RT–11 INSTALLATION SUMMARY CARDS

AV-H377A-TC

RT–11 INSTALLATION SUMMARY CARD 1
System Distributed on Small Device[1] to Run on Small Device

NOTE

This installation card is intended to be used at the computer after you have thoroughly studied the *RT–11 Installation and System Generation Guide*. You should not attempt to use this card to install your system unless you have read the required chapters. The steps on this card briefly summarize the procedures described in Chapter 3 of the installation guide. The section numbers in parentheses after each step refer to the corresponding section in the *RT–11 Installation and System Generation Guide.* In the command lines, red indicates your input.

1. Bootstrap distribution volume. (Section 3.1) Make sure that processor is powered up but not running. Insert distribution volume number 1 or 1–T (write protected, if possible) in RX01, DECtape II, or PDT–11 Unit 0. Use hardware bootstrap to boot volume. Then set date.

```
.DATE dd-mmm-yy(RET)
```

2. Preserve distribution volumes. (Section 3.2) Initialize 7 blank volumes. Use the following command, with blank volume inserted in Unit 1.

```
.INIT/BAD xx1:(RET)
```

Copy each distribution volume to a backup volume. Label backup volumes. In commands, xx is DX, DD, or PD.

Commands to copy bootable volume:

```
.SQU/OUT:xx1: xx0:(RET)
.COPY/BOOT xx1:RT11SJ.SYS xx1:(RET)
```

Command for nonbootable volumes:

```
.SQU/WAIT/OUT:xx1: xx0:(RET)
Mount output volume in xx1:; Continue?
```

Insert blank volume in Unit 1 and type "Y."

```
Mount input volume in xx0:; Continue?
```

Replace volume in Unit 0 with volume you want to copy and type "Y."

```
Mount system volume in xx0:; Continue?
```

Replace volume in Unit 0 with distribution volume 1 or 1–T and type "Y."

Store distribution volumes. Use hardware bootstrap to boot backup volume 1 or 1–T in Unit 0. Set date. Remove protection from files on backup volumes.

```
.REN/SYS/NOPRO xxn:*.* xxn:*.*(RET)
```

3. Install mandatory patches. (Section 3.3)

To install binary patches: Run SIPP and enter patch as published in *RT–11 Software Dispatch Review.*

```
.R SIPP(RET)
```

To install source patches: Use editor to create SLP command file, filnam.SLP. Then use SLP utility to patch filnam.MAC.

```
.R SLP(RET)
*filnam.MAC=filnam.MAC/filnam.SLP(RET)
```

4. Create working system from chosen components. (Section 3.4) Initialize a number of blank volumes. Copy components you have selected for your working system to initialized volumes.

To copy components from bootable volumes:

```
.COPY/SYS/QUERY xx0: xx1:(RET)
 Files copied:
xx0:aaaaaa.ttt to xx1:aaaaaa.ttt? Y(RET) (to include file)
xx0:zzzzzz.ttt to xx1:zzzzzz.ttt? N(RET) (to exclude file)
```

[1] RX01 diskettes, DECtape II cartridges, or PDT–11 volumes.

To copy components from nonbootable volumes:

```
.SET USR NOSWAP(RET)
.COPY/SYS/WAIT xx1:filnam.typ xx0:filnam.typ(RET)
Mount input volume in xx1:; Continue?
```

Place volume containing file you want to copy in Unit 1 and type "Y."

```
Mount output volume in xx0:; Continue?
```

Replace system volume in Unit 0 with volume to which you want to copy filnam.typ and type "Y."

```
Mount system volume in xx0:; Continue?
```

Replace volume in Unit 0 with system volume and type "Y."

Label each working system volume (RT–11 V04 1/x, and so on).

```
.SET USR SWAP(RET)
```

5. Install bootstrap on volumes that need to be bootable. (Section 3.5) Insert in Unit 1 volume on which you need to install bootstrap (yy is BL, SJ, or FB).

```
.COPY/BOOT xx1:RT11yy.SYS xx1:(RET)
```

Insert working system volume 1 in Unit 0 and use hardware bootstrap to boot working system. Set date. Store patched backup volumes for future patching purposes.

