DPM

RSX11M TST KIT USR GDAH·F154B·MC
CZQRIBO   FICHE 1 OF 1

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        Upd.te describes procedure for
        unbundled DPM systems, includes
        .RL02 kit, adds TS11:, and
        generalizes the procedures.

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1.0 ABSTRACT

The purpose of the DPM RSX11M Test System Kits (ZPXXX-RD) is threefold:

1. To provide all the neccessary utilities and support for the following diagnostic tasks: The Serial Bus Exerciser (DZKCH), the Remote Terminal Exerciser (CZKCI), and the DPM50 Diagnostic Monitor (CZKMP);

2. To provide Field Service with a means to verify complete system integrity before the customer's system is built;

3. To provide distribution media for the diagnostic tasks CZKCI, DZKCH, and CZKMP, and the DPM50 diagnostics.

The user should keep in mind that the RSX11M operating system used in the DPM Test System is provided merely as a support to the on-line diagnostic tasks, and, as such, is not supported in the same manner as licensed DEC Software. Library versions will be updated only when RSX11M version changes cause conflicts between the diagnostics and the system.

Please note that although they were designed for 60-cycle operation, the test systems also operate under 50-cycles with no modifications.

2.0 DPM SYSTEM CONFIGURATIONS

DPM systems are sold in two ways: as a kit, containing only dataway controllers and cables, associated hardware and DPM software; and as a packaged system. The kits may be installed on 11/34 or 11/70 based systems which contain at least the following:

1. 256K bytes of memory

2. a magtape drive

3. appropiate expansion hardware

There are two classes of DPM packaged systems: The DPM6X, based on the PDP-11/34 Processor and the DPM8X, based on the PDP-11/70 Processor. Each class has at least 256K bytes of memory, a console terminal, a magtape drive, DECdataway controllers each with 63 user addresses, and a disk. The different minimum systems are enumerated in the table below.

DPMXX	DISK TYPE	MAGTAPE	NO. DECDATAWAY CONTROLLERS
DPM62	RL01	TS03	2
DPM65	RK07	TS03	2
DPM86	RM03	TUE16	4
DPM87	RP06	TUE16	4

3.0 BOOTING THE DPM RSX11M TEST SYSTEM

3.1 General

The DPM RSX11M Test System consists of three kits, ZP126 (for systems with 800BPI magtape), ZP127 (for systems with RL02 disks), and ZP128 (for systems with 1600BPI magtape). ZP126 and ZP128 each contain eight magtapes, while ZP127 contains an RL02 disk pack. Each kit also contains the appropiate documents. One tape in the ZP126 and ZP 128 kits is a copy of the RSX standalone Disk Save and Compress Utility; another contains the DPM diagnostics; the other six are system tapes, one for each supported disk type (see Section 2).

When using ZP126 or ZP128, the target system must be at least a minimum DPM system configuration. A blank disk pack of the appropiate type should be provided to hold the test system and the diagnostics. Refer to section 3.2 for the boot procedure to use with these kits.

When using ZP127, the target system must be a minimum RL02-based DPM system. A blank disk pack is not necessary, but the system must have either RL02 drive 0 or drive 1 free. Refer to section 3.3 for boot instructions.

3.2 Booting the Test System from Magtape

The DPM RSX11M Test System requires two separate procedures to start it up. These procedures, described in detail below, are: 1) Move an RSX system from a system tape to the system disk and boot it, and 2) move the diagnostics from the diagnostics tape to the system disk. Step 1) is accomplished using standalone DSC, and step 2) is performed during the RSX system startup procedure.

