9.1	N/A	Jun 86 -
0.1.9 N	FPJ11 FLOATING-POINT ACCELERATOR WITH PDP-11/84 AND Micro PDP-11/83 SYSTEMS	V9.1		Jun 86 -
0.1.10 N	ANNOUNCING RSTS/E VERSION 9.2	V9.2	N/A	Jun 86 -
0.1.11 N	HARDWARE PROBLEM USING TK50 TAPE DRIVE ON SOME Q-BUS SYSTEMS	V9.2	N/A	Aug 86
0.1.12 N	RSTS/E V9.0 SUPPORT TERMINATED	V9.0	N/A	Aug 86
0.1.13 N	ANNOUNCING Micro/RSTS VERSION 2.1	V9.2	N/A	Aug 86
0.1.14 N	UPGRADING RQDX1 AND RQDX2 CONTROLLERS TO RQDX3	V9.2	V9.2	Sep 86
	System Management Guidelines			
0.2.1 N	USING SAVE/RESTORE ON A TWO-DISK SYSTEM	V9.0	N/A	Jun 85 *
	Initialization			
	INIT.SYS Program Patches			
1.1.1	RESERVED			
1.1.2	RESERVED			
1.1.3	RESERVED			
1.1.4 M	DSKINT OPTION OF INIT.SYS MAY NOT DETECT BAD BLOCKS	V9.0	V9.1	Oct 85 -
1.1.5 M	TMSCP DRIVES ARE NOT MARKED AS AVAILABLE AFTER REWIND-OFFLINE OPERATIONS	V9.1	V9.2	Jun 86 -
1.1.6 M	OFF-LINE SAVRES INVALIDATES ALL BUT LAST VOLUME OF MULTIVOLUME MAGTAPE SAVE SET	V9.1	V9.2	Jun 86 -
1.1.7 M	INIT SAV/RES TO TMSCP TAPE MAY ABORT WITH "TRAP THROUGH 4"	V9.1	V9.2	Jun 86
	INIT.SYS Program Notes			
1.2.1 N	DEVICES WITH NON-STANDARD UNIBUS ADDRESSES AND VECTORS	V9.0	N/A	Jun 85 *
	System Installation and Update			
	Installation/Update Notes			
2.1.1 N	CSPLIB.TSK AND CSPLIB.STB MISSING FROM V9.0 KIT	V9.0	V9.1	Sep 85
2.1.2 N	PBUILD.TSK SHOULD NOT BE INCLUDED IN V9.0 KIT	V9.0	V9.1	Sep 85
	Executive			
	Monitor Patches			
3.1.1 F	DISABLING THE USE OF DATA SPACE	V9.0	N/A	Jun 85 *

Sequence	Title	Released	Corrected	Mon/Yr
	Terminal Services Patches			
3.3.1 F	CHANGING SPECIAL LOGIN TERMINAL	V9.0	N/A	Jun 85 *
3.3.2 F	INPUT ESCAPE SEQUENCE HANDLING	V9.0	N/A	Jun 85 *
3.3.3	RESERVED			
3.3.4	RESERVED			
3.3.5 M	CORRECT AUTOBAUD DETECTION PROBLEM	V9.0	V9.2	Jun 86
3.3.6 M	CORRECT AUTOBAUD DETECTION PROBLEM	V9.1	V9.2	Jun 86
3.3.7 M	FIX CONTROL/O PROBLEM - MANDATORY TERMINAL SERVICE PATCH	V9.0	V9.3	Jul 86
3.3.8 M	FIX PROBLEMS WITH USING PRINT DEVICES ON TERMINAL LINES	V9.0	V9.3	Aug 86
	Terminal Service Notes			
3.4.1 N	UNDERSTANDING TERMINAL PARITY AND STOP BIT SETTINGS	V9.0	N/A	Jun 85 *
3.4.2 N	MODEM CONTROL ON PRIVATE, LEASED LINES	V9.0	N/A	Jun 85 *
3.4.3 N	MODEM SUPPORT ON RSTS/E	V9.0	N/A	Jun 86
	File Processor Patches			
3.5.1 F	CONTROLLING EMT LOGGING	V9.0	N/A	Jun 85 *
3.5.2 M	SET TERMINAL CHARACTERISTICS SYS CALL MAY HANG THE SYSTEM	V9.0	V9.1	Sep 85
3.5.3 M	ERROR IN HANDLING OF PUBLIC DISKS	V9.0	V9.1	Sep 85
3.5.4 M	FIX CORRUPTION OF LOW-CORE LOCATIONS	V9.0	V9.2	Jan 86
3.5.5 M	ALLOW MULTIPLE OPENS ON NONMOUNTED NFS DISK	V9.0	V9.3	Aug 86
3.5.6 M	DISK MODE 8 IS IGNORED - MANDATORY FILE PROCESSOR PATCH	V9.0	V9.2	Sep 86
3.5.7 M	ACCOUNTS MAY BECOME UNDELETABLE - MANDATORY FILE PROCESSOR PATCH	V9.1	V9.3	Sep 86
	File Processor Notes			
3.6.1	PENDING SET TERMINAL CHARACTERISTICS SYS CALL CHANGE	V9.2	N/A	Sep 86
	Device Driver Patches			
3.7.1 F	USING THE CSS PAPER TAPE READER ON RSTS/E	V9.0	N/A	Jun 85 *
3.7.2 M	ACCESSING TMSCP TAPES MAY CAUSE SYSTEM TO CRASH	V9.1	V9.2	Jun 86
	BASIC-PLUS			
	BASIC-PLUS Patches			
4.1.1 F	SPECIAL PRINT-USING CHARACTERS	V9.0	N/A	Jun 85 *
4.1.2 F	DEFAULT SCALE FACTOR	V9.0	N/A	Jun 85 *
4.1.3 F	OMITTING SCALE FACTOR WARNING MESSAGE	V9.0	N/A	Jun 85 *
4.1.4 F	DEFAULT TO NOEXTEND MODE	V9.0	N/A	Jun 85 *
4.1.5 F	IMMEDIATE MODE FROM .BAS FILE	V9.0	N/A	Jun 85 *
4.1.6 F	NO PPN'S IN CATALOG COMMAND	V9.0	N/A	Jun 85 *
4.1.7 F	DISABLING THE CCL SYS CALL	V9.0	N/A	Jun 85 *
4.1.8 F	CLEAR I/O BUFFERS USED BY OPEN STATEMENTS	V9.0	N/A	Jun 85 *
4.1.9 F	FORCE "ILLEGAL STATEMENT" ERROR WHEN USING OBSOLETE SEND/RECEIVE	V9.0	N/A	Jun 85 *
	Non-Standard BASIC-PLUS Features			
4.10.1 N	THE BASIC-PLUS DEBUG FACILITY	V9.0	N/A	Jun 85 *
4.10.2 N	THE BASIC-PLUS DUMP FACILITY	V9.0	N/A	Jun 85 *

Sequence	Title	Released	Corrected	Mon/Yr
4.10.3 F	CHANGING THE BASIC-PLUS DEBUG KEYWORDS	V9.0	N/A	Jun 85 *
4.10.4 F	ENABLING THE BASIC-PLUS DUMP FEATURE	V9.0	N/A	Jun 85 *
4.10.5 F	ENABLING DUMP FROM COMPILED FILES FOR NON-PRIVILEGED USERS	V9.0	N/A	Jun 85 *
4.10.6 F	CHANGING THE BASIC-PLUS D?MP KEYWORD	V9.0	N/A	Jun 85 *
	RSTS/E 2780 DEVICE DRIVER			
	2780 Device Driver Patches			
5.1.1 M	BUFFER LIMIT CHECKING	V9.0		Jun 85 *
5.1.2 M	DISCONNECT COMMAND HANDLING	V9.0		Jun 85 *
5.1.3 M	DP11 TRANSMIT HANG CONDITION	V9.0		Jun 85 *
5.1.4 M	DU11/DP11 TRANSMIT HANG CONDITION	V9.0		Jun 85 *
5.1.5 M	LOSS OR DUPLICATION OF DATA	V9.0		Jun 85 *
5.1.6 M	DOUBLE CLOSE ALTERS MONITOR	V9.0		Jun 85 *
5.1.7 M	GET/PUT INTERLOCK PROBLEM	V9.0		Jun 85 *
5.1.8 M	2780 HANDLER FAILURE PROBLEM	V9.0		Jun 85 *
5.1.9 M	LOCAL BINARY TRANSMIT PROBLEM	V9.0		Jun 85 *
	2780 Device Notes			
5.2.1 N	INSTALLING AND TROUBLE-SHOOTING 2780's	V9.0	N/A	Jun 85 *
	RSTS/E UTILITIES			
	System Library ($)			
	DSKINT.TSK			
10.5.1 M	MANDATORY PATCH FOR DCL INITIALIZE COMMAND	V9.2	V9.3	Jul 86
	Error Control Package (ERROR$)			
	Package Notes			
12.1.1 N	UNDERSTANDING "PA MEMORY SYSTEM" ERROR LOGS	V9.0	N/A	Jun 85 *
	Operator Services and Spooling Package (OPSER$)			
	Package Notes			
14.1.1 N	NOTES ON USE OF THE SERIAL LA180 (LA180S) TERMINAL	V9.0	N/A	Jun 85 *
14.1.2 N	USING TWO OR MORE PRINTERS TO SERVE A QUEUE	V9.0	N/A	Jun 85 *
	Print/Batch Services Package (PB$)			
	Package Notes			
15.1.1 R	PBS MUST BE STARTED FROM A PRIVILEGED ACCOUNT	V9.1	V9.2	Feb 86
	RSTS/E DOCUMENTATION			
	Documentation			
	Installation and Update Guide			
19.4.1 N	PBUILD.TSK NO LONGER INCLUDED IN RSTS/E	V9.0	N/A	Sep 85
	System Manager's Guide			
19.5.1 N	ACCOUNT [0,200] NOT AVAILABLE FOR CUSTOMER USE	V9.0	N/A	Sep 85

Sequence	Title	Released	Corrected	Mon/Yr
	RUN-TIME SYSTEMS SUPPORT			
	DCL			
	Package Notes			
20.1.1 N	FILE SPECIFICATIONS IN DCL	V9.0	N/A	Jun 85 *
20.1.2 N	SETTING UP THE DCL LINK COMMAND	V9.0	N/A	Jun 85 *
	RSX Utilities			
	Package Notes			
21.1.1 N	USING RTSODT FOR DEBUGGING RUN-TIME SYSTEMS	V9.0	N/A	Jun 85 *
	CRF.TSK			
21.2.1 N	USING THE RSX CRF UTILITY	V9.0	N/A	Jun 85 *
	RT-11 Run-time System and Utilities			
	Package Notes			
22.1.1 N	USE OF UNDERSCORE IN RT-11 EMULATOR UTILITIES	V9.0	N/A	Jun 85 *
22.1.2 N	USING RTSODT FOR DEBUGGING RUN-TIME SYSTEMS	V9.0	N/A	Jun 85 *
	HOOK.SAV			
22.3.1 N	NOTES ON HOOK.SAV	V9.0	N/A	Jun 85 *
	OPTIONAL SOFTWARE			
	RSTS/E 2780 Package V3.0			
	RJ2780			
25.2.1 M	FAILURE TO CLEAR `JOB ACTIVE' ON ATTACH	V9.0		Jun 85 *
25.2.2 M	LOCAL BINARY TRANSMIT FAILURE	V9.0		Jun 85 *
	DECnet/E V2.0			
	Utilities			
	NFT SUBMIT			
31.21.1 R	REMOTE BATCH CONTROL FILES BEING DELETED BEFORE EXECUTING	V9.2	V9.3	Apr 86
	DECmail-11 V2.0			
36.1.1 N	USING EDT V3.0 FOR DECmail-11 V2.0	V9.0	N/A	Jun 86
	DIBOL V5.2			
	Announcement			
39.1.1 N	ANNOUNCING RSTS/E DIBOL V5.2	V9.0	N/A	Jan 86

Sequence	Title	Released	Corrected	Mon/Yr
	ADE V2.4			
	Package Notes			
47.1.1 N	ANNOUNCING ADE V2.4 FOR RSTS/E V9.0 AND Micro/RSTS V1.1	V9.0	N/A	Jul 85
	FORTRAN IV/RSTS/E V2.6			
55.3.1 N	CALL ASSIGN CARRIAGE CONTROL ARGUMENT DOES NOT WORK PROPERLY	V9.0	V9.0	Jun 85 +
55.3.2 N	DSIN YIELDS RESULTS WITH THE WRONG SIGN FOR NEGATIVE ANGLES	V9.0	V9.0	Jun 85 +
55.3.3 N	INSTALLING FORTRAN-IV V2.6 ON RSTS/E V9.n	V9.0	N/A	Jun 85 +
	DECWORD/DP V1.2			
	Package Notes			
69.1.1 N	NEW DECWORD INSTALLATION/UPDATE CONTROL FILE ON RSTS/E V9.0	V9.0	N/A	Jun 85 +
69.1.2 N	DECWORD V1.2 CBI FILES MAY BE DELETED TO SAVE DISK SPACE	V9.0	N/A	Jun 85 +
69.1.3 N	DECWORD V1.2 COMMUNICATIONS FILES MAY BE DELETED TO SAVE DISK SPACE	V9.0	N/A	Jun 85 +
69.1.4 N	ANNOUNCING AVAILABILITY OF DECWORD FOR Micro/RSTS	V9.0	N/A	Jun 85 +
69.1.5 N	DECWORD/DP V1.2 SUPPORT FOR LN03 LASER PRINTER	V9.0	N/A	Sep 85
69.1.6 N	INFORMATION ON RUNNING DECWORD/DP V1.2 ON RSTS/E V9.0	V9.0	N/A	Sep 85
	WPSMEN			
69.2.0 M	REPLACEMENT MODULE ISSUED FOR WPSMEN	V9.0	V9.0	Jun 85 +
	WPSUDK			
69.3.0 M	REPLACEMENT MODULE ISSUED FOR WPSUDK	V9.0	V9.0	Jun 85 +
	RMS-11 V2.0			
	Access Methods			
75.2.1 M	INDEX FILE CORRUPTION IN ALTERNATE KEY PATH	V9.0	V9.1	Apr 86
75.2.2 M	CORRUPTION IN VERY LARGE FILES	V9.0	V9.1	Sep 85
75.2.3 M	RMS-11 INDEXED FILE CORRUPTION	V9.2	V9.2	Sep 86
	BASIC-PLUS-2 V2.3			
79.2.1 N	PROBLEM WITH PRINT USING	V9.0		Jan 86

Sequence	Title	Released	Corrected	Mon/Yr
	FORTRAN IV/RSX V2.6			
	OTS			
90.1.1 N	LIST-DIRECTED READ	V9.0		Jan 86

SOFTWARE PERFORMANCE REPORT (SPR) SUBMISSIONS

Digital Equipment Corporation guarantees a response to every SPR submitted by DIGITAL specialists and customers who purchase software product service agreements.

Blank SPR forms are available upon request in desired quantities from SPR Administration, P.O. Box F, Maynard, MA 01754, or your local DIGITAL office.

Inquiries on the progress of submitted SPRs should be directed to your local DIGITAL office or SPR Administration at (617) 493-4722.

An SPR Answer Survey Card is enclosed with each SPR response. Please complete the survey card; it provides essential feedback for monitoring the quality of our SPR responses.

Completing an SPR Form

Complete the entire form by either typing or printing clearly. Remove "Customer File Copy" for your records. Leave carbon in tact.

Include customer name and **complete** mailing address.

To expedite the processing of your SPR, enter your **Customer Number** in the space provided. This number is located in the upper left-hand corner of your Dispatch label. It can also be obtained from your local DIGITAL office or by calling SPR Administration at (617) 493-6683.

If you do not want your SPR to be published, check the "DO NOT PUBLISH" box on the SPR form. However, if the SPR is determined to be of universal value and it does not describe a security problem, DIGITAL may elect to publish it. For SPRs which describe security problems, it is imperative that the "DO NOT PUBLISH" box be marked.

Describe one problem per SPR form. If an SPR is submitted with more than one problem, it can lengthen the turnaround time.

State the problem clearly. If necessary, summarize the problem, then describe in detail.

Include all the information needed to reproduce the problem. The easiest problems to fix are those reported in statements similar to the following: if you do X, Y happens when Z should.

State all version numbers and all inserted patches. The problem can be fixed sooner if the version is known. Please include the operating system version even on operating system SPRs, since operating system bugs sometimes manifest themselves as "bugs" in other programs. A statement of patches inserted in the relevant software is also helpful. State the type of terminal or work station on which the software is running, e.g., VT100, VT220, PRO 350, DECmate.

Include as much information as possible; too much information is better than not enough. Send all information in machine-readable format if it occupies more than half a page. Please include the following:

1. Program causing the problems
2. All necessary auxiliary files, such as DBMS or LIBRARY files
3. Assembly switches which are on (if applicable)
4. Switches handed to the software, since different switches cause different sections of the code to be executed
5. All necessary run-time files for language run-time problems
6. A directory listing of media, when included; label media carefully

SUGGESTIONS FOR SUBMITTING TAPES WITH SPRs

To insure timely processing of SPRs submitted with tapes, please follow the suggestions below:

1. Use either a floppy or a magnetic tape.
2. If a magnetic tape is used, it should be either 800, 1600, or 6250 bpi.
3. Include a directory with each tape submitted.
4. Label each tape with the following information:
   a. Customer name
   b. Tape format
   c. bpi
   d. Track
   e. Preprinted number of the SPR submitted with the tape
5. Remove from the tape any unnecessary or confidential files.

Thank you.

SOFTWARE PROBLEMS OR ENHANCEMENTS

Questions and problems regarding, and enhancements to, DIGITAL software should be reported on a Software Performance Report (SPR) form and mailed to the SPR Center at one of the following DIGITAL offices (SPR forms are available from the SPR Center):

AREAS COVERED	SPR CENTER
United States	Corporate Administrative Services Group P.O. Box F Maynard, MA 01754
Canada	Digital Equipment of Canada, Ltd. P.O. Box 13000 Kanata, Ontario Canada, K2K 2A6
Mexico	Digital Equipment de Mexico S.A. de C.V. Apartado Postal 12-1009 Mexico 12, O.F. Mexico
Puerto Rico	Digital Equipment Latin America P.O. Box 11038 Fernandez Juncos Station Santurce 00910 Puerto Rico
Australia, New Zealand	Digital Equipment Aust Pty Ltd 754 Pacific Hwy 1st floor M/SSNH/B-1 Chatswood, New South Wales 2067 Australia
Brazil	Digital Equipment Comercio e Industria Ltda. Avenida Augusto Severo, 156-A 20021 Rio de Janeiro, RJ Brazil
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Italy	Digital Equipment S.p.A. Viale Fulvio Testi, 11 Ang. Via Gorki 105 1-20092 Cinisello Balsamo Milan Italy
Japan	Nihon Digital Equipment Corp. Sunshine 60, P.O. Box 1135 1-1 Higashi Ikebukuro 3-Chome, Toshima-Ku, Tokyo, 170 Japan
Belgium, Luxemburg	Digital Equipment N.V./S.A. Rue De L'Aeronef 1 B-1140 Brussels Belgium
Holland	Digital Equipment B.V. Kaap Hoorndreef 38 NL-3563 AV Utrecht Holland
Sweden	Digital Equipment AB SPR Admin. M-B Duff/CSC Allen 6 S-172 89 Sundbyberg Sweden
Denmark	Digital Equipment Corp. A/S Sandtoften 9 DK-2820 Gentofte Denmark
Finland	Digital Equipment Corp. OY Box 16 02201 ESPOO Finland
Norway	Digital Equipment Corp. A/S Ammerudveien 22 N-0958 Oslo 9 Norway
Austria, East Germany, West Germany, Poland, Hungary, Rumania, Czechoslovakia, Russia, Bulgaria	Digital Equipment Corp. GmbH SPR Centre - D2 Freischuetzstrasse 91 8000 Muenchen 81 West Germany
Israel	Digital Equipment Ltd. Digital House Acadia Junction Herzlia 46 733 Israel
Greece, Portugal, Spain, Switzerland, Yugoslavia, (Morocco, Algeria, Tunisia, Cyprus, Turkey, Malta)	Digital Equipment Corp. AG Kanalstrasse 21 CH-8152 Glattbrugg (Zurich) Switzerland

DIGITAL SOFTWARE LICENSING

DATA SHEET

This data sheet explains what software licenses are and why customers must obtain a software license to run any item of DIGITAL proprietary software.

DIGITAL does not sell software; DIGITAL offers software under a license agreement. DIGITAL has a license agreement for source software and object software. Since DIGITAL software programs are made available primarily in object code, this data sheet focuses on the purchase of object programs.

Introduction to Software Licensing

When DIGITAL hardware is purchased, all rights of ownership (legally called "title") to the hardware pass to the customer. This is not the case with software. DIGITAL regards software as proprietary information. Since software is easily reproduced, it must be legally protected from improper copying. Therefore, DIGITAL uses a combination of trade secret and copyright legal protection for software. DIGITAL protects its investment by retaining title to its software at all times and requires anyone wishing to use it to obtain a license.

How DIGITAL Licenses Software

The license agreement for object programs is contained in DIGITAL's standard Terms and Conditions of Sale and Corporate Volume Purchase Agreements instead of as a separate agreement. Therefore, when software products are purchased under DIGITAL's Terms of Sale, the software license agreement is made at the same time.

Key Principles of the License Agreement

Object code is licensed for single use. This means obtaining a license for a product allows the associated software to be used on the "single" CPU on which it was first installed. Other key points are as follows:

- If the licensed CPU temporarily malfunctions, the software may be run on another machine while the CPU is down.
- Copies of the software may be made for backup purposes if appropriate proprietary and copyright notices are included.
- The software may be modified or merged with other software if appropriate proprietary and copyright notices are included.
- The software may be used by the customer's employees and its agents directly concerned with the internal use, but may not be made available to anyone else.

Modification to the Software Product

Any modification to licensed software does not exempt the product from DIGITAL license terms. Every line of code from a software product falls under the terms of the license. Only those modifications that are not part of the original software are the customer's property. It is important to note that warranty on the product is limited to the original software supplied by DIGITAL.

Transferability of Licensed Software Products

License Transfer - A license agreement does not automatically allow transfer of licensed software to another party or another CPU. If the customer intends to sell the licensed CPU and pass on the software with the sale or move the software onto another CPU, permission must be obtained from DIGITAL. A case-by-case License Transfer is required to relicense the software.

Software Sublicensing - DIGITAL customers with a purchase agreement authorizing sublicensing, such as OEMs, may transfer licensed object products to their customers without a License Transfer. A valid sublicense, executed by an OEM with its customer, gives the OEM's customer the same license rights and responsibilities as a license agreement made directly with DIGITAL.

Source Software

Sources are only available for selected products. A license agreement for source software must be separately executed for each facility/location which intends to purchase sources in machine-readable, listing, or microfiche form. Further information and availability of sources can be found in the applicable Software Product Description (SPD).

Software Warranty

Each licensed software product offered has an SPD describing the warranty commitment for the product. Software products under DIGITAL warranty must conform to the description provided for a 90-day period, which generally begins upon product installation or 30 days after delivery. All other products are provided AS IS, without warranty. The SPD clearly states under which warranty category the product falls.

Purchasing the License for the Software Product

A license must be obtained for each CPU on which the licensed software will be used (unless otherwise specified by DIGITAL).

A Single-use License for object code is generally ordered according to the type/classifcation of the CPU or system configuration intended to run the product. Further information and availability can be found in the applicable SPD.

Software Product

A license is a prerequisite to purchase the associated software. The Media and Documentation Option for a product is ordered according to media type. Further information and availability of media can be found in the applicable SPD.

Purchasing Software Product Revisions/Updated Versions

If a licensed customer is not covered by a product service agreement, updated versions can be purchased when they are made generally available. Updated versions are ordered according to media type. A customer can also choose to run updated versions on additional CPUs, but not purchase multiple media distributions. If this is the case, the Software Revision Right-to-Copy option must be purchased for each CPU which runs the updated version.

Software Product Services

A licensed customer can purchase annual product service agreements to receive updated versions on media when available. A customer may choose to copy updated versions onto additional CPUs during this service agreement period. In this case, the software Service Right-to-Copy must be purchased for each CPU which runs the updated version. Further information and availability can be found in the applicable SPD. Your local DIGITAL office can be contacted for additional assistance.

DIGITAL EQUIPMENT COMPUTER USERS SOCIETY

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The Digital Equipment Computer Users Society (DECUS) is one of the largest and most respected users groups in the computer industry today. Membership in DECUS, which is free and voluntary, provides the individual user with information and services not found anywhere else.

DECUS provides an environment where users of Digital Equipment Corporation products can share information with other users and with DIGITAL. Members can find out the latest news on DIGITAL's hardware, software, and educational products. The feedback exchange with DIGITAL allows the users of DIGITAL's products to have a voice in the company's future.

Founded in 1961, DECUS now has three autonomous areas worldwide - DECUS U.S., DECUS Europe, made up of eight independent chapters, and DECUS GIA (General International Area), made up of four independent chapters. DECUS services and activities are shared between these chapters through mutual agreements.

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Special Interest Groups (SIGs)

These groups, formed around an area of common interest, exist for a variety of hardware, operating systems, languages, applications, and marketing areas. Participation in these groups allows fellow users to exchange information and share technical expertise in the areas of most interest to the users.

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LUGs and NUGs are licensed groups of individuals who gather to share information with other users on a periodic basis. Not only do they have common professional interest, but they also have geographic and cultural ties. DIGITAL representatives attending these meetings often unveil new products and services and supply updates on existing policies and procedures.

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DECUS holds symposia each year in the different chapters, two per year in the U.S. These meetings provide a unique opportunity for users with a wide spectrum of experience to meet for up to five days of intensive technical exchange. Symposium activities include workshops, clinics, panels, tutorials, and formal paper presentations. DIGITAL participates in symposia by sending Product Group managers and developers to discuss strategies, products, problems, and solutions.

Publications

The flow of information among users, as well as between users and DIGITAL, is the primary goal of DECUS. Various publications generated by DECUS support this communication. They include chapter newsletters and *The Proceedings*, a technical volume published after each symposium. DECUS also publishes Special Interest Groups' newsletters that provide information pertaining to specific DIGITAL products.

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The DECUS Program Library is the main vehicle for the exchange of software among users of all DIGITAL systems. The Library contains over 1000 software programs written and voluntarily submitted by users. These programs include compilers, editors, utilities, numerical and statistical functions, as well as games and graphic routines. The Library publishes an annual software catalog that lists and describes all the DECUS programs available to all users for a minimal charge.

You are cordially invited to join over 60,000 other users of DIGITAL products around the world and begin to share your experiences, both successes and problems.

For more information, contact the appropriate DECUS chapter office listed here.

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The Software Dispatch


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software

The Software Dispatch

RSTS/E

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RSTS/E SOFTWARE DISPATCH

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Maynard, MA 01754

The RSTS/E Software Dispatch complements the RSTS/E Software Dispatch Review. New and revised Software Product Descriptions, programming notes, software problems and solutions, and documentation corrections are published here. Much of the material is developed from Software Performance Report (SPR) answers significant to the general audience and is printed here to supplement the maintenance notebook (established by the Software Dispatch Review).

PRODUCTS SUPPORTED in the RSTS/E SOFTWARE DISPATCH

ADE/RSTS
BASIC-PLUS-2 for RSTS/E, PDP-11
COBOL, PDP-11
COBOL-81/RSTS/E
DATATRIEVE-11
DECAL
DECgraph-11
DECmail/RSTS
DECnet/E
DECWORD/DP
DMS-500
FMS-11/RSTS
FORTRAN IV/RSTS/E
FORTRAN-77 DEBUG, PDP-11
FORTRAN-77/RSTS/E, PDP-11
GIGI Software
INDENT
MENU-11/RSTS
RPG II, PDP-11
RSTS Smart Mailer
RSTS/E DIBOL
RSTS/E
RSTS/E 3271 Protocol Emulator
RSTS/E High Performance 2780/3780 Emulator
RSTS/E-2780
SORT-11

DISTRIBUTION

The RSTS/E Software Dispatch is directed to one software contact for each software product. No mailing will be made to addresses without a software contact name. **Address change requests should be sent to the nearest DIGITAL field office. Include the new address and mailing label from the most recently received publication.**

Software binary and sources are provided under licenses only. The standard Terms and Conditions, OEM Agreement, and/or Quantity Discount Agreement contain the licenses for all binaries other than DECsystem-10.

Barbara Scollan, Editor

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PRODUCT AVAILABILITY DATES - RSTS/E

OCTOBER 1986

The following list contains date and version of the latest release of supported software products. Customers who are in warranty or have a software product service agreement during the month the product became available, are eligible to receive the new release. Eligible customers who have not received the new release should contact their local DIGITAL office.

PRODUCT	VERSION	AVAILABLE
ADE/RSTS	2.4	JUL 85
BASIC-PLUS-2 for RSTS/E,PDP-11	2.3	JUN 85
COBOL,PDP-11	4.4	MAY 82
COBOL-81/RSTS/E	2.4	MAY 86
DATATRIEVE-11	3.1	SEP 84
DECdx/RSTS	1.0	NOV 84
DECmail-11 for RSTS/E and Micro/RSTS	2.0	MAR 84
DECnet/E	2.1	JUN 85
DECtap	1.5	MAR 86
DECWORD/DP	1.2 SPD ONLY	MAY 85
DMS-500	2.1	JUL 82
FMS-11/RSTS	1.5	APR 85
FORTRAN IV/RSTS/E	2.6	JUN 83
PDP-11 SYMBOLIC DEBUGGER/RSTS (formerly FORTRAN-77 DEBUG/RSTS/E, PDP-11)	2.0	APR 86
FORTRAN-77/RSTS/E,PDP-11	5.0	OCT 83
GIGI Software	1.0 ARCHIVED	DEC 84
INDENT	1.4	JUN 85
MENU-11/RSTS	2.0	DEC 83
Message Router for RSTS/E	1.0	AUG 84
RPG II,PDP-11	8.8	JUL 83
RSTS Smart Mailer	1.1	NOV 84
RSTS/E	9.2	JUN 86
RSTS/E DECgraph-11	1.2	NOV 84
RSTS/E DIBOL	5.2 SPD ONLY	MAY 86
RSTS/E High Performance 2780/3780 Emulator	1.1 RETIRED	MAR 86
RSTS/E V8.0 UPDATE	G	APR 85
RSTS/E 3271 Protocol Emulator	2.1 RETIRED	MAR 86

RSTS/E V9

REMOVE RECEIVER SYS() CALL FAILS TO REMOVE OTHER JOBS - MANDATORY FILE PROCESSOR PATCH

PROBLEM:

The remove receiver SYS() call will not remove receiver declarations of other jobs. Instead, it will remove declarations from the calling job.

SOLUTION:

The patch procedures outlined below will correct the problem. The declare receiver SYS() call will correctly remove receiver declarations of other jobs.

This problem is corrected in source for RSTS/E V9.3.

PROCEDURE:

1. This is a required patch to the RSTS/E V9.1 and V9.2 executives. It must be installed in all target monitor SILs. Note that the patch for RSTS/E V9.1 is different than the one for V9.2. Be sure to select the patch that corresponds to your version of RSTS/E.

2. The patch described in steps 4 and 5 below can be installed using the PATCH option of INIT.SYS:

   ```
   Option: PATCH
   File to patch? <lf>                (LINE FEED for installed monitor SIL)
   ```

3. This patch can be installed manually using ONLPAT, the on-line patching program. If you have not installed an overlay file using the INSTALL/OVERLAY_FILE command, it will take effect immediately. If you have installed an overlay file, you must use the REMOVE/OVERLAY_FILE command to have the patch take effect (or wait until the system is rebooted).

   ```
   RUN $ONLPAT
   Command File Name? <cr>            (RETURN for manual patch installation)
   File to patch? <lf>                (LINE FEED for installed monitor SIL)
   File found in account [0,1]
   ```

4. For the RSTS/E V9.1 executive, the patch is as follows:

```
Module name? OVR
Base address? SND2
Offset address? 76
 Base    Offset  Old      New?
??????  000076  010403  ? 4767
??????  000100  022323  ? 610-102
??????  000102  005721  ? ^Z        (CTRL/Z for new offset)
Offset address? 610
 Base    Offset  Old      New?
??????  000610  000000  ? 10403
??????  000612  000000  ? 62703
??????  000614  000000  ? 5
??????  000616  000000  ? 207
??????  000620  ??????  ? ^Z        (CTRL/Z for new offset)
Offset address? ^Z                  (CTRL/Z for new base)
Base address? SND2SI
Offset address? 0
 Base    Offset  Old      New?
?????   000000  000610  ? 620
??????  000002  ??????  ? ^Z        (CTRL/Z for new offset)
Offset address? ^Z                  (CTRL/Z for new base)
Base address? ^Z                    (CTRL/Z for new module)
Module name? RSTS
Base address? $$0305
Offset address? 0
 Base    Offset  Old      New?
??????  000000  ??????  ? Q!200
??????  000002  ??????  ? ^C        (up-arrow/C to exit;CTRL/C for INIT)
```

5. For the RSTS/E V9.2 executive, the patch is as follows:

```
Module name? OVR
Base address? SND2
Offset address? 100
 Base    Offset  Old      New?
??????  000100  010403  ? 4767
??????  000102  022323  ? 640-104
??????  000104  005721  ? ^Z
Offset address? 640
 Base    Offset  Old      New?
??????  000640  000000  ? 10403
??????  000642  000000  ? 62703
```

```
??????  000644  000000  ? 5
??????  000646  000000  ? 207
??????  000650  ??????  ? ^Z
Offset address? ^Z
Base address? SND2SI
Offset address? 0
 Base   Offset  Old     New?
??????  000000  000640  ? 650
??????  000002  ??????  ? ^Z
Offset address? ^Z
Base address? ^Z
Module name? RSTS
Base address? $$0305
Offset address? 0
 Base   Offset  Old     New?
??????  000000  ??????  ? Q!200
??????  000002  ??????  ? ^C
```

RSTS/E V9.1 Seq. No. 6.2.1 M
System Files
BACKUP.TSK 1 of 2

BACKUP DOES NOT HANDLE MULTIDISK PUBLIC STRUCTURES - MANDATORY PATCH FOR BACKUP.TSK

PROBLEM:

If one refers to SY: in a BACKUP or RESTORE command, only SY0: of the public structure is actually referenced.

SOLUTION:

The patching procedure detailed below corrects the problem.

PROCEDURE:

1. This is a required patch to the RSTS/E V9.1 and V9.2 BACKUP programs.

   This problem will be fixed in source in RSTS/E V9.3.