6. Customize system. (Section 3.6) Implement any customizations that you decided you need.

7. Compress each volume. (Section 3.7) Compress each working system volume to make its free space contiguous.

```
.SQU xxn:(RET)
```

8. Preserve working system. (Section 3.8) Protect all files in working system and copy system to backup volumes. Store backup volumes.

```
.PEN/SYS/PRO xxn:*.* xxn:*.*(RET)
.INIT/BAD xx1:(RET)
```

Commands to copy bootable volume:

```
.SQU/OUT:xx1: xx0:(RET)
.COPY/BOOT xx1:RT11yy.SYS xx1:(RET)
```

Command to copy nonbootable volumes:

```
.SQU/WAIT/OUT:xx1: xx0:(RET)
```

9. Test working system. (Section 3.9) This test serves as a minimal integrity check. DIGITAL considers your system installed if the demonstration runs. To perform this test, you need the software components listed in Section 3.9.

Single-job monitor exercise: Bootstrap SJ monitor and set date. Insert blank volume in Unit 1, assign default device to Unit 1, and initialize volume in Unit 1. Then display directory of system volume.

```
.AS xx1: DK:(RET)
.INIT/BAD xx1:(RET)
.DIR/BRIEF/COL:1 SY:(RET)
```

(Directory prints on terminal.)

Remove protection from DEMOBG.MAC, then edit demonstration program.

```
.EDIT SY:DEMOBG.MAC(RET)
*F;(TAB).ASCII(ESC)(ESC)
*OAD(ESC)(ESC)
*EX(ESC)(ESC)
```

Assemble demonstration program.

```
.AS LP:  LST:(RET)
```

or

```
.AS TT:  LST:(RET)

.MACRO/LIST:LST: SY:DEMOBG(RET)
```

Link demonstration program.

```
.LINK DEMOBG(RET)
```

Run demonstration program.

```
.RUN DEMOBG(RET)
RT-11 DEMONSTRATION ...
... DONE.
(CTRL/C)
(CTRL/C)
```

Foreground/background monitor exercise: In this exercise, another program DEMOFG runs in the foreground and sends messages (to ring the terminal bell) to DEMOBG in the background. Other programs can execute in the background, but messages are received only when DEMOBG is active.

Use BOOT command to bootstrap FB monitor. Assign default device to Unit 1 and set time.

```
.BOOT xx0:RT11FB.SYS(RET)
.AS xx1:  DK:(RET)
.TIME hh:mm:ss(RET)
```

Assemble demonstration program.

```
.MACRO SY:DEMOFG(RET)
```

Link demonstration program.

```
.LINK/FOR DEMOFG(RET)
```

Run demonstration programs.

```
.FRUN DEMOFG(RET)
F>
FOREGROUND DEMONSTRATION ...
... BELL.
(CTRL/B)
B>
RUN DEMOBG(RET)
```

(Bell rings quickly several times, then once every two seconds.)

```
RT-11 DEMONSTRATION ...
... DONE.
(CTRL/C)
(CTRL/C)
```

(Bell stops.)

```
.DIR(RET)
```

(Directory prints on terminal.)

```
.RUN DEMOBG(RET)
```

(Bell rings several times in rapid succession, then rings once every two seconds.)

```
RT-11 DEMONSTRATION ...
... DONE.
(CTRL/C)
(CTRL/C)
```

(Bell stops.)

```
(CTRL/F)
F>
(CTRL/C)
(CTRL/C)
B>
UNLOAD F(RET)
```

If you completed exercises without error, your system has passed minimal test and you can consider it successfully installed.

RT–11 INSTALLATION SUMMARY CARD 2
System Distributed on Small Device[1] to Run on Disk

NOTE

This installation card is intended to be used at the computer after you have thoroughly studied the *RT–11 Installation and System Generation Guide*. You should not attempt to use this card to install your system unless you have read the required chapters. The steps on this card briefly summarize the procedures described in Chapter 4 of the installation guide. The section numbers in parentheses after each step refer to the corresponding section in the *RT–11 Installation and System Generation Guide*. In the command lines, red indicates your input.

1. Bootstrap distribution volume. (Section 4.1) Ensure that processor is powered up but not running. Insert distribution volume number 1/7 (write protected, if possible) in RX01 diskette or TU58 DECtape II cartridge Unit 0. Use hardware bootstrap to boot volume. Then set date.

```
.DATE dd-mmm-yy RET
```

2. Copy distribution volumes to disk. (Section 4.2) Initialize disk to serve as working system disk (format RK05 disk first). In commands, xx is device name of disk.