This is the complete startup procedure:

1. Load the DSC tape (DSCS8 for 800BPI or DSCS16 for 1600BPI) on magtape drive 0.

2. Boot the magtape using the standard hardware bootstrap. The console should print the following message:

   RSX-11S V2.2 BL22 DISK SAVE AND COMPRESS UTILITY

   DSC>

3. Remove the DSCSYS tape

4. Select a system tape based on the following table:

SYSTEM DISK	SYSTEM TAPE
RK05	AP-F146A-MC CZQRBA0 TEST SYS FOR RK05
RK06	AP-F147A-MC CZQRCA0 TEST SYS FOR RK06
RK07	AP-F148A-MC CZQRDA0 TEST SYS FOR RK07
RL01	AP-F151A-MC CZQRGA0 TEST SYS FOR RL01
RM03	AP-F150A-MC CZQRFA0 TEST SYS FOR RM03
RP06	AP-F149A-MC CZQREA0 TEST SYS FOR RP06

5. Load the tape selected in 4. above on tape drive 0

6. Load the blank disk pack on drive 0

7. Check the magtape drive:
   If it is a TS03, TE10, or TU10, then type on the console:

   MT0:/VEC=224

   The console will return with the prompt DSC>.

8. Check the disk drive:
   If it is an RM03, then type on the console:

   DR:/VEC=254

   If it is an RL01, then type on the console:

   DL:/VEC=160

   The console will return with prompt DSC>.

9. Transfer the system tape to the target disk using DSC.
   The command line format is

   devout/VE=devin

   where devout is the target system device mnemonic and

devin is the magtape drive device mnemonic. The mnemon-
ics are obtained from the following table:

DISK	devout	TAPE	devin
RK05	DK:	TS03	MT:
RK06	DM:	TU10	MT:
RK07	DM:	TE10	MT:
RP06	DB:	TU16	MM:
RL01	DL:	TU45	MM:
RMO3	DR:	TS11	MS:

Once the command is entered, DSC may type out a warning
message:

        DSC - *WARNING* 59 - devout

This indicates that there is no bad block file on the
target disk and may be ignored.

After the tape has been read once, DSC will type:

        DSC - 45 START VFY PASS

It will then rewind the tape and reread it to verify
that the transfer was made correctly. If a verification
error occurs, the operation should be retried.

When DSC is finished, it will print its prompt:

        DSC>

10. Halt the processor. Remove the system tape from the
    magtape   drive   and   mount   the   diagnostics   tape
    (AP-F152A-MC CZQRHAO RSX11M TEST SYSTEM DIAGS).

11. Boot the target disk using the standard hardware boot-
    strap.

12. The system will come up and print the   following
    messages:

    DEVICE DB00: NOT IN CONFIGURATION

    (one or more of these depending on the hardware configu-
    ration)

      RSX-11M V3.1 BL22 124K MAPPED
    >RED devout:=SY0:
    >RED devout:=LB0:
    >MOU devout:DPMDIAGKIT
    >@[1,2]STARTUP

```
>*PLEASE ENTER TIME AND DATE (HR:MM DD-MMM-YY) [S]:
>TIM
 16:47:40 18-JUL-79
>INS $ISBRPT
>INS $ISBERR
>INS $ISBINI
>INS $FDCTIM
>FIX FDCTIM
>LOA SB:/HIGH
>RUN FDCTIM M/RSI=20S
>INS $PIP
>INS $FLX
>*DO YOU WANT TO LOAD DPM DIAGNOSTICS FROM MAGTAPE?

    enter Y here if the diagnostics are to be loaded
    an answer of N or carriage return terminates the
    startup procedure and produces the message  @<EOF>.

>*DO YOU HAVE A TU16, TU45 OR TU77 MAGTAPE?

    enter Y if so

>;MOUNT THE DPM DIAGNOSTICS TAPE ON DRIVE 0
>*IS THE DRIVE READY?

    enter Y when the tape is mounted and the drive is online
    an N answer will repeat the query

>SET /UIC-[200,270]
>FLX /CO/BL:80.=MM0:*.TSK
>FLX =MM0:*.IMG/IM:248.
>@<EOF>
>
```

When this point is reached, the diagnostics are on the
system disk in account [200,270]. For instructions on
running them, see section 5.0. To obtain a listing of
the diagnostics account, type the following command
line,

```
    >PIP /LI
```


3.3 Booting the RL02 Test System

The procedure for booting the RL02 DPM test system consists of
two very simple tests:

1. Mount the RL02 pack () in a free drive (this must be
    drive 0 or drive 1).

2. Boot it, using the standard hardware bootstrap.   The

console will print the following:

```
    RSX-11M V3.2 BL26       124K        MAPPED
>RED DL:=SY:
>RED DL:=LB:
>MOU DL:DPMDIAGKIT
>@DL:[1,2]STARTUP
>* PLEASE ENTER TIME AND DATE (HR:MM DD-MMM-YY) [S]:
>TIM
 15:55:59 15-FEB-80
>ACS SY:/BLKS=1024
>INS $PIP
>INS $ISBRPT
>INS $ISBERR
>INS $ISBINI
>INS $FDCTIM
>LOA SB:/HIGH
>RUN FDCTIM M/RSI-20S
>SET /UIC=[200,270]
>@ <EOF>
>
```

The system is now ready for use. The default UIC is [200,270],
which is where the diagnostics are located. To obtain a listing
of the diagnostics, type on the console:

>PIP /LI

4.0 INSTALLATION OF DIAGNOSTIC TASKS ON A CUSTOMER'S SYSTEM

4.1 General

The three diagnostic tasks, CZKCI, DZKCH, and CZKMP require ser-
vices provided by the RSX-11M operating system. They can, there-
fore, run on the customer's system concurrently with his normal
operation. They will test only terminals which are not attached
to customer tasks, and will abort if the operator attempts to
test a terminal which is attached. This section describes how to
install the diagnostic tasks on the customer's system.

The diagnostics may be loaded onto the customer's system disk,
onto another disk in the system, or may be left on the diagnos-
tics pack created in section 3. If the diagnostics are to be
left on the diagnostics pack, then this section can be ignored.

If the customer's system is multiuser, an account should be cre-
ated on the system, by following the procedure described in sec-
tion 4.2.

If the system is not multiuser, then a UFD must be created on the

disk which is to receive the diagnostics. This is done with the command

>UFD dev:[200,270]

where dev: is the mnemonic of the disk which will hold the diagnostics.

Section 4.3 describes the procedures to follow to move the diagnostics to the appropiate disk.

4.2 Creating the Diagnostic Account

The following procedure creates an account under [200,270] in which the on-line diagnostic tasks and the remote LSI-11 diagnostics will reside.

1. Log onto the customer's system as a PRIVILEGED USER WITH THE CUSTOMER'S ASSISTANCE OR KNOWLEDGE (PREFERABLY THE FORMER!).

2. Run the account program: >RUN $ACNT

3. Enter option A.

4. Enter new account 200,270.

5. Create new password, DIAGB.

6. Enter the system device default code dev, where dev is the disk mnemonic for the disk which will hlod the diagnostics.

7. Enter the first name as (FIELD).

8. Enter the last name as (SERVICE).

9. Type control/Z to exit the program (^Z)

10. Create the diagnostic UFD with the following command:

>UFD dev:[200,270]

where dev is the disk which will hold the diagnostics.

4.3 Loading the Diagnostics on the Customer's System

This section describes the ways to put the DPM diagnostics on a customer's system. The diagnostics may either be on magtape (the DPM diagnostics tape, AP-F152A-MC) or on the diagnostic pack created in section 3. Section 4.3.1 describes the procedure for

magtape, while section 4.3.2 describes the procedure when using
the diagnostic pack.

NOTE: The diagnostics require about 1500 blocks of disk space.

If the customer's system is multiuser, the first step is to log
on under the account created in section 4.2:

    >HEL
    ACCOUNT OR NAME: 200,270
    PASSWORD: DIAGB – this is unechoed

If the system is not multiuser, the first step is to set the de-
fault UIC to [200,270]:

    >SET /UIC=[200,270]

4.3.1 Loading Diagnostics from Magtape

    1. If the system is multiuser, allocate the magtape
        drive:

           >ALL MM0:

        Use MT0: instead of MM0: in all magtape refer-
        ences if the drive is a TS03, TU10 or TE10.

        Use MS0: if the drive is a TS11.