2. This patch must be installed manually using ONLPAT, the on-line patching program. It will take effect immediately.

```
RUN $ONLPAT
Command File Name? <cr>   (RETURN for manual patch installation)
File to patch? _SY:[0,1]BACKUP.TSK
```

3. For RSTS/E V9.1, the patch is as follows:

```
Base address? BCKCUI-24
Offset address? 740
 Base       Offset  Old     New?
063526      000740  177400  ? 0
063526      000742  000434  ? ^Z            (CTRL/Z for a new offset)
Offset address? 762
 Base       Offset  Old     New?
063526      000762  113767  ? 13767
063526      000764  000434  ? ^Z            (CTRL/Z for a new offset)
Offset address? 770
 Base       Offset  Old     New?
063526      000770  112767  ? 102002
063526      000772  177777  ? ^C            (up-arrow/C to exit)
```

4. For RSTS/E V9.2, the patch is as follows:

```
Base address? BCKCUI-24
Offset address? 1104
 Base       Offset  Old     New?
062044      001104  177400  ? 0
062044      001106  000434  ? ^Z            (CTRL/Z for a new offset)
Offset address? 1126
 Base       Offset  Old     New?
062044      001126  113767  ? 13767
062044      001130  000434  ? ^Z            (CTRL/Z for a new offset)
Offset address? 1134
 Base       Offset  Old     New?
062044      001134  112767  ? 102002
062044      001136  177777  ? ^C            (up-arrow/C to exit)
```

DECnet/E V2.1
for RSTS/E V9.0
Monitor Patches

Seq. No. 7.1.1 M

1 of 2

DECnet/E DISALLOWS SOME CONNECT DATA BLOCKS - MANDATORY DECnet/E PATCH

PROBLEM:

DECnet/E will return an "?Illegal byte count for I/O" error when attempting to send a connect initiate message if the connect data block begins on an odd byte boundary.

Some programming languages, especially DIBOL, do not attempt to align data structures on even byte boundaries, so this problem can occur or go away at apparently random times just by making unrelated changes to a program.

SOLUTION:

The patching procedures outlined below will correct the problem. Note, however, that DECnet/E is able to process connect messages that begin on even byte boundaries more efficiently than on odd byte boundaries. DIGITAL recommends that connect data blocks be aligned on even byte boundaries whenever possible.

This problem is corrected in source for DECnet/E V4.0 and RSTS/E V9.3.

PROCEDURE:

1. This is a required patch to the RSTS/E V9.0, V9.1, and V9.2 executives. It must be installed in all target monitor SILs that include support for DECnet/E. This patch will fail to install in any monitor that does not include support for DECnet/E. Note that the patch for RSTS/E V9.0 and V9.1 is different than the one for RSTS/E V9.2. Be sure to select the version that corresponds to your version of RSTS/E.

2. The patch described in steps 4 and 5 below can be installed using the PATCH option of INIT.SYS:

   Option: PATCH
   File to patch? <lf> (LINE FEED for installed monitor SIL)

3. This patch can be installed manually using ONLPAT, the on-line patching program. If you have not installed an overlay file using the INSTALL/OVERLAY_FILE command, it will take effect immediately. If you have installed an overlay file, you must use the REMOVE/OVERLAY_FILE command to have the patch take effect (or wait until the system is rebooted).

4. For RSTS/E V9.0 and V9.1 executives, the patch is as follows:

```
File to patch?
Module name? OVR
Base address? NET13
Offset address? 274
 Base    Offset  Old      New?
??????  000274  001004  ? 240
??????  000276  004767  ? ^Z        (CTRL/Z for new offset)
Offset address? ^Z                  (CTRL/Z for new base)
Base address? ^Z                    (CTRL/Z for new module)
Module name? RSTS
Base address? $$0701
Offset address? 0
 Base    Offset  Old      New?
??????  000000  ??????  ? Q!2
??????  000002  ??????  ? ^C        (up-arrow/C to exit;CTRL/C for INIT)
```

5. For RSTS/E V9.2 executives, the patch is as follows:

```
File to patch?
Module name? OVR
Base address? NET13
Offset address? 270
 Base    Offset  Old      New?
??????  000270  001004  ? 240
??????  000272  004767  ? ^Z        (CTRL/Z for new offset)
Offset address? ^Z                  (CTRL/Z for new base)
Base address? ^Z                    (CTRL/Z for new module)
Module name? RSTS
Base address? $$0701
Offset address? 0
 Base    Offset  Old      New?
??????  000000  ??????  ? Q!2
??????  000002  ??????  ? ^C        (up-arrow/C to exit;CTRL/C for INIT)
```

PROPER ERROR MESSAGE FORMAT

Information describing the proper format of error messages was inadvertently left out of the RSTS/E Guide to Writing Command Procedures. Incorrectly formatted error messages may prevent some command procedures from reacting correctly to errors.

To determine error severity, the RSTS terminal server examines the first one or two characters of every output line looking for special prefix characters. If the first character on the line is a percent sign ("%"), then the severity level is set to WARNING. If the first character is a question mark ("?"), then severity depends on the second character. If it is another question mark, then it is a SEVERE ERROR message. If the second character is not a question mark and is not a space, then the severity level is set to ERROR.

If the second character is a space, then the line is not treated as an error message and the severity level of the message is SUCCESS. This behavior prevents BASIC-PLUS input prompts ("? ") from being incorrectly treated as error messages. This is not new and is compatible with the old ATPK program and the OPSER-based BATCH processor.

To ensure correct ERROR severity, do not begin error messages with a question mark and a space ("? ").

MENU-11/CALCULATOR NOW SETS TERMINAL GRAPHIC/CHARACTER SETS PROPERLY

The calculator application of MENU-11 sometimes causes the following problems:

- o Terminals print the British pound sign instead of the American pound sign after exiting from the application

- o Terminals enter graphics mode during the calculator application

Both problems will be corrected in RSTS/E V9.3 by a replacement module for EZCALC.TSK.

RSTS/E VERSION 9
CUMULATIVE INDEX
OCTOBER 1986

This is a complete listing of all articles for RSTS/E V9.0 and all subsequent point releases, and layered products. Missing sequence numbers may pertain to problems unique to other versions of the same product or other major operating systems.

IMPORTANT!

The following numerical system has been grouped in logical order denoted by the first digit (X.X.X). The second digit (X.X.X.) refers to the subcomponent and the third digit (X.X.X) denotes the issue number or sequential order.

Unassigned articles are indicated: RESERVED.

Flags are currently being installed for all articles. The flags and definitions are as follows.

M = Mandatory Patch. These patches correct errors in the software product. All users are required to apply these patches to maintain consistent "user level" unless the accompanying article specifies otherwise.

F = Optional Feature Patch. These patches extend or configure functionality into the product. These functions will be treated as a supported part of the product for the duration of the current release and may be incorporated in a future release.

R = Restriction. These articles discuss areas that will not be patched in the current release because they require major modification or because they are not consistent with the design of the product. Restrictions, except those described as permanent, are reviewed and modified when possible as part of the normal release cycle.

N = Note. These articles provide explanatory information that supplements the manual set and provide more detailed information about a program or package. They also provide procedural information to make it easier to use a program or package.

+ = Article appeared in the RSTS/E Software Dispatch Review (Order No. AA-5514G-BC), June 1985.

* = Article appeared in the RSTS/E V9.0 Maintenance Notebook (Order No. AA-L997D-TC), June 1985.

- = Article is being republished.

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0.1.3 N	UNDERSTANDING ?NO ROOM FOR USER ON DEVICE ERRORS	V9.0	N/A	Jul 85
0.1.4 N	WARNING ON USE OF THE PEEK() FUNCTION	V9.0	N/A	Nov 85
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0.1.6 N	ANNOUNCING NEW HARDWARE SUPPORT IN RSTS/E	V9.0	N/A	Apr 86
0.1.7 N	ANNOUNCING RSTS/E V9.1--SUPPORT FOR TK50 AND RD53	V9.1	N/A	Jun 86 -
0.1.8 N	ANNOUNCING Micro/RSTS VERSION 2.0	V9.1	N/A	Jun 86 -
0.1.9 N	FPJ11 FLOATING-POINT ACCELERATOR WITH PDP-11/84 AND Micro PDP-11/83 SYSTEMS	V9.1		Jun 86 -
0.1.10 N	ANNOUNCING RSTS/E VERSION 9.2	V9.2	N/A	Jun 86 -
0.1.11 N	HARDWARE PROBLEM USING TK50 TAPE DRIVE ON SOME Q-BUS SYSTEMS	V9.2	N/A	Aug 86
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1.1.3	RESERVED			
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	BASIC-PLUS Patches			
4.1.1 F	SPECIAL PRINT-USING CHARACTERS	V9.0	N/A	Jun 85 *
4.1.2 F	DEFAULT SCALE FACTOR	V9.0	N/A	Jun 85 *
4.1.3 F	OMITTING SCALE FACTOR WARNING MESSAGE	V9.0	N/A	Jun 85 *
4.1.4 F	DEFAULT TO NOEXTEND MODE	V9.0	N/A	Jun 85 *
4.1.5 F	IMMEDIATE MODE FROM .BAS FILE	V9.0	N/A	Jun 85 *
4.1.6 F	NO PPN'S IN CATALOG COMMAND	V9.0	N/A	Jun 85 *
4.1.7 F	DISABLING THE CCL SYS CALL	V9.0	N/A	Jun 85 *
4.1.8 F	CLEAR I/O BUFFERS USED BY OPEN STATEMENTS	V9.0	N/A	Jun 85 *
4.1.9 F	FORCE "ILLEGAL STATEMENT" ERROR WHEN USING OBSOLETE SEND/RECEIVE	V9.0	N/A	Jun 85 *

Sequence	Title	Released	Corrected	Mon/Yr
	Non-Standard BASIC-PLUS Features			
4.10.1 N	THE BASIC-PLUS DEBUG FACILITY	V9.0	N/A	Jun 85 *
4.10.2 N	THE BASIC-PLUS DUMP FACILITY	V9.0	N/A	Jun 85 *
4.10.3 F	CHANGING THE BASIC-PLUS DEBUG KEYWORDS	V9.0	N/A	Jun 85 *
4.10.4 F	ENABLING THE BASIC-PLUS DUMP FEATURE	V9.0	N/A	Jun 85 *
4.10.5 F	ENABLING DUMP FROM COMPILED FILES FOR NON-PRIVILEGED USERS	V9.0	N/A	Jun 85 *
4.10.6 F	CHANGING THE BASIC-PLUS D?MP KEYWORD	V9.0	N/A	Jun 85 *
	RSTS/E 2780 DEVICE DRIVER			
	2780 Device Driver Patches			
5.1.1 M	BUFFER LIMIT CHECKING	V9.0		Jun 85 *
5.1.2 M	DISCONNECT COMMAND HANDLING	V9.0		Jun 85 *
5.1.3 M	DP11 TRANSMIT HANG CONDITION	V9.0		Jun 85 *
5.1.4 M	DU11/DP11 TRANSMIT HANG CONDITION	V9.0		Jun 85 *
5.1.5 M	LOSS OR DUPLICATION OF DATA	V9.0		Jun 85 *
5.1.6 M	DOUBLE CLOSE ALTERS MONITOR	V9.0		Jun 85 *
5.1.7 M	GET/PUT INTERLOCK PROBLEM	V9.0		Jun 85 *
5.1.8 M	2780 HANDLER FAILURE PROBLEM	V9.0		Jun 85 *
5.1.9 M	LOCAL BINARY TRANSMIT PROBLEM	V9.0		Jun 85 *
	2780 Device Notes			
5.2.1 N	INSTALLING AND TROUBLE-SHOOTING 2780's	V9.0	N/A	Jun 85 *
	SYSTEM FILES			
	BACKUP.TSK			
6.2.1 M	BACKUP DOES NOT HANDLE MULTI-DISK PUBLIC STRUCTURES	V9.1	V9.3	Oct 86
	DECnet/E MONITOR PACKAGE V2.1			
	Monitor Patches			
7.1.1 M	DECnet/E DISALLOWS SOME CONNECT DATA BLOCKS	V9.0	V9.3	Oct 86
	RSTS/E UTILITIES			
	System Library ($)			
	DSKINT.TSK			
10.5.1 M	MANDATORY PATCH FOR DCL INITIALIZE COMMAND	V9.2	V9.3	Jul 86
	Error Control Package (ERROR$)			
	Package Notes			
12.1.1 N	UNDERSTANDING "PA MEMORY SYSTEM" ERROR LOGS	V9.0	N/A	Jun 85 *
	Operator Services and Spooling Package (OPSER$)			
	Package Notes			
14.1.1 N	NOTES ON USE OF THE SERIAL LA180 (LA180S) TERMINAL	V9.0	N/A	Jun 85 *
14.1.2 N	USING TWO OR MORE PRINTERS TO SERVE A QUEUE	V9.0	N/A	Jun 85 *
	Print/Batch Services Package (PB$)			
	Package Notes			
15.1.1 R	PBS MUST BE STARTED FROM A PRIVILEGED ACCOUNT	V9.1	V9.2	Feb 86

Sequence	Title	Released	Corrected	Mon/Yr
	RSTS/E DOCUMENTATION			
	Documentation			
	Installation and Update Guide			
19.4.1 N	PBUILD.TSK NO LONGER INCLUDED IN RSTS/E	V9.0	N/A	Sep 85
	System Manager's Guide			
19.5.1 N	ACCOUNT [0,200] NOT AVAILABLE FOR CUSTOMER USE	V9.0	N/A	Sep 85
	RUN-TIME SYSTEMS SUPPORT			
	DCL			
	Package Notes			
20.1.1 N	FILE SPECIFICATIONS IN DCL	V9.0	N/A	Jun 85 *
20.1.2 N	SETTING UP THE DCL LINK COMMAND	V9.0	N/A	Jun 85 *
20.1.3 N	PROPER ERROR MESSAGE FORMAT	V9.1	V9.3	Oct 86
	RSX Utilities			
	Package Notes			
21.1.1 N	USING RTSODT FOR DEBUGGING RUN-TIME SYSTEMS	V9.0	N/A	Jun 85 *
	CRF.TSK			
21.2.1 N	USING THE RSX CRF UTILITY	V9.0	N/A	Jun 85 *
	RT-11 Run-time System and Utilities			
	Package Notes			
22.1.1 N	USE OF UNDERSCORE IN RT-11 EMULATOR UTILITIES	V9.0	N/A	Jun 85 *
22.1.2 N	USING RTSODT FOR DEBUGGING RUN-TIME SYSTEMS	V9.0	N/A	Jun 85 *
	HOOK.SAV			
22.3.1 N	NOTES ON HOOK.SAV	V9.0	N/A	Jun 85 *
	OPTIONAL SOFTWARE			
	RSTS/E 2780 Package V3.0			
	RJ2780			
25.2.1 M	FAILURE TO CLEAR `JOB ACTIVE' ON ATTACH	V9.0		Jun 85 *
25.2.2 M	LOCAL BINARY TRANSMIT FAILURE	V9.0		Jun 85 *
	DECnet/E V2.0			
	Utilities			
	NFT SUBMIT			
31.21.1 R	REMOTE BATCH CONTROL FILES BEING DELETED BEFORE EXECUTING	V9.2	V9.3	Apr 86
	DECmail-11 V2.0			
36.1.1 N	USING EDT V3.0 FOR DECmail-11 V2.0	V9.0	N/A	Jun 86

Sequence	Title	Released	Corrected	Mon/Yr
	DIBOL V5.2			
	Announcement			
39.1.1 N	ANNOUNCING RSTS/E DIBOL V5.2	V9.0	N/A	Jan 86
	ADE V2.4			
	Package Notes			
47.1.1 N	ANNOUNCING ADE V2.4 FOR RSTS/E V9.0 AND Micro/RSTS V1.1	V9.0	N/A	Jul 85
	FORTRAN IV/RSTS/E V2.6			
55.3.1 N	CALL ASSIGN CARRIAGE CONTROL ARGUMENT DOES NOT WORK PROPERLY	V9.0	V9.0	Jun 85 +
55.3.2 N	DSIN YIELDS RESULTS WITH THE WRONG SIGN FOR NEGATIVE ANGLES	V9.0	V9.0	Jun 85 +
55.3.3 N	INSTALLING FORTRAN-IV V2.6 ON RSTS/E V9.n	V9.0	N/A	Jun 85 +
	MENU-11 V2.0			
	Package Notes			
68.1.1 N	MENU-11/CALCULATOR NOW SETS TERMINAL GRAPHIC/CHARACTER SETS PROPERLY	V9.1	V9.3	Oct 86
	DECWORD/DP V1.2			
	Package Notes			
69.1.1 N	NEW DECWORD INSTALLATION/UPDATE CONTROL FILE ON RSTS/E V9.0	V9.0	N/A	Jun 85 +
69.1.2 N	DECWORD V1.2 CBI FILES MAY BE DELETED TO SAVE DISK SPACE	V9.0	N/A	Jun 85 +
69.1.3 N	DECWORD V1.2 COMMUNICATIONS FILES MAY BE DELETED TO SAVE DISK SPACE	V9.0	N/A	Jun 85 +
69.1.4 N	ANNOUNCING AVAILABILITY OF DECWORD FOR Micro/RSTS	V9.0	N/A	Jun 85 +
69.1.5 N	DECWORD/DP V1.2 SUPPORT FOR LN03 LASER PRINTER	V9.0	N/A	Sep 85
69.1.6 N	INFORMATION ON RUNNING DECWORD/DP V1.2 ON RSTS/E V9.0	V9.0	N/A	Sep 85
	WPSMEN			
69.2.0 M	REPLACEMENT MODULE ISSUED FOR WPSMEN	V9.0	V9.0	Jun 85 +
	WPSUDK			
69.3.0 M	REPLACEMENT MODULE ISSUED FOR WPSUDK	V9.0	V9.0	Jun 85 +
	RMS-11 V2.0			
	Access Methods			
75.2.1 M	INDEX FILE CORRUPTION IN ALTERNATE KEY PATH	V9.0	V9.1	Apr 86
75.2.2 M	CORRUPTION IN VERY LARGE FILES	V9.0	V9.1	Sep 85
75.2.3 M	RMS-11 INDEXED FILE CORRUPTION	V9.2	V9.2	Sep 86

Sequence	Title	Released	Corrected	Mon/Yr
	BASIC-PLUS-2 V2.3			
79.2.1 N	PROBLEM WITH PRINT USING	V9.0		Jan 86
	FORTRAN IV/RSX V2.6			
	OTS			
90.1.1 N	LIST-DIRECTED READ	V9.0		Jan 86

Software Product Descriptions (SPDs)

Below is a revised SPD which appears on the following pages:

13.16.09 COBOL-81/RSTS/E, Version 2.4

Software Product Description

PRODUCT NAME: COBOL-81/RSTS/E, Version 2.4 **SPD 13.16.09**

DESCRIPTION

COBOL-81/RSTS/E is a high level language for business data processing that operates under control of the RSTS/E Operating System. It is based upon the 1974 ANSI COBOL Standard X3.23-1974 and includes some of the features planned for the next COBOL standard. COBOL-81/RSTS/E is a subset of VAX COBOL and includes various DIGITAL extensions to COBOL, including screen handling at the source language level.

COBOL-81/RSTS/E meets the low-intermediate level requirements of the United States government, as described in FIPS PUB21-1. Many of the individual modules are designed to meet the high level requirements, as described below:

ANS-74 MODULE	Level Supported by COBOL-81	FIPS PUB21-1 Requirements for High Level
Nucleus	2*	2
Table Handling	2	2
Sequential I/O	2	2
Relative I/O	2	2
Indexed I/O	2	2
Segmentation	2**	2
Library	1†	2
Debug	***	2
Interprogram Communication	1	2
SORT/MERGE	2	2
Communication	-	2

* The Nucleus module complies at level 2, except that the ALTER statement and the ALPHABET IS literal clause are not included.

** The Segmentation module complies at level 2, except that independent segments from level 1 are not included.

*** COBOL-81 uses the PDP-11 Interactive Symbolic Debugger, which may be substituted for the Debug module at all but the high level.

† The Library module includes a partial level 2 REPLACING facility.

VAX COBOL and COBOL-81 share many common features. These features are implemented with the same syntax and semantics on both compilers. In this way, source code developed using COBOL-81 may be migrated to VAX COBOL. Additionally, a VAX/VMS system may be used to develop source code that will eventually be compiled using COBOL-81.

The following DIGITAL extensions to COBOL are implemented in COBOL-81:

- Screen handling is implemented as extensions to the DISPLAY and ACCEPT statements. The DISPLAY statement enables the programmer to display information or prompts anywhere on a video screen. The ACCEPT statement takes information typed anywhere on the screen and returns the value to a running COBOL-81 program. If requested, the ACCEPT statement can convert data to a numeric format. Supported terminal-types are recognized at run-time from information provided by the operating system.
- RMS-STS and RMS-STV special registers may be examined to assist debugging. These registers contain status values from the RMS file system.
- File sharing features enable more than one user to access data at the same time.

The following utilities are provided to assist the COBOL-81 programmer:

- BLDODL (BuiLD ODL), which merges Skeleton Overlay Descriptor Language (SKL) files generated by COBOL compilation into a single Overlay Descriptor Language (ODL) file.
- RFM (ReForMat), a utility that converts source programs from terminal format to conventional ANS COBOl and vice-versa.

COBOL-81 consists of a compiler and an Object Time System/Library. The compiler produces an object module from a source program. The compiler is capable of producing a source listing with embedded diagnostics indicating the line and position of a source-code error, a data-name map, a procedure-name map, and a cross-reference listing in alphabetical order.

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Object modules produced by the compiler can be linked with other object modules produced by either the MACRO-11 or COBOL-81 language processor. These subprograms are accessed with the CALL statement.

COBOL-81 file I/O operations are controlled through the RMS data management software. This method of record I/O supports sequential, relative and indexed file operations.

COBOL-81 also supports the Commercial Instruction Set (CIS).

MINIMUM HARDWARE REQUIRED

Any valid RSTS/E system configuration that includes the following:

- A user area of at least 48K bytes of memory if using an RMS resident library, 52K bytes for all other applications
- At least 5000 free blocks of on-line storage on the public disk structure, plus additional space for user programs and data files

OPTIONAL HARDWARE

- Any mass storage or terminal device supported by the prerequisite software, except TU56 DECtape and TU58 DECtape II
- KEF11-BB Commercial Instruction Set for PDP-11/24
- KE44-A Commercial Instruction Set for PDP-11/44
- A VT200 family, VT100 family, VT52 or Professional terminal is required for the screen handling extensions to the ACCEPT and DISPLAY statements.

PREREQUISITE SOFTWARE

RSTS/E Operating System

Refer to the RSTS/E Optional Software Cross Reference Table (SPD 20.97.xx) for the required version.

OPTIONAL SOFTWARE

PDP-11 Symoblic Debugger, Version 2.0

SOFTWARE WARRANTY

Warranty for this software product is provided by DIGITAL with the purchase of a license for the product as defined in the Software Warranty Addendum of this SPD.

INSTALLATION

This software product can be installed by the customer using the step-by-step documentation available for this product. Optionally you can purchase DIGITAL Installation Services which provide for the installation of the software product by an experienced DIGITAL Software Specialist.

Courtesy Installation Service

This software product will be installed by DIGITAL at no additional charge if you purchase it concurrent with a Startup Service Package that includes installation service. Both the operating system and this product must be installed concurrently.

ORDERING INFORMATION

Single-Use licensed software is furnished under the licensing provisions of DIGITAL's Standard Terms and Conditions of Sale, which provide in part that the software and any part thereof may be used on only the single CPU on which the software is first installed, and may be copied, in whole or in part (with the proper inclusion of DIGITAL's copyright notice and any proprietary notices on the software) for use that same CPU.

You will need a separate license for each CPU on which you will be using the software product (except as otherwise specified by DIGITAL). Then, Materials and Service Options are selected to utilize the product effectively. **THE LICENSE OPTIONS ARE DESCRIBED BELOW. IF YOU ARE NOT FAMILIAR WITH THE SERVICE OPTIONS, YOU MAY OBTAIN THE APPROPRIATE SOFTWARE PRODUCT SERVICE DESCRIPTION(S) FROM YOUR LOCAL DIGITAL OFFICE.** If you are already familiar with these options, you may obtain the ordering information directly from the Software Options Chart.

Single-Use License Option

The Single-Use License is your right to use the software product on a single CPU.

For your first installation of this software product you must purchase as a **minimum:**

- Single-Use License Option, and
- Distribution and Documentation Option

The license gives you the right to use the software on a single CPU and the Distribution and Documentation Option provides the machine-readable software and related documentation.

To use this software product on additional CPUs, you must purchase for each CPU as a **minimum:**

- Single-Use License Option

In addition to the right to use, the license gives you the one-time right to copy the software from your original CPU installation to the additional CPU. Therefore, the Distribution and Documentation Option is not required, but optional.

The licensee may also reproduce and distribute object modules and/or resident libraries which are necessary to run programs compiled with this product provided such programs are distributed: 1) in accordance with the provisions of licensee's standard software license; or 2) with licensee's copyright notice included on such programs; or 3) if conditions (1) or (2) are not met, with DIGITAL'S COPYRIGHT notice included on such programs.

Migration Option

Current licensed users of PDP-11 COBOL are eligible for the migration option. This is a Single-Use License offered at a reduced price and provides all of the License rights described above.

For your first installation of this software product you must purchase as a **minimum:**

- Migration Option, and

- Distribution and Documentation Option

To use this software product on additional CPUs currently licensed for PDP-11 COBOL, you must purchase for each CPU as a **minimum:**

- Migration Option

Migration Option

COBOL-81/RSTS/E offers a special Migration Option. This special license allows currently licensed users of PDP-11 COBOL to upgrade to COBOL-81 at a reduced cost. A translator utility is provided to help make the transition from PDP-11 COBOL to COBOL-81 as smooth as possible.

Distribution and Documentation Option

The Distribution and Documentation option provides the machine-readable software and the basic documentation. You must have, or order, a Single-Use License to obtain this option. You will need this option to install the software for the first time. When revised versions of this software product become available, they may also be obtained by purchasing this option again.

Software Revision Right-To-Copy Option

The Right-To-Copy Option allows a customer with multiple CPUs to copy a revised version of a software product from one CPU to another. Each CPU must be licensed for that product. You first install the revised software on one CPU; then you can make copies for additional CPUs by purchasing the Right-To-Copy Option for each additional CPU.

Documentation-Only Option

The Documentation-Only Option provides one copy of the basic documentation.

Software Product Services

A variety of service options are available. For more information on these or other services, please contact your local Digital office.

SOFTWARE OPTIONS CHART

The distribution Media Codes used in the Software Options Chart are described below. You specify the desired Media Code at the end of the Order Number, e.g., QJ993-HD = binaries on 9-track 800 BPI Magtape (NRZI).

5 = TK50 Tape Cartridge
D = 9-track 800 BPI Magtape (NRZI)
H = RL02 Disk Cartridge
M = 9-track 1600 BPI Mgtape (PE)
V = RK07 Disk Cartridge
Z = No hardware dependency

NOTE: The availability of these software product options and services may vary by country. Customers should contact their local DIGITAL office for information on availability.

OPTIONS	ORDER NUMBER CLASS L SYSTEMS *	ORDER NUMBER CLASS H SYSTEMS *
LICENSE OPTIONS: A LICENSE IS REQUIRED FOR EACH CPU.		
Single-Use License	QY993-UZ	QJ993-UZ
Migration Option from PDP-11 COBOL, Version 4.4	QY998-UZ	QJ998-UZ
MATERIALS AND SERVICE OPTIONS:		
Distribution and Documentation Option (Includes a Translator Utility and Manual)	QY993-H5 QY993-HH QY993-HM	QJ993-H5 QJ993-HD QJ993-HH QJ993-HM QJ993-HV
Software Revision Right-To-Copy Option	QY993-HZ	QJ993-HZ
Documentation Only Option	QY993-GZ	QJ993-GZ
Installation Service Option	QY993-I5 QY993-IH QY993-IM	QJ993-I5 QJ993-ID QJ993-IH QJ993-IM QJ993-IV
DECsupport Service	QY993-95 QY993-9H QY993-9M	QJ993-95 QJ993-9D QJ993-9H QJ993-9M QH993-9V
Basic Service	QY993-85 QY993-8H QY993-8M	QJ993-85 QJ993-8D QJ993-8H QJ993-8M QJ993-8V
Self-Maintenance Service	QY993-35 QY993-3H QY993-3M	QJ993-35 QJ993-3D QJ993-3H QJ993-3M QJ993-3V

* Class H (for high-end systems) include:

— All UNIBUS models and systems

— MicroPDP-11/83

* Class L (low-end systems) include:

— All Q-BUS models and systems except MicroPDP-11/83

— KD11, KDF11, KDJ11 CPU modules

— DCT11, DCF11, DCJ11 microprocessor chips

SOFTWARE PERFORMANCE REPORT (SPR) SUBMISSIONS

Digital Equipment Corporation guarantees a response to every SPR submitted by DIGITAL specialists and customers who purchase software product service agreements.

Blank SPR forms are available upon request in desired quantities from SPR Administration, P.O. Box F, Maynard, MA 01754, or your local DIGITAL office.

Inquiries on the progress of submitted SPRs should be directed to your local DIGITAL office or SPR Administration at (617) 493-4722.

An SPR Answer Survey Card is enclosed with each SPR response. Please complete the survey card; it provides essential feedback for monitoring the quality of our SPR responses.

Completing an SPR Form

Complete the entire form by either typing or printing clearly. Remove "Customer File Copy" for your records. Leave carbon in tact.

Include customer name and **complete** mailing address.

To expedite the processing of your SPR, enter your **Customer Number** in the space provided. This number is located in the upper left-hand corner of your Dispatch label. It can also be obtained from your local DIGITAL office or by calling SPR Administration at (617) 493-6683.

If you do not want your SPR to be published, check the "DO NOT PUBLISH" box on the SPR form. However, if the SPR is determined to be of universal value and it does not describe a security problem, DIGITAL may elect to publish it. For SPRs which describe security problems, it is imperative that the "DO NOT PUBLISH" box be marked.

Describe one problem per SPR form. If an SPR is submitted with more than one problem, it can lengthen the turnaround time.

State the problem clearly. If necessary, summarize the problem, then describe in detail.

Include all the information needed to reproduce the problem. The easiest problems to fix are those reported in statements similar to the following: if you do X, Y happens when Z should.

State all version numbers and all inserted patches. The problem can be fixed sooner if the version is known. Please include the operating system version even on operating system SPRs, since operating system bugs sometimes manifest themselves as "bugs" in other programs. A statement of patches inserted in the relevant software is also helpful. State the type of terminal or work station on which the software is running, e.g., VT100, VT220, PRO 350, DECmate.

Include as much information as possible; too much information is better than not enough. Send all information in machine-readable format if it occupies more than half a page. Please include the following:

1. Program causing the problems
2. All necessary auxiliary files, such as DBMS or LIBRARY files
3. Assembly switches which are on (if applicable)
4. Switches handed to the software, since different switches cause different sections of the code to be executed
5. All necessary run-time files for language run-time problems
6. A directory listing of media, when included; label media carefully

SUGGESTIONS FOR SUBMITTING TAPES WITH SPRs

To insure timely processing of SPRs submitted with tapes, please follow the suggestions below:

1. Use either a floppy or a magnetic tape.
2. If a magnetic tape is used, it should be either 800, 1600, or 6250 bpi.
3. Include a directory with each tape submitted.
4. Label each tape with the following information:
   a. Customer name
   b. Tape format
   c. bpi
   d. Track
   e. Preprinted number of the SPR submitted with the tape
5. Remove from the tape any unnecessary or confidential files.

Thank you.

SOFTWARE PROBLEMS OR ENHANCEMENTS

Questions and problems regarding, and enhancements to, DIGITAL software should be reported on a Software Performance Report (SPR) form and mailed to the SPR Center at one of the following DIGITAL offices (SPR forms are available from the SPR Center):

AREAS COVERED	SPR CENTER
United States	Corporate Administrative Services Group P.O. Box F Maynard, MA 01754
Canada	Digital Equipment of Canada, Ltd. P.O. Box 13000 Kanata, Ontario Canada, K2K 2A6
Mexico	Digital Equipment de Mexico S.A. de C.V. Apartado Postal 12-1009 Mexico 12, O.F. Mexico
Puerto Rico	Digital Equipment Latin America P.O. Box 11038 Fernandez Juncos Station Santurce 00910 Puerto Rico
Australia, New Zealand	Digital Equipment Aust Pty Ltd 754 Pacific Hwy 1st floor M/SSNH/B-1 Chatswood, New South Wales 2067 Australia
Brazil	Digital Equipment Comercio e Industria Ltda. Avenida Augusto Severo, 156-A 20021 Rio de Janeiro, RJ Brazil
China	Digital Equipment Hong Kong Ltd. 5-7th Floor Intercontinental Plaza 94 Granville Road Tsimshatsui East Kowloon Hong Kong
Remainder of General International District (GID)	Digital Equipment Corp. General International District - SWS 100 Nagog Park Acton, MA 01720-3499 United States
United Kingdom, Bahrein, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Qatar, Oman, Saudi Arabia, Syria, United Arab Emirates, Yemen Arab Republic	Digital Equipment Co. Ltd. Jays Close Basingstoke, Hampshire RG22 4DE England
France	Digital Equipment France Zone Industrielle Bois de L'Epine 11 Avenue Joliot Curie BP 202 91007 Evry Cedex France

AREAS COVERED	SPR CENTER
Italy	Digital Equipment S.p.A. Viale Fulvio Testi, 11 Ang. Via Gorki 105 1-20092 Cinisello Balsamo Milan Italy
Japan	Nihon Digital Equipment Corp. Sunshine 60, P.O. Box 1135 1-1 Higashi Ikebukuro 3-Chome, Toshima-Ku, Tokyo, 170 Japan
Belgium, Luxemburg	Digital Equipment N.V./S.A. Rue De L'Aeronef 1 B-1140 Brussels Belgium
Holland	Digital Equipment B.V. Kaap Hoorndreef 38 NL-3563 AV Utrecht Holland
Sweden	Digital Equipment AB SPR Admin. M-B Duff/CSC Allen 6 S-172 89 Sundbyberg Sweden
Denmark	Digital Equipment Corp. A/S Sandtoften 9 DK-2820 Gentofte Denmark
Finland	Digital Equipment Corp. OY Box 16 02201 ESPOO Finland
Norway	Digital Equipment Corp. A/S Ammerudveien 22 N-0958 Oslo 9 Norway
Austria, East Germany, West Germany, Poland, Hungary, Rumania, Czechoslovakia, Russia, Bulgaria	Digital Equipment Corp. GmbH SPR Centre - D2 Freischuetzstrasse 91 8000 Muenchen 81 West Germany
Israel	Digital Equipment Ltd. Digital House Acadia Junction Herzlia 46 733 Israel
Greece, Portugal, Spain, Switzerland, Yugoslavia, (Morocco, Algeria, Tunisia, Cyprus, Turkey, Malta)	Digital Equipment Corp. AG Kanalstrasse 21 CH-8152 Glattbrugg (Zurich) Switzerland

DIGITAL SOFTWARE LICENSING

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DATA SHEET

This data sheet explains what software licenses are and why customers must obtain a software license to run any item of DIGITAL proprietary software.