RK05 disk:

```
.FORM RK0: RET
.INIT/BAD RK0: RET
```

Other type disk:

```
.INIT/BAD xx0: RET
```

or

```
.INIT/REP xx0: RET
```

Copy all files from distribution volume 1 to initialized disk (xx is device name of disk, yy is device name of distribution device).

```
.SQU/OUT:xx0: yy0: RET
```

Copy rest of distribution volumes to disk.

```
.COPY/SYS yy1: xx0: RET
```

Copy bootstrap to disk and compress disk.

```
.COPY/BOOT xx0:RT11SJ.SYS xx0: RET
.SQU xx0: RET
```

3. Preserve distribution volumes. (Section 4.3) Halt processor. Store distribution volumes. Use hardware bootstrap to boot disk. Then set date and remove protection from protected files on backup disk.

```
.REN/SYS/NOPRO *.* *.* RET
```

4. Install mandatory patches. (Section 4.4)

To install binary patches: Run SIPP and enter patch as published in *RT–11 Software Dispatch Review.*

```
.R SIPP RET
```

To install source patches: Use editor to create SLP command file, filnam.SLP. Then use SLP utility to patch filnam.MAC.

```
.R SLP RET
*filnam.MAC=filnam.MAC,filnam.SLP RET
```

5. Create working system from chosen components. (Section 4.5) Initialize a disk in Unit 1. In commands, xx is device name of disk.

RK05 disk:

```
.FORM RK1: RET
.INIT/BAD RK1: RET
```

Other type disk:

```
INIT/BAD xx1: RET
```

or

```
.INIT/REP xx1: RET
```

Copy components you have selected for your working system to initialized disk.

```
.COPY/SYS/QUERY xx0: xx1: RET
 Files copied:
xx0:aaaaaa.ttt to xx1:aaaaaa.ttt? Y RET (to include file)
xx0:zzzzzz.ttt to xx1:zzzzzz.ttt? N RET (to exclude file)
```

6. Install bootstrap on disk. (Section 4.6) Install bootstrap on working system disk (yy is BL, SJ, or FB).

```
.COPY/BOOT xx1:RT11yy.SYS xx1: RET
```

Remove disk from Unit 0 and store it for future patching. Mount new working system disk in Unit 0 and use hardware bootstrap to boot working system disk. Set date.

7. Customize system. (Section 4.7) Implement any customizations that you decided you need.

8. Compress disk. (Section 4.8) Compress working system disk to make its free space contiguous.

```
.SQU xx0: RET
```

9. Preserve working system. (Section 4.9) Protect all files in working system and back it up.

```
.PEN/SYS/PRO *.* *.* RET
```

To back up system on RX01 or DECtape II: Initialize a number of blank RX01 or DECtape II volumes. In command, xx is DX or DD.

```
.INIT/BAD xx1: RET
```

Copy all files in your working system to as many RX01 or DECtape II volumes as necessary (xx is device name for your backup device and yy is name for your disk).

```
.COPY/SYS/QUERY yy0: xx1: RET
```

Then copy bootstrap to backup volume that is to be bootable. In command, aa is BL, SJ, or FB.

```
.COPY/BOOT xx1:RT11aa.SYS xx1: RET
```

Store backup volumes.

To back up system on another disk: Initialize blank disk. In commands, xx is device name of disk.

RK05 disk:

```
.FORM RK1: RET
.INIT/BAD RK1: RET
```

Other type disk:

```
.INIT/BAD xx1: RET
```

or

```
.INIT/REP xx1: RET
```

Copy all the files in your working system to backup disk and copy bootstrap to disk (aa is BL, SJ, or FB).

```
.SQU/OUT:xx1 xx0: RET
.COPY/BOOT xx1:RT11aa.SYS xx1: RET
```

Store backup disk in safe place.

10. Test working system. (Section 4.10) This test serves as a minimal integrity check. DIGITAL considers your system installed if the demonstration runs. To perform this test, you need the software components listed in Section 4.10.

Single-job monitor exercise: Bootstrap SJ Monitor and set date. Display directory of system disk.

```
.DIR/BRIEF/COL:1 SY: RET
```

[1] RX01 diskettes, DECtape II cartridges, or PDT–11 volumes.

(Directory prints on terminal.)

