

PICTURE SYSTEM DIAGNOSTICS OPERATION ON THE PDP-11
UNDER RT-11 VERSION 03B OPERATING SYSTEM

1.1 INTRODUCTION

RT-11 is a fast, relatively easy to use single-user Operating System for the PDP-11 family of computers. Features of the system include low system overhead, fast I/O, and BATCH capability, allowing a sequence of diagnostics to run unattended by the operator.

From the Picture System 2 Diagnostics user's point of view, the most important difference between RT-11 Version 03B, and Versions 02, 01, or the E&S Diagnostic Monitor, is that operations which were formerly accomplished with the PIP or UPDATE utility programs, are now accomplished with the DIRECTORY, COPY, AND DUPLICATE commands. Also, DK0: formerly the name for the RK05 device, is the logical name for the default storage volume, which is distinct from SY:, the System Device.

Distribution media for Picture System Diagnostics include RK05 and RL01 disk packs, RX01 and RX02 Diskettes, and SAV program files on magtape. Minimal hardware includes a PDP-11 with 56KB memory, and one of the disk drives mentioned above, or else 800 bpi magtape with some other system device containing the RT-11 V03B Operating System.

The HELP command lists all Monitor commands and, when followed by command name (e.g. HELP COPY), provides information about the specific command. Commands and options may be abbreviated down

to the shortest unambiguous beginning portion of the string; for example, DIR for DIRECTORY. If a user is unsure of command syntax, he may type the command name only, omitting parameters. The monitor will, in that case, prompt the user for required information.

NOTE

In the examples within this section, all user responses are underscored. All command lines are terminated with a carriage return.

1.2 INSTALLATION

For the available disk and diskette media, no installation is required. For magtape, copy the entire contents of the magtape onto the default storage device:

.COPY MTO:*. * DK:

1.3 OPERATOR'S PROCEDURES

1.3.1 STARTUP

Boot the System Device according to instructions obtained from either the customer or the on-site PDP-11 Hardware Documentation. STARTS.COM is an indirect file, which the Monitor will execute upon startup, if found. If the file is not found, the displayed

?KMON-F-Command file not found

error message may be disregarded. Always specify the date if new files are to be created. Also, the time must be specified if BATCH processing is to be used.

1.3.2 DATE, TIME

Specify the date:

.DAT dd-mmm-yy

Specify the time:

.TIM hh:mm

1.3.3 TASK INITIATION

The default extension for a program file is SAV. Program files, other than current versions, will have extensions, such as S01. To initiate a task, use the RUN command:

.RUN QSDxxx

or

.RUN QSDxxx.S0x

1.3.4 TASK TERMINATION

To interrupt an executing diagnostic, key-in CTRL-C CTRL-C. To restart, key-in START.

1.3.5 FILE MAINTENANCE

1.3.5.1 File Specification

A file specification consists of physical or logical device name (ddd), file name (nnnnn) and extension or type (eee) and must be in the following form:

ddd:nnnnn.eee

Physical Device Names:

DL0: RL01 Drive 0
DL1: RL01 Drive 1
DYn: RX02 Drive n
DXn: RX01 Drive n
RKn: RK05 Drive n
MTn: TU10 Magtape n
MMn: TU16 Magtape n

Logical Device Names:

SY: System Device, or the device which was booted
and contains the operating system
DKn: Default storage volume n.

If the extension is omitted, the system assumes the following defaults:

.SAV Loadable program or Task file
.BAT Source file containing BATCH Commands
.CTL "Control" file generated by the BATCH Processor
during interpretation of a BAT file.
.COM Indirect command file, which may be processed by
the Monitor as opposed to the BATCH processor.

For Example:

RK:QSD000.SAV

The following "wildcard" operators may be used to specify a group of files which have some common feature:

- * Within the name or extension field, matches anything.
- % Within a name or extension, matches any letter.

Factoring may be used to propagate a device name, file name, or extension across multiple files. For example:

DK:(A,B).C equals DK:A.C,DK:B.C

1.3.5.2 Directory

To obtain a directory, type DIR followed by a file specification.
For example:

.DIRECTORY SY:

or

.DIR DK:*.SAV

or

.DIR DK:*(SAV,S0%)

or

.DIR DK:(QSD%%,RSD%%)*

1.3.5.3 File Copying

Contrary to earlier versions of RT-11, the input file specification is on the left, and the output file specification is on the right. For example:

.COPY DY0:*. * DL1: (from RX02 dr 0 to RL01 dr 1,
all files)

or

.COPY DK:QSDDT.SAV SY:

or

.COPY
From? DK:*. *
To ? SY:

1.3.5.4 File Deletion

When the DELETE command is used, confirmation is required for each file to be deleted. In response to each query, type Y for "yes" to cause deletion of the file in question.

```
.DELETE QSD13%.*  
Files Deleted:  
QSD130.SAV ? Y  
QSD131.SAV ? Y  
QSD136.SAV ? N
```

(only the first two are deleted)

1.3.5.5 File Renaming

In the following example, the SAV file is first renamed to S02, then the S01 file is renamed to SAV.

```
.RENAME QSD111.SAV QSD111.S02  
.RENAME QSD111.S01 QSD111.SAV
```

1.3.6 DEVICE COPYING

For the following example, mount an RK05 disk pack containing the diagnostics system in drive 0, and a scratch disk pack in drive 1. The copy will be a bootable system.

```
.R FORMAT  
  
*RK1:  
RK1:/FORMAT- Are you sure?Y  
*^C  
.INITIALIZE/BADBLOCKS RK1:  
RK1:/Init- Are you sure?Y  
.COPY/DEVICE RK0: RK1:  
RK1:/Copy- Are you sure?Y
```

1.4 BATCH OPERATION

1.4.1 BATCH STARTUP

If your version of Picture System Diagnostics supports BATCH operation, the following commands will be in STARTS.COM in order to facilitate BATCH usage:

.ASS TT: LOG
.LOAD BA

The default extension for a BATCH command file is BAT. The following conventions have been adopted for naming Picture System Diagnostic Batch files:

PS2xx.BAT	Single- or Multi-user PS2
SPSxx.BAT	Single-user PS2 only
MPSxx.BAT	Multi-user PS2 only

To initiate batch processing, run BATCH and key-in the name of the desired command file. For example:

.R BATCH
*PS200.BAT

A BATCH command file may be created or modified using the TECO.SAV text editor. The third line in the following example represents any desired message, which will be typed out by the BATCH processor. The TIM and 'FF' commands should follow the execution of each diagnostic. Multiple diagnostic commands may be entered on one line, as in MP100=2ED3P10X.

```
$JOB/RT11
      TTYIO
$MES xxxxxxxxxxxxxxxxxxxxxxxx
.TIM
.'FF'
.RUN QSDxxx
*X
.TIM
.'FF'

(etc.)

.RUN QSDxxx
*MP100=2ED3P10X
.TIM
.'FF'
$EOJ
```

1.4.2 BATCH TERMINATION

To abort a BATCH job, key-in CTRL-C CTRL-C.

1.5 RELATED DOCUMENTS

The following are all publications of Digital Equipment Corporation (DEC), and are part of the RT11 V03 Software Documentation Package:

- RT-11 Documentation Directory
- Introduction to RT-11
- RT-11 System User's Guide
- RT-11 System Message Manual
- PDP-11 TECO User's Guide (Text Editor)
- RT-11 Pocket Guide
- TECO Pocket Guide