DIGITAL does not sell software; DIGITAL offers software under a license agreement. DIGITAL has a license agreement for source software and object software. Since DIGITAL software programs are made available primarily in object code, this data sheet focuses on the purchase of object programs.

Introduction to Software Licensing

When DIGITAL hardware is purchased, all rights of ownership (legally called "title") to the hardware pass to the customer. This is not the case with software. DIGITAL regards software as proprietary information. Since software is easily reproduced, it must be legally protected from improper copying. Therefore, DIGITAL uses a combination of trade secret and copyright legal protection for software. DIGITAL protects its investment by retaining title to its software at all times and requires anyone wishing to use it to obtain a license.

How DIGITAL Licenses Software

The license agreement for object programs is contained in DIGITAL's standard Terms and Conditions of Sale and Corporate Volume Purchase Agreements instead of as a separate agreement. Therefore, when software products are purchased under DIGITAL's Terms of Sale, the software license agreement is made at the same time.

Key Principles of the License Agreement

Object code is licensed for single use. This means obtaining a license for a product allows the associated software to be used on the "single" CPU on which it was first installed. Other key points are as follows:

- If the licensed CPU temporarily malfunctions, the software may be run on another machine while the CPU is down.
- Copies of the software may be made for backup purposes if appropriate proprietary and copyright notices are included.
- The software may be modified or merged with other software if appropriate proprietary and copyright notices are included.
- The software may be used by the customer's employees and its agents directly concerned with the internal use, but may not be made available to anyone else.

Modification to the Software Product

Any modification to licensed software does not exempt the product from DIGITAL license terms. Every line of code from a software product falls under the terms of the license. Only those modifications that are not part of the original software are the customer's property. It is important to note that warranty on the product is limited to the original software supplied by DIGITAL.

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The Software Dispatch

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software

The Software Dispatch

RSTS/E

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RSTS/E SOFTWARE DISPATCH

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The RSTS/E Software Dispatch complements the RSTS/E Software Dispatch Review. New and revised Software Product Descriptions, programming notes, software problems and solutions, and documentation corrections are published here. Much of the material is developed from Software Performance Report (SPR) answers significant to the general audience and is printed here to supplement the maintenance notebook (established by the Software Dispatch Review).

PRODUCTS SUPPORTED in the RSTS/E SOFTWARE DISPATCH

ADE/RSTS
BASIC-PLUS-2 for RSTS/E, PDP-11
COBOL, PDP-11
COBOL-81/RSTS/E
DATATRIEVE-11
DECAL
DECgraph-11
DECmail/RSTS
DECnet/E
DECWORD/DP
DMS-500
FMS-11/RSTS
FORTRAN IV/RSTS/E
FORTRAN-77 DEBUG, PDP-11
FORTRAN-77/RSTS/E, PDP-11
GIGI Software
INDENT
MENU-11/RSTS
RPG II, PDP-11
RSTS Smart Mailer
RSTS/E DIBOL
RSTS/E
RSTS/E 3271 Protocol Emulator
RSTS/E High Performance 2780/3780 Emulator
RSTS/E-2780
SORT-11

DISTRIBUTION

The RSTS/E Software Dispatch is directed to one software contact for each software product. No mailing will be made to addresses without a software contact name. **Address change requests should be sent to the nearest DIGITAL field office. Include the new address and mailing label from the most recently received publication.**

Software binary and sources are provided under licenses only. The standard Terms and Conditions, OEM Agreement, and/or Quantity Discount Agreement contain the licenses for all binaries other than DECsystem-10.

Barbara Scollan, Editor

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PRODUCT AVAILABILITY DATES - RSTS/E

NOVEMBER 1986

The following list contains date and version of the latest release of supported software products. Customers who are in warranty or have a software product service agreement during the month the product became available, are eligible to receive the new release. Eligible customers who have not received the new release should contact their local DIGITAL office.

PRODUCT	VERSION	AVAILABLE
ADE/RSTS	2.4	JUL 85
BASIC-PLUS-2 for RSTS/E,PDP-11	2.3	JUN 85
COBOL,PDP-11	4.4	MAY 82
COBOL-81/RSTS/E	2.4	MAY 86
DATATRIEVE-11	3.1	SEP 84
DECdx/RSTS	1.0	NOV 84
DECmail-11 for RSTS/E and Micro/RSTS	2.0	MAR 84
DECnet/E	2.1	JUN 85
DECtap	1.5	MAR 86
DECWORD/DP	1.2 SPD ONLY	MAY 85
DMS-500	2.1	JUL 82
FMS-11/RSTS	1.5	APR 85
FORTRAN IV/RSTS/E	2.6	JUN 83
PDP-11 SYMBOLIC DEBUGGER/RSTS (formerly FORTRAN-77 DEBUG/RSTS/E, PDP-11)	2.0	APR 86
FORTRAN-77/RSTS/E,PDP-11	5.0	OCT 83
GIGI Software	1.0 ARCHIVED	DEC 84
INDENT	1.4	JUN 85
MENU-11/RSTS	2.0	DEC 83
Message Router for RSTS/E	1.0	AUG 84
RPG II,PDP-11	8.8	JUL 83
RSTS Smart Mailer	1.1	NOV 84
RSTS/E	9.2	JUN 86
RSTS/E DECgraph-11	1.2	NOV 84
RSTS/E DIBOL	5.2 SPD ONLY	MAY 86
RSTS/E High Performance 2780/3780 Emulator	1.1 RETIRED	MAR 86
RSTS/E V8.0 UPDATE	G	APR 85
RSTS/E 3271 Protocol Emulator	2.1 RETIRED	MAR 86

RSTS/E V9

WRITING NON-FILE-STRUCTURED TO MOUNTED DISKS

Prior to RSTS/E V9.0 and Micro/RSTS V2.0, RSTS did not allow writing non-file-structured (NFS) to a mounted disk. Utilities such as HOOK that needed to do so had to first dismount the disk before writing to it.

As of RSTS/E V9.0 and Micro/RSTS V2.0, with the introduction of multiple privileges, users with sufficient privilege (WRTNFS and SYSMOD) were permitted to write non-file-structured to mounted disks.

In some instances, users with such privileges could corrupt their system disk or other mounted disks by running an application that prompted for an "Output file?" and entering only the device name of a mounted disk. The application would then open (for read/write access) the disk supplied and write directly to it, corrupting some or all of the disk's structure (boot block, label block, etc.).

SYSTAT is an example of such an application. If you respond to SYSTAT's "Output to?" prompt with only the device name of a mounted disk and you have both SYSMOD and WRTNFS privileges enabled, SYSTAT writes its report directly onto the disk, corrupting one or more blocks at the beginning of the disk.

Also, some utilities such as ONLCLN and SAVRES check to see if a disk is mounted by opening the device NFS and seeing if write access is granted. Previously, if write access was granted, then the disk was not mounted (since write access was never granted to mounted disks opened NFS). As of RSTS/E V9.0 and Micro/RSTS V2.0, such utilities, when run by users with SYSMOD privilege, may conclude that the disk is not mounted, when in fact, it is.

Because of the serious consequences of these cases, steps are being taken to guard against such accidental corruption of mounted disks. Specifically, the RSTS monitor will be changed to require that MODE bit 16384 be set when opening a mounted disk for NFS write access. If the bit is not set, then write access <u>will not</u> be granted. This parallels the current safeguards when opening a disk directory for write access. Opening unmounted disks for NFS writes will not be affected by this change.

This change is currently under development and will be included in RSTS/E V9.3 and a future release of Micro/RSTS. Once implemented, this change will not be compatible with versions of RSTS/E beginning with V9.0, or versions of Micro/RSTS beginning with V2.0 (earlier versions did not permit NFS writing to mounted disks, regardless of user privileges).

Any user-written applications designed to write NFS to a mounted disk will have to be modified to include MODE bit 16384 to continue working properly.

Until this change is made, we recommend that you take the following steps to prevent the possible corruption of any mounted disks on your system:

- o Carefully control which users are granted WRTNFS and SYSMOD privileges. Generally, very few users need WRTNFS privilege, and virtually no one should require SYSMOD privilege.

- o Users that do require these privileges should modify their LOGIN.COM file to disable these privileges, using the command:

  ```
  $ SET JOB/PRIVILEGE=(NOWRTNFS,NOSYSMOD)
  ```

  This will help to prevent "accidental" problems; such users can reenable these privileges when needed.

- o Use care in entering file-specs to commands or applications that might open the file-spec as supplied and write to it. Be sure to include a file name in any such file-specs.

- o Be especially careful using ONLCLN and SAVRES. Users with SYSMOD privilege can, as of RSTS/E V9.0 and Micro/RSTS V2.0, rebuild a mounted disk (ONLCLN), or perform SAVEs and IMAGEs to or from a mounted disk (SAVRES).

INIT MAY START TIMESHARING WITH NO MONITOR INSTALLED

PROBLEM:

When using the undocumented INSTALL option, or when starting a monitor by specifying its name (for example, START RSTS starts the monitor named RSTS), INIT.SYS does not handle errors properly.

When INIT attempts to install a new monitor, it first deinstalls the currently installed monitor SIL. If INIT cannot install the new monitor for any reason (an error or CTRL/C), then the system is left with no monitor installed.

In such cases, if you then attempt to start the system, INIT will try to start timesharing with no monitor installed. The result is unpredictable: the monitor size may be reduced to less than 10K words, or a monitor may appear to start but then immediatly HALT instead of continuing with start-up.

SOLUTION:

If INIT reports an error while installing a new monitor, or you type CTRL/C to terminate an INSTALL operation, then you must explicitly reinstall or start a different monitor.

You should also reissue the DEFALT option to set defaults in any monitor SIL which you install or start after such an event.

This problem will be corrected in a future release of RSTS/E.

LARGE OVERLAID I- AND D-SPACE TASKS MAY FAIL RANDOMLY - MANDATORY MONITOR PATCH

PROBLEM:

The GTSK$ and EXTK$ directives under the RSX emulator do not work correctly for programs using overlays and separate instruction and data space. This is known to cause BASIC-PLUS-2 programs to fail with "?Odd address trap" errors immediately at start-up. Programs written in other programming languages may behave in different ways. The most common errors would be "?Odd address trap" and "?Memory management violation."

SOLUTION:

The patch procedures outlined below correct the problem. Overlaid programs using separate instruction and data space will run correctly.

This problem is corrected in source in RSTS/E V9.3 and later.

PROCEDURE:

1. This is a required patch to the RSTS/E V9.1 and V9.2 monitors. It must be installed in all target monitor SILs. Note that the patch for RSTS/E V9.1 is different than the one for RSTS/E V9.2. Be sure to select the patch that corresponds to your version of RSTS/E.

2. The patch described in step 4 below can be installed using the PATCH option of INIT.SYS:

   Option: PATCH
   File to patch? <lf> (LINE FEED for installed monitor SIL)

3. This patch can be installed manually using ONLPAT, the on-line patching program. Note, however, that if the patch is applied on line to the installed monitor SIL, it will not take effect until the system is rebooted.

   RUN $ONLPAT
   Command File Name? <cr> (RETURN for manual patch installation)
   File to patch? <lf> (LINE FEED for installed monitor SIL)
   File found in account [0,1]

4. For RSTS/E V9.1 monitors, the patch is as follows:

```
Module name? RSX
Base address? EMU@OVR
Offset address? 10300
 Base   Offset  Old     New?
??????  010300  062702  ? 4737
??????  010302  000037  ? RSXPAT@OVR
??????  010304  072227  ? ^Z        (CTRL/Z for new offset)
Offset address? 10330
 Base   Offset  Old     New?
??????  010330  060305  ? 240
??????  010332  010537  ? ^Z        (CTRL/Z for new offset)
Offset address? ^Z                  (CTRL/Z for new base)
Base address? RSXPAT@OVR
Offset address? 0
 Base   Offset  Old     New?
120000  000000  000000  ? 10205
120000  000002  000000  ? 62702
120000  000004  000000  ? 37
120000  000006  000000  ? 207
120000  000010  ??????  ? ^Z        (CTRL/Z for new offset)
Offset address? ^Z                  (CTRL/Z for new base)
Base address? ^Z                    (CTRL/Z for new module)
Module name? RSTS
Base address? $$0301
Offset address? 0
 Base   Offset  Old     New?
??????  000000  ??????  ? Q!2
??????  000002  ??????  ? ^C        (up-arrow/C to exit;CTRL/C for INIT)
```

5. For RSTS/E V9.2 monitors, the patch is as follows:

```
Module name? RSX
Base address? EMU@OVR
Offset address? 10550
 Base   Offset  Old     New?
??????  010550  062702  ? 4737
??????  010552  000037  ? RSXPAT@OVR
??????  010554  072227  ? ^Z        (CTRL/Z for new offset)
Offset address? 10600
 Base   Offset  Old     New?
```

```
??????  010600  060305  ? 240
??????  010602  010537  ? ^Z          (CTRL/Z for new offset)
Offset address? ^Z                    (CTRL/Z for new base)
Base address? RSXPAT@OVR
Offset address? 0
 Base   Offset  Old     New?
120000  000000  000000  ? 10205
120000  000002  000000  ? 62702
120000  000004  000000  ? 37
120000  000006  000000  ? 207
120000  000010  ??????  ? ^Z          (CTRL/Z for new offset)
Offset address? ^Z                    (CTRL/Z for new base)
Base address? ^Z                      (CTRL/Z for new module)
Module name? RSTS
Base address? $$0301
Offset address? 0
 Base   Offset  Old     New?
??????  000000  ??????  ? Q!2
??????  000002  ??????  ? ^C          (up-arrow/C to exit;CTRL/C for INIT)
```

RSTS/E V9.0 Seq. No. 3.3.7 M
Executive
Terminal Service Patches 1 of 3

Supersedes RSTS/E V9.0 Maintenance Notebook and July 1986 Dispatch Seq 3.3.7

FIX CONTROL/O PROBLEM - MANDATORY TERMINAL SERVICE PATCH

PROBLEM:

Typing ^O (Control/O) on a nonconsole terminal while outputting large amounts of text causes the system's general buffer pool to be depleted and the text not to be suppressed.

Note: This article supersedes article Seq. No. 3.3.7 M, published in the RSTS/E Software Dispatch, July 1986. What action you must take is dependent on the following:

1. If you have genned your monitor with echo control support and you have installed the July version of the patch, you do not need to install this patch.

2. If you have not included echo control support in your monitor and you have not installed the July version of this patch, then this patch must be installed.

3. If you did not include echo control support in your monitor and you have installed the July version of this patch, then you will need to recreate your monitor and reinstall all monitor patches, replacing the July version with this article. The installation of the July version of this article would have shown different values for the old contents and therefore should not have been installed.

SOLUTION:

The patch procedures outlined below will correct the above problem and must be applied to all RSTS/E V9.0, V9.1, and V9.2 monitors.

PROCEDURE:

1. This is a required patch to the RSTS/E V9.0 executive. It must be installed in all target monitor SILs.

2. The patch described in step 4 below can be installed using the PATCH option of INIT.SYS:

```
Option: PATCH
File to patch? <lf>                (LINE FEED for installed monitor SIL)
```

3. This patch can be installed manually using ONLPAT, the on-line patching program. Note, however, that if the patch is applied on line to the installed monitor SIL, it will not take effect until the system is rebooted.

```
RUN $ONLPAT
Command File Name? <cr>            (RETURN for manual patch installation)
File to patch? <lf>                (LINE FEED for installed monitor SIL)
File found in account [0,1]
```

This problem will be corrected in source for RSTS/E V9.3.

4. The patch is as follows:

```
Module name? TER
Base address? TTOMUL
Offset address? 4
 Base   Offset  Old     New?
??????  000004  012763  ? 240
??????  000006  ??????  ? 137
??????  000010  000016  ? TERPAT+110
??????  000012  004567  ? ^Z        (CTRL/Z for new offset)
Offset address? 250-(24*(EKOCTL=0))
 Base   Offset  Old     New?
??????  000250  005711  ? 137
??????  000252  100403  ? TERPAT+136
??????  000254  004767  ? ^Z        (CTRL/Z for new offset)
Offset address? ^Z                  (CTRL/Z for new base)
Base address? TERPAT
Offset address? 110
 Base   Offset  Old     New?
??????  000110  000000  ? 12763
??????  000112  000000  ? CHOUT
??????  000114  000000  ? 16
??????  000116  000000  ? 32761
??????  000120  000000  ? DDCONS
```

```
??????  000122  000000  ? 6
??????  000124  000000  ? BNE+2
??????  000126  000000  ? 5711
??????  000130  000000  ? BMI+15
??????  000132  000000  ? 137
??????  000134  000000  ? TTOMUL+12
??????  000136  000000  ? 5711
??????  000140  000000  ? BMI+2
??????  000142  000000  ? 137
??????  000144  000000  ? TTOMUL+(254-(24*(EKOCTL=0)))
??????  000146  000000  ? 32761
??????  000150  000000  ? DDCONS
??????  000152  000000  ? 6
??????  000154  000000  ? BEQ+2
??????  000156  000000  ? 137
??????  000160  000000  ? TTOMUL+(262-(24*(EKOCTL=0)))
??????  000162  000000  ? 5726
??????  000164  000000  ? 4737
??????  000166  000000  ? CHKLIN
??????  000170  000000  ? 207
??????  000172  000000  ? ^Z        (CTRL/Z for new offset)
Offset address? ^Z                  (CTRL/Z for new base)
Base address? ^Z                    (CTRL/Z for new module)
Module name? RSTS
Base address? $$0303
Offset address? 0
 Base   Offset  Old     New?
??????  000000  ??????  ? Q!100
??????  000002  ??????  ? ^C        (up-arrow/C to exit;CTRL/C for INIT)
```

CORRECT DHU11/DHV11 PROBLEMS - MANDATORY TERMINAL SERVICE PATCH

PROBLEM:

Opening a device connected to a DHU11/DHV11 multiplexer in binary mode (mode 1) may disable flow control for the wrong line. This problem, coupled with the use of the multiterminal service feature, may cause the system to crash.

A timing window exists in the terminal driver whereby an output interrupt on a DHU11/DHV11 line may be lost, consequently, suspending output on that line. Output will resume on the suspended line when an input interrupt occurs on any line on that multiplexer.

SOLUTION:

The following patch corrects the above problems for both RSTS/E V9.1 and V9.2. These problems are fixed in source in RSTS/E V9.3 and later.

NOTE

> This patch should only be applied if you have included support for DHU11/DHV11 multiplexers in your monitor. If after entering "VHINT" to the "Base address?" prompt the message "Symbol not found in STB" appears, then your monitor does not contain support for the DHU11/DHV11 multiplexer and this patch should not be installed.

PROCEDURE:

1. This is a required patch to the RSTS/E V9.1 and V9.2 executives. It must be installed in all target monitor SILs that include support for DHU11/DHV11 multiplexers.

2. The patch described in step 4 below can be installed using the PATCH option of INIT.SYS:

   Option: PATCH
   File to patch? <lf> (LINE FEED for installed monitor SIL)

3. This patch can be installed manually using ONLPAT, the on-line patching program. Note, however, that if the patch is applied on line to the installed monitor SIL, it will not take effect until the system is rebooted.

```
RUN $ONLPAT
Command File Name? <cr>              (RETURN for manual patch installation)
File to patch? <lf>                  (LINE FEED for installed monitor SIL)
File found in account [0,1]
```

4. The patch is as follows:

```
Module name? TER
Base address? VHINT
Offset address? 10
 Base   Offset  Old     New?
??????  000010  031345  ? MOV+4505
??????  000012  001402  ? <LF>       (no change; verify only)
??????  000014  005002  ? 4737
??????  000016  ??????  ? PATCH+56
??????  000020  ??????  ? ^Z         (CTRL/Z for new offset)
Offset address? ^Z                   (CTRL/Z for new base)
Base address? SETMOD
Offset address? (6*(EKOCTL<>0))+(110*(FMSSUP<>0))+40
 Base   Offset  Old     New?
??????  ??????  016003  ? 4337
??????  ??????  ??????  ? PATCH+22
??????  ??????  004767  ? <LF>       (no change; verify only)
??????  ??????  ??????  ? <LF>       (no change; verify only)
??????  ??????  042763  ? 4737
??????  ??????  000020  ? PATCH+40
??????  ??????  000010  ? MOV+2603
??????  ??????  ??????  ? ^Z         (CTRL/Z for new offset)
Offset address? ^Z                   (CTRL/Z for new base)
Base address? ^Z                     (CTRL/Z for new module)
Module name? RSTS
Base address? PATCH
Offset address? 22
 Base   Offset  Old     New?
??????  000022  000000  ? MOV+0346
??????  000024  000000  ? MOV+6003
??????  000026  000000  ? CSR.KB
??????  000030  000000  ? MOV+2737
```

```
??????  000032  000000  ? PR5
??????  000034  000000  ? PS
??????  000036  000000  ? 207
??????  000040  000000  ? BIC+2763
??????  000042  000000  ? 20
??????  000044  000000  ? 10
??????  000046  000000  ? MOV+2737
??????  000050  000000  ? PR3
??????  000052  000000  ? PS
??????  000054  000000  ? 207
??????  000056  000000  ? BIT+1305
??????  000060  000000  ? BEQ+2
??????  000062  000000  ? CLR+02
??????  000064  000000  ? LOG$KB
??????  000066  000000  ? 207
??????  000070  ??????  ? ^Z        (CTRL/Z for new offset)
Offset address? ^Z                  (CTRL/Z for new base)
Base address? $$0303
Offset address? 0
??????  ??????  ??????  ? Q!400
??????  ??????  ??????  ? ^C        (up-arrow/C to exit;CTRL/C for INIT)
```

MONITOR WILL PREMATURELY TIMEOUT LONG OPERATIONS ON TK25s

PROBLEM:

There is a 4-minute timeout for tape operations in the MS driver. This is long enough for all known operations on MS-type tape devices, except for the TK25, which can take 20 minutes or more to perform a long SKIP RECORD operation. The result is that during a long TK25 SKIP operation, the driver will timeout, then when the drive is again ready, the driver will retry the SKIP. This process will continue until the drive reaches either a tape mark or the end of the tape.

One application problem caused by this is the occurrence of the error "Sequencing problem on magtape - recovery in progress" while attempting a partial RESTOR of a RSTS/E V8.0 BACKUP set from TK25 tape.

SOLUTION:

The attached patch provides a temporary solution to the problem and should be installed only on a system on which you are experiencing the problem. The patch removes the timeout entirely, which means that the driver software will wait indefinitely for any MS tape operation to complete, just as it used to do in RSTS/E V8.0.

The problem exists in RSTS/E V9.0, V9.1, and V9.2, and this patch may be applied to any of these versions. The problem will be fixed permanently in RSTS/E V9.3, by providing a longer timeout for TK25 SKIP operations.

PROCEDURE:

1. This is an optional patch to the RSTS/E V9.0, V9.1, and V9.2 executives. It should be installed in all target monitor SILs experiencing the problem described above.

2. The patch described in step 4 below can be installed using the PATCH option of INIT.SYS:

   Option: PATCH
   File to patch? <lf> (LINE FEED for installed monitor SIL)

3. This patch can be installed manually using ONLPAT, the on-line patching program. Note, however, that if the patch is applied on line to the installed monitor SIL, it will not take effect until the system is rebooted.

```
RUN $ONLPAT
Command File Name? <cr>     (RETURN for manual patch installation)
File to patch? <lf>         (LINE FEED for installed monitor SIL)
File found in account [0,1]
```

4. The patch is as follows:

```
Module name? MVR
Base address? MSDVRM@OVR
Offset address? 154
 Base    Offset  Old     New?
??????  000154  105264  ? 4737
??????  000156  000116  ? MVRPAT@OVR+100
??????  000160  001407  ? 103407
??????  000162  000433  ? ^Z          (CTRL/Z for new offset)
Offset address? ^Z                    (CTRL/Z for new base)
Base address? MVRPAT@OVR
Offset address? 100
 Base    Offset  Old     New?
??????  000100  000000  ? 105264
??????  000102  000000  ? 116
??????  000104  000000  ? 1004
??????  000106  000000  ? 126427
??????  000110  000000  ? 177775
??????  000112  000000  ? 4
??????  000114  000000  ? 1001
??????  000116  000000  ? 5727
??????  000120  000000  ? 261
??????  000122  000000  ? 207
??????  000124  ??????  ? ^Z          (CTRL/Z for new offset)
Offset address? ^Z                    (CTRL/Z for new base)
Base address? ^Z                      (CTRL/Z for new module)
Module name? RSTS
Base address? $$0307@OVR
Offset address? 0
 Base    Offset  Old     New?
??????  000000  ??????  ? Q!4
??????  000002  ??????  ? ^C   (up-arrow/C to exit;CTRL/C for INIT)
```

DECmail-11 V3.0
for RSTS/E V9

Seq. No. 36.0.1 N

ANNOUNCING A MAJOR RELEASE AND 60-DAY FREE TRIAL OFFER FOR DECmail-11 V3.0

Applications and Timesharing Software Engineering (ATSE) announces a major release of DECmail-11 V3.0, which runs on RSTS/E and Micro/RSTS operating systems.

Free Trial Offer

A 60-day free trial package is being offered for a limited time (November 1986 through April 1987). The trial package consists of DECmail-11 V3.0 on RX50 or 1600-bpi magtape and one copy each of the DECmail-11 V3.0 Installation Guide, DECmail-11 V3.0 Getting Started Guide, and DECmail-11 V3.0 User's Guide. This is an excellent opportunity to try DECmail-11 at no risk. For more information on this free trial offer, contact Ginger Landry, Product Manager, 603-884-0206, or contact your Digital account representative.

Product Description

DECmail-11 is an easy-to-use, full-functionality, menu or command-driven electronic message system that operates on PDP-11 computers running under the following operating systems:

- RSTS/E V9.0 (or later)
- Micro/RSTS V2.0 (or later)

DECmail-11 provides facilities for creating, editing, sending, reading, printing, deleting, and filing messages. Some unique features include user-defined commands, user-defined nicknames, system manager-defined commands and nicknames (global), the ability to set auto answer, and the ability to have DECmail-11 act on single messages or sequences of messages. These and other features make this mail system an effective means of communication management. The power of the mail system can be easily controlled by the user through flexible, simple-to-learn and use commands, an on line help facility, and complete in-depth user documentation. Commands such as NEXT, PREVIOUS, and LAST allow the user to move through a large number of messages quickly and easily. Messages can be sent to and received from PDP-11, VAX, and TOPS-10/20 systems connected via DECnet.

Major New Features

- One-level menu interface

  This added functionality provides each user the option of either a menu or command-mode interface. The menu, which contains a major subset of the DECmail-11 functions, will quickly aid the new or infrequent user to be productive with the use of mail within minutes. The design of the menu is similar to ALL-IN-1. Upon user request, the menu can be turned off. The user will then be in command mode. The menu can be turned back on at the user's request.

- Remote VMS Message Router support

  DECmail-11 V3.0 supports connections to a remote VMS Message Router (V2.0 or later) via DECnet. DECmail-11 users who wish to use the STORE and FORWARD features of Message Router, or wish to correspond with users of ALL-IN-1 based mail products (without using MRGATE, the Message Router VMSmail Gateway), will be able to do so by using a remote Message Router mailbox located on a VMS node.

- Mail queue task

  DECmail-11 V3.0 includes a mail queue task to handle the delivery of queued messages. Messages can be queued by user request or queued automatically if, for example, the destination node is not available. The mail queue task automatically restarts after a system has recovered from a crash. In addition, error messages are returned to the user, and users will be able to query the system as to the status of their queued messages through the SHOW QUEUE command.

- Improved batch mail message sending

  When sending messages via the BA send menu option, DECmail-11 notifies the user of any errors which prevent the message from being delivered and returns the entire message back to the sender.

- Support for EDT V3

  EDT V3 is supported for all operating systems as the default editor.

- o Display full network error messages

  DECmail-11 V3.0 repeats DECnet messages exactly, in addition to giving its own interpretation of the message.

- o Printer port support

  DECmail-11 V3.0 supports the printing of messages though local printer ports on VT100 and VT200-family terminals.

- o UNDELETE command

  The UNDELETE command recovers deleted messages.

- o Documentation

  The documentation for DECmail-11 consists of the following:

  - User's Guide
  - Installation/System Manager's Guide
  - Getting Started
  - Reference Card

Use of DECmail-11

Communications is a key ingredient that helps teams work in a business environment, and electronic mail is today's most effective communication tool. Electronic mail enables users to work more productively by eliminating "telephone tag" and the interoffice mail blues. Benefits obtained with electronic mail include the fact that it is instantaneous, reliable delivery, it maintains an automatic record of transmissions, it is the most direct way of getting an idea from one person to another and/or a group of people, it is a cost savings in regard to manual mail processing, and it provides a spontaneous situation. DECmail-11 offers these benefits and more, and it has been tailored for personal, departmental, and organizational users of the PDP-11 family.

DECmail-11 can be used to meet the needs of the small office with a stand-alone computer or those of a large corporation or university with a complex distributed network of both PDP-11s and VAXs. DECmail-11 is an excellent way people in a small corporation or department to leave messages

for each other. It is their electronic message board, electronic highway, and electronic filing system. Communications is faster and easier. DECmail-11 supports the PDP-11 strategy of providing low-cost software solutions for the business environment.

As a communication tool, DECmail-11 is fully compatible with the way people work, not in isolation, but together as a team, sharing and refining information.

Prerequisite Software

One of the following is required:

- o RSTS/E V9.0 (or later)
- o Micro/RSTS V2.0 (or later)

Availability

DECmail-11 V3.0 is available from Digital this month. Contact your Digital account representative for information on DECmail-11 and participating in the free trial offer.

MENU-11 V2.0
for RSTS/E V9.2
Package Notes

MENU-11 $AREA COMMAND BROKEN IN RSTS/E V9.2, FIXED IN V9.3

PROBLEM:

Because of an incompatibility between MENU.TSK and MCTRL.TSK that occurs after installing the replacement module MENU.TSK (PA6801.TSK) in RSTS/E V9.2, the $AREA command does not work.

SOLUTION:

The problem will be solved by replacement of MCTRL.TSK in RSTS/E V9.3.

RSTS/E VERSION 9
CUMULATIVE INDEX
NOVEMBER 1986

This is a complete listing of all articles for RSTS/E V9.0 and all subsequent point releases, and layered products. Missing sequence numbers may pertain to problems unique to other versions of the same product or other major operating systems.

IMPORTANT!

The following numerical system has been grouped in logical order denoted by the first digit (X.X.X). The second digit (X.X.X.) refers to the subcomponent and the third digit (X.X.X) denotes the issue number or sequential order.

Unassigned articles are indicated: RESERVED.

Flags are currently being installed for all articles. The flags and definitions are as follows.

M = Mandatory Patch. These patches correct errors in the software product. All users are required to apply these patches to maintain consistent "user level" unless the accompanying article specifies otherwise.

F = Optional Feature Patch. These patches extend or configure functionality into the product. These functions will be treated as a supported part of the product for the duration of the current release and may be incorporated in a future release.

R = Restriction. These articles discuss areas that will not be patched in the current release because they require major modification or because they are not consistent with the design of the product. Restrictions, except those described as permanent, are reviewed and modified when possible as part of the normal release cycle.

N = Note. These articles provide explanatory information that supplements the manual set and provide more detailed information about a program or package. They also provide procedural information to make it easier to use a program or package.

+ = Article appeared in the RSTS/E Software Dispatch Review (Order No. AA-5514G-BC), June 1985.

* = Article appeared in the RSTS/E V9.0 Maintenance Notebook (Order No. AA-L997D-TC), June 1985.

- = Article is being republished.