    2. Load the DPM diagnostics tape (AP–F152A–MC) on
        drive 0.

    3. Transfer the diagnostics:

        dev: in the commands below refers to the disk on
        which the diagnostics are to reside. It is SY:
        for the system device. Refer to the devout column
        in the table in step 9 of section 3.2 for standard
        disk mnemonics.

           >RUN $FLX
           FLX>devout:/CO/BL:80.=MM0:*.TSK
           FLX>devout:=MM0:*.IMG/IM:248.
           FLX>^Z

    4. If the magtape was allocated, deallocate it:

           >DEA MM0:

   The diagnostics are now on the target device and are ready
   for use. Refer to section 5 for basic run instructions. If

the system is multiuser, log off when you are finished, L_1 by

typing BYE on the console.

4.3.2 Loading Diagnostics from the Diagnostics Pack

1. If the system is multiuser, allocate the appropiate device:

   >ALL devin:

   NOTE: Both devin and devout refer to disk mnemonics in this procedure. devin is the diagnostics pack, and devout is the destination pack. Refer to the devout column in the table in step 9 of section 3.2 for a list of the disk mnemonics.

2. Place the diagnostics pack in the appropiate drive.

3. Mount the diagnostics pack:

   >MOU devin:DPMDIAGKIT

4. Move the diagnostics from the diagnostics pack to the destination pack:

   >PIP devout:=devin:*.*

5. Dismount the diagnostics pack:

   >DMO devin:

6. If the drive was allocated, deallocate it:

   >DEA devin:

The diagnostics are now ready to run. If the system is multiuser, log off when finished by typing BYE on the console.

5.0 EXECUTING THE DIAGNOSTIC TASKS

5.1 General

There are essentially three different methods of executing the diagnostic tasks. The difference in the three methods is due to the type of RSX-11M system running at the time - the DPM test system, or the customer's system - and, if the tasks are to be run on-line under the customer's system, whether they are to be run from the DPM test pack or from the customer's system device.

NOTE: All the names and devices within the inner parentheses are alternative choices depending on the test to be run or the DPM test pack used.

5.2 Standalone Under DPM Test System

This mode is almost equivalent to the traditional diagnostic operation in that no customer's tasks run concurrently with the diagnostics.

1. Boot the DPM Test System, which was created from tape in section 3.

2. Run the task:

   >RUN DZKCH (CZKCI, CZKMP)

3. Refer to the specific document for diagnostic run instructions.

5.3 On-line Under the Customer's System

5.3.1 Using the DPM Test Pack

1. Load the DPM Test Pack on drive n

2. If the system is multiuser, log onto the Customer's sytem:

   >HEL
   ACCOUNT OR NAME: 200,270
   PASSWORD: DIAGB   this is unechoed

   Otherwise, set the default UIC to [200,270]:

   >SET /UIC=[200,270]

3. If the system is multiuser, allocate the DPM Test Pack:

   >ALL DKn:(DRn:,DBn:,DMn:,DLn:)

4. Mount the DPM test pack:

   >MOU DKn:(DRn:,DBn:,DMn:,DLn:) DPMDIAGKIT

5. Run the task:

```
>RUN DKn:(DRn:,etc.) DZKCH (CZKCI, CZKMP)
```

6. Refer to the specific document for diagnostic run instructions

5.3.2 Using the Customer's System Pack

1. If the system is multiuser, log on as in step 2 of section 5.3.1, above. Otherwise, set the default UIC to [200,270]:

    ```
    >SET /UIC=[200,270]
    ```

2. Run the task:

    ```
    >RUN DZKCH (DZKCI, CZKMP)
    ```

NOTE: Care must be taken in selecting terminals to be tested under sections 5.3.1 and 5.3.2 above. The diagnostics will not detach or disturb in any other way any terminal which is attached to any other task in the customer's system. Therefore, any terminal to be tested must be unattached before any of the diagnostics can be run. In the case of a DPM01 terminal, all four of the DPM01 addresses must be unattached to run either diagnostic.