Sequence	Title	Released	Corrected	Mon/Yr
	RSTS/E V9			
	General Notes			
	System Notes			
0.1.1 N	RSTS/E V9.0 COMPONENT SUMMARY	V9.0	N/A	Jun 85 *
0.1.2 N	ANNOUNCING RSTS/E V9.0	V9.0	N/A	Jun 85 *
0.1.3 N	UNDERSTANDING ?NO ROOM FOR USER ON DEVICE ERRORS	V9.0	N/A	Jul 85
0.1.4 N	WARNING ON USE OF THE PEEK() FUNCTION	V9.0	N/A	Nov 85
0.1.5 N	FPJ11 FLOATING-POINT ACCELERATOR WITH PDP-11/84 AND MicroPDP-11/83 SYSTEMS	V9.0	N/A	Jan 86
0.1.6 N	ANNOUNCING NEW HARDWARE SUPPORT IN RSTS/E	V9.0	N/A	Apr 86
0.1.7 N	ANNOUNCING RSTS/E V9.1--SUPPORT FOR TK50 AND RD53	V9.1	N/A	Jun 86 -
0.1.8 N	ANNOUNCING Micro/RSTS VERSION 2.0	V9.1	N/A	Jun 86 -
0.1.9 N	FPJ11 FLOATING-POINT ACCELERATOR WITH PDP-11/84 AND Micro PDP-11/83 SYSTEMS	V9.1		Jun 86 -
0.1.10 N	ANNOUNCING RSTS/E VERSION 9.2	V9.2	N/A	Jun 86 -
0.1.11 N	HARDWARE PROBLEM USING TK50 TAPE DRIVE ON SOME Q-BUS SYSTEMS	V9.2	N/A	Aug 86
0.1.12 N	RSTS/E V9.0 SUPPORT TERMINATED	V9.0	N/A	Aug 86
0.1.13 N	ANNOUNCING Micro/RSTS VERSION 2.1	V9.2	N/A	Aug 86
0.1.14 N	UPGRADING RQDX1 AND RQDX2 CONTROLLERS TO RQDX3	V9.2	V9.2	Sep 86
0.1.15 N	WRITING NON-FILE-STRUCTURED TO MOUNTED DISKS	V9.1	V9.3	Nov 86
	System Management Guidelines			
0.2.1 N	USING SAVE/RESTORE ON A TWO-DISK SYSTEM	V9.0	N/A	Jun 85 *
	Initialization			
	INIT.SYS Program Patches			
1.1.1	RESERVED			
1.1.2	RESERVED			
1.1.3	RESERVED			
1.1.4 M	DSKINT OPTION OF INIT.SYS MAY NOT DETECT BAD BLOCKS	V9.0	V9.1	Oct 85 -
1.1.5 M	TMSCP DRIVES ARE NOT MARKED AS AVAILABLE AFTER REWIND-OFFLINE OPERATIONS	V9.1	V9.2	Jun 86 -
1.1.6 M	OFF-LINE SAVRES INVALIDATES ALL BUT LAST VOLUME OF MULTIVOLUME MAGTAPE SAVE SET	V9.1	V9.2	Jun 86 -
1.1.7 M	INIT SAV/RES TO TMSCP TAPE MAY ABORT WITH "TRAP THROUGH 4"	V9.1	V9.2	Jun 86
	INIT.SYS Program Notes			
1.2.1 N	DEVICES WITH NON-STANDARD UNIBUS ADDRESSES AND VECTORS	V9.0	N/A	Jun 85 *
1.2.2 R	INIT MAY START TIMESHARING WITH NO MONITOR INSTALLED	V9.1	N/A	Nov 86
	System Installation and Update			
	Installation/Update Notes			
2.1.1 N	CSPLIB.TSK AND CSPLIB.STB MISSING FROM V9.0 KIT	V9.0	V9.1	Sep 85
2.1.2 N	PBUILD.TSK SHOULD NOT BE INCLUDED IN V9.0 KIT	V9.0	V9.1	Sep 85
	Executive			
	Monitor Patches			
3.1.1 F	DISABLING THE USE OF DATA SPACE	V9.0	N/A	Jun 85 *
3.1.2 M	LARGE OVERLAID I- AND D-SPACE TASKS MAY FAIL RANDOMLY - MANDATORY MONITOR PATCH	V9.1	V9.3	Nov 86

Sequence	Title	Released	Corrected	Mon/Yr
	Terminal Services Patches			
3.3.1 F	CHANGING SPECIAL LOGIN TERMINAL	V9.0	N/A	Jun 85 *
3.3.2 F	INPUT ESCAPE SEQUENCE HANDLING	V9.0	N/A	Jun 85 *
3.3.3	RESERVED			
3.3.4	RESERVED			
3.3.5 M	CORRECT AUTOBAUD DETECTION PROBLEM	V9.0	V9.2	Jun 86
3.3.6 M	CORRECT AUTOBAUD DETECTION PROBLEM	V9.1	V9.2	Jun 86
3.3.7 M	FIX CONTROL/O PROBLEM - MANDATORY TERMINAL SERVICE PATCH	V9.0	V9.3	Nov 86
3.3.8 M	FIX PROBLEMS WITH USING PRINT DEVICES ON TERMINAL LINES	V9.0	V9.3	Aug 86
3.3.9 M	CORRECT DHU11/DHV11 PROBLEMS - MANDATORY TERMINAL SERVICE PATCH	V9.1	V9.3	Nov 86
	Terminal Service Notes			
3.4.1 N	UNDERSTANDING TERMINAL PARITY AND STOP BIT SETTINGS	V9.0	N/A	Jun 85 *
3.4.2 N	MODEM CONTROL ON PRIVATE, LEASED LINES	V9.0	N/A	Jun 85 *
3.4.3 N	MODEM SUPPORT ON RSTS/E	V9.0	N/A	Jun 86
	File Processor Patches			
3.5.1 F	CONTROLLING EMT LOGGING	V9.0	N/A	Jun 85 *
3.5.2 M	SET TERMINAL CHARACTERISTICS SYS CALL MAY HANG THE SYSTEM	V9.0	V9.1	Sep 85
3.5.3 M	ERROR IN HANDLING OF PUBLIC DISKS	V9.0	V9.1	Sep 85
3.5.4 M	FIX CORRUPTION OF LOW-CORE LOCATIONS	V9.0	V9.2	Jan 86
3.5.5 M	ALLOW MULTIPLE OPENS ON NONMOUNTED NFS DISK	V9.0	V9.3	Aug 86
3.5.6 M	DISK MODE 8 IS IGNORED - MANDATORY FILE PROCESSOR PATCH	V9.0	V9.2	Sep 86
3.5.7 M	ACCOUNTS MAY BECOME UNDELETABLE - MANDATORY FILE PROCESSOR PATCH	V9.1	V9.3	Sep 86
3.5.8 M	REMOVE RECEIVER SYS() CALL FAILS TO REMOVE OTHER JOBS - MANDATORY FILE PROCESSOR PATCH	V9.1	V9.3	Oct 86
	File Processor Notes			
3.6.1	PENDING SET TERMINAL CHARACTERISTICS SYS CALL CHANGE	V9.2	N/A	Sep 86
	Device Driver Patches			
3.7.1 F	USING THE CSS PAPER TAPE READER ON RSTS/E	V9.0	N/A	Jun 85 *
3.7.2 M	ACCESSING TMSCP TAPES MAY CAUSE SYSTEM TO CRASH	V9.1	V9.2	Jun 86
3.7.3 F	MONITOR WILL PREMATURELY TIMEOUT LONG OPERATIONS ON TK25s	V9.1	V9.3	Nov 86
	BASIC-PLUS			
	BASIC-PLUS Patches			
4.1.1 F	SPECIAL PRINT-USING CHARACTERS	V9.0	N/A	Jun 85 *
4.1.2 F	DEFAULT SCALE FACTOR	V9.0	N/A	Jun 85 *
4.1.3 F	OMITTING SCALE FACTOR WARNING MESSAGE	V9.0	N/A	Jun 85 *
4.1.4 F	DEFAULT TO NOEXTEND MODE	V9.0	N/A	Jun 85 *
4.1.5 F	IMMEDIATE MODE FROM .BAS FILE	V9.0	N/A	Jun 85 *
4.1.6 F	NO PPN'S IN CATALOG COMMAND	V9.0	N/A	Jun 85 *
4.1.7 F	DISABLING THE CCL SYS CALL	V9.0	N/A	Jun 85 *
4.1.8 F	CLEAR I/O BUFFERS USED BY OPEN STATEMENTS	V9.0	N/A	Jun 85 *
4.1.9 F	FORCE "ILLEGAL STATEMENT" ERROR WHEN USING OBSOLETE SEND/RECEIVE	V9.0	N/A	Jun 85 *

Sequence	Title	Released	Corrected	Mon/Yr
	Non-Standard BASIC-PLUS Features			
4.10.1 N	THE BASIC-PLUS DEBUG FACILITY	V9.0	N/A	Jun 85 *
4.10.2 N	THE BASIC-PLUS DUMP FACILITY	V9.0	N/A	Jun 85 *
4.10.3 F	CHANGING THE BASIC-PLUS DEBUG KEYWORDS	V9.0	N/A	Jun 85 *
4.10.4 F	ENABLING THE BASIC-PLUS DUMP FEATURE	V9.0	N/A	Jun 85 *
4.10.5 F	ENABLING DUMP FROM COMPILED FILES FOR NON-PRIVILEGED USERS	V9.0	N/A	Jun 85 *
4.10.6 F	CHANGING THE BASIC-PLUS D?MP KEYWORD	V9.0	N/A	Jun 85 *
	RSTS/E 2780 Device Driver			
	2780 Device Driver Patches			
5.1.1 M	BUFFER LIMIT CHECKING	V9.0		Jun 85 *
5.1.2 M	DISCONNECT COMMAND HANDLING	V9.0		Jun 85 *
5.1.3 M	DP11 TRANSMIT HANG CONDITION	V9.0		Jun 85 *
5.1.4 M	DU11/DP11 TRANSMIT HANG CONDITION	V9.0		Jun 85 *
5.1.5 M	LOSS OR DUPLICATION OF DATA	V9.0		Jun 85 *
5.1.6 M	DOUBLE CLOSE ALTERS MONITOR	V9.0		Jun 85 *
5.1.7 M	GET/PUT INTERLOCK PROBLEM	V9.0		Jun 85 *
5.1.8 M	2780 HANDLER FAILURE PROBLEM	V9.0		Jun 85 *
5.1.9 M	LOCAL BINARY TRANSMIT PROBLEM	V9.0		Jun 85 *
	2780 Device Notes			
5.2.1 N	INSTALLING AND TROUBLE-SHOOTING 2780's	V9.0	N/A	Jun 85 *
	System Files			
	BACKUP.TSK			
6.2.1 M	BACKUP DOES NOT HANDLE MULTI-DISK PUBLIC STRUCTURES	V9.1	V9.3	Oct 86
	DECnet/E Monitor Package V2.1			
	Monitor Patches			
7.1.1 M	DECnet/E DISALLOWS SOME CONNECT DATA BLOCKS	V9.0	V9.3	Oct 86
	RSTS/E Utilities			
	System Library ($)			
	DSKINT.TSK			
10.5.1 M	MANDATORY PATCH FOR DCL INITIALIZE COMMAND	V9.2	V9.3	Jul 86
	Error Control Package (ERROR$)			
	Package Notes			
12.1.1 N	UNDERSTANDING "PA MEMORY SYSTEM" ERROR LOGS	V9.0	N/A	Jun 85 *
	Operator Services and Spooling Package (OPSER$)			
	Package Notes			
14.1.1 N	NOTES ON USE OF THE SERIAL LA180 (LA180S) TERMINAL	V9.0	N/A	Jun 85 *
14.1.2 N	USING TWO OR MORE PRINTERS TO SERVE A QUEUE	V9.0	N/A	Jun 85 *
	Print/Batch Services Package (PB$)			
	Package Notes			
15.1.1 R	PBS MUST BE STARTED FROM A PRIVILEGED ACCOUNT	V9.1	V9.2	Feb 86

Sequence	Title	Released	Corrected	Mon/Yr
	RSTS/E Documentation			
	Documentation			
	Installation and Update Guide			
19.4.1 N	PBUILD.TSK NO LONGER INCLUDED IN RSTS/E	V9.0	N/A	Sep 85
	System Manager's Guide			
19.5.1 N	ACCOUNT [0,200] NOT AVAILABLE FOR CUSTOMER USE	V9.0	N/A	Sep 85
	RUN-Time Systems Support			
	DCL			
	Package Notes			
20.1.1 N	FILE SPECIFICATIONS IN DCL	V9.0	N/A	Jun 85 *
20.1.2 N	SETTING UP THE DCL LINK COMMAND	V9.0	N/A	Jun 85 *
20.1.3 N	PROPER ERROR MESSAGE FORMAT	V9.1	V9.3	Oct 86
	RSX Utilities			
	Package Notes			
21.1.1 N	USING RTSODT FOR DEBUGGING RUN-TIME SYSTEMS	V9.0	N/A	Jun 85 *
	CRF.TSK			
21.2.1 N	USING THE RSX CRF UTILITY	V9.0	N/A	Jun 85 *
	RT-11 Run-Time System and Utilities			
	PACKAGE NOTES			
22.1.1 N	USE OF UNDERSCORE IN RT-11 EMULATOR UTILITIES	V9.0	N/A	Jun 85 *
22.1.2 N	USING RTSODT FOR DEBUGGING RUN-TIME SYSTEMS	V9.0	N/A	Jun 85 *
	HOOK.SAV			
22.3.1 N	NOTES ON HOOK.SAV	V9.0	N/A	Jun 85 *
	Optional Software			
	RSTS/E 2780 Package V3.0			
	RJ2780			
25.2.1 M	FAILURE TO CLEAR 'JOB ACTIVE' ON ATTACH	V9.0		Jun 85 *
25.2.2 M	LOCAL BINARY TRANSMIT FAILURE	V9.0		Jun 85 *
	DECnet/E V2.0			
	Utilities			
	NFT Submit			
31.21.1 R	REMOTE BATCH CONTROL FILES BEING DELETED BEFORE EXECUTING	V9.2	V9.3	Apr 86
	DECmail-11 V3.0			
36.0.1 N	ANNOUNCING A MAJOR RELEASE AND 60-DAY FREE TRIAL OFFER FOR DECmail-11 V3.0			Nov 86
	DECmail-11 V2.0			
36.1.1 N	USING EDT V3.0 FOR DECmail-11 V2.0	V9.0	N/A	Jun 86

Sequence	Title	Released	Corrected	Mon/Yr
	DIBOL V5.2			
	Announcement			
39.1.1 N	ANNOUNCING RSTS/E DIBOL V5.2	V9.0	N/A	Jan 86
	ADE V2.4			
	Package Notes			
47.1.1 N	ANNOUNCING ADE V2.4 FOR RSTS/E V9.0 AND Micro/RSTS V1.1	V9.0	N/A	Jul 85
	FORTRAN IV/RSTS/E V2.6			
55.3.1 N	CALL ASSIGN CARRIAGE CONTROL ARGUMENT DOES NOT WORK PROPERLY	V9.0	V9.0	Jun 85 +
55.3.2 N	DSIN YIELDS RESULTS WITH THE WRONG SIGN FOR NEGATIVE ANGLES	V9.0	V9.0	Jun 85 +
55.3.3 N	INSTALLING FORTRAN-IV V2.6 ON RSTS/E V9.n	V9.0	N/A	Jun 85 +
	MENU-11 V2.0			
	Package Notes			
68.1.1 N	MENU-11/CALCULATOR NOW SETS TERMINAL GRAPHIC/CHARACTER SETS PROPERLY	V9.1	V9.3	Oct 86
68.1.2 N	MENU-11 $AREA COMMAND BROKEN IN RST/E V9.2, FIXED IN RSTS/E V9.3	V9.2	V9.3	Nov 86
	DECWORD/DP V1.2			
	Package Notes			
69.1.1 N	NEW DECWORD INSTALLATION/UPDATE CONTROL FILE ON RSTS/E V9.0	V9.0	N/A	Jun 85 +
69.1.2 N	DECWORD V1.2 CBI FILES MAY BE DELETED TO SAVE DISK SPACE	V9.0	N/A	Jun 85 +
69.1.3 N	DECWORD V1.2 COMMUNICATIONS FILES MAY BE DELETED TO SAVE DISK SPACE	V9.0	N/A	Jun 85 +
69.1.4 N	ANNOUNCING AVAILABILITY OF DECWORD FOR Micro/RSTS	V9.0	N/A	Jun 85 +
69.1.5 N	DECWORD/DP V1.2 SUPPORT FOR LN03 LASER PRINTER	V9.0	N/A	Sep 85
69.1.6 N	INFORMATION ON RUNNING DECWORD/DP V1.2 ON RSTS/E V9.0	V9.0	N/A	Sep 85
	WPSMEN			
69.2.0 M	REPLACEMENT MODULE ISSUED FOR WPSMEN	V9.0	V9.0	Jun 85 +
	WPSUDK			
69.3.0 M	REPLACEMENT MODULE ISSUED FOR WPSUDK	V9.0	V9.0	Jun 85 +
	RMS-11 V2.0			
	Access Methods			
75.2.1 M	INDEX FILE CORRUPTION IN ALTERNATE KEY PATH	V9.0	V9.1	Apr 86
75.2.2 M	CORRUPTION IN VERY LARGE FILES	V9.0	V9.1	Sep 85
75.2.3 M	RMS-11 INDEXED FILE CORRUPTION	V9.2	V9.2	Sep 86

Sequence	Title	Released	Corrected	Mon/Yr
	BASIC-PLUS-2 V2.3			
79.2.1 N	PROBLEM WITH PRINT USING	V9.0		Jan 86
	FORTRAN IV/RSX V2.6			
	OTS			
90.1.1 N	LIST-DIRECTED READ	V9.0		Jan 86

Software Product Descriptions (SPDs)

Below is a list of the revised SPDs which appear on the following pages:

13.14.06	DECWORD/DP, Version 1.2 (and DECWORD for Micro/RSTS)
14.49.10	PDP-11 FORTRAN-77/RSTS/E, Version 5.0
14.54.14	PDP-11 BASIC-PLUS-2 for RSTS/E, Version 2.3
18.12.04	Micro/RSTS, Version 2.1

Software Product Description

PRODUCT NAME: DECWORD/DP, Version 1.2 (and DECWORD for Micro/RSTS)

SPD 13.14.06

DESCRIPTION

DECWORD/DP and DECWORD for Micro/RSTS is a word processing software package that supplements RSTS/E and Micro/RSTS data processing capabilities. It features menu-driven document processing, including word and list processing, communications, and Computer-Based Instruction (CBI).

DECWORD/DP and DECWORD for Micro/RSTS editing capabilities permit the user to input and correct text without retyping. List processing allows production of many identical or nearly identical documents, including reports, customized letters, and mailing lists. Math and sort utilities permit the user to manipulate data within the list processing documents.

Note: For the remainder of this document, "DECWORD" will refer to both DECWORD/DP and DECWORD for Micro/RSTS.

CBI provides on-line, self-paced instructions to teach basic word processing skills. The course is comprised of eleven basic word processing lessons, which allow the user to build confidence in the use of DECWORD and the keyboard.

CBI is task oriented, rather than feature oriented. By following simple commands at the terminal, trainees can learn to perform straight-forward tasks, such as writing and printing a letter.

DECWORD should be managed and supported by RSTS/E data processing staff, who can manage system resources and ensure that users are adequately trained.

System management is provided by a combination of RSTS/E utilities and DECWORD utilities. Installation, user management, and document management are clearly described in the DECWORD Manager's Manual Set.

Features

Document Preparation

- Menu driven operation
- Easy-to-learn commands
- Computer-Based Instruction (CBI)
- 100 user-defined keys (UDKs) for predetermined repetitive operations that can be recalled with either a three or four keystroke sequence. UDKs allow sequences of frequently used steps to be stored, including repetitive looping and storage of up to 500 keystrokes per UDK.
- Automatic index and table of contents generation
- Seven-level automatic paragraph numbering
- Automatic footnote generation—Footnotes defined in the text will be printed automatically in the footnote section at the bottom of the page
- Full control of tabs, margins, justification and pagination with:

  Ragged, justified or semi-justified margins

  Automatic line centering

  Discretionary pagination control

  Standard, decimal and right aligned tabs

  Semi-automatic hyphenation

  Line spacing from half-line to triple-line spacing

  Word wrapping control

  Automatic page and section numbering
- Selectable pitch and type fonts
- Underlined and overstruck (bold) printout
- Superscripts, subscripts, and composite characters
- Even and odd page handling to allow for different formats on facing pages
- Running headers and footers
- Figure marking to reserve a block of space for pasteup figures that are added after printing
- Automatic insertion of current date and time in printed document

CBI features eleven lessons that teach the user to:

digital software

June 1986

AE-L394G-TC

- Create
- Edit
- Print documents
- Use rulers
- Cut and paste
- Use Spelling Error Detection
- Perform simple list processing
- Create paragraphs and tables
- Copy, rename, or delete a document
- Use abbreviation documents

Editing Capabilities

- Special editing keypad
- Up to 25 storage locations (paste buffers) for manipulating portions of text and for transferring text from one document to another
- Automatic word wrapping
- Operations by grammatical entity (character, word, tab position, sentence, paragraph, line, page, screen)
- Stored documents, paragraphs, phrases and abbreviations can be inserted into the document being edited with a few keystrokes
- "Undeleted" capability allows retrieval of accidentally deleted text
- Swap transposed character key
- Column operations—Insert, move, or delete text as a column, total a column of numbers, and insert the result in the text
- Search and replace—Search for a phrase; search and select the phrase found; replace the selected phrase with the contents of a paste buffer; search forward, backward, case sensitive
- Global search and replace—Replaces all occurrences of a phrase with another phrase or the contents of a paste buffer; replaces one to 99 occurrences of a phrase; conditionally replaces occurrences of a phrase; replaces forward, backward, case sensitive
- Delete by character and word, rubout by line, sentence, word or character
- Edit normal width documents (79 columns) on VT52 or VT100-W terminals or wide documents (131 columns) on VT100-W terminals
- Date and time stamp key for inserting current date and time into text
- Ten stored rulers for repeated settings

Printer Utilities

- Ten stored printer settings for repeated settings
- Queued printing (spooling) allows printers to be shared by all users without tying up terminals
- Direct printing option allows printing to non-spooled printers, to the terminal, or to a RSTS/E or Micro/RSTS file on disk
- Full device control can be used to restrict users to designated output devices
- An expanded printing line up to 255 columns can be defined
- Single sheet or continuous forms printing
- Flexible printer control tables enable users to customize printouts by:

  Turning on/off, underline and bold

  Defining first/last characters to print

  Defining special function keys (SFK) used for special character sets, changing type fonts, etc.

  Define two bin sheet feeder option

List Processing

List processing creates customized form letters and reports selectively from stored information (lists). This utility provides a comprehensive tool for customized data storage and retrieval.

Extensive arithmetic capabilities allow manipulation of numeric information by addition, subtraction, multiplication and division. Users can store, retrieve and print subtotals and totals for both rows and columns.

String operations can be used to manipulate non-numeric information.

List Processing Features

- Variable selection—Records can be chosen from the list for processing, based on the contents of the record
- Multiple form documents can be processed, based on information in the records
- 10 key sort on list processing format documents
- Detached processing prevents extended operations from tying up the terminal

Spelling Error Detection

Spelling errors in a document can be detected by comparison of words in a document against a stored dictionary with:

- Output of errors to screen, printer, or disk file
- Four levels of dictionary for each user-system, group, personal, or special
- Easily modifiable dictionaries (words added or deleted as necessary)

- 10,000 word dictionary, expandable to 32,000 words, is supplied with the system
- One word dictionary provided for starting from scratch

Conversion Utilities

DECWORD conversion utilities provide for the integration of word and data processing. Information can be transferred in the following ways

- ASCII data file to/from DECWORD
- RNO (RSTS/E Runoff Utility) to DECWORD
- RX01/RX02 floppy disk to/from DECWORD

  Reads an RX01/RX02 floppy disk, one document, all documents, or selected documents

  Writes a document to an RX01/RX02 floppy disk

  Deletes a document on an RX01/RX02 floppy disk

  Displays the RX01/RX02 floppy index

  Initializes an RX01/RX02 floppy disk

Document Maintenance

- Copies documents from one account to another
- Protects documents or index
- Sorts index
- Verifies index, document, or task file

Communications

DECWORD Communications enables users to communicate with other users.

Features

- Asynchronous, serial RS232 compatible, full duplex transmission
- Transmission rates from 300 to 2400 baud are fully supported
- Transmission rates from 4800 baud to 9600 baud are supported, but system performance is likely to be degraded

CX Character Transmission

CX provides for transmission of data (keyboard input or from documents) to another computer system, and to a number of other devices that transmit and receive ASCII characters. Special word processing control characters (for example, bold, underline, rulers) are not transmitted.

CX provides flexible control of communications characteristics for embedded control characters and answerback support. CX supports multiple combinations of input from keyboard, document or remote host, and output to screen, document or remote host.

DX Document Transmission

The DX feature provides document transmission between DECWORD and any word processor or system which understands the DX-WPS error correcting protocol. DX converts a DECWORD document to DX-WPS protocol, enabling the document to be sent with most of the special format control intact (Underlining, bolding, ruler settings, etc.). Documents are converted according to the conversion rules used for the WPS-8 floppy disk conversion.

Using DX, documents can be sent to:

- Another DECWORD system
- Another DIGITAL word processing system running WPS-8, (at least at Version 3.0) or WPS-8/Diskette (DECmate series software)
- An unattended DIGITAL word processing system (using the corresponding WPS-8 or DECWORD communications option AX)
- Any of several DIGITAL operating systems that have the corresponding DX layered application project.

AX Automatic Transmission

Used in conjunction with DX, the AX feature provides the same document transmission capabilities as the DX feature, and, in addition, allows for one of the word processing systems (WPS-8 or DECWORD) in the communication link to be used in automatic mode. This makes it possible for one user to send or receive documents across the communications link.

System Features

The following features provide for system management and system security:

- Password security
- User security
- Document protection
- Index protection
- Printer security
- Up to 999 documents per user account
- Monitoring of users
- Messages can be sent to all or selected users
- Document validation

Documentation

DECWORD user documentation is written in a clear consistent style, and is designed for users of varying backgrounds. The following books make up the documentation set.

DECWORD User's Set

- *DECWORD Directory*
- *Beginner's Guide to DECWORD*
- *How to Use DECWORD*
- *Glossary of DECWORD terms*
- *DECWORD Quick Reference Guide*

DECWORD Advanced Set

- *DECWORD Directory*

- *How to Use DECWORD Options*
- *How to Use DECWORD List Processing*
- *DECWORD for WPS-8 Users*
- *DECWORD Quick Reference Guide*
- *How To Use DECWORD Communications*

DECWORD Manager's Set

- *DECWORD Directory*
- *DECWORD Release Information*
- *How to Install DECWORD*
- *How to Manage DECWORD*
- *DECWORD Quick Reference Guide*

DECWORD Basic User Course CBI Booklets

MINIMUM HARDWARE REQUIRED

Any valid RSTS/E or Micro/RSTS system configuration with:

- At least 248KB of main memory
- At least 4,000 blocks of free disk space of which 600 must be contiguous for the DECWORD code, libraries and related files
- At least one VT52-W, VT100-W, VT102-W, VT125-W, or VT200 series word processing terminal
- At least one of the supported terminal interfaces

OPTIONAL HARDWARE

- Keyboard conversion package (VT1XX-CE) to upgrade the user terminal (VT100-A) to a standard word processing terminal (VT100-W)
- LQPSE-FA, LQP02 or LQP03 letter quality printers (Note however that DECWORD for Micro/RSTS does not support the LQPSE-FA.)
- Keyboard surrounds identifying the DECWORD specific functions on the VT100-W and VT52-W word processing terminal keyboard.
- LN01, LQP02 or LQP03 dual bin sheet feeder
- Any of the following terminal interfaces:
  - — DZ11-C
  - — DZQ11
  - — DHV11
  - — DH11
  - — DHU11
  - — DZ11
  - — DL11-A, -E, -W, DLV11 (as a word processing terminal interface)
- Any of the following terminal interfaces.
  - — VT52-A
  - — VT100-A, -B
  - — VT101-A
  - — VT102-A
  - — VT123-A
  - — VT200 Series

PREREQUISITE SOFTWARE

RSTS/E or Micro/RSTS Operating System

Refer to the RSTS/E and Micro/RSTS Optional Software Cross Reference Tables (SPD 20.97.xx and SPD 20.94.xx) for the required versions.

Notes:

1. The RSTS/E SYSGEN options for multiterminal support and echo control must be enabled. The BASIC-PLUS Run-Time System must be generated with "Print Using" enabled.
2. Depending on workload, each terminal used for DECWORD word processing could consume RSTS/E resources equivalent to two terminals being used for data processing applications

OPTIONAL SOFTWARE

None

SOFTWARE WARRANTY

United States and Canada Only

Warranty for this software product is provided by DIGITAL with the purchase of a license for the product as defined in the Software Warranty Addendum of this SPD.

Outside the United States and Canada

THIS PRODUCT IS PROVIDED **"AS IS"** WITHOUT ANY WARRANTY OF ANY KIND EITHER EXPRESS OR IMPLIED.

INSTALLATION

This software product can be installed by the customer using the step-by-step documentation available for this product. Optionally you can purchase DIGITAL Installation Services which provide for the installation of the software product by an experienced DIGITAL Software Specialist.

Courtesy Installation

This software product will be installed by DIGITAL at no additional charge if you purchase it concurrent with a Start-Up Service Package that includes Installation Service. Both the host operating system and this product must be installed concurrently.

ORDERING INFORMATION

Single-Use licensed software is furnished under the licensing provisions of DIGITAL's Standard Terms and Conditions of Sale, which provide in part that the software and any part thereof may be used on only the single CPU on which the software is first installed, and may be copied, in whole or in part (with the proper inclusion of DIGITAL's copyright notice and any proprietary notices on the software) for use on that same CPU.

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Software Revision Right-To-Copy Option

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Documentation-Only Option

The Documentation-Only option provides one copy of the basic documentation.

Software Product Services

A variety of service options are available. For more information on these or other services, please contact your local DIGITAL office.

SOFTWARE OPTIONS CHART

The distribution Media Codes used in the Software Options Chart are described below. You specify the desired Media Code at the end of the Order Number, e.g. QR480-HD = binaries on 9-track 800 BPI Magtape (NRZI).

3 = RX50 Floppy Diskette
D = 9-track 800 BPI Magtape (NRZI)
H = RL02 Disk Cartridge
M = 9-track 1600 BPI Magtape (PE)
V = RK07 Disk Cartridge
Z = No hardware dependency

NOTE: The availability of these software product options and services may vary by country. Customers should contact their local DIGITAL office for information on availability.

OPTIONS	ORDER NUMBER DECWORD/DP	ORDER NUMBER DECWORD For Micro/RSTS
LICENSE OPTIONS: A LICENSE IS REQUIRED FOR EACH CPU.		
Single-Use License	QR480-UZ	QY480-UZ
MATERIALS AND SERVICE OPTIONS:		
Distribution and Documentation Option	QR480-HD QR480-HH QR480-HM QR480-HV	QY480-H3
Software Revision Right-To-Copy Option	QR480-HZ	QY480-HZ
Documentation-Only Option	QR480-GZ	QY480-GZ
User's Documentation Kit	QR480-GZ	QY490-GZ
Advanced User's Documentation Kit	QR481-GZ	QY491-GZ
Manager's Documentation Kit	QR482-GZ	QY492-GZ
Installation Service Option	QR480-ID QR480-IH QR480-IM QR480-IV	QY480-I3
DECsupport Service	QR480-9D QR480-9H QR480-9M QR480-9V	QY480-93
Basic Service	QR480-8D QR480-8H QR480-8M QR480-8V	QY480-83
Self-Maintenance Service	QR480-3D QR480-3H QR480-3M QR480-3V	QY480-33

Software Product Description

PRODUCT NAME: PDP-11 FORTRAN-77/RSTS/E, Version 5.0 **SPD 14.49.10**

DESCRIPTION

PDP-11 FORTRAN-77/RSTS/E is an extended implementation of the ANSI subset FORTRAN-77 standard (X3.9-1978) that runs on the RSTS/E Operating System. PDP-11 FORTRAN-77/RSTS/E contains all the features of ANSI FORTRAN-77 subset, many of the full set language features, and extensions that are not included in the ANSI FORTRAN-77 standard. Switch-selectable support is provided for user programs conforming to the previous ANSI FORTRAN standard (X3.9-1966).

PDP-11 FORTRAN-77/RSTS/E also meets the Federal Information Processing Standard Publication (FIPS PUB-69) requirement for a flagger. The flagger optionally produces diagnostic messages for syntax and/or source form elements which do not conform to the full-level ANSI FORTRAN X3.9-1978 Standard.

PDP-11 FORTRAN-77/RSTS/E programs can be optionally executed under control of PDP-11 Symbolic Debugger/RSTS/E (SPD 12.79.xx). Execution of application programs using PDP-11 Symbolic Debugger/RSTS/E aids in the location of programming errors in successfully compiled programs that behave abnormally when executed.

PDP-11 FORTRAN-77/RSTS/E includes all subset ANSI features including:

- CHARACTER data type
- Block IF construct, including IF...THEN, ELSE IF, ELSE, and END IF statements, for conditional execution of blocks of statements

The PDP-11 FORTRAN-77/RSTS/E compiler includes the following features of full-language FORTRAN as defined by the ANSI Standard:

- Double precision and complex data types
- Intrinsic functions, including LEN, ICHAR, and INDEX
- Exponentiation forms, including double precision and complex
- Format edit descriptors, including S, SP, SS, T, TL, TR, Iw.m, and Gw.dEe
- Generalized DO loop parameters
- Generic function selection based on argument data type for FORTRAN-defined functions
- Lower and upper bounds specification in array declarators
- Substrings of character variables and character array elements
- Optional syntax for I/O statements (UNIT and FMT)

PDP-11 FORTRAN-77/RSTS/E includes the following extensions to the ANSI standard:

- Language elements for keyed and sequential access to RMS multikey ISAM files
- DEFINE FILE, FIND, DELETE, REWRITE, and UNLOCK statements
- TYPE and ACCEPT input/output statements
- Comments permitted at the end of each source line
- INCLUDE statement
- BYTE data type
- ENCODE, DECODE statements
- Explicit specification of storage allocation units for data types (e.g., INTEGER*4)
- Hexadecimal and octal constants
- O and Z format edit descriptors

The PDP-11 FORTRAN-77 compiler produces direct PDP-11 machine code optimized for execution-time efficiency on a PDP-11 with a floating point processor. PDP-11 FORTRAN-77 compiler optimizations include:

- Optimizations of arithmetic and logical IF statements
- Common subexpression elimination
- Removal of invariant expressions from DO loops
- Allocation of processor registers across block IF constructs and DO loops

Object Time System

The PDP-11 FORTRAN-77/RSTS/E Object Time System (OTS) is a set of object modules that are selectively linked with compiler-produced object modules by the operating system's task builder, to produce a task (program) ready for execution.

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PDP-11 FORTRAN-77/RSTS/E provides the capability of creating either or both of the following Object-Time systems:

- The OTS based on File Control Services (FCS) allows sequential and random access to sequentially organized files.
- The OTS based on Record Management Services (RMS) uses RMS to provide access to sequential, relative, and indexed organizational files.

The RMS OTS is normally larger than the FCS OTS, but provides additional capabilities. For a given task, it is not possible to mix FCS OTS modules with RMS OTS modules.

MINIMUM HARDWARE REQUIRED

Any valid RSTS/E Operating System configuration with:

- Floating Point Processor (FPP)
- At least 56K bytes of user memory
- Up to 390 contiguous disk blocks for the compiler task
- An additional 150 to 250 disk blocks are required for the Object Time System library file and auxiliary support files, depending on installation options

The compiler can use 370 or more blocks of temporary disk space when compiling large programs.

Note: The FPP is not required if the user's source program does not exercise floating point arithmetic.

OPTIONAL HARDWARE

None

PREREQUISITE SOFTWARE

RSTS/E Operating System

Refer to RSTS/E Optional Software Cross Reference Table (SPD 20.97.xx) for the required version.

OPTIONAL SOFTWARE

PDP-11 Symbolic Debugger/RSTS/E

SOFTWARE WARRANTY

Warranty for this software product is provided by DIGITAL with the purchase of a license for the product as defined in the Software Warranty Addendum of this SPD.

INSTALLATION

This software product can be installed by the customer using the step-by-step documentation available for this product. Optionally you can purchase DIGITAL Installation Services which provide for the installation of the software product by an experienced DIGITAL Software Specialist.

Courtesy Installation

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To use this software product on additional CPUs, for each CPU you must purchase as a **minimum:**

- Single-Use License option

In addition to the right to use, the license gives you the one-time right to copy the software from your original CPU installation to the additional CPU. Therefore, the Distribution and Documentation option is not required, but optional.

The licensee may also reproduce and distribute object modules and/or resident libraries which are necessary to run programs compiled with this product provided such programs are distributed: 1) in accordance with the provisions of licensee's standard software license; or 2) with licensee's copyright notice included on such programs; or 3) if conditions (1) or (2) are not met, with DIGITAL's COPYRIGHT notice included on such programs.

Migration Option

Current licensed users of FORTRAN-IV/RSTS/E are eligible for the migration option. This is a Single-Use License offered at a reduced price and provides all of the License rights described above.

For your first installation of this software product you must purchase as a **minimum:**

- Migration Option, and
- Distribution and Documentation option

To use this software product on additional CPUs currently licensed for FORTRAN-IV/RSTS/E, for each CPU you must purchase as a **minimum:**

- Migration option

Distribution and Documentation Option

The Distribution and Documentation option provides the machine readable software and the basic documentation. You must have, or order, a Single-Use License to obtain this option. You will need this option to install the software for the first time. When revised versions of this software product become available, they may also be obtained by purchasing this option again.

Software Revision Right-To-Copy Option

The Right-To-Copy option allows a customer with multiple CPUs to copy a revised version of a software product from one CPU to another. Each CPU must be licensed for that product. You first install the revised software on one CPU; then you can make copies for additional CPUs by purchasing the Right-To-Copy option for each additional CPU.

Documentation-Only Option

The Documentation-Only option provides one copy of the basic documentation.

Software Product Services

A variety of service options are available. For more information on these or other services, please contact your local DIGITAL office.

SOURCE MATERIALS OPTIONS

You can obtain optional source materials for this software product by signing DIGITAL's Software Program Sources License Agreement and then purchasing the source option(s) you want. The agreement entitles you to use the source materials at one customer facility or location which is specified in the agreement.

Most users do not require source materials. They are used primarily to make modifications to the software product. Source kits provided by DIGITAL do not necessarily contain all source files used by DIGITAL to build binary kits.

Source License and Sources Distribution Option

This option provides you with the machine-readable source code for this software product. It gives you the right to use the source code on any CPU at the facility/location specified in the agreement which has a Single-Use License for the object code.

Source License and Sources Listings Option

This option provides you with listings of the source programs for this software product. It gives you the right to use the listings for any CPU at the facility/location specified in the agreement which has a Single-Use License for the object code.

Sources Update Distribution Option

This option provides you with the revised version of the machine-readable source code for this software product. You must have purchased the Source License and Source Distribution Option to obtain this option.

Sources Update Listings Option

This option provides you with listings of source code for the revised version of the software product. You must have purchased the Source License and Source Listings Option to obtain this option.

SOFTWARE OPTIONS CHART

The distribution Media Codes used in the Software Options Chart are described below. You specify the desired Media Code at the end of the Order Number, e.g., QR100-HD = binaries on 9-track 800 BPI Magtape (NRZI).

5 = TK50 Tape Cartridge
D = 9-track 800 BPI Magtape (NRZI)
H = RL02 Disk Cartridge
M = 9-track 1600 BPI Magtape (PE)
R = Microfiche
V = RK07 Disk Cartridge
Z = No hardware dependency

NOTE: The availability of these software product options and services may vary by country. Customers should contact their local DIGITAL office for information on availability.

OPTIONS	ORDER NUMBER CLASS L SYSTEMS[1]	ORDER NUMBER CLASS H SYSTEMS[2]
LICENSE OPTIONS: A LICENSE IS REQUIRED FOR EACH CPU.		
Single-Use License	QY100-UZ	QR100-UZ
Migration Option from PDP-11 FORTRAN IV/RSTS/E	QY453-UZ	QR453-UZ
MATERIALS AND SERVICE OPTIONS:		
Distribution and Documentation Option	QY100-H5 QY100-HH QY100-HM	QR100-H5 QR100-HD QR100-HH QR100-HM QR100-HV
Software Revision Rightr-To-Copy Option	QY100-HZ	QR100-HZ
Documentation Only Option	QY100-GZ	QR100-GZ
Installation Service Option	QY100-I5 QY100-IH QY100-IM	QR100-I5 QR100-ID QR100-IH QR100-IM QR100-IV
DECsupport Service	QY100-95 QY100-9H QY100-9M	QR100-95 QR100-9D QR100-9H QR100-9M QR100-9V
Basic Service	QY100-85 QY100-8H QY100-8M	QR100-85 QR100-8D QR100-8H QR100-8M QR100-8V
Self-Maintenance Service	QY100-35 QY100-3H QY100-3M	QR100-35 QR100-3D QR100-3H QR100-3M QR100-3V

OPTIONS	ORDER NUMBER CLASS L SYSTEMS[1]	ORDER NUMBER CLASS H SYSTEMS[2]
SOURCE MATERIALS OPTIONS:		
Source License and Sources Distribution for Compiler		QR100-ED QR100-EM
Source License and Sources Distribution for Object Time Systems		QR101-ED QR101-EM
Source License, and Sources Listings for Compiler and Object Time Systems		QR101-FR
Sources Distribution for Compiler		QR100-ND QR100-NM
Sources Distribution for Object Time Systems		QR101-ND QR101-NM
Sources Listings for Compiler and Object Time System		QR101-NR

[1]Class L Systems (low-end systems):

— All Q-BUS models and systems except MicroPDP-11/83

— KD11, KDF11, KDJ11 CPU modules

— DCT11, DCF11, DCJ11 microprocessor chips

[2]Class H Systems (high-end systems):

— All UNIBUS models and systems

— MicroPDP-11/83

Software Product Description

PRODUCT NAME: PDP-11 BASIC-PLUS-2 for RSTS/E, Version 2.3 **SPD 14.54.14**

DESCRIPTION

PDP-11 BASIC-PLUS-2 for RSTS/E is an extended BASIC compiler that runs under the RSTS/E Operating System. It takes full advantage of the PDP-11 floating point hardware option and integer instruction sets, and generates threaded code instructions.

BASIC-PLUS-2 provides a high performance program execution environment for applications development and timesharing. It combines immediate mode with the power of a structured programming language.

In addition to elementary BASIC language features, BASIC-PLUS-2 provides:

- BASIC Programming Support Environment
  - — The compiler generates code suitable for Instruction and Data space on processors where both the hardware and software operating system support this feature.
  - — RUN command for immediate execution of BASIC programs
  - — RUN allows use of RMS-11 Sequential, Relative, and Indexed file organizations
  - — Dynamic linking (LOAD) of separately compiled BASIC modules for immediate execution using the RUN command
  - — EDIT command for revision of program text while within BASIC
  - — HELP (INQUIRE) for on-line assistance
  - — SEQUENCE command for generating line numbers
  - — Direct execution of unnumbered statements (immediate mode)
  - — Direct execution of command line statements
  - — Integrated cross-reference and listing facility
  - — Ability to detect and report multiple errors on a source line
  - — A high degree of compatibility with VAX BASIC
- Compile-Time Directives
  - — Text inclusion through use of the %INCLUDE directive
  - — Conditional compilation (%IF)
  - — Listing and cross-reference output controls (%LIST, %CROSS)
- Structured Programming Constructs
  - — 31 character alphanumeric statement labels
  - — 31 character variable names, allowing (_) and (.)
  - — DECLARE statement removes the requirement for (%) and ($) suffixes in variables
  - — Explicit declarations provide access to many data types
  - — Most program lines do not need line numbers
  - — Statement condition/repeat modifiers simplify structure
  - — IF...THEN...ELSE...END IF conditional blocks
  - — SELECT...CASE...END SELECT multiway decision blocks
  - — EXIT and ITERATE statements for iterative statement blocks
  - — OTHERWISE out-of-range clause for ON GOTO and ON GOSUB statements
- EXTERNAL statement allows access to global variables, functions, and constants, and allows data typing of parameters to aid in minimizing runtime mismatches
- Language Subsets and Subset Flaggers
  - — Declining Feature Flagger for program maintenance/conversion use
- Exception Handling (ON ERROR) for main and subprograms
- Multiline Statements and Multistatement Lines
- Program Segmentation
  - — Single and multiline user-defined functions using DEF
  - — SUB and FUNCTION programs as individually compiled modules
  - — External module parameter passing BY VALUE, REFerence, or DESCriptor

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— Ability to invoke EXTERNAL function procedures from BASIC-PLUS-2

— Up to eight actual arguments per call or external function invocation

— COMMON and MAP statements for creating static storage areas and sharing data between modules

— Specification of data types permitted on COMMON, DECLARE, DEF, DIMENSION, EXTERNAL, FUNCTION, MAP, and SUB statements

— Default data allocation rules can be specified with BASIC commands or by the OPTION statement in program text

— By default all declarations are implicit, however, the OPTION TYPE=EXPLICIT can be used to require explicit declaration of all variables

— Integer data type:

BYTE (8 bit) with range of -128 to +127
WORD (16 bit) with range of -32768 to +32767
LONG (32 bit) with range of -2147483648 to +2147483647

— Real data type:

SINGLE (6 digits) with range of .29x10**-38 to 1.70x10**38
DOUBLE (16 digits) with range of .29x10**-38 to 1.70x10**38

— STRING data type, allowing both static (in MAP or COMMON) and dynamic length

- Symbolic names for control characters BEL, BS, HT, LF, VT, FF, CR, SO, SI, ESC, and DEL
- Definition of user-defined program constants through DECLARE CONSTANT
- A BASIC Symbolic Debugger allowing inspection and alteration of program variables
- File Organizations and Access Methods

— Block I/O (random access to sequential files of 512 byte records)

— Virtual Arrays (arrays mapped onto disk structures)

— RMS Sequential I/O

— RMS Relative I/O

— Multikey RMS Indexed I/O operations, including support for integer and segmented keys

— RMS Record File Address (RFA) access for high performance applications

- Dynamic record definition and variable allocation via MAP DYNAMIC
- Extended Report Formatting Capabilities

— Suppression of zero fields

— Zero fill or blank fill fields

— Commas in large numeric values

— CR (credit) or DR (debit) indicators

— Floating currency symbol for numeric fields

— Asterisk-fill on numeric fields

— FORMAT$ function accepts full PRINT USING editing syntax

- Arrays up to eight dimensions, declarable at run-time
- Matrix manipulation capabilities
- Compatibility with key RSTS/E BASIC-PLUS features including:

— FIELD Statement

— CVT, MAGTAPE, and SWAP% functions

— Virtual arrays

— A subset of RSTS/E System Service (SYS) calls

PDP-11 BASIC-PLUS-2 uses the full printable ASCII character set and 8-bit character codes within constants and I/O operations.

The BASIC-PLUS-2 user has the option of traditional compilation with subsequent linker invocation or use of the RUN command that causes the program to be placed into execution.

Subprograms and function programs compiled under BASIC-PLUS-2 can be included by the LOAD command for execution when RUN is used.

Object Time System

The BASIC-PLUS-2 Object Time System is a set of object modules selectively linked with object modules produced by the BASIC-PLUS-2 compiler by the operating system linker (task builder utility) to produce a task (program) ready for execution.

MINIMUM HARDWARE REQUIRED

Any valid RSTS/E system configuration with:

- Minimum of 64K bytes of user memory
- At least 2000 - 2500 blocks, 1500 of which must be contiguous, at compile time
- At least 6200 - 8000 blocks, 1500 of which must be contiguous, temporarily required during installation procedure
- Extended Instruction Set

OPTIONAL HARDWARE

Floating Point Processor (as supported by the RSTS/E Operating System configuration)

PREREQUISITE SOFTWARE

RSTS/E Operating System

Refer to the RSTS/E Optional Software Cross Reference Table (SPD 20.97.xx) for the required version.

OPTIONAL SOFTWARE

None

SOFTWARE WARRANTY

Warranty for this software product is provided by DIGITAL with the purchase of a license for the product as defined in the Software Warranty Addendum of this SPD.

INSTALLATION

This software product can be installed by the customer using the step-by-step documentation available for this product. Optionally you can purchase DIGITAL Installation Services which provide for the installation of the software product by an experienced DIGITAL Software Specialist.

Courtesy Installation Service

This software product will be installed by DIGITAL at no additional charge if you purchase it concurrent with a Startup Service Package that includes installation service. Both the operating system and this product must be installed concurrently.

ORDERING INFORMATION

Single-Use licensed software is furnished under the licensing provisions of DIGITAL's Standard Terms and Conditions of Sale, which provide in part that the software and any part thereof may be used on only the single CPU on which the software is first installed, and may be copied, in whole or in part (with the proper inclusion of DIGITAL's copyright notice and any proprietary notices on the software) for use on that same CPU.

You will need a separate license for each CPU on which you will be using the software product (except as otherwise specified by DIGITAL). Then, Materials and Service Options are selected to utilize the product effectively. **THE LICENSE OPTIONS ARE DESCRIBED BELOW. IF YOU ARE NOT FAMILIAR WITH THE SERVICE OPTIONS, YOU MAY OBTAIN THE APPROPRIATE SOFTWARE PRODUCT SERVICE DESCRIPTION(S) FROM YOUR LOCAL DIGITAL OFFICE.** If you are already familiar with these options, you may obtain the ordering information directly from the Software Options Chart.

LICENSE OPTIONS

Single-Use License Option

The Single-Use License is your right to use the software product on a single CPU.

For your first installation of this software product you must purchase as a **minimum:**

- Single-Use License Option, and
- Distribution and Documentation Option

The license gives you the right to use the software on a single CPU and the Distribution and Documentation Option provides the machine-readable software and related documentation.

To use this software product on additional CPUs, you must purchase for each CPU as a **minimum:**

- Single-Use License Option

In addition to the right to use, the license gives you the one-time right to copy the software from your original CPU installation to the additional CPU. Therefore, the Distribution and Documentation Option is not required, but optional.

The licensee may also reproduce and distribute object modules and/or resident libraries which are necessary to run programs compiled with this product provided such programs are distributed: 1) in accordance with the provisions of licensee's standard software license; or 2) with licensee's copyright notice included on such programs; or 3) if conditions (1) or (2) are not met, with DIGITAL'S COPYRIGHT notice included on such programs.

Distribution and Documentation Option

The Distribution and Documentation option provides the machine-readable software and the basic documentation. You must have, or order, a Single-Use License to obtain this option. You will need this option to install the software for the first time. When revised versions of this software product become available, they may also be obtained by purchasing this option again.

Software Revision Right-To-Copy Option

The Right-To-Copy Option allows a customer with multiple CPUs to copy a revised version of a software product from one CPU to another. Each CPU must be licensed for that product. You first install the revised software on one CPU; then you can make copies for additional CPUs by purchasing the Right-To-Copy Option for each additional CPU.

Documentation-Only Option

The Documentation-Only option provides once copy of the basic documentation.

Software Product Services

A variety of service options are available. For more information on these or other serivces, please contact your local DIGITAL office.

SOFTWARE OPTIONS CHART

The distribution Media Codes used in the Software Options Chart are described below. You specify the desired Media Code at the end of the Order Number, e.g., QY916-HH = binaries on RL02 Disk Cartridge.

5 = TK50 Tape Cartridge
D = 9-track 800 BPI Magtape (NRZI)
H = RL02 Disk Cartridge
M = 9-track 1600 BPI Magtape (PE)
V = RK07 Disk Cartridge
Z = No hardware dependency

NOTE: The availability of these software product options and services may vary by country. Customers should contact their local DIGITAL office for information on availability.

OPTIONS	ORDER NUMBER CLASS L SYSTEMS[1]	ORDER NUMBER CLASS H SYSTEMS[2]
LICENSE OPTIONS: A LICENSE IS REQUIRED FOR EACH CPU.		
Single-Use License	QY916-UZ	QJ916-UZ
MATERIALS AND SERVICE OPTIONS:		
Distribution and Documentation Option	QY916-H5 QY916-HH QY916-HM	QJ916-H5 QJ916-HD QJ916-HH QJ916-HM QJ916-HV
Software Revision Right-To-Copy Option	QY916-HZ	QJ916-HZ
Documentation-Only Option	QY916-GZ	QJ916-GZ
Installation Service Option	QY916-I5 QY916-IH QY916-IM	QJ916-I5 QJ916-ID QJ916-IH QJ916-IM QJ916-IV
DECsupport Service	QY916-95 QY916-9H QY916-9M	QJ916-95 QJ916-9D QJ916-9H QJ916-9M QJ916-9V
Basic Service	QY916-85 QY916-8H QY916-8M	QJ916-85 QJ916-8D QJ916-8H QJ916-8M QJ916-8V
Self-Maintenance Service	QY916-35 QY916-3H QY916-3M	QJ916-35 QJ916-3D QJ916-3H QJ916-3M QJ916-3V

[1]Class L Systems

— All Q-BUS models and systems except MicroPDP-11/83

— KD11, KDF11, KDJ11 CPU modules

— DCT11, DCF11, DCJ11 microprocessor chips

[2]Class H Systems

— All UNIBUS models and systems

— MicroPDP-11/83

Software Product Description

PRODUCT NAME: Micro/RSTS, Version 2.1 **SPD 18.12.04**

DESCRIPTION

Micro/RSTS, Version 2.1, a subset of RSTS/E, Version 9.2, is a multiuser general purpose timesharing operating system which is distributed on RX50 flexible diskettes and TK50 cartridge tapes. Micro/RSTS is optimized for the MicroPDP-11 family of computers and provides a powerful run-time environment for applications developed on either RSTS/E or Micro/RSTS. In addition to the application run-time environment, EDT (DIGITAL's standard text editor), the BASIC-PLUS language, PDP-11 SORT/MERGE, and RMS-11 file management utilities are provided as standard components of the Micro/RSTS system's Base Kit.

For users who require a program development environment using either MACRO-11 or any of the Micro/RSTS high level compilers, an optional Application Development Kit can be purchased and layered on the Base Kit to support these activities.

Standard Features

- Support for all RSTS/E system services including all SYSCALLs
- Support for all RSTS/E standard run-time environments
- Support for up to 14 terminals and 20 jobs on MicroPDP-11/73, MicroPDP-11/53, and MicroPDP-11/83 systems and for MicroPDP-11/23 systems with more than 256KB of memory. Support for up to 14 terminals and 10 jobs on MicroPDP-11/23 systems with 256KB of memory. The system operator can adjust the maximum number for jobs.
- Designed to optimize the system around low cost per terminal, ease of installation and ease of use
- DCL - DIGITAL Command Language which prompts users for input. DCL commands are English words that are self-documenting when typed in full, but can be abbreviated once the user is accustomed to the system.
- On-line help files. Users can get help on any DCL command by using the "HELP" command. Additional assistance for the new user is provided through tutorial documentation. Detailed documentation is also included to meet the needs of the more experienced user. Installation of help information is optional.
- Both RMS-11 and native RSTS file management support is provided and includes such features as file sharing and protection.
- Reliability features include disk file backup and restore commands support individual file, error protected save set and volume image archiving methods.
- Lineprinter spooling to allow flexible sharing of printing devices
- Standard Base Kit components include EDT (DIGITAL's standard text editor), the BASIC-PLUS development environment, and PDP-11 SORT/MERGE (DIGITAL's standard sort product for PDP-11 systems).
- Support for applications which include DIGITAL's Forms Management product - FMS

The User Interface - DIGITAL Command Language (DCL)

DCL is based upon the DCL available on most DIGITAL operating systems. In particular, it is similar to the DCL implemented on VAX/VMS. In addition to fundamental operations such as listing directories and copying files, DCL includes features such as user-defined command synonyms, string and numeric symbol substitution, reading and writing files, system and account management functions, security control such as setting passwords, submitting to batch, setting terminal characteristics, and terminal activity logging.

A comprehensive set of HELP frames explaining the operation of all DCL commands is available to users at all times through the use of the "HELP" command. Entering the HELP command alone will provide a directory of all the subjects on which information is available. Entering HELP followed by the listed subject will yield information on the specific topic. Often additional subtopics provide more specialized information which can then be selected by the user. All help information is provided in the Base Kit however, installation of the help information is optional.

DCL command file processing provides the DCL user with the capability of placing a collection of DCL commands in a file and executing the commands as if they were a

program. Conceptually, the commands in the file appear to the system as a series of commands which are entered at the keyboard. All command file processing is done within DCL so that no additional keyboards or job slots are required. Information can be passed to the command file processor at the time the file is invoked and used to customize the action taken as the command file is executed.

In addition to standard DCL commands, the command file processor interprets set of specialized commands that allow operations such as conditional branching, local and global symbols, special purpose DCL Functions, error handling, "Control C" trapping, up to 13 nesting levels, selective display, optional time-stamping and user prompting.

DCL command files are used to start up the system and automatically set up the system, group and individual user environments when the user logs into the system.

Security and Privilege

Access to the system is controlled by the use of passwords which can be 6 to 14 characters in length. Initial assignment of passwords is done by the system manager. Each user, given the required privilege, can change the password assigned to his/her account.

The system manager may optionally define a system password which must be entered before the user is prompted to login to an account. This feature is available for different classes of access such as directly connected versus dial-up lines. As a resource sharing system, Micro/RSTS can give every user access to the system peripherals and resources, as well as a wide range of additional capabilities. Usage restrictions can be imposed on a per user or per system basis on certain of these resources.

Micro/RSTS provides 34 separate privilege attributes which can be assigned to any account on the system. Programs, which are resident on the system, may require one or more of these attributes in order to execute. In this way, the system manager can assign only those privileges to an account which are required by the users of that account.

Batch Services

Batch jobs are a collection of DCL commands in a file which are placed (submitted) on a queue for execution. Batch services process each job in the queue in turn. Users can submit batch jobs to perform tasks that require no terminal interaction, or to run programs at a later time. For each batch job, the user can set limits on the system resources allocated to the job. Multiple queues can be defined. Each queue can have different attributes. A user with the required privilege can start up and control batch queues.

Print Services

Micro/RSTS provides centralized printing on line-printers (LP) and printer type terminals (KB). Print requests are maintained on queues and are processed as the required printer becomes available. A privileged user can define and control all aspects of print services including managing printer forms, imposing page limits on requests, and restricting access to certain printers.

Account Management

DCL commands are provided to create and delete accounts, set account attributes, and display account information. Account templates can be created and used to set up a class of accounts with the same attributes.

Several different types of accounts can be defined. User accounts allow access to the Micro/RSTS system. Captive accounts cause the system to startup a specific application such as word processing or a menu. When the user leaves the application, the job is killed and the user is logged off. Guest accounts can be set up causing the system not to prompt for the password for the account during login. Non-interactive accounts can be setup causing the system not to allow a user to login.

Accounts have privileges associated with them. The privilege attributes assigned to an account determine what a user logged into the account can do on the system.

Accounts can be set up with an expiration date. After the expiration date has passed, users can no longer login to the account. The account is not automatically deleted and the information in the account can be retrieved by a user with the required privileges.

Disk File and Device Backup

Micro/RSTS provides the ability for total or selective backup of accounts and files to disks or to magnetic tapes using DCL commands. This is done through the use of multi-volume container files which may be placed on standard RSTS format disks or ANSI labeled magnetic tape. A separate utility is provided for making image copies.

Selective backup can be done on-line. Image copies of disk volumes can be made on-line for all volumes except the system disk and off-line for all volumes including the system disk.

Micro/RSTS BACKUP produces BACKUP sets which are subset compatible with the VAX/VMS and MicroVMS BACKUP and can read BACKUP sets produced by the VAX/VMS and MicroVMS BACKUP. This provides for easy transfer of data between machines running these two operating systems.

Micro/RSTS BACKUP provides streaming support for streaming tape drives. Refer to the "Optional Hardware" section of this SPD for a list of tape drives which BACKUP supports in streaming mode.

File Sort Utility (PDP-11 SORT/MERGE)

Micro/RSTS includes a file sort utility, PDP-11 SORT/MERGE, that accepts as input up to 10 RMS-11 files, and creates a second, reordered RMS-11 file. The input file can contain data stored in binary or ASCII format. The file organization can be sequential, relative, or indexed and the record format can be fixed length, variable length, or stream. The utility can be accessed from DCL "SORT" and "MERGE" commands or as subroutines from within programs written in a language which uses RMS-11. The SORT and MERGE DCL commands are available as a

standard component of the Micro/RSTS Base Kit. The SORT/MERGE subroutines require the Micro/RSTS Application Development Kit.

BASIC-PLUS

The BASIC-PLUS language processor which is included as a standard feature of the Micro/RSTS Base kit, is a compiler and a run-time system. The BASIC-PLUS compiler produces a compact pseudo code that is interpreted by the run-time system. BASIC-PLUS programs can be saved in either source form or in compiled form (compact pseudo code).

The immediate mode feature of BASIC-PLUS allows single-line statements typed without a line number to be compiled and executed immediately. This is a particularly useful feature in interactive debugging of BASIC-PLUS programs.

BASIC-PLUS can serve as a powerful system programming language. The extensive file processing capabilities of BASIC-PLUS allow users to take full advantage of RSTS/E file processing features. Most system features of RSTS/E are accessible via the flexible SYS system function call mechanism.

In addition to standard features, BASIC-PLUS features long variable names (with extend mode), IF...THEN... ELSE construct, ON ERROR condition handlers, statement modifiers such as IF, UNLESS, WHILE, UNTIL, FOR, multiline statements and program chaining.

Packaging

Micro/RSTS is available as two separate kits; a Base Kit and an Application Development Kit. All Micro/RSTS users require the Base System which is provided in the Base Kit. The Application Development Kit is optional and provides support of program development using MACRO-11 and Micro/RSTS high level languages. The Base Kit is a prerequisite for the Application Development Kit.

Micro/RSTS Base Kit

The Base Kit can be installed from the distribution media onto any hard disk which is supported by the Micro/RSTS System and has a capacity of at least 10 megabytes. (Refer to the "Minimum Hardware" and "Optional Hardware" sections of this SPD for supported disks.)

The Micro/RSTS Version 2.1 Base Kit consists of all the software required to run RSTS/E on a MicroPDP-11. In addition, several optional software packages are included which can be installed selectively:

HELP	On-line help facility
TEST	Device testing package (CPEXER, KBEXER, etc.)
RESTOR	Restore function of Version 1.0 and 1.1 BACKUP package
RMS	RMS Utilities (RMSDES, RMSIFL, etc.)
AUXLIB	Auxiliary library programs (DSKCVT, QUOLST, etc.)
SORT	Software to support DCL SORT and MERGE commands

Micro/RSTS Application Development Kit

The Application Development Kit is installable on any disk supported by the Base Kit.

The Micro/RSTS, Version 2.1 Application Development Kit consists of several optional software packages which can be installed selectively:

RMS	RMS program development components
RSX	RSX program development tools (MAC, TKB, etc.)
RT11	RT-11 program development tools (MACRO, LINK, etc.)
SORT	SORT/MERGE program development tools
UNSUPP	Unsupported software (DSKDMP, etc.)

MINIMUM HARDWARE REQUIRED

A MicroPDP-11 family computer system which consists of:

- KDF11-B, KDJ11-B or KDJ11-D processor board
- One supported hard disk drive with a capacity of at least 10 megabytes

  Supported hard disk drives which can be used as a system disk include:

  RD51-A 11MB fixed Winchester disk
  RD31 20MB fixed Winchester disk
  RD52-A 31MB fixed Winchester disk
  RD53-A 71MB fixed Winchester disk
  RC25 52MB fixed/removable disk
  RA60 205 MB removable disk
  RA80 121MB fixed disk
  RA81 456MB fixed disk
- One of the following distribution devices:

  RX50 800 KB (2 x 400MB) flexible diskette drive
  RX33 1.2MB flexible diskette drive
  TK50 Cartridge tape drive
- 256KB memory (512KB is recommended for systems supporting more than 2 users)
- Console terminal

OPTIONAL HARDWARE

- KEF11-AA Floating Chip Option
- KEF11-BB CIS Chip Option
- FPF11-A Floating Point Option
- One RLV12 Controller with 1-4 RL02 disk drives for use as add-on disks
- DZV11/DZQ11 4-line serial terminal multiplexer (3 maximum)
- One LPV11 line printer
- DHV11 8-line serial terminal multiplexer (3 maximum)

- Up to two TK50 cartridge tape drives
- Additional RD disks as supported by the RQDX controller
- One additional RC25 52MB Fixed/Removable Disk Subsystem (as units 4-7). Each RC25 drive is 2 disk units; 1 fixed and 1 removable. There can be up to 2 drives (4 disk units) in the subsystem.
- One TK25 tape subsystem, or one TSV05 tape drive
- Up to four RA80, RA81 or RA60 disks on a KDA50-Q controller
- Additional Memory (If simultaneous use of two or more large programs is expected then more memory is recommended. If more than four simultaneous users are required, additional memory must be added.)

PREREQUISITE SOFTWARE

For Micro/RSTS Base Kit:

None

For Micro/RSTS Application Development Kit:

Micro/RSTS Base Kit

OPTIONAL SOFTWARE

Refer to the Micro/RSTS Optional Software Cross Reference Table (SPD 20.94.xx) for available optional software.

SOFTWARE WARRANTY

Warranty for this software product is provided by DIGITAL with the purchase of a license for the product as defined in the Software Warranty Addendum of this SPD.

INSTALLATION

This software product can be installed by the customer using the step-by-step documentation available for this product. Optionally you can purchase DIGITAL Installation Services which provide for the installation of the software product by an experienced DIGITAL Software Specialist.

ORDERING INFORMATION

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You will need a separate license for each CPU on which you will be using the software product (except as otherwise specified by DIGITAL). Then, Materials and Service Options are selected to utilize the product effectively. **THE LICENSE OPTIONS ARE DESCRIBED BELOW. IF YOU ARE NOT FAMILIAR WITH THE SERVICE OPTIONS, YOU MAY OBTAIN THE APPROPRIATE SOFTWARE PRODUCT SERVICE DESCRIPTION(S) FROM YOUR LOCAL DIGITAL OFFICE.** If you are already familiar with these options, you may obtain the ordering information directly from the Software Options Chart.

LICENSE OPTIONS

Single-Use License Option

The Single-Use License is your right to use the software product on a single CPU.

For your first installation of this software product you must purchase as a **minimum:**

- Single-Use License Option, and
- Distribution and Documentation Option

The license gives you the right to use the software on a single CPU and the Distribution and Documentation Option provides the machine-readable software and related documentation.

To use this software product on additional CPUs, you must purchase for each CPU as a **minimum:**

- Single-Use License Option

In addition to the right to use, the license gives you the one-time right to copy the software from your original CPU installation to the additional CPU. Therefore, the Distribution and Documentation Option is not required, but optional.

Distribution and Documentation Option

The Distribution and Documentation option provides the machine-readable software and the basic documentation. You must have, or order, a Single-Use License to obtain this option. You will need this option to install the software for the first time. When revised versions of this software product become available, they may also be obtained by purchasing this option again.

Software Revision Right-To-Copy Option

The Right-To-Copy Option allows a customer with multiple CPUs to copy a revised version of a software product from one CPU to another. Each CPU must be licensed for that product. You first install the revised software on one CPU; then you can make copies for additional CPUs by purchasing the Right-To-Copy Option for each additional CPU.

Documentation-Only Option

The Documenation-Only Option provides one copy of the basic documentation.

Software Product Services

A variety of service options are available. For more information on these or other services, please contact your local DIGITAL office.

SOFTWARE OPTIONS CHART

The distribution Media Codes used in the Software Options Chart are described below. You specify the desired Media Code at the end of the Order Number, e.g., QY829-H3 = binaries on RX50 Floppy Diskette.

3 = RX50 Floppy Diskette (for use with RX50 and RX33 distri-5 = TK50 Tape Cartridge bution devices)
Z = No hardware dependency

NOTE: The availability of these software product options and services may vary by country. Customers should contact their local DIGITAL office for information on availability.

OPTIONS	ORDER NUMBER BASE KIT	ORDER NUMBER APPLICATION DEVELOPMENT KIT
LICENSE OPTIONS: A LICENSE IS REQUIRED FOR EACH CPU.		
Single-Use License for Class L Systems[1]	QY829-UZ	QY829-UZ
Single-Use License for Class H Systems[2]	QR829-UZ	QR829-UZ
MATERIALS AND SERVICE OPTIONS:		
Distribution and Documentation Option	QY829-H3 QY829-H5	QY830-H3 QY830-H5
Software Revision Right-To-Copy Option	QY829-HZ	QY830-HZ
Documentation-Only Option	QY829-GZ	QY830-GZ
Installation Service Option	QY829-I3 QY829-I5	QY830-I3 QY830-I5
DECsupport Service	QY829-93 QY829-95	QY830-93 QY830-95
Basic Service	QY829-83 QY829-85	QY830-83 QY830-85
Self-Maintenance Service	QY829-33 QY829-35	QY830-33 QY830-35

[1] Class L Systems
— All Q-BUS models and systems except MicroPDP-11/83
- KD11, KDF11, KDJ11 CPU modules
- DCT11, DCF11, DCJ11 microprocessor chips

[2] Class H Systems
- All UNIBUS models and systems
- MicroPDP-11/83

SOFTWARE PERFORMANCE REPORT (SPR) SUBMISSIONS

Digital Equipment Corporation guarantees a response to every SPR submitted by DIGITAL specialists and customers who purchase software product service agreements.

Blank SPR forms are available upon request in desired quantities from SPR Administration, P.O. Box F, Maynard, MA 01754, or your local DIGITAL office.

Inquiries on the progress of submitted SPRs should be directed to your local DIGITAL office or SPR Administration at (617) 493-4722.

An SPR Answer Survey Card is enclosed with each SPR response. Please complete the survey card; it provides essential feedback for monitoring the quality of our SPR responses.

Completing an SPR Form

Complete the entire form by either typing or printing clearly. Remove "Customer File Copy" for your records. Leave carbon in tact.

Include customer name and **complete** mailing address.

To expedite the processing of your SPR, enter your **Customer Number** in the space provided. This number is located in the upper left-hand corner of your Dispatch label. It can also be obtained from your local DIGITAL office or by calling SPR Administration at (617) 493-6683.

If you do not want your SPR to be published, check the "DO NOT PUBLISH" box on the SPR form. However, if the SPR is determined to be of universal value and it does not describe a security problem, DIGITAL may elect to publish it. For SPRs which describe security problems, it is imperative that the "DO NOT PUBLISH" box be marked.

Describe one problem per SPR form. If an SPR is submitted with more than one problem, it can lengthen the turnaround time.

State the problem clearly. If necessary, summarize the problem, then describe in detail.

Include all the information needed to reproduce the problem. The easiest problems to fix are those reported in statements similar to the following: if you do X, Y happens when Z should.

State all version numbers and all inserted patches. The problem can be fixed sooner if the version is known. Please include the operating system version even on operating system SPRs, since operating system bugs sometimes manifest themselves as "bugs" in other programs. A statement of patches inserted in the relevant software is also helpful. State the type of terminal or work station on which the software is running, e.g., VT100, VT220, PRO 350, DECmate.

Include as much information as possible; too much information is better than not enough. Send all information in machine-readable format if it occupies more than half a page. Please include the following:

1. Program causing the problems
2. All necessary auxiliary files, such as DBMS or LIBRARY files
3. Assembly switches which are on (if applicable)
4. Switches handed to the software, since different switches cause different sections of the code to be executed
5. All necessary run-time files for language run-time problems
6. A directory listing of media, when included; label media carefully

SUGGESTIONS FOR SUBMITTING TAPES WITH SPRs

To insure timely processing of SPRs submitted with tapes, please follow the suggestions below:

1. Use either a floppy or a magnetic tape.
2. If a magnetic tape is used, it should be either 800, 1600, or 6250 bpi.
3. Include a directory with each tape submitted.
4. Label each tape with the following information:
   a. Customer name
   b. Tape format
   c. bpi
   d. Track
   e. Preprinted number of the SPR submitted with the tape
5. Remove from the tape any unnecessary or confidential files.

Thank you.

SOFTWARE PROBLEMS OR ENHANCEMENTS

Questions and problems regarding, and enhancements to, DIGITAL software should be reported on a Software Performance Report (SPR) form and mailed to the SPR Center at one of the following DIGITAL offices (SPR forms are available from the SPR Center):

AREAS COVERED	SPR CENTER
United States	Corporate Administrative Services Group P.O. Box F Maynard, MA 01754
Canada	Digital Equipment of Canada, Ltd. P.O. Box 13000 Kanata, Ontario Canada, K2K 2A6
Mexico	Digital Equipment de Mexico S.A. de C.V. Apartado Postal 12-1009 Mexico 12, O.F. Mexico
Puerto Rico	Digital Equipment Latin America P.O. Box 11038 Fernandez Juncos Station Santurce 00910 Puerto Rico
Australia, New Zealand	Digital Equipment Aust Pty Ltd 754 Pacific Hwy 1st floor M/SSNH/B-1 Chatswood, New South Wales 2067 Australia
Brazil	Digital Equipment Comercio e Industria Ltda. Avenida Augusto Severo, 156-A 20021 Rio de Janeiro, RJ Brazil
China	Digital Equipment Hong Kong Ltd. 5-7th Floor Intercontinental Plaza 94 Granville Road Tsimshatsui East Kowloon Hong Kong
Remainder of General International Area (GIA)	Digital Equipment Corp. General International District - SWS 100 Nagog Park Acton, MA 01720-3499 United States
United Kingdom, Bahrein, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Qatar, Oman, Saudi Arabia, Syria, United Arab Emirates, Yemen Arab Republic	Digital Equipment Co. Ltd. Jays Close Basingstoke, Hampshire RG22 4DE England
France	Digital Equipment France Zone Industrielle Bois de L'Epine 11 Avenue Joliot Curie BP 202 91007 Evry Cedex France

AREAS COVERED	SPR CENTER
Italy	Digital Equipment S.p.A. Viale Fulvio Testi, 11 Ang. Via Gorki 105 1-20092 Cinisello Balsamo Milan Italy
Japan	Nihon Digital Equipment Corp. Sunshine 60, P.O. Box 1135 1-1 Higashi Ikebukuro 3-Chome, Toshima-Ku, Tokyo, 170 Japan
Belgium, Luxemburg	Digital Equipment N.V./S.A. Rue De L'Aeronef 1 B-1140 Brussels Belgium
Holland	Digital Equipment B.V. Kaap Hoorndreef 38 NL-3563 AV Utrecht Holland
Sweden	Digital Equipment AB SPR Admin. M-B Duff/CSC Allen 6 S-172 89 Sundbyberg Sweden
Denmark	Digital Equipment Corp. A/S Sandtoften 9 DK-2820 Gentofte Denmark
Finland	Digital Equipment Corp. OY Box 16 02201 ESPOO Finland
Norway	Digital Equipment Corp. A/S Ammerudveien 22 N-0958 Oslo 9 Norway
Austria, East Germany, West Germany, Poland, Hungary, Rumania, Czechoslovakia, Russia, Bulgaria	Digital Equipment Corp. GmbH SPR Centre - D2 Freischuetzstrasse 91 8000 Muenchen 81 West Germany
Israel	Digital Equipment Ltd. Digital House Acadia Junction Herzlia 46 733 Israel
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The Software Dispatch

RSTS/E

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RSTS/E SOFTWARE DISPATCH

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The RSTS/E Software Dispatch complements the RSTS/E Software Dispatch Review. New and revised Software Product Descriptions, programming notes, software problems and solutions, and documentation corrections are published here. Much of the material is developed from Software Performance Report (SPR) answers significant to the general audience and is printed here to supplement the maintenance notebook (established by the Software Dispatch Review).

PRODUCTS SUPPORTED in the RSTS/E SOFTWARE DISPATCH

ADE/RSTS
BASIC-PLUS-2 for RSTS/E, PDP-11
COBOL, PDP-11
COBOL-81/RSTS/E
DATATRIEVE-11
DECAL
DECgraph-11
DECmail/RSTS
DECnet/E
DECWORD/DP
DMS-500
FMS-11/RSTS
FORTRAN IV/RSTS/E
FORTRAN-77 DEBUG, PDP-11
FORTRAN-77/RSTS/E, PDP-11
GIGI Software
INDENT
MENU-11/RSTS
RPG II, PDP-11
RSTS Smart Mailer
RSTS/E DIBOL
RSTS/E
RSTS/E 3271 Protocol Emulator
RSTS/E High Performance 2780/3780 Emulator
RSTS/E-2780
SORT-11

DISTRIBUTION

The RSTS/E Software Dispatch is directed to one software contact for each software product. No mailing will be made to addresses without a software contact name. **Address change requests should be sent to the nearest DIGITAL field office. Include the new address and mailing label from the most recently received publication.**

Software binary and sources are provided under licenses only. The standard Terms and Conditions, OEM Agreement, and/or Quantity Discount Agreement contain the licenses for all binaries other than DECsystem-10.

Barbara Scollan, Editor

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PRODUCT AVAILABILITY DATES - RSTS/E

DECEMBER 1986

The following list contains date and version of the latest release of supported software products. Customers who are in warranty or have a software product service agreement during the month the product became available, are eligible to receive the new release. Eligible customers who have not received the new release should contact their local DIGITAL office.

PRODUCT	VERSION	AVAILABLE
ADE/RSTS	2.4	JUL 85
BASIC-PLUS-2 for RSTS/E,PDP-11	2.3	JUN 85
COBOL,PDP-11	4.4	MAY 82
COBOL-81/RSTS/E	2.4	MAY 86
DATATRIEVE-11	3.1	SEP 84
DECdx/RSTS	1.0	NOV 84
DECmail-11 for RSTS/E and Micro/RSTS	2.0	MAR 84
DECnet/E	2.1	JUN 85
DECtap	1.5	MAR 86
DECWORD/DP	1.2 SPD ONLY	MAY 85
DMS-500	2.1	JUL 82
FMS-11/RSTS	1.5	APR 85
FORTRAN IV/RSTS/E	2.6	JUN 83
PDP-11 SYMBOLIC DEBUGGER/RSTS (formerly FORTRAN-77 DEBUG/RSTS/E, PDP-11)	2.0	APR 86
FORTRAN-77/RSTS/E,PDP-11	5.0	OCT 83
GIGI Software	1.0 ARCHIVED	DEC 84
INDENT	1.4	JUN 85
MENU-11/RSTS	2.0	DEC 83
Message Router for RSTS/E	1.0	AUG 84
RPG II,PDP-11	8.8	JUL 83
RSTS Smart Mailer	1.1	NOV 84
RSTS/E	9.2	JUN 86
RSTS/E DECgraph-11	1.2	NOV 84
RSTS/E DIBOL	5.2 SPD ONLY	MAY 86
RSTS/E High Performance 2780/3780 Emulator	1.1 RETIRED	MAR 86
RSTS/E V8.0 UPDATE	G	APR 85
RSTS/E 3271 Protocol Emulator	2.1 RETIRED	MAR 86

RSTS/E V9

SYSTEM PERFORMANCE LOSS SINCE RSTS/E VERSION 9.0

Several customers have reported system performance degradation after upgrading from RSTS/E V8.0 to V9.0, V9.1, or V9.2. While configurations reporting these problems were very different, most were running at or above CPU "capacity."

Upon receipt of these problem reports, steps were taken to identify areas of the software where performance was negatively affected since the release of V9.0. This investigation revealed that certain areas of the monitor required additional CPU overhead to perform their function. Thus, some customers running RSTS/E V9.0, V9.1, or V9.2 on systems with inadequate CPU processing power or on systems that are heavily loaded might encounter worse performance, while other customers running on lightly loaded systems or systems with sufficient CPU power might not notice any performance losses (some have indicated that their performance improved after upgrading from V8.0).

Three performance areas were identified. These areas are described in detail below, along with the steps that have been taken to improve performance in RSTS/E V9.3:

1. Terminal Service - Because of the features added to Terminal Service to support DCL command file processing, more CPU overhead was added to character output processing. This was most noticeable on systems using screen-intensive applications or applications using high-volume character output processing. System load directly affected this area.

   This was a recognized performance area in RSTS/E V9.0, and steps have been taken since then to improve output character processing. While performance in this area is not yet back to that in V8.0, significant improvements have been made, especially in V9.3. More work is planned to continue improving performance in this area for future releases of RSTS/E.

2. Disk Allocation Handling - In RSTS/E V9.1, with the added support for loading a mounted disk's index (sometimes called the Storage Allocation Truth Table (SATT)) into memory, revisions were made to the code that handles SATT searching to locate nonallocated clusters needed to extend a file. Certain optimizations found in the code were not duplicated, yielding increased CPU overhead in searching the SATT. Systems using disks with small pack cluster sizes, or systems that do many file extends (word processing systems generally fall into this category) might encounter performance losses in this area.

This performance loss has been eliminated in RSTS/E V9.3. Performance is equal to or better than that found in pre-V9.1 versions of RSTS/E.

3. MSCP Disk Handling - In RSTS/E V9.1, with the added support for TMSCP tape drives (TK50 and TU81), extensive changes were made to the existing MSCP disk driver to provide common code to be shared by both the MSCP and TMSCP drivers. Because of the calling structure used, more CPU overhead was required for most MSCP disk functions than in earlier versions. This problem affected all systems using DU-type (MSCP) disks, whether or not they included any TMSCP tape drives.

   This performance loss has been virtually eliminated in RSTS/E V9.3 as a result of a major reorganization of the MSCP/TMSCP code in the monitor. Use of a more efficient calling structure has resulted in significant performance gains in this area.

Steps are being taken to more closely monitor system performance and identify potential performance problems when new features are added or changes are made to the RSTS/E software.

We are interested in hearing about any other performance problems in upgrading from earlier versions of RSTS/E. If you have encountered such problems, please submit a Software Performance Report (SPR). Be sure to include complete details on your system's hardware and software configuration, and the conditions under which the performance loss was observed.

RSTS/E V9.2
General Notes
System Notes

Seq. No. 0.1.17 N

1 of 1

RSTS/E V9.1 SUPPORT TERMINATED

Digital's support policy for RSTS/E software products is to maintain each version for a period of six months after the release of a newer version.

RSTS/E V9.2 was officially released on 18 June 1986. Therefore, support for RSTS/E V9.1 terminates on 31 December 1986.

All customers are expected to have installed RSTS/E V9.2 software on their systems if they are to be supported after that date.

CORRECT DHU11/DHV11 FLOW CONTROL PROBLEM - MANDATORY TERMINAL SERVICE PATCH

PROBLEM:

When using a modem with a DHU11/DHV11 multiplexer line, it is possible for the line to remain in an XOFFed state when carrier is lost.

SOLUTION:

The following patch corrects this problem for both RSTS/E V9.1 and V9.2. This problem is fixed in source in V9.3 and later.

NOTE:

> This patch should only be applied if you have included support for DHU11/DHV11 multiplexers with modem control in your monitor. If the "old" values in the patch below do not match with your monitor, then your monitor does not contain support for the DHU11/DHV11 multiplexer with modem control, and this patch should not be installed.

PROCEDURE:

1. This is a required patch to the RSTS/E V9.1 and V9.2 executives. It must be installed in all target monitor SILs that include support for DHU11/DHV11 multiplexers.

2. The patch described in step 4 below can be installed using the PATCH option of INIT.SYS:

   ```
   Option: PATCH
   File to patch? <lf>          (LINE FEED for installed monitor SIL)
   ```

3. This patch can be installed manually using ONLPAT, the online patching program. Note, however, that if the patch is applied on line to the installed monitor SIL, it will not take effect until the system is rebooted.

   ```
   RUN $ONLPAT
   Command File Name? <cr>      (RETURN for manual patch installation)
   File to patch? <lf>          (LINE FEED for installed monitor SIL)
   File found in account [0,1]
   ```

4. The patch is as follows:

```
Module name? TER
Base address? TTMRNG
Offset address? -(6+(56*(DL11E<>0)))
 Base   Offset  Old     New?
??????  ??????  052763  ? 4737
??????  ??????  011000  ? PATCH+70
??????  ??????  000010  ? 240
??????  ??????  ??????  ? ^Z        (CTRL/Z for new offset)
Offset address? ^Z                  (CTRL/Z for new base)
Base address? ^Z                    (CTRL/Z for new module)
Module name? RSTS
Base address? PATCH
Offset address? 70
 Base   Offset  Old     New?
??????  000070  000000  ? BIS+2763
??????  000072  000000  ? 11000
??????  000074  000000  ? 10
??????  000076  000000  ? BIS+2763
??????  000100  000000  ? 100000
??????  000102  000000  ? 14
??????  000104  000000  ? 207
??????  000106  ??????  ? ^Z        (CTRL/Z for new offset)
Offset address? ^Z                  (CTRL/Z for new base)
Base address? $$0303
Offset address? 0
 Base   Offset  Old     New?
??????  000000  ??????  ? Q!1000
??????  000002  ??????  ? ^C    (up-arrow/C to exit;CTRL/C for INIT)
```

RSTS/E V9.1 Seq. No. 6.2.1 M
System Files
BACKUP.TSK 1 of 2

Supersedes RSTS/E V9 October 1986 Software Dispatch Seq. No. 6.2.1 M

BACKUP DOES NOT HANDLE MULTIDISK PUBLIC STRUCTURES - MANDATORY PATCH FOR BACKUP.TSK

PROBLEM:

If one refers to SY: in a BACKUP or RESTORE command, only SY0: of the public structure is actually referenced.

SOLUTION:

The patching procedure detailed below corrects the problem.

PROCEDURE:

1. This is a required patch to the RSTS/E V9.1 and V9.2 BACKUP programs.

   This problem will be fixed in RSTS/E V9.3.

2. This patch must be installed manually using ONLPAT, the online patching program. It will take effect immediately.

```
RUN $ONLPAT
Command File Name? <cr>   (RETURN for manual patch installation)
File to patch? _SY:[0,1]BACKUP.TSK
```

3. For RSTS/E V9.1, the patch is as follows:

```
Base address? BCKCUI-24
Offset address? 740
 Base       Offset  Old     New?
063526      000740  177400  ? 0
063526      000742  000434  ? ^Z            (CTRL/Z for a new offset)
Offset address? 762
 Base       Offset  Old     New?
063526      000762  113767  ? 13767
063526      000764  000434  ? ^Z            (CTRL/Z for a new offset)
Offset address? 770
 Base       Offset  Old     New?
063526      000770  112767  ? 102002
063526      000772  177777  ? ^C            (up-arrow/C to exit)
```

4. For RSTS/E V9.2, the patch is as follows:

```
Base address? BCKCUI-24
Offset address? 1104
 Base       Offset  Old     New?
061364      001104  177400  ? 0
061364      001106  000434  ? ^Z            (CTRL/Z for a new offset)
Offset address? 1126
 Base       Offset  Old     New?
061364      001126  113767  ? 13767
061364      001130  000434  ? ^Z            (CTRL/Z for a new offset)
Offset address? 1134
 Base       Offset  Old     New?
061364      001134  112767  ? 102002
061364      001136  177777  ? ^C            (up-arrow/C to exit)
```

RSTS/E V9.0 Seq. No. 6.2.2 R
System Files
BACKUP.TSK 1 of 1

MULTIVOLUME RSTS/E BACKUP SETS CANNOT BE RESTORED ON VAX/VMS V4.2 AND LATER

PROBLEM:

A multivolume BACKUP container set created with RSTS/E V9 BACKUP cannot be restored on VMS. The problem exists on all RSTS/E V9 releases. We are currently examining this problem and a solution is expected in a future release.

SYMPTOMS:

There are two reasons why VMS rejects RSTS/E BACKUP container sets. Both have to do with the way RSTS/E handles volume changes. The first reason causes VMS to yield errors pertaining to the block sequence number (unexpected block number, blocks missing from file), and the second produces errors pertaining to file ID mismatches.

It should be noted that VMS produces "Invalid record type" errors when it encounters RSTS/E accounting information. These errors have nothing to do with this problem and may be ignored.

WORKAROUND:

The only way to circumvent the problem is to use single-volume container sets. This can be done by either going to higher-density media or producing more than one container set: make a few passes, backing up just enough to fit on a single volume on each pass.

RSTS/E V9.2 Seq. No. 10.12.1 M
System Library Package
SHUTUP 1 of 1

SHUTUP MAY ABORT DURING ERRCPY SHUT-DOWN PHASE - MANDATORY PATCH FOR SHUTUP.TSK

PROBLEM:

The RSTS/E system shut-down program, SHUTUP.TSK, sometimes aborts during the ERRCPY shut-down phase. The ERRCPY program does shut down, but SHUTUP prints the following message and then aborts the system shutdown:

```
?ERRCPY failed to shutdown
??SHUTUP aborting - Please try again later
```

SOLUTION:

The folowing patch will correct the problem. You can also work around it by simply rerunning SHUTUP after the failure.

This problem is corrected in RSTS/E V9.3.

PROCEDURE:

1. This is a required patch to the RSTS/E V9.2 SHUTUP.TSK program.

2. This patch must be installed manually using ONLPAT, the online patching program. It will take effect immediately.

```
RUN $ONLPAT
Command file name? <CR>
File to patch? $SHUTUP.TSK
```

3. The patch is as follows:

```
Base address? 55672
Offset address? 0
 Base   Offset  Old     New?
055672  000000  000002  ? 1
055672  000002  014674  ? ^C        (up-arrow/C to exit)
```

RSTS/E V9.2 Seq. No. 14.1.3 R
Operator Services and Spooling Package
QUMRUN.TSK 1 of 1

QUE /DELETE IGNORED UNLESS USER HAS WWRITE OR GWRITE PRIVILEGES

PROBLEM:

Because of an error in the QUMRUN program, a user logged into an account lacking WWRITE or GWRITE privileges cannot use the /DELETE qualifier when submitting a job through the OPSER QUE command. The user sees no errors, but the file is not deleted upon completion of the job.

SOLUTION:

This problem is fixed in RSTS/E V9.3.

RSTS/E V9.1 Seq. No. 14.1.4 N
Operator Services and Spooling Package
QUMRUN.TSK 1 of 1

QUMRUN HIBERNATES UNDER CERTAIN CONDITIONS

PROBLEM:

Under a particular set of conditions, the QUMRUN program (part of the OPSER Spooling Package) may hibernate, with the result that all OPSER-based spooling stops. If you attach to the hibernating QUMRUN program, you will see the following error message:

```
??Program failure in QUMRUN
?Subscript out of range at line 2760
```

This can happen under the following set of conditions:

1. Two or more spoolers or batch jobs are on line.

2. The first online spooler gets hung with its pending messages at the maximum limit allowed for that job (5/5).

3. Another spooler is brought on line.

Approximately two minutes after step 3 happens, QUMRUN will hibernate.

SOLUTION:

This problem is fixed in RSTS/E V9.3.

RSTS/E VERSION 9
CUMULATIVE INDEX
DECEMBER 1986

This is a complete listing of all articles for RSTS/E V9.0 and all subsequent point releases, and layered products. Missing sequence numbers may pertain to problems unique to other versions of the same product or other major operating systems.

IMPORTANT!

The following numerical system has been grouped in logical order denoted by the first digit (X.X.X). The second digit (X.X.X.) refers to the subcomponent and the third digit (X.X.X) denotes the issue number or sequential order.

Unassigned articles are indicated: RESERVED.

Flags are currently being installed for all articles. The flags and definitions are as follows.

M = Mandatory Patch. These patches correct errors in the software product. All users are required to apply these patches to maintain consistent "user level" unless the accompanying article specifies otherwise.

F = Optional Feature Patch. These patches extend or configure functionality into the product. These functions will be treated as a supported part of the product for the duration of the current release and may be incorporated in a future release.

R = Restriction. These articles discuss areas that will not be patched in the current release because they require major modification or because they are not consistent with the design of the product. Restrictions, except those described as permanent, are reviewed and modified when possible as part of the normal release cycle.

N = Note. These articles provide explanatory information that supplements the manual set and provide more detailed information about a program or package. They also provide procedural information to make it easier to use a program or package.

+ = Article appeared in the RSTS/E Software Dispatch Review (Order No. AA-5514G-BC), June 1985.

* = Article appeared in the RSTS/E V9.0 Maintenance Notebook (Order No. AA-L997D-TC), June 1985.

- = Article is being republished.

Sequence	Title	Released	Corrected	Mon/Yr
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	General Notes			
	System Notes			
0.1.1 N	RSTS/E V9.0 COMPONENT SUMMARY	V9.0	N/A	Jun 85 *
0.1.2 N	ANNOUNCING RSTS/E V9.0	V9.0	N/A	Jun 85 *
0.1.3 N	UNDERSTANDING ?NO ROOM FOR USER ON DEVICE ERRORS	V9.0	N/A	Jul 85
0.1.4 N	WARNING ON USE OF THE PEEK() FUNCTION	V9.0	N/A	Nov 85
0.1.5 N	FPJ11 FLOATING-POINT ACCELERATOR WITH PDP-11/84 AND MicroPDP-11/83 SYSTEMS	V9.0	N/A	Jan 86
0.1.6 N	ANNOUNCING NEW HARDWARE SUPPORT IN RSTS/E	V9.0	N/A	Apr 86
0.1.7 N	ANNOUNCING RSTS/E V9.1--SUPPORT FOR TK50 AND RD53	V9.1	N/A	Jun 86 -
0.1.8 N	ANNOUNCING Micro/RSTS VERSION 2.0	V9.1	N/A	Jun 86 -
0.1.9 N	FPJ11 FLOATING-POINT ACCELERATOR WITH PDP-11/84 AND Micro PDP-11/83 SYSTEMS	V9.1		Jun 86 -
0.1.10 N	ANNOUNCING RSTS/E VERSION 9.2	V9.2	N/A	Jun 86 -
0.1.11 N	HARDWARE PROBLEM USING TK50 TAPE DRIVE ON SOME Q-BUS SYSTEMS	V9.2	N/A	Aug 86
0.1.12 N	RSTS/E V9.0 SUPPORT TERMINATED	V9.0	N/A	Aug 86
0.1.13 N	ANNOUNCING Micro/RSTS VERSION 2.1	V9.2	N/A	Aug 86
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2.1.2 N	PBUILD.TSK SHOULD NOT BE INCLUDED IN V9.0 KIT	V9.0	V9.1	Sep 85

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3.1.2 M	LARGE OVERLAID I- AND D-SPACE TASKS MAY FAIL RANDOMLY - MANDATORY MONITOR PATCH	V9.1	V9.3	Nov 86
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3.3.2 F	INPUT ESCAPE SEQUENCE HANDLING	V9.0	N/A	Jun 85 *
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3.3.4	RESERVED			
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3.3.6 M	CORRECT AUTOBAUD DETECTION PROBLEM	V9.1	V9.2	Jun 86
3.3.7 M	FIX CONTROL/O PROBLEM - MANDATORY TERMINAL SERVICE PATCH	V9.0	V9.3	Nov 86
3.3.8 M	FIX PROBLEMS WITH USING PRINT DEVICES ON TERMINAL LINES	V9.0	V9.3	Aug 86
3.3.9 M	CORRECT DHU11/DHV11 PROBLEMS - MANDATORY TERMINAL SERVICE PATCH	V9.1	V9.3	Nov 86
3.3.10 M	CORRECT DHU11/DHV11 FLOW CONTROL PROBLEM - MANDATORY TERMINAL SERVICE PATCH	V9.1	V9.3	Dec 86
	Terminal Service Notes			
3.4.1 N	UNDERSTANDING TERMINAL PARITY AND STOP BIT SETTINGS	V9.0	N/A	Jun 85 *
3.4.2 N	MODEM CONTROL ON PRIVATE, LEASED LINES	V9.0	N/A	Jun 85 *
3.4.3 N	MODEM SUPPORT ON RSTS/E	V9.0	N/A	Jun 86
	File Processor Patches			
3.5.1 F	CONTROLLING EMT LOGGING	V9.0	N/A	Jun 85 *
3.5.2 M	SET TERMINAL CHARACTERISTICS SYS CALL MAY HANG THE SYSTEM	V9.0	V9.1	Sep 85
3.5.3 M	ERROR IN HANDLING OF PUBLIC DISKS	V9.0	V9.1	Sep 85
3.5.4 M	FIX CORRUPTION OF LOW-CORE LOCATIONS	V9.0	V9.2	Jan 86
3.5.5 M	ALLOW MULTIPLE OPENS ON NONMOUNTED NFS DISK	V9.0	V9.3	Aug 86
3.5.6 M	DISK MODE 8 IS IGNORED - MANDATORY FILE PROCESSOR PATCH	V9.0	V9.2	Sep 86
3.5.7 M	ACCOUNTS MAY BECOME UNDELETABLE - MANDATORY FILE PROCESSOR PATCH	V9.1	V9.3	Sep 86
3.5.8 M	REMOVE RECEIVER SYS() CALL FAILS TO REMOVE OTHER JOBS - MANDATORY FILE PROCESSOR PATCH	V9.1	V9.3	Oct 86
	File Processor Notes			
3.6.1	PENDING SET TERMINAL CHARACTERISTICS SYS CALL CHANGE	V9.2	N/A	Sep 86
	Device Driver Patches			
3.7.1 F	USING THE CSS PAPER TAPE READER ON RSTS/E	V9.0	N/A	Jun 85 *
3.7.2 M	ACCESSING TMSCP TAPES MAY CAUSE SYSTEM TO CRASH	V9.1	V9.2	Jun 86
3.7.3 F	MONITOR WILL PREMATURELY TIMEOUT LONG OPERATIONS ON TK25s	V9.1	V9.3	Nov 86

Sequence	Title	Released	Corrected	Mon/Yr
	BASIC-PLUS			
	BASIC-PLUS Patches			
4.1.1 F	SPECIAL PRINT-USING CHARACTERS	V9.0	N/A	Jun 85 *
4.1.2 F	DEFAULT SCALE FACTOR	V9.0	N/A	Jun 85 *
4.1.3 F	OMITTING SCALE FACTOR WARNING MESSAGE	V9.0	N/A	Jun 85 *
4.1.4 F	DEFAULT TO NOEXTEND MODE	V9.0	N/A	Jun 85 *
4.1.5 F	IMMEDIATE MODE FROM .BAS FILE	V9.0	N/A	Jun 85 *
4.1.6 F	NO PPN'S IN CATALOG COMMAND	V9.0	N/A	Jun 85 *
4.1.7 F	DISABLING THE CCL SYS CALL	V9.0	N/A	Jun 85 *
4.1.8 F	CLEAR I/O BUFFERS USED BY OPEN STATEMENTS	V9.0	N/A	Jun 85 *
4.1.9 F	FORCE "ILLEGAL STATEMENT" ERROR WHEN USING OBSOLETE SEND/RECEIVE	V9.0	N/A	Jun 85 *
	Non-Standard BASIC-PLUS Features			
4.10.1 N	THE BASIC-PLUS DEBUG FACILITY	V9.0	N/A	Jun 85 *
4.10.2 N	THE BASIC-PLUS DUMP FACILITY	V9.0	N/A	Jun 85 *
4.10.3 F	CHANGING THE BASIC-PLUS DEBUG KEYWORDS	V9.0	N/A	Jun 85 *
4.10.4 F	ENABLING THE BASIC-PLUS DUMP FEATURE	V9.0	N/A	Jun 85 *
4.10.5 F	ENABLING DUMP FROM COMPILED FILES FOR NON-PRIVILEGED USERS	V9.0	N/A	Jun 85 *
4.10.6 F	CHANGING THE BASIC-PLUS D?MP KEYWORD	V9.0	N/A	Jun 85 *
	RSTS/E 2780 Device Driver			
	2780 Device Driver Patches			
5.1.1 M	BUFFER LIMIT CHECKING	V9.0		Jun 85 *
5.1.2 M	DISCONNECT COMMAND HANDLING	V9.0		Jun 85 *
5.1.3 M	DP11 TRANSMIT HANG CONDITION	V9.0		Jun 85 *
5.1.4 M	DU11/DP11 TRANSMIT HANG CONDITION	V9.0		Jun 85 *
5.1.5 M	LOSS OR DUPLICATION OF DATA	V9.0		Jun 85 *
5.1.6 M	DOUBLE CLOSE ALTERS MONITOR	V9.0		Jun 85 *
5.1.7 M	GET/PUT INTERLOCK PROBLEM	V9.0		Jun 85 *
5.1.8 M	2780 HANDLER FAILURE PROBLEM	V9.0		Jun 85 *
5.1.9 M	LOCAL BINARY TRANSMIT PROBLEM	V9.0		Jun 85 *
	2780 Device Notes			
5.2.1 N	INSTALLING AND TROUBLE-SHOOTING 2780's	V9.0	N/A	Jun 85 *
	System Files			
	BACKUP.TSK			
6.2.1 M	BACKUP DOES NOT HANDLE MULTIDISK PUBLIC STRUCTURES- MANDATORY PATCH FOR BACKUP.TSK	V9.1	V9.3	Dec 86
6.2.2 R	MULTIVOLUME RSTS/E BACKUP SETS CANNOT BE RESTORED ON VMS	N/A	N/A	Dec 86
	DECnet/E Monitor Package V2.1			
	Monitor Patches			
7.1.1 M	DECnet/E DISALLOWS SOME CONNECT DATA BLOCKS	V9.0	V9.3	Oct 86

Sequence	Title	Released	Corrected	Mon/Yr
	RSTS/E Utilities			
	System Library ($)			
	DSKINT.TSK			
10.5.1 M	MANDATORY PATCH FOR DCL INITIALIZE COMMAND	V9.2	V9.3	Jul 86
	SHUTUP			
10.12.1 M	SHUTUP MAY ABORT DURING ERRCPY SHUT-DOWN PHASE - MANDATORY PATCH FOR SHUTUP.TSK	V9.2	V9.3	Dec 86
	Error Control Package (ERROR$)			
	Package Notes			
12.1.1 N	UNDERSTANDING "PA MEMORY SYSTEM" ERROR LOGS	V9.0	N/A	Jun 85 *
	Operator Services and Spooling Package (OPSER$)			
	Package Notes			
14.1.1 N	NOTES ON USE OF THE SERIAL LA180 (LA180S) TERMINAL	V9.0	N/A	Jun 85 *
14.1.2 N	USING TWO OR MORE PRINTERS TO SERVE A QUEUE	V9.0	N/A	Jun 85 *
14.1.3 R	QUE /DELETE IGNORED UNLESS USER HAS WWRITE OR GWRITE PRIVILEGES	V9.2	V9.3	Dec 86
14.1.4 N	QUMRUN HIBERNATES UNDER CERTAIN CONDITIONS	V9.1	V9.3	Dec 86
	Print/Batch Services Package (PB$)			
	Package Notes			
15.1.1 R	PBS MUST BE STARTED FROM A PRIVILEGED ACCOUNT	V9.1	V9.2	Feb 86
	RSTS/E Documentation			
	Documentation			
	Installation and Update Guide			
19.4.1 N	PBUILD.TSK NO LONGER INCLUDED IN RSTS/E	V9.0	N/A	Sep 85
	System Manager's Guide			
19.5.1 N	ACCOUNT [0,200] NOT AVAILABLE FOR CUSTOMER USE	V9.0	N/A	Sep 85
	RUN-Time Systems Support			
	DCL			
	Package Notes			
20.1.1 N	FILE SPECIFICATIONS IN DCL	V9.0	N/A	Jun 85 *
20.1.2 N	SETTING UP THE DCL LINK COMMAND	V9.0	N/A	Jun 85 *
20.1.3 N	PROPER ERROR MESSAGE FORMAT	V9.1	V9.3	Oct 86
	RSX Utilities			
	Package Notes			
21.1.1 N	USING RTSODT FOR DEBUGGING RUN-TIME SYSTEMS	V9.0	N/A	Jun 85 *
	CRF.TSK			
21.2.1 N	USING THE RSX CRF UTILITY	V9.0	N/A	Jun 85 *

Sequence	Title	Released	Corrected	Mon/Yr
	RT-11 Run-Time System and Utilities			
	PACKAGE NOTES			
22.1.1 N	USE OF UNDERSCORE IN RT-11 EMULATOR UTILITIES	V9.0	N/A	Jun 85 *
22.1.2 N	USING RTSODT FOR DEBUGGING RUN-TIME SYSTEMS	V9.0	N/A	Jun 85 *
	HOOK.SAV			
22.3.1 N	NOTES ON HOOK.SAV	V9.0	N/A	Jun 85 *
	Optional Software			
	RSTS/E 2780 Package V3.0			
	RJ2780			
25.2.1 M	FAILURE TO CLEAR 'JOB ACTIVE' ON ATTACH	V9.0		Jun 85 *
25.2.2 M	LOCAL BINARY TRANSMIT FAILURE	V9.0		Jun 85 *
	DECnet/E V2.0			
	Utilities			
	NFT Submit			
31.21.1 R	REMOTE BATCH CONTROL FILES BEING DELETED BEFORE EXECUTING	V9.2	V9.3	Apr 86
	DECmail-11 V3.0			
36.0.1 N	ANNOUNCING A MAJOR RELEASE AND 60-DAY FREE TRIAL OFFER FOR DECmail-11 V3.0			Nov 86
	DECmail-11 V2.0			
36.1.1 N	USING EDT V3.0 FOR DECmail-11 V2.0	V9.0	N/A	Jun 86
	DIBOL V5.2			
	Announcement			
39.1.1 N	ANNOUNCING RSTS/E DIBOL V5.2	V9.0	N/A	Jan 86
	ADE V2.4			
	Package Notes			
47.1.1 N	ANNOUNCING ADE V2.4 FOR RSTS/E V9.0 AND Micro/RSTS V1.1	V9.0	N/A	Jul 85
	FORTRAN IV/RSTS/E V2.6			
55.3.1 N	CALL ASSIGN CARRIAGE CONTROL ARGUMENT DOES NOT WORK PROPERLY	V9.0	V9.0	Jun 85 +
55.3.2 N	DSIN YIELDS RESULTS WITH THE WRONG SIGN FOR NEGATIVE ANGLES	V9.0	V9.0	Jun 85 +
55.3.3 N	INSTALLING FORTRAN-IV V2.6 ON RSTS/E V9.n	V9.0	N/A	Jun 85 +

Sequence	Title	Released	Corrected	Mon/Yr
	MENU-11 V2.0			
	Package Notes			
68.1.1 N	MENU-11/CALCULATOR NOW SETS TERMINAL GRAPHIC/CHARACTER SETS PROPERLY	V9.1	V9.3	Oct 86
68.1.2 N	MENU-11 $AREA COMMAND BROKEN IN RST/E V9.2, FIXED IN RSTS/E V9.3	V9.2	V9.3	Nov 86
	DECWORD/DP V1.2			
	Package Notes			
69.1.1 N	NEW DECWORD INSTALLATION/UPDATE CONTROL FILE ON RSTS/E V9.0	V9.0	N/A	Jun 85 +
69.1.2 N	DECWORD V1.2 CBI FILES MAY BE DELETED TO SAVE DISK SPACE	V9.0	N/A	Jun 85 +
69.1.3 N	DECWORD V1.2 COMMUNICATIONS FILES MAY BE DELETED TO SAVE DISK SPACE	V9.0	N/A	Jun 85 +
69.1.4 N	ANNOUNCING AVAILABILITY OF DECWORD FOR Micro/RSTS	V9.0	N/A	Jun 85 +
69.1.5 N	DECWORD/DP V1.2 SUPPORT FOR LN03 LASER PRINTER	V9.0	N/A	Sep 85
69.1.6 N	INFORMATION ON RUNNING DECWORD/DP V1.2 ON RSTS/E V9.0	V9.0	N/A	Sep 85
	WPSMEN			
69.2.0 M	REPLACEMENT MODULE ISSUED FOR WPSMEN	V9.0	V9.0	Jun 85 +
	WPSUDK			
69.3.0 M	REPLACEMENT MODULE ISSUED FOR WPSUDK	V9.0	V9.0	Jun 85 +
	RMS-11 V2.0			
	Access Methods			
75.2.1 M	INDEX FILE CORRUPTION IN ALTERNATE KEY PATH	V9.0	V9.1	Apr 86
75.2.2 M	CORRUPTION IN VERY LARGE FILES	V9.0	V9.1	Sep 85
75.2.3 M	RMS-11 INDEXED FILE CORRUPTION	V9.2	V9.2	Sep 86
	BASIC-PLUS-2 V2.3			
79.2.1 N	PROBLEM WITH PRINT USING	V9.0		Jan 86
	FORTRAN IV/RSX V2.6			
	OTS			
90.1.1 N	LIST-DIRECTED READ	V9.0		Jan 86

SOFTWARE PERFORMANCE REPORT (SPR) SUBMISSIONS

Digital Equipment Corporation guarantees a response to every SPR submitted by DIGITAL specialists and customers who purchase software product service agreements.

Blank SPR forms are available upon request in desired quantities from SPR Administration, P.O. Box F, Maynard, MA 01754, or your local DIGITAL office.

Inquiries on the progress of submitted SPRs should be directed to your local DIGITAL office or SPR Administration at (617) 493-4722.

An SPR Answer Survey Card is enclosed with each SPR response. Please complete the survey card; it provides essential feedback for monitoring the quality of our SPR responses.

Completing an SPR Form

Complete the entire form by either typing or printing clearly. Remove "Customer File Copy" for your records. Leave carbon in tact.

Include customer name and **complete** mailing address.

To expedite the processing of your SPR, enter your **Customer Number** in the space provided. This number is located in the upper left-hand corner of your Dispatch label. It can also be obtained from your local DIGITAL office or by calling SPR Administration at (617) 493-6683.

If you do not want your SPR to be published, check the "DO NOT PUBLISH" box on the SPR form. However, if the SPR is determined to be of universal value and it does not describe a security problem, DIGITAL may elect to publish it. For SPRs which describe security problems, it is imperative that the "DO NOT PUBLISH" box be marked.

Describe one problem per SPR form. If an SPR is submitted with more than one problem, it can lengthen the turnaround time.

State the problem clearly. If necessary, summarize the problem, then describe in detail.

Include all the information needed to reproduce the problem. The easiest problems to fix are those reported in statements similar to the following: if you do X, Y happens when Z should.

State all version numbers and all inserted patches. The problem can be fixed sooner if the version is known. Please include the operating system version even on operating system SPRs, since operating system bugs sometimes manifest themselves as "bugs" in other programs. A statement of patches inserted in the relevant software is also helpful. State the type of terminal or work station on which the software is running, e.g., VT100, VT220, PRO 350, DECmate.

Include as much information as possible; too much information is better than not enough. Send all information in machine-readable format if it occupies more than half a page. Please include the following:

1. Program causing the problems
2. All necessary auxiliary files, such as DBMS or LIBRARY files
3. Assembly switches which are on (if applicable)
4. Switches handed to the software, since different switches cause different sections of the code to be executed
5. All necessary run-time files for language run-time problems
6. A directory listing of media, when included; label media carefully

SUGGESTIONS FOR SUBMITTING TAPES WITH SPRs

To insure timely processing of SPRs submitted with tapes, please follow the suggestions below:

1. Use either a floppy or a magnetic tape.
2. If a magnetic tape is used, it should be either 800, 1600, or 6250 bpi.
3. Include a directory with each tape submitted.
4. Label each tape with the following information:
   a. Customer name
   b. Tape format
   c. bpi
   d. Track
   e. Preprinted number of the SPR submitted with the tape
5. Remove from the tape any unnecessary or confidential files.

Thank you.

SOFTWARE PROBLEMS OR ENHANCEMENTS

Questions and problems regarding, and enhancements to, DIGITAL software should be reported on a Software Performance Report (SPR) form and mailed to the SPR Center at one of the following DIGITAL offices (SPR forms are available from the SPR Center):

AREAS COVERED	SPR CENTER
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The Software Dispatch

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software

The Software Dispatch

RSTS/E

August 1987

AD-5514G-23

digital software

PRODUCT AVAILABILITY DATES - RSTS/E

AUGUST 1987

The following list contains date and version of the latest release of supported software products. Customers who are in warranty or have a software product service agreement during the month the product became available, are eligible to receive the new release. Eligible customers who have not received the new release should contact their local DIGITAL office.

PRODUCT	VERSION	AVAILABLE
ADE/RSTS	2.4 RETIRED	APR 87
BASIC-PLUS-2 for RSTS/E,PDP-11	2.4	JUN 87
COBOL,PDP-11	4.4	MAY 82
COBOL-81/RSTS/E	2.4	MAY 86
DATATRIEVE-11	3.1	SEP 84
DECdx/RSTS	1.0	NOV 84
DECmail-11 for RSTS/E and Micro/RSTS	3.0	DEC 86
DECnet/E	4.01	JAN 87
DECtap	1.5A	DEC 86
DECWORD/DP	1.2 SPD ONLY	MAY 85
DMS-500	2.1	JUL 82
FMS-11/RSTS	1.5	APR 85
FORTRAN IV/RSTS/E	2.6	JUN 83
PDP-11 SYMBOLIC DEBUGGER/RSTS (formerly FORTRAN-77 DEBUG/RSTS/E, PDP-11)	2.0	APR 86
FORTRAN-77/RSTS/E,PDP-11	5.0	OCT 83
GIGI Software	1.0 RETIRED	FEB 86
INDENT	1.4	JUN 85
MENU-11/RSTS	2.0	DEC 83
Message Router for RSTS/E	1.0 RETIRED	MAR 87
RPG II,PDP-11	8.8 RETIRED	JAN 87
RSTS Smart Mailer	1.1 RETIRED	DEC 85
RSTS/E	9.3	JAN 87
RSTS/E DECgraph-11	1.2	NOV 84
RSTS/E DIBOL	5.2 SPD ONLY	MAY 86
RSTS/E High Performance 2780/3780 Emulator	1.1 RETIRED	MAR 86
RSTS/E V8.0 UPDATE	G	APR 85
RSTS/E 3271 Protocol Emulator	2.1 RETIRED	MAR 86

RSTS/E V9.2
General Notes
System Notes

Seq. No. 0.1.22 N

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RSTS/E V9.2 TERMINATION NOTICE

Digital's support policy for RSTS/E software products is to maintain each version for a period of six months after the release of a newer version.

RSTS/E V9.3 was officially released 30 January 1987. Therefore, support for RSTS/E V9.2 terminated 30 July 1987.

All customers are expected to have installed RSTS/E V9.3 or later software on their systems if they are to be supported after this date.

- o RSTS/E System Directives Manual, Order No. AD-EZ10A-T2

  This has also been updated to describe programming the Ethernet devices.

- o Release Notes, Order No. AA-KL99A-TC

  The Release Notes lists all changes, corrections to bugs since previous releases, and currently known restrictions and problems.

Availability

RSTS/E V9.4 is currently available.

Contact your Digital account manager for specific service availability and pricing information on RSTS/E V9.4.

ENABLE SUPPORT OF DELQA FOR RSTS/E V9.4

PROBLEM:

Without the following patch, you will have XH0: initialization failures when booting your system disk. This patch will enable the new DELQA Ethernet device to work with your RSTS/E V9.4 system.

This problem will be fixed in the next release of RSTS/E.

SOLUTION:

1. This is a required patch to the RSTS/E INIT.SYS Program. Since patching the distribution medium is not recommended, the patch must be installed every time the COPY option is used to copy INIT.SYS from the distribution medium. Any copy of the patched INIT.SYS will propagate the fix.

2. The patch described in step 4 below can be installed using the PATCH option of INIT.SYS:

   ```
   Option: PATCH
   File to patch? INIT.SYS
   ```

3. This patch can be installed manually using ONLPAT, the online patching program:

   ```
   RUN $ONLPAT
   Command File Name? <cr>     (RETURN for manual patch installation)
   File to patch? INIT.SYS
   File found in account [0,1]
   ```

4. The patch is as follows:

   ```
   File to patch? SY:[0,1]INIT.SYS
   Base address? ONE
   Offset address? 16776
    Base   Offset  Old     New?
   117064  016776  012711  ? 4737
   117064  017000  000001  ? PATCH
   117064  017002  032721  ? ^Z     (CTRL/Z for new offset)
   ```

4. The patch is as follows:

```
Module name? MVR
Base address? MSDVRM@OVR
Offset address? 230
 Base   Offset  Old     New?
??????  000230  152763  ? 4737
??????  000232  000040  ? MVRPAT@OVR
??????  000234  000021  ? 240
??????  000236  004767  ? ^Z    (CTRL/Z for new offset)
Offset address? 2336
 Base   Offset  Old     New?
??????  002336  105363  ? 4737
??????  002340  000032  ? MVRPAT@OVR+14
??????  002342  132763  ? ^Z    (CTRL/Z for new offset)
Offset address? ^Z              (CTRL/Z for new base)
Base address? MVRPAT@OVR
Offset address? 0
 Base   Offset  Old     New?
120000  000000  000000  ? 152763
120000  000002  000000  ? 40
120000  000004  000000  ? 21
120000  000006  000000  ? 052711
120000  000010  000000  ? 10000
120000  000012  000000  ? 207
120000  000014  000000  ? 012763
120000  000016  000000  ? 60.*10.
120000  000020  000000  ? 32
120000  000022  000000  ? 207
120000  000024  ??????  ? ^Z    (CTRL/Z for new offset)
Offset address? ^Z              (CTRL/Z for new base)
Base address? ^Z                (CTRL/Z for new module)
Module name? RSTS
Base address? $$0307
Offset address? 0
 Base   Offset  Old     New?
??????  000000  ??????  ? Q!40
??????  000002  ??????  ? ^C  (up-arrow/C to exit;CTRL/C for INIT)
```

RSTS/E V9.3
Monitor
Device Driver Patches

Seq. No. 3.7.7 M

1 of 2

ANSI FILES CREATED ON MS-TYPE DRIVES MAY HAVE INVALID EOF1 TRAILER RECORD

PROBLEM:

ANSI magnetic tape files that are created on TS11/TSV05/TU80/TK25 tape drives using anything except the COPY command or the PIP utility will have an invalid EOF1 trailer record. The block count field of the trailer record will always contain zeros, regardless of how many records were actually written to the tape.

SOLUTION:

The following patching procedure corrects the above problem.

This problem is fixed in source in RSTS/E V9.4 and later.

PROCEDURE:

1. This is a required patch to the RSTS/E V9.3 executive. It must be installed in all target monitor SILs that include support for TU80/TS11/TSV05/TK25 magnetic tapes.

2. The patch described in step 4 below can be installed using the PATCH option of INIT.SYS:

   Option: PATCH
   File to patch? <lf> (LINE FEED for installed monitor SIL)

3. This patch can be installed manually using ONLPAT, the online patching program. Note, however, that if the patch is applied on line to the installed monitor SIL, it will not take effect until the system is rebooted.

   RUN $ONLPAT
   Command File Name? <cr> (RETURN for manual patch installation)
   File to patch? <lf> (LINE FEED for installed monitor SIL)
   File found in account [0,1]

4. The patch is as follows:

```
Module name? BBR
Base address? MUDVRM@OVR
Offset address? 1726
 Base   Offset  Old     New?
??????  001726  105764  ? 414
??????  001730  000012  ? ^Z    (CTRL/Z for new offset)
Offset address? 2054
 Base   Offset  Old     New?
??????  002054  016461  ? 4737
??????  002056  000016  ? BBRPAT@OVR
??????  002060  000014  ? 240
??????  002062  012746  ? ^Z    (CTRL/Z for new offset)
Offset address? ^Z              (CTRL/Z for new base)
Base address? BBRPAT@OVR
Offset address? 0
 Base   Offset  Old     New?
120000  000000  000000  ? 112746
120000  000002  000000  ? 177620
120000  000004  000000  ? 146426
120000  000006  000000  ? 12
120000  000010  000000  ? 1006
120000  000012  000000  ? 010146
120000  000014  000000  ? 016401
120000  000016  000000  ? 30
120000  000020  000000  ? 5261
120000  000022  000000  ? 22
120000  000024  000000  ? 012601
120000  000026  000000  ? 016461
120000  000030  000000  ? 16
120000  000032  000000  ? 14
120000  000034  000000  ? 207
120000  000036  ??????  ? ^Z    (CTRL/Z for new offset)
Offset address? ^Z              (CTRL/Z for new base)
Base address? ^Z                (CTRL/Z for new module)
Module name? RSTS
Base address? $$0307
Offset address? 0
 Base   Offset  Old     New?
??????  000000  ??????  ? Q!200
??????  000002  ??????  ? ^C  (up-arrow/C to exit;CTRL/C for INIT)
```

RSTS/E V9.4 Seq. No. 3.7.10 M
Monitor
Device Driver Patches 1 of 2

XEDVR CONTROLLER ERRORS CAN CAUSE SYSTEM CRASH

PROBLEM:

The device driver for the DEUNA and DELUA Ethernet Controllers is designed to reinitialize in the event of a severe controller error. If this reinitialization fails, it is possible under some conditions to crash the system instead of disabling the controller.

SOLUTION:

The patch included in this article prevents the driver from crashing the system, and results in the controller being (correctly) disabled when it ceases to function during normal operation.

This problem will be fixed in the next release of RSTS/E.

PROCEDURE:

1. This is a required patch to the RSTS/E V9.3 and RSTS/E V9.4 executives. It must be installed in all target monitor SILs.

2. The patch described in step 4 below can be installed using the PATCH option of INIT.SYS:

   Option: PATCH
   File to patch? <lf> (LINE FEED for installed monitor SIL)

3. This patch can be installed manually using ONLPAT, the online patching program. Note, however, that if the patch is applied on line to the installed monitor SIL, it will not take effect until the system is rebooted.

   RUN $ONLPAT
   Command File Name? <cr> (RETURN for manual patch installation)
   File to patch? <lf> (LINE FEED for installed monitor SIL)
   File found in account [0,1]

4. The patch is as follows:

```
Base address? BCKREC
Offset address? 162
 Base    Offset  Old      New?
045546  000162  004737  ? <LF>      (no change; verify only)
045546  000164  055150  ? PATCH
045546  000166  004737  ? ^Z        (CTRL/Z for new offset)
Offset address? ^Z                  (CTRL/Z for new base)
Base address? PATCH
Offset address? 0
 Base    Offset  Old      New?
044736  000000  000000  ? 4737
044736  000002  000000  ? 55150
044736  000004  000000  ? 137
044736  000006  000000  ? 55430
044736  000010  ??????  ? ^Z        (CTRL/Z for new offset)
Offset address? ^Z                  (CTRL/Z for new base)
Base address? 1:55150
Offset address? 254
 Base    Offset  Old      New?
055150  000254  004737  ? 137
055150  000256  054132  ? ^C        (up-arrow/C to exit;CTRL/C for INIT)
```

PBS PERFORMANCE DEGRADES AS PBS.SYS CONTINUALLY GROWS

PROBLEM:

Some sites are having problems with the performance of the Print/Batch Services (PBS) package degrading as the file PBS$:PBS.SYS grows at a seemingly fast rate. Some sites experience growth at a rate of one block per entry while others experience rates of only one block per four to six entries.

The varying growth rates are the result of the file being organized as an RMS-indexed file with variable length records. As entries in the file are created and deleted, some RMS overhead exists in the file for each record. Also, the order in which entries are added and deleted can possibly cause a lot of wasted space in the file. And finally, the number of files queued by an entry affects the size of the record.

The RMS overhead and wasted space are currently reclaimed only when the PBS package is restarted. This means that by stopping and restarting the queue manager, the work file is compressed to its minimum size.

As the file size and RMS overhead grow, the performance of PBS slowly degrades: commands take longer to be acknowledged and PBS itself slows down.

Systems that are brought down regularly for preventative maintenance or other offline operations will probably not be affected by this problem. Systems that remain up for months at a time and/or have heavy PBS usage are the sites that exhibit the problem.

SOLUTION:

We are considering ways for PBS to automatically perform compression as the work file grows. Until then, Digital recommends that the following action be taken:

Periodically shut down the queue manager. By restarting the queue manager, PBS will compress the work file, reducing its size as well as regaining performance by reducing overhead.

Since each system varies as to which aspect of the problem (performance versus file size) is the limiting factor, we cannot recommend a time interval at which to perform this action. PBS must either be monitored or restarted often enough so that the problem is prevented.

Sequence	Title	Released	Corrected	Mon/Yr
0.1.4 N	WARNING ON USE OF THE PEEK() FUNCTION	V9.0	N/A	Nov 85
0.1.5 N	FPJ11 FLOATING-POINT ACCELERATOR WITH PDP-11/84 AND MicroPDP-11/83 SYSTEMS	V9.0	N/A	Jan 86
0.1.6 N	ANNOUNCING NEW HARDWARE SUPPORT IN RSTS/E	V9.0	N/A	Apr 86
0.1.7 N	ANNOUNCING RSTS/E V9.1--SUPPORT FOR TK50 AND RD53	V9.1	N/A	Jun 86 -
0.1.8 N	ANNOUNCING Micro/RSTS VERSION 2.0	V9.1	N/A	Jun 86 -
0.1.9 N	FPJ11 FLOATING-POINT ACCELERATOR WITH PDP-11/84 AND Micro PDP-11/83 SYSTEMS	V9.1		Jun 86 -
0.1.10 N	ANNOUNCING RSTS/E VERSION 9.2	V9.2	N/A	Jun 86 -
0.1.11 N	HARDWARE PROBLEM USING TK50 TAPE DRIVE ON SOME Q-BUS SYSTEMS	V9.2	N/A	Aug 86
0.1.12 N	RSTS/E V9.0 SUPPORT TERMINATED	V9.0	N/A	Aug 86
0.1.13 N	ANNOUNCING Micro/RSTS VERSION 2.1	V9.2	N/A	Aug 86
0.1.14 N	UPGRADING RQDX1 AND RQDX2 CONTROLLERS TO RQDX3	V9.2	V9.2	Sep 86
0.1.15 N	WRITING NON-FILE-STRUCTURED TO MOUNTED DISKS	V9.1	V9.3	Nov 86
0.1.16 N	SYSTEM PERFORMANCE LOSS SINCE RSTS/E VERSION 9.0	V9.1	N/A	Dec 86
0.1.17 N	RSTS/E V9.1 SUPPORT TERMINATED	V9.2	N/A	Dec 86
0.1.18 N	ANNOUNCING NEW HARDWARE SUPPORT FOR THE LA75 IN RSTS/E	V9.2	V9.3	Jan 87
0.1.19 N	RSTS/E SUPPORTS TU81-PLUS TAPE SUBSYSTEM	V9.2	N/A	Feb 87
0.1.20 N	ANNOUNCING RSTS/E V9.3	V9.3	V9.3	Feb 87
0.1.21 N	USING "REVERSE LAT" ETHERNET TERMINAL SERVERS ON RSTS/E	V9.2	N/A	Apr 87
0.1.22 N	RSTS/E V9.2 TERMINATION NOTICE	V9.2	N/A	Aug 87
0.1.23 N	ANNOUNCING RSTS/E VERSION 9.4	V9.3	N/A	Aug 87
	System Management Guidelines			
0.2.1 N	USING SAVE/RESTORE ON A TWO-DISK SYSTEM	V9.0	N/A	Jun 85 *
	Initialization			
	INIT.SYS Program Patches			
1.1.1	RESERVED			
1.1.2	RESERVED			
1.1.3 N	MSCP DISK SIZE VARIANCES BETWEEN SAVESETS CREATED ONLINE AND OFFLINE	V9.3	N/A	Apr 87
1.1.4 M	DSKINT OPTION OF INIT.SYS MAY NOT DETECT BAD BLOCKS	V9.0	V9.1	Oct 85 -
1.1.5 M	TMSCP DRIVES ARE NOT MARKED AS AVAILABLE AFTER REWIND-OFFLINE OPERATIONS	V9.1	V9.2	Jun 86 -
1.1.6 M	OFF-LINE SAVRES INVALIDATES ALL BUT LAST VOLUME OF MULTIVOLUME MAGTAPE SAVE SET	V9.1	V9.2	Jun 86 -
1.1.7 M	INIT SAV/RES TO TMSCP TAPE MAY ABORT WITH "TRAP THROUGH 4"	V9.1	V9.2	Jun 86
1.1.8 M	MICRO-DIAGNOSTIC FAILURES ON MSCP AND TMSCP DEVICES - MANDATORY PATCH	V9.2	V9.3	Jan 87
1.1.9 M	INIT MAY DISABLE PRIMARY RQDX CONTROLLER	V9.3	V9.4	Apr 87
1.1.10 M	ENABLE SUPPORT OF DELQU FOR RSTS/E V9.4	V9.4	N/A	Aug 87
	INIT.SYS Program Notes			
1.2.1 N	DEVICES WITH NON-STANDARD UNIBUS ADDRESSES AND VECTORS	V9.0	N/A	Jun 85 *
1.2.2 R	INIT MAY START TIMESHARING WITH NO MONITOR INSTALLED	V9.1	N/A	Nov 86

Sequence	Title	Released	Corrected	Mon/Yr
	System Installation and Update			
	Installation/Update Notes			
2.1.1 N	CSPLIB.TSK AND CSPLIB.STB MISSING FROM V9.0 KIT	V9.0	V9.1	Sep 85
2.1.2 N	PBUILD.TSK SHOULD NOT BE INCLUDED IN V9.0 KIT	V9.0	V9.1	Sep 85
	Executive			
	Monitor Patches			
3.1.1 F	DISABLING THE USE OF DATA SPACE	V9.0	N/A	Jun 85 *
3.1.2 M	LARGE OVERLAID I- AND D-SPACE TASKS MAY FAIL RANDOMLY - MANDATORY MONITOR PATCH	V9.1	V9.3	Nov 86
3.1.3 M	RANDOM SYSTEM CRASHES DURING HEAVY ACTIVITY-MANDATORY MONITOR PATCH	V9.2	V9.3	Jan 87
	Terminal Services Patches			
3.3.1 F	CHANGING SPECIAL LOGIN TERMINAL	V9.0	N/A	Jun 85 *
3.3.2 F	INPUT ESCAPE SEQUENCE HANDLING	V9.0	N/A	Jun 85 *
3.3.3	RESERVED			
3.3.4	RESERVED			
3.3.5 M	CORRECT AUTOBAUD DETECTION PROBLEM	V9.0	V9.2	Jun 86
3.3.6 M	CORRECT AUTOBAUD DETECTION PROBLEM	V9.1	V9.2	Jun 86
3.3.7 M	FIX CONTROL/O PROBLEM - MANDATORY TERMINAL SERVICE PATCH	V9.0	V9.3	Jan 87
3.3.8 M	FIX PROBLEMS WITH USING PRINT DEVICES ON TERMINAL LINES	V9.0	V9.3	Aug 86
3.3.9 M	CORRECT DHU11/DHV11 PROBLEMS - MANDATORY TERMINAL SERVICE PATCH	V9.1	V9.3	Nov 86
3.3.10 M	CORRECT DHU11/DHV11 FLOW CONTROL PROBLEM - MANDATORY TERMINAL SERVICE PATCH	V9.1	V9.3	Dec 86
3.3.11 M	PROBLEM WITH SETTING MULTIPLE PRIVATE DELIMITERS - MANDATORY TERMINAL SERVICE PATCH	V9.1	N/A	Mar 87
3.3.12 M	PROBLEM WITH DETACHED JOBS AND CAPTIVE ACCOUNTS - MANDATORY TERMINAL SERVICE PATCH	V9.2	V9.4	Apr 87
3.3.13 M	PROBLEM WITH HARDWARE ERRORS ON DHU11/DHV11 MULTIPLEXERS	V9.2	V9.4	Jul 87
	Terminal Service Notes			
3.4.1 N	UNDERSTANDING TERMINAL PARITY AND STOP BIT SETTINGS	V9.0	N/A	Jun 85 *
3.4.2 N	MODEM CONTROL ON PRIVATE, LEASED LINES	V9.0	N/A	Jun 85 *
3.4.3 N	MODEM SUPPORT ON RSTS/E	V9.0	N/A	Jun 86
3.4.4 M	CONNECTING "REVERSE LAT" ETHERNET TERMINAL SERVERS TO RSTS/E	V9.2	N/A	Apr 87
3.4.5 N	UNDERSTANDING ESCAPE SEQUENCES AND TRANSPARENT CONTROLS MODE	V9.2	N/A	Jul 87
	File Processor Patches			
3.5.1 F	CONTROLLING EMT LOGGING	V9.0	N/A	Jun 85 *
3.5.2 M	SET TERMINAL CHARACTERISTICS SYS CALL MAY HANG THE SYSTEM	V9.0	V9.1	Sep 85
3.5.3 M	ERROR IN HANDLING OF PUBLIC DISKS	V9.0	V9.1	Sep 85
3.5.4 M	FIX CORRUPTION OF LOW-CORE LOCATIONS	V9.0	V9.2	Jan 86
3.5.5 M	ALLOW MULTIPLE OPENS ON NONMOUNTED NFS DISK	V9.0	V9.3	Aug 86

Sequence	Title	Released	Corrected	Mon/Yr
	UTLMGR			
10.16.1 R	SHOW DEVICES INCORRECTLY DISPLAYS MSCP CONTROLLER ADDRESSES	V9.1	N/A	Feb 87
	Error Control Package (ERROR$)			
	Package Notes			
12.1.1 N	UNDERSTANDING "PA MEMORY SYSTEM" ERROR LOGS	V9.0	N/A	Jun 85 *
	ANALYS.TSK			
12.5.0 N	ANALYS "?SUBSCRIPT OUT OF RANGE AT LINE 4300" ERROR	V9.3	V9.4	Jul 87
	RESTOR Package (RESTOR$)			
	RESTOR.TSK			
13.13.0 N	RESTOR$:RESTOR CAN FAIL WHEN USING PRELOADED INDEX WORK FILE	V9.4	V9.4	Jun 87
	Operator Services and Spooling Package (OPSER$)			
	Package Notes			
14.1.1 N	NOTES ON USE OF THE SERIAL LA180 (LA180S) TERMINAL	V9.0	N/A	Jun 85 *
14.1.2 N	USING TWO OR MORE PRINTERS TO SERVE A QUEUE	V9.0	N/A	Jun 85 *
14.1.3 R	QUE /DELETE IGNORED UNLESS USER HAS WWRITE OR GWRITE PRIVILEGES	V9.2	V9.3	Dec 86
14.1.4 N	QUMRUN HIBERNATES UNDER CERTAIN CONDITIONS	V9.1	V9.3	Dec 86
14.1.5 R	OPSER BATCH PACKAGE MUST BE LOCATED ON SYSTEM DISK (SY:)	V9.3	V9.4	May 87
	Print/Batch Services Package (PB$)			
	Package Notes			
15.1.1 R	PBS MUST BE STARTED FROM A PRIVILEGED ACCOUNT	V9.1	V9.2	Feb 86
15.1.2 R	SET ENTRY/PRIORITY MAY NOT REPOSITION ENTRY IN QUEUE	V9.1	V9.3	Jan 87
15.1.3 R	LOG FILE DEFAULT PPN IN USER REQUEST PACKET INCOMPATIBLE WITH SUBMIT	V9.1	V9.3	Jan 87
15.1.4 R	PBS PERFORMANCE DEGRADES AS PBS.SYS CONTINUALLY GROWS	V9.3	N/A	Aug 87
	PBS.TSK			
15.3.1 M	PBS HANGS IF BATCH OWNER CANNOT CREATE LOG FILE - MANDATORY PBS.TSK PATCH	V9.1	V9.3	Mar 87
15.3.2 M	PBS PERFORMS LINE PRINTER FILL ON KB SERVERS - MANDATORY PBS PATCH	V9.2	V9.3	Apr 87
15.3.3 M	PBS INCORRECTLY PRINTS TABS AT TOP OF FORM - MANDATORY PBS PATCH	V9.2	V9.4	Apr 87
15.3.4 M	PBS INCORRECTLY HANDLES WIDTH 255 SERVERS - MANDATORY PBS.TSK PATCH	V9.2	V9.4	May 87

RSTS/E Documentation

	Documentation			
	Installation and Update Guide			
19.4.1 N	PBUILD.TSK NO LONGER INCLUDED IN RSTS/E	V9.0	N/A	Sep 85

Sequence	Title	Released	Corrected	Mon/Yr
	System Manager's Guide			
19.5.1 N	ACCOUNT [0,200] NOT AVAILABLE FOR CUSTOMER USE	V9.0	N/A	Sep 85
	Run-Time Systems Support			
	DCL			
	Package Notes			
20.1.1 N	FILE SPECIFICATIONS IN DCL	V9.0	N/A	Jun 85 *
20.1.2 N	SETTING UP THE DCL LINK COMMAND	V9.0	N/A	Jun 85 *
20.1.3 N	PROPER ERROR MESSAGE FORMAT	V9.1	V9.3	Oct 86
20.1.4 R	DCL IGNORES LEADING "+" ON FIRST @ COMMAND PARAMETER	V9.1	V9.3	Jan 87
20.1.5 R	PARAMETERS NOT PASSED WHEN CHAINING TO COMMAND PROCEDURES	V9.1	N/A	Jan 87
20.1.6 M	CHAINING TO DCL COMMAND PROCEDURES - MANDATORY PATCH	V9.3	V9.4	May 87
	Common User Interface			
20.5.1 R	DUPLICATE PARAMETER QUALIFIERS CAN CAUSE ?ODD ADDRESS TRAP	V9.1	N/A	Feb 87
	RSX Utilities			
	Package Notes			
21.1.1 N	USING RTSODT FOR DEBUGGING RUN-TIME SYSTEMS	V9.0	N/A	Jun 85 *
	CRF.TSK			
21.2.1 N	USING THE RSX CRF UTILITY	V9.0	N/A	Jun 85 *
	RT-11 Run-Time System and Utilities			
	PACKAGE NOTES			
22.1.1 N	USE OF UNDERSCORE IN RT-11 EMULATOR UTILITIES	V9.0	N/A	Jun 85 *
22.1.2 N	USING RTSODT FOR DEBUGGING RUN-TIME SYSTEMS	V9.0	N/A	Jun 85 *
	HOOK.SAV			
22.3.1 N	NOTES ON HOOK.SAV	V9.0	N/A	Jun 85 *
	PIP.SAV			
22.9.0 R	PIP FAILS WITH ANSI TAPE RECORD LENGTH GREATER THAN 2048	V9.2	V9.4	May 87
22.9.1 N	PIP PROBLEMS FIXED IN NEXT RELEASE	V9.3	V9.4	Jul 87
	SAVRES.SAV			
22.11.0 N	MSCP DISK SIZE VARIANCES BETWEEN SAVESETS CREATED ONLINE AND OFFLINE	V9.3	N/A	Apr 87
	Optional Software			
	RSTS/E 2780 Package V3.0			
	RJ2780			
25.2.1 M	FAILURE TO CLEAR 'JOB ACTIVE' ON ATTACH	V9.0		Jun 85 *
25.2.2 M	LOCAL BINARY TRANSMIT FAILURE	V9.0		Jun 85 *

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State the problem clearly. If necessary, summarize the problem, then describe in detail.

Include all the information needed to reproduce the problem. The easiest problems to fix are those reported in statements similar to the following: if you do X, Y happens when Z should.

State all version numbers and all inserted patches. The problem can be fixed sooner if the version is known. Please include the operating system version even on operating system SPRs, since operating system bugs sometimes manifest themselves as "bugs" in other programs. A statement of patches inserted in the relevant software is also helpful. State the type of terminal or work station on which the software is running, e.g., VT100, VT220, PRO 350, DECmate.

Include as much information as possible; too much information is better than not enough. Send all information in machine-readable format if it occupies more than half a page. Please include the following:

1. Program causing the problems
2. All necessary auxiliary files, such as DBMS or LIBRARY files
3. Assembly switches which are on (if applicable)
4. Switches handed to the software, since different switches cause different sections of the code to be executed
5. All necessary run-time files for language run-time problems
6. A directory listing of media, when included; label media carefully

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Software Product Description

PRODUCT NAME: RSTS/E, Version 9.4 **SPD 13.01.31**

DESCRIPTION

RSTS/E is a multi-user, general purpose timesharing system. Its uses include interactive timesharing, batch processing, indirect command file processing, program development using a variety of languages and tools, and a wide variety of special purpose applications. Up to 127 concurrent terminal users in both local and remote locations, through multi-terminal services, can interact with application tasks. Without multi-terminal services there can be a maximum of 63 users. Tasks can share computational, storage, and input/output services provided by the RSTS/E system.

The RSTS/E system is comprised of the RSTS/E monitor, device drivers, Commonly Used System Programs (CUSPs) and standard software components. Some of the major features of RSTS/E include:

- Interactive timesharing
- Dynamic allocation of system resources
- DCL (Digital Command Language)
- DCL command file processing
- CCL system manager defined command interface
- System security features
- User and job privileges and resource quotas allocated to accounts as required
- Batch services using DCL command files
- Print services using DCL
- Extensive file processing including file sharing, protection mechanisms, and virtual (memory) disk support
- Integrated system and account management using DCL
- Magnetic tape processing (single or multi-volume)
- Terminal handler designed for interactive environments
- Shared common code
- Software-maintained cache of frequently accessed disk data
- Intertask communication
- Disk file and device backup and restore utilities with streaming support for streaming tape drives supported by RSTS/E
- System reliability and maintainability features
- DCL, RT-11, RSX, and BASIC-PLUS run-time system support
- Program Development Tools

Programs can be written in any of several languages. The following languages are included on RSTS/E systems:

- BASIC-PLUS
- MACRO-11 assembly language (RT-11 and RSX-11)

The following is a partial list of languages which are optionally available for use on RSTS/E. Refer to the RSTS/E Optional Software Cross Reference Table (SPD 20.97.xx) for a complete list of layered products supported by RSTS/E:

- PDP-11 BASIC-PLUS-2 for RSTS/E
- COBOL-81/RSTS/E
- PDP-11 COBOL
- RSTS/E DIBOL
- FORTRAN IV/RSTS/E
- PDP-11 FORTRAN-77/RSTS/E

BASIC-PLUS-2, COBOL-81, and PDP-11 COBOL require the support of the Record Management Services (RMS) software that is included with all RSTS/E systems. The optional DATATRIEVE-11 data management software also uses RMS. The use of RMS is optional for DIBOL-11, FORTRAN-77, and MACRO-11 assembly language programs. BASIC-PLUS and FORTRAN-IV do not use RMS.

Tools are available to facilitate the design, incorporation and maintenance of forms into applications. The Forms Management System (FMS) and INDENT are optionally available for the design, use and maintenance of interactive forms.

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Other utilities which are included as a standard part of the RSTS/E system are:

- EDT, DIGITAL's standard text editor
- PDP-11 SORT/MERGE, DIGITAL's powerful file sort utility and subroutine package
- RMS-11, DIGITAL's standard Record Management System

Timesharing

Each user of a RSTS/E system is associated with a job on the system and normally interacts with that job by using a terminal. Jobs can also run detached (not using a terminal) or they can use pseudo keyboards. Although a RSTS/E system is limited to 63 jobs, some RSTS/E systems can support as many as 127 terminal users simultaneously. These limits (63 jobs and 127 multiple terminals) are not always achievable. Jobs such as Error Logger, Queue Manager, and batch jobs also affect the maximum limits. In addition, each job requires a minimum of 10 to 30 blocks of tempory disk on the public disk structure.

Dynamic Allocation of System Resources

RSTS/E schedules CPU time and memory residency among jobs based upon their priority and processing requirements. Jobs are rescheduled based upon time-slicing or as a result of waiting for system services. A round-robin algorithm is used to select among eligible jobs with the same priority. Job priorities can be altered by any user or program with the required privileges.

RSTS/E uses the memory management hardware capabilities to map a user's job area and any shared code into the user job's virtual address space. Jobs can be swapped out to disk storage when the memory is needed for other jobs to run. A job's size can be expanded dynamically, subject to limits imposed by a user with the required privileges. For machines which do not support separate instruction and data (I&D) space the absolute limit for a job size is 64K bytes (32K words). For machines which do support separate I&D space the absolute limit is 128K bytes (64K words). To take advantage of separate I&D space, programs can be written in RSX MACRO-11 or several of the high level languages. BASIC-PLUS programs cannot be larger than 32K bytes (16K words). For RT-11, MACRO-11 and FORTRAN IV the maximum is 28K words.

User Command Languages

User commands to the RSTS/E system are handled and interpreted by one of the run-time systems capable of acting as a keyboard monitor.

The Keyboard Monitors which are included as standard components of RSTS/E are DCL, RSX, RT-11, and BASIC-PLUS. All of these interpret sets of system commands, that is, English-like words followed by optional command parameters. These system commands allow users to perform all the fundamental functions required to use the RSTS/E system, such as logging on and off, copying files, and running programs. BASIC-PLUS and RT-11 have additional commands to perform actions appropriate for those environments.

Digital Command Language (DCL)

DCL is based upon the DCL available on most DIGITAL operating systems. In particular, it is similar to the DCL implemented on VAX/VMS. In addition to fundamental operations such as listing directories and copying files, DCL includes features such as user defined command synonyms, string and numeric symbol substitution, reading and writing files, system and account management functions, setting passwords, submitting to batch, setting terminal characteristics, and terminal activity logging. DCL is required as the system default keyboard monitor. DCL need not be memory resident unless a user is accessing it.

DCL command file processing is an extension of the DCL keyboard monitor. A DCL command file is a collection of DCL commands in a file. Conceptually, the commands in the file appear to the system as a series of commands which are presented to DCL from the keyboard. All command file processing is done within DCL so that no additional keyboards or job slots are required. Parameters can be passed to the command file processor at the time the file is invoked. DCL command files are considered to be executable and can be "run" or "chained to" as programs or can be invoked with the DCL "@" command.

In addition to standard DCL commands, the command file processor interprets a set of specialized commands that allow operations such as conditional branching, local and global symbols using 32 bit integers and 255 character strings, special purpose DCL Functions, error handling, "Control C" trapping, up to 13 nesting levels, selective display, optional time stamping and user prompting.

DCL command files are used to start up the system and set up system, group and individual user environments through the use of command files which are executed as the user logs into the system

A comprehensive set of help frames explaining the operation of most DCL commands is available using the "HELP" command. This information is also available in the documentation which is provided as part of the RSTS/E product.

Concise Command Language (CCL)

The CCL feature allows each installation's system manager to define additional system-wide commands to run system utilities as well as other user programs. Each CCL command definition specifies the full form of the command and its abbreviation.

Security and Privilege

Access to the system is controlled by the use of passwords which can be 6 to 14 characters in length. Initial assignment of passwords is done by the system manager. Each user, given the required privilege, can change the password assigned to his/her account. Passwords are normally stored in hashed form. This feature is available on a per account basis at the option of the system manager.

The system manager may optionally define a system password which must be entered before the user is prompted to login to an account. This feature is available for different classes of access such as dial-up or network access.

As a resource sharing system, RSTS/E can give every user access to the system peripherals and resources, as well as a wide range of additional capabilities. Usage restrictions can be imposed on a per user or per system basis on some of these resources.

RSTS/E provides 34 separate privilege attributes which can be assigned to any account on the system. Tasks which are resident on the system may require one or more of these attributes in order to run. The system manager can then restrict the privileges an account has to those required by the users of the account. There is no connection between the numbers which designate accounts (PPNs) and the privileges assigned to the account.

Print/Batch Services

Batch jobs are a collection of DCL commands in a file which are placed (submitted) on a queue for execution. Batch services process each job in the queue in turn. Users can submit batch jobs to perform tasks that require no terminal interaction, or to run programs at a later time. For each batch job, the user can set limits on the system resources allocated to the job. Multiple queues can be defined. Each queue can have different attributes. Queues which are assigned to physical printers can be set up with a variety of attributes related to the form and quantity of output. A user with the required privilege can start up and control batch queues.

The following capabilities are not provided through Print/Batch Services but continue to be available through the use of OPSER utilities provided with the RSTS/E system.

- Operator logging
- Operator request processing

Both Print/Batch Services and OPSER print spooling packages support printing on hard copy terminals, such as receive-only printers. Note however, that data integrity is not checked on the serial line.

File System

Disk files can be created, updated, extended, deleted, and renamed under program control, or they can be created, deleted, and renamed using terminal commands. Files can be created and extended dynamically with the RSTS/E file system automatically allocating disk space wherever available. Alternatively, to enhance system performance, a file's location can be specified and/or a file can be preallocated to use physically contiguous space. A disk file's size is limited by the storage capacity of the volume on which it resides. One file cannot extend across multiple disk volumes.

Files can be accessed by multiple users simultaneously. When opened for shared update, multiple users can update the same file while it remains open. The file system's block interlock mechanism can be used to prevent different users from updating the same part of the file concurrently.

RSTS/E disk volumes, when used as file-structured devices, are either public or private. A public volume is the system disk or any volume initialized and mounted as a public volume. Other file-structured volumes are private. Files cannot span volumes. Access to a disk file is governed by its protection code, which specifies read and write access for the file's owner, for users within the owner's group, and for all users. For executable files, the protection code specifies execute and read/write access for owner, group, and all users on the system.

A utility (FIT) provides file transfer capabilities to and from volumes (including RX01/RX02 floppy diskettes) using RT-11 file structure and DOS (read-only) media. This is limited to disks up to 33.5 million bytes in storage capacity. A separate utility handles interchange of files on RX01/RX02 flexible diskettes using the IBM 3741 single density format (Format 1). With this utility EBCDIC to ASCII translation is a user-specifiable option.

For systems with memory in excess of the amount required during the normal operation of the RSTS/E system, RSTS/E supports a "Virtual" or memory resident disk. This disk appears no different to the user than any other disk, however, since it is actually an allocated block of memory, I/O to the virtual disk operates at memory speeds. This disk can be used for most of the same purposes that a physical disk can but can be especially effective for use in storing commonly accessed read-only user files or system files.

Account Management

DCL commands are provided to create and delete accounts, set account attributes, and display account information. Account templates can be created and used to set the defaults for a class of accounts.

Several different types of accounts can be defined. User accounts allow access to the RSTS/E system. Captive accounts cause the system to startup a specific application such as word processing or a menu. When the user leaves the application the job is killed and the user is logged off. Guest accounts can be set up causing the system not to prompt for the password for the account during login. Accounts can be designated as non-interactive, causing the system not to allow a user to login.

Accounts have privileges associated with them. The privilege attributes assigned to an account determine what a user logged into the account can do on the system.

Accounts can be set up with an expiration date. After the expiration date has passed, users can no longer login to the account. The account is not automatically deleted.

Magnetic Tape Processing

RSTS/E can be instructed to read and write tapes of a specific density such as 800, 1600, or 6250 BPI if the density is supported by the controller for the tape drive.

Alternatively, the user can specify that either the minimum or maximum density supported by the controller be selected automatically.

Supported tape formats are DOS-11 and ANSI. DOS-11 format is used for interchange between PDP-11 and VAX systems running RSTS/E, RT-11, RSX-11M, RSX-11M-PLUS, IAS, and VAX/VMS.

ANSI format is used for interchange with the above systems as well as other computer systems. RSTS/E implements a subset of the ANSI format, defined by American National Standard Institute Specification X3.27-1978, which is used for interchange between systems that support the standard. When using ANSI labeling format, RSTS/E processes only volume-header, file-header, end-of-file, and end-of-volume labels. RSTS/E does not perform access checking. A tape volume is considered private to the job which has access to that volume. RMS uses ANSI tape labeling format exclusively. Files may be processed using F (fixed-length) or D (variable-length) record formats.

The RSTS/E BACKUP utility uses ANSI tape format.

Terminal Handling

The RSTS/E terminal handler is designed for interactive environments and features:

- Full-duplex communications
- Modem control
- Type-ahead with immediate echo
- Programmable echo control
- Multi-terminal I/O for individual jobs
- Pseudo keyboard capability
- Auto baud detection

The echo control feature allows programs to handle terminal input one field at a time and to retain control of the screen display. This feature gives application programs the capability to use nonblock mode transfer terminals to simulate block mode input. RSTS/E does not support block mode transfer terminals.

Each RSTS/E system includes at least one terminal, the system console terminal, and potentially as many as 126 additional terminals. On systems purchased as DIGITAL supported, the console terminal must be either:

- A hard copy device
- Any terminal supported by RSTS/E when a hard copy device is available on the system.

The multi-terminal service feature allows any job to control multiple terminals, up to the maximum number configured for the system, on one logical channel. This feature allows one program to control a number of terminals that are all performing the same function.

Pseudo keyboards are logical devices that have the logical characteristics of real, physical terminals but have no hardware associated with them. Pseudo keyboards have input and output buffers to which a program can send output, and from which it can receive input. Using a pseudo keyboard as a communications device, a user can write a program to control other jobs. Each RSTS/E system includes at least one pseudo keyboard. The maximum total number of terminals and pseudo keyboards is 127.

Terminal Servers

RSTS/E can not act as a Local Area Transport (LAT) host. However, RSTS/E systems or LANs (Local Area Network) that include RSTS/E nodes can achieve the major features and benefits of terminal servers by making use of a terminal server feature known as "reverse LAT." The RSTS/E system can be accessed from a LAT terminal server if it is connected via a supported terminal multi-plexer to a Ethernet Communications Server (DECSA) running Terminal Server, at a minimum of Version 2.1 (maximum 32 lines) or DECserver 200/MC at a minimum of Version 1.0 (maximum 8 lines). These terminal servers provide reverse LAT capabilty with full modem control.

Shared Common Code

RSTS/E allows the sharing of code that is common to multiple jobs. The code that resides in the resident library must be written in the MACRO assembly language.

It is possible to create cluster libraries: that is, resident libraries that share the same address window in the user task's virtual address space.

Disk Data Cache

RSTS/E can minimize accesses to disk for frequently used data by keeping data in a software-maintained cache, a specially designated area of system memory space. The data retained in this cache can be restricted to disk directory blocks only, or it can include data from disk files. In the latter case, a user with the required privileges has the option to allow all disk files to be cached or to allow only certain eligible files to be placed in the cache. Information on the virtual disk is never cached.

It is recommended that data from disk files be stored in the software cache only on systems with greater than 512K bytes (256K words) of memory.

Intertask Communication

RSTS/E jobs can communicate with each other by sending and/or receiving intertask messages under program control. Jobs can send messages to valid message receivers.

Disk File and Device Backup

RSTS/E provides the ability for total or selective backup of accounts and files to disks or to magnetic tapes using DCL commands. This is done through the use of multi-volume container files which may be placed on standard RSTS/E format disks or ANSI labeled magnetic tape. A separate utility is provided for making image copies.

Selective backup is done on-line. Image copies of disk volumes can be made on-line for all volumes except the

system disk and off-line for all volumes including the system disk.

RSTS/E BACKUP produces BACKUP sets which are subset compatible with the VAX/VMS BACKUP and can read BACKUP sets produced by VAX/VMS BACKUP. This provides for easy transfer of data between machines running these two operating systems.

RSTS/E BACKUP provides streaming support for streaming tape drives. See Table 1 (hardware support) for a list of tape drives which BACKUP supports in streaming mode.

System Reliability and Maintainability

The error logging mechanism in RSTS/E records certain classes of hardware errors in a disk file. The system manager can print the error log and analyze it on-line.

If a nonrecoverable hardware or system software error causes a system crash, RSTS/E will attempt to produce a crash dump and then attempt to reload the system and do a "cold restart." The automatic restart capability is enabled at the system manager's option.

The system manager can check the reliability of most peripherals on-line by running the Device Test package.

Software integrity is kept at a high level by using software maintenance tools that allow the system manager to correct software components that are found to be in error. Most parts of the RSTS/E system are maintained by replacing the component in error. Some layered products are maintained by automatic patching procedures.

Program Development Tools

Program development on a RSTS/E system is facilitated by a wide selection of system utilities.

The DIGITAL Text Editor (EDT) can edit all types of text files, including RMS fixed length record files, variable length record files, and stream files.

The RSX emulation provides a keyboard environment similar to that found in the RSX-11M-PLUS Operating System, by providing a subset of the RSX-11M-PLUS system directives. Also included are TASK BUILDER and LIBRARIAN similar to those used by RSX.

The RT-11 run-time system provides an environment similar to that found on the single-job monitor of the RT-11 Operating System, and provides a subset of the RT-11 directives. Also included are a LINKER and LIBRARIAN similar to those used by RT-11.

Standard RSTS/E Software Components

The following software components are supplied as integral parts of RSTS/E:

- EDT
- RMS-11
- RMS Utility Programs
- PDP-11 SORT/MERGE
- BASIC-PLUS
- MACRO-11

EDT

EDT is a text editor that can be used to create a file, enter and manipulate text in the file, and save or delete work done during editing sessions. EDT works with any kind of text file. EDT can be used as either a keypad or line editor.

EDT offers many features to make text editing easier and more efficient. These features include:

- On-line HELP that can be used any time during an editing session
- Protection of editing sessions with journaling
- Initialization command file to specify editing characteristics
- Use of several files or parts of files at a time

Record Management Services (RMS-11)

RMS-11 includes a set of run-time service routines and utility programs that provide a data management subsystem. This allows a user to create and manipulate files, and create, access, and alter records within files.

RMS supports sequential, relative, and indexed file organizations.

The indexed file organization allows each indexed file to have one primary key and up to 254 alternate keys. In addition to random access based on key values, programs can access records in an indexed file sequentially in ascending order by key values.

RMS supports fixed length, variable length, variable length with fixed control field, and stream record formats.

Indexed files are restricted to either fixed or variable record formats. The stream record format is restricted to sequential disk files only. Languages that do not use RMS (for example FORTRAN IV) cannot process RMS files unless the record format is stream.

User programs are provided with logical data record access to RMS files through extended language syntax statements. The functions provided by RMS-11 include OPEN, CLOSE, READ/GET, WRITE/PUT, REWRITE/UPDATE and DELETE. The form of the statement is dependent upon the application language.

RMS-11 supports cluster libraries for sharing application virtual address space between a resident library and resident libraries of other software systems that support cluster libraries. The use of separate instruction and data space is also allowed for machines which support this feature.

RMS-11 supports Digital Network Architecture (DNA) Data Access Protocol (DAP). This support allows access by RMS from a RSTS/E system with DECnet/E to files on remote DECnet nodes. The remote DECnet nodes may be RSTS/E, VAX/VMS, RSX-11M or RSX-11M-PLUS, DECnet-20, DECnet-DOS, or DECnet-Ultrix systems. In general remote file access appears the same as local file access to the programmer.

RMS Utility Programs

The following set of utility programs support RMS file-structured operations:

FILE DESIGN (DES) and FILE DEFINE (DEF) - Interactive utilities to assist the user in designing files for optimum performance.

RMS BACKUP (BCK) - Creates a backup copy of one or more RMS files from a disk to another disk or to magnetic tape.

RMS RESTORE (RST) - Recreates an original RMS file from the backup copy.

CONVERT (CNV) - Initially loads or adds records to an output file from input data recorded on a sequential, relative or indexed file; creates, supersedes, or extends a sequential output file from an input file.

DISPLAY (DSP) - Lists attributes of RMS files and records.

INDEXED FILE LOAD (IFL) - Initial load utility for indexed files, optimized for performance and space.

File Sort Utility (PDP-11 SORT/MERGE)

RSTS/E includes a file sort utility, PDP-11 SORT/MERGE that accepts as input up to 10 RMS files, and creates a second, reordered RMS file. The input file can contain data stored in binary or ASCII format. The file organization can be sequential, relative, or indexed and the record format can be fixed length, variable length, or stream.

PDP-11 SORT/MERGE also includes a set of subroutines, callable from programs written in one of the languages that use RMS.

BASIC-PLUS

The BASIC-PLUS language processor is comprised of a compiler and run-time system. The BASIC-PLUS compiler produces a compact pseudo code that is interpreted by the run-time system. BASIC-PLUS programs can be saved in either source form or in compiled form (compact pseudo code).

The immediate mode feature of BASIC-PLUS allows single-line statements typed without a line number to be compiled and executed immediately. This is a particularly useful feature in interactive debugging of BASIC-PLUS programs.

BASIC-PLUS can serve as a powerful system programming language. The extensive file processing capabilities of BASIC-PLUS allow users to take full advantage of RSTS/E file processing features. Most system features of RSTS/E are accessible via the flexible SYS system function call mechanism.

In addition to standard features, BASIC-PLUS features long variable names (with extend mode), IF...THEN... ELSE construct, ON ERROR condition handlers, statement modifiers such as IF, UNLESS, WHILE, UNTIL, FOR, multi-line statements and program chaining.

MACRO-11

The MACRO-11 assembly language, which uses the PDP-11 instruction set, can be used for development of programs and/or subroutines. The MACRO-11 assembler generates standard relocatable object modules from MACRO-11 source code.

SOURCE CODE INFORMATION

Source code is available in two formats:

- Machine-readable (magnetic tape)
- Listings on Microfiche

Source kits include sources for the RSTS/E Monitor, Run-Time systems, and Utilities.

Refer to the Ordering Information section of this SPD or contact DIGITAL for complete information.

This source code is provided on an **"AS IS"** basis without warranty of any kind, either express or implied.

UNSUPPORTED SOFTWARE COMPONENTS

There are components included with the RSTS/E product which are unsupported but may be useful in specialized situations. They are not required for normal or recommended use of the system. A list of these components is included in the documentation supplied with the RSTS/E product.

MINIMUM HARDWARE REQUIRED

A RSTS/E configuration must include:

- Any PDP-11 CPU from the list below, with line clock or programmable (KW11-P) clock
- Console terminal. Console terminal must be a hard copy device or VT100 or VT200 class terminal with a printer available on the supported system.
- 248K bytes (124K words) of memory
- 10M bytes of disk space
- Software distribution device
- Tape drive or removable disk for backup

OPTIONAL HARDWARE

Refer to Tables 1, 2, and 3 for a list of all hardware supported by RSTS/E.

Hardware limitations may limit the number of devices and/or memory that a particular system can support.

PREREQUISITE SOFTWARE

None

OPTIONAL SOFTWARE

The RSTS/E Optional Software Cross Reference Table (SPD 20.97.xx) lists the software which runs on RSTS/E. There may be several versions available of an optional software product. Refer to the RSTS/E Optional Software Cross Reference Table (SPD 20.97.xx) for the version of the product supported on this version of RSTS/E.

Optional software products may require system resources (e.g., physical memory, disk space) over and above the requirements for RSTS/E. If these extra resources are not available, severe system performance degradation can occur. Refer to the SPD for specific resource requirements for each product.

SOFTWARE WARRANTY

Warranty for this software product is provided by DIGITAL with the purchase of a license for the product as defined in the Software Warranty Addendum of this SPD.

INSTALLATION

DIGITAL requires that a customer's first purchase of this software product include DIGITAL Installation Services. These services provide for installation of the software product by an experienced DIGITAL Software Specialist.

For subsequent purchases of this product only experienced customers should attempt installation. DIGITAL recommends that all other customers purchase DIGITAL's Installation Services.

ORDERING INFORMATION

Single-Use licensed software is furnished under the licensing provisions of DIGITAL's Standard Terms and Conditions of Sale, which provide in part that the software and any part thereof may be used on only the single CPU on which the software is first installed, and may be copied, in whole or in part (with the proper inclusion of DIGITAL's copyright notice and any proprietary notices on the software) for use on that same CPU.

You will need a separate license for each CPU on which you will be using the software product (except as otherwise specified by DIGITAL). Then, Materials and Service Options are selected to utilize the product effectively. **THE LICENSE OPTIONS ARE DESCRIBED BELOW. IF YOU ARE NOT FAMILIAR WITH THE SERVICE OPTIONS, YOU MAY OBTAIN THE APPROPRIATE SOFTWARE PRODUCT SERVICE DESCRIPTION(S) FROM YOUR LOCAL DIGITAL OFFICE.** If you are already familiar with these options, you may obtain the ordering information directly from the Software Options Chart.

LICENSE OPTIONS

Single-Use License Option

The Single-Use License is your right to use the software product on a single CPU.

You purchase a Single-Use License according to the category to which your CPU belongs.

For your first installation of this software product you must purchase as a **minimum:**

- Single-Use License Option, and
- Distribution and Documentation Option

The license gives you the right to use the software on a single CPU and the Distribution and Documentation Option provides the machine-readable software and related documentation.

To use this software product on additional CPUs, for each CPU you must purchase as a **minimum:**

- Single-Use License Option

In addition to the right to use, the license gives you the one-time right to copy the software from your original CPU installation to the additional CPU. Therefore, the Distribution and Documentation Option is not required, but optional.

Distribution and Documentation Option

The Distribution and Documentation Option provides the machine-readable software and the basic documentation. You must have, or order, a Single-Use License to obtain this option. You will need this option to install the software for the first time. When revised versions of this software product become available, they may also be obtained by purchasing this option again.

Software Revision Right-To-Copy Option

The Right-To-Copy Option allows a customer with multiple CPUs to copy a revised version of a software product from one CPU to another. Each CPU must be licensed for that product. You first install the revised software on one CPU; then you can make copies for additional CPUs by purchasing the Right-To-Copy Option for each additional CPU.

Documentation-Only Option

The Documentation-Only Option provides one copy of the basic documentation.

Software Product Services

A variety of service options are available. For more information on these or other services, please contact your local DIGITAL office.

SOURCE MATERIALS OPTIONS

You can obtain optional source materials for this software product by signing DIGITAL's Software Program Sources License Agreement and then purchasing the source option(s) you want. The agreement entitles you to use the source materials at one customer facility or location which is specified in the agreement.

Most users do not require source materials. They are used primarily to make modifications to the software product. Source kits provided by DIGITAL do not necessarily contain all source files used by DIGITAL to build binary kits.

Source License and Sources Distribution Option

This option provides you with the machine-readable source code for this software product. It gives you the right to use the source code on any CPU at the facility/location specified in the agreement which has a Single-Use License for the object code.

Source License and Sources Listings Option

This option provides you with listings of the source programs for this software product. It gives you the right to use the listings for any CPU at the facility/location specified in the agreement which has a Single-Use License for the object code.

Sources Update Distribution Option

This option provides you with the revised version of the machine-readable source code for this software product. You must have purchased the Source License and Source Distribution Option to obtain this option.

Sources Update Listings Option

This option provides you with listings of source code for the revised version of the software product. You must have purchased the Source License and Source Listings Option to obtain this option.

Sources Update Distribution and Listings Option

This option provides you with the revised version of the machine-readable source code and listings for this software product. You must have purchased the Source License, Source Distribution and Listings Option to obtain this option.

SOFTWARE OPTIONS CHART

The distribution Media Codes used in the Software Options Chart are described below. You specify the desired Media Code at the end of the Order Number, e.g. QR430-H5 = binaries on TK50 Tape Cartridge.

5 = TK50 Tape Cartridge
D = 9-track 800 BPI Magtape (NRZI)
H = RL02 Disk Cartridge
M = 9-track 1600 BPI Magtape (PE)
R = Microfiche
V = RK07 Disk Cartridge
Z = No hardware dependency

NOTE: The availability of these software product options and services may vary by country. Customers should contact their local DIGITAL office for information on availability.

OPTIONS	ORDER NUMBER
LICENSE OPTIONS: A LICENSE IS REQUIRED FOR EACH CPU.	
Single-Use License Class H[1]	QR430-UZ
Single-Use License Class L[2]	QY430-UZ
MATERIALS AND SERVICE OPTIONS:	
Start-Up Service Package, Level III	QR430-B5 QR430-BD QR430-BH QR430-BM QR430-BV
Start-Up Service Package, Level II	QR430-75 QR430-7D QR430-7H QR430-7M QR430-7V
Start-Up Service Package, Level I	QR430-55 QR430-5D QR430-5H QR430-5M QR430-5V
Distribution and Documentation Option	QR430-H5 QR430-HD QR430-HH QR430-HM QR430-HV
Software Revision Right-To-Copy Option	QR430-HZ

OPTIONS	ORDER NUMBER
Documentation-Only Option	QR430-GZ
System Manager Documentation	QR432-GZ
Installation Service Option	QR430-I5 QR430-ID QR430-IH QR430-IM QR430-IV
DECsupport Service	QR430-95 QR430-9D QR430-9H QR430-9M QR430-9V
Basic Service	QR430-85 QR430-8D QR430-8H QR430-8M QR430-8V
Self-Maintenance Service	QR430-35 QR430-3D QR430-3H QR430-3M QR430-3V
SOURCE MATERIALS OPTIONS:	
Source License and Sources Distribution for RSTS/E Monitor, Run-Time Systems and Utilities	QR430-EM
Source License and Sources Listings for RSTS/E Monitor, Run-Time Systems and Utilities	QR430-FR
Sources Distribution for RSTS/E Monitor, Run-Time Systems and Utilities	QR430-NM
Sources Listings for RSTS/E Monitor, Run-Time Systems and Utilities	QR430-NR
Interim Update of Source Distribution for RSTS/E Monitor, Run-Time Systems and Utilities	QR430-LM
Interim Update of Source Listings for RSTS/E Monitor, Run-Time Systems and Utilities	QR430-LR

[1] Class H Single-Use License (for high-end systems)

— All UNIBUS models and systems

— MicroPDP-11/83

[2] Class L Single-Use License (for low-end systems)

— All Q-BUS models and systems except MicroPDP-11/83

— KD11, KDF11, KDJ11 CPU modules

— DCT11, DCF11, DCJ11 microprocessor chips

TABLE 1

Supported Processor Information

Processor Type	**MicroPDP-11/23/ 53/73/83**	**11/23-PLUS**	**11/24**	**11/34 11/34A**
Processor Features	KEF11-B (on /23) KEF11-AA (on /23) FPF11 (on /23) FPP (Std on 53/73/83) FPJ (Opt on /73/83)	KEF11-B KEF11-AA FPF11	KEF11-B KEF11-AA FPF11	FPP
Parity or ECC				
Min. Memory	256KB	256KB	248KB	248KB
Max. Memory	4088KB	4088KB	3840KB	248KB
Cache Memory	None on 11/23/53 8KB Std on 11/73/83	None	None	2KB Opt on 11/34A
Peripheral Interface	Q-BUS	Q-BUS	UNIBUS	UNIBUS

TABLE 1 (Continued)

Supported Processor Information

Processor Type	**11/35 11/40**	**11/45/50 11/55/60**	**11/44**	**11/70**	**11/84**
Processor Features	EIS (Req) FIS	FPP FPP Std on /60 FP11-E Opt on /60	FPP CIS	FPP	FPP (Std) FP11-E Opt on /60
Parity or ECC					
Min. Memory	248KB	248KB	512KB	512KB	512KB
Max. Memory	248KB	248KB	3840KB	3840KB	4088KB
Cache Memory	None	2KB Std on 11/60	8KB Std	2KB Std	8KB Std
Peripheral Interface	UNIBUS	UNIBUS	UNIBUS	UNIBUS MASSBUS	UNIBUS

TABLE 2

Supported Peripherals

Processor	**MicroPDP-11/23/53/ 73/83/11/23-PLUS**	**PDP-11/24/34/34A PDP-11/35/40/45 PDP-11/50/55/60 PDP-11/44/84**	**PDP-11/70**
Maximum Number of Disk Units			
RX01/2 (Non-RSTS File Structure)	8 X RX01	8	8
RX50[1]	16	16	16
RX33[1]	16	-	-
RD31/32/RD51/2/3/4[1]	16	-	-
RK05 (data disk only)	-	8	8[5]
RK06/7[2]	-	8	8[5]
RL01/2[4]	4 RL02	4	4[5]
RP02/3	-	8	-
RH11 - RP04/5/6, RM02[3]	-	16	-
RH70 - RP04/5/6, RM02/3/5/80[3]	-	-	16
RA80/81/60[1,2]	16	16	16[5]
RC25[1]	16	16	16[5]
Tape Units	Up to 4: TSV05 or TK25	Up to 8: TE10, TU10, TS03 or up to 4: TS11,TU80	UNIBUS Tapes Up to 8: TE10, TU10, TS03 Or up to 4: TS11, TU80
	Up to 2: TK50[7]		Up to 8: TU56 Up to 2: TK50[7] TU81[7]
		Up to 8: TU56 Up to 2: TK50[7] TU81/[7,] TU81E[7,9] Up to 8: TE16, TU16 TU45, TU77 (4max.)	MASSBUS Tapes Up to 8: TE16, TU16, TU45, TU77 (4max.)

Distribution Media	RL02 1600 bpi tape TK50 cart. tape	800 bpi tape (2400 FT) 1600 bpi tape RK07, RL02, TK50	800 bpi tape (2400 FT) 1600 bpi tape RK07, RL02, TK50
Terminals	Up to 26 Supported Terminals	Up to 127 Supported Terminals	Up to 127 Supported Terminals
Interfaces	Up to 3: DZV11-C DZQ11 DHV11 DHQ11	Up to 31: DL11-A/B/C/D Up to 32: DL11-E Up to 16: DJ11 DH11[6], DHU11, DZ11	Up to 31: DL11-A/B/C/D Up to 32: DL11-E Up to 16: DJ11 DH11[6], DHU11, DZ11
Printers	Up to 8 LPV11 and supported printer	Up to 8 LP11 and supported printer	Up to 8 LP11 and supported printer
Modems	DF01-A DF02, DF03 DF112 DF224	DF01-A DF02, DF03, DF112[8] DF224	DF01-A DF02, DF03, DF112[8] DF224
	Bell 103A,212 Compatible	Bell 103A,212 Compatible	Bell 103A,212 Compatible
		With DMC11 and DMR11: DF126, DF127, DF129	With DMC11 and DMR11: DF126, DF127, DF129
Other Peripherals			
Card Readers		1 CM11 or 1 CR11 and 1 CD11	1 CM11 or 1 CR11 and 1 CD11
Paper Tape Reader/Punch		1 PC11	1 PC11

Table 2 Footnotes

1 RSTS/E supports up to four (4) MSCP class controllers per system. Each controller supports up to four (4) MSCP class disk units.

2 These dual ported disks cannot be used from two (2) systems simultaneously.

3 These dual ported disks can be accessed as READONLY from two (2) systems simultaneously.

4 A minimum of two (2) RL01 capacity disks plus a software distribution device is required.

5 On the PDP-11/70 when MSCP class disks (for example UDA50/RA81/RA60/RC25) are present, combinations of these disks must be the only disks on the UNIBUS.

6 DM11-BB is required for DH11 dial up.

7 RSTS/E supports up to two (2) TMSCP class controllers. Each controller supports one (1) TMSCP class tape unit.

8 The DF112 DIALOUT capability is not supported on DH11 interfaces.

9 TU81E must be unit #0.

TABLE 3

Supported Terminals and Printers

Terminals	Printers
LA12, LA34, LA36, LA38, LA50, LA75, LA100, LA120, LA180, LA210	LP11 - A/B/C/D/E/F/G/H/J/K LP11 - R/S/V/W/X/Y/Z LN01, LG01, LG02
VT52, VT55, VT100, VT101, VT102, VT125 (as VT100 in ANSI mode only) VT131 (as VT100 or VT102 only) VT220, VT240, VT241 VT330/40 (as a Level 2 (VT2xx) only)	(These LP11 options include LP11 interface plus designated printer)
DECserver 200	
DECmate I/II/III in CX Mode	
PC 300 Series (P/OS with VT102 subset terminal emulation)	
Rainbow 100 series (with VT102 subset terminal emulation software)	
LQP02, LQP03, LN03, LN03+	