Remove protection from DEMOBG.MAC, then edit demonstration program.

```
.EDIT SY:DEMOBG.MAC(RET)
*F;(TAB).ASCII(ESC)(ESC)
*OAD(ESC)(ESC)
*EX(ESC)(ESC)
```

Assemble demonstration program.

```
.AS LP: LST:(RET)
```

or

```
.AS TT: LST:(RET)
```

```
.MACRO/LIST:LST: SY:DEMOBG(RET)
```

Link demonstration program.

```
.LINK DEMOBG(RET)
```

Run demonstration program.

```
.RUN DEMOBG(RET)
RT-11 DEMONSTRATION ...
... DONE.
(CTRL/C)
(CTRL/C)
```

Foreground/background monitor exercise: In this exercise, another program DEMOFG runs in the foreground and sends messages (to ring the terminal bell) to DEMOBG in the background. Other programs can execute in the background, but messages are received only when DEMOBG is active.

Use BOOT command to bootstrap FB monitor. Set time.

```
.BOOT xxO:RT11FB.SYS(RET)
.TIME hh:mm:ss(RET)
```

Assemble demonstration program.

```
.MACRO SY:DEMOFG(RET)
```

Link demonstration program.

```
.LINK/FORE DEMOFG(RET)
```

Run demonstration program.

```
.FRUN DEMOFG(RET)
F>
FOREGROUND DEMONSTRATION ...
... BELL.
B>
RUN DEMOBG(RET)
```

(Bell rings quickly several times, then once every two seconds.)

```
RT-11 DEMONSTRATION ...
... DONE.
(CTRL/C)
(CTRL/C)
```

(Bell stops.)

```
.DIR(RET)
```

(Directory prints on terminal.)

```
.RUN DEMOBG(RET)
```

(Bell rings several times in rapid succession, then rings once every two seconds.)

```
RT-11 DEMONSTRATION ...
... DONE.
(CTRL/C)
(CTRL/C)
```

(Bell stops.)

```
(CTRL/F)
F>
(CTRL/C)
(CTRL/C)
B>
UNLOAD F(RET)
```

If you completed exercises without error, your system has passed minimal test and you can consider it successfully installed.

RT–11 INSTALLATION SUMMARY CARD 3
System Distributed on Hard Disk to Run on Disk

NOTE

This installation card is intended to be used at the computer after you have thoroughly studied the *RT–11 Installation and System Generation Guide*. You should not attempt to use this card to install your system unless you have read the required chapters. The steps on this card briefly summarize the procedures described in Chapter 5 of the installation guide. The section numbers in parentheses after each step refer to the corresponding section in the *RT–11 Installation and System Generation Guide*. In the command lines, red indicates your input.

1. Bootstrap distribution disk. (Section 5.1) Make sure that processor is powered up but not running. Mount distribution disk (write protected) in disk Unit 0. Use hardware bootstrap to boot volume. Then set date.

```
.DATE dd-mmm-yy RET
```

2. Preserve distribution disk. (Section 5.2) Initialize a blank disk (format RK05 disk first). In commands, xxn is device name and unit number of disk.

RK05 disk:

```
.FORM RKn: RET
.INIT/BAD RKn: RET
```

Other type disk:

```
.INIT/BAD xxn: RET
```

or

```
.INIT/REP xxn: RET
```

Copy all files from distribution disk to initialized blank disk and copy bootstrap to disk. In commands, yyn is device name and unit number of distribution disk and xxn is device and unit of backup disk.

```
.SQU/OUT:xxn: yyn: RET
.COPY/BOOT xxn:RT11SJ.SYS xxn: RET
```

Store distribution disk. Use hardware bootstrap to boot backup disk. Set date. Remove protection from all files on backup disk.

```
.REN/SYS/NOPRO *.* *.* RET
```

3. Install mandatory patches. (Section 5.3)

To install binary patches: Run SIPP and enter patch as published in *RT–11 Software Dispatch Review.*

```
.R SIPP RET
```

To install source patches: Use editor to create SLP command file, filnam.SLP. Then use SLP utility to patch filnam.MAC.

```
.R SLP RET
*filnam.MAC=filnam.MAC/filnam.SLP RET
```

4. Create working system from chosen components. (Section 5.4) Initialize blank disk (format RK05 disk first). In commands, xxn is device and unit of blank disk.

RK05 disk:

```
.FORM RKn: RET
.INIT/BAD RKn: RET
```

Other type disk:

```
.INIT/BAD xxn: RET
```

or

```
.INIT/REP xxn: RET
```

Copy components you have selected for working system from backup disk to initialized blank disk. In command, yyn is device and unit of backup disk and xxn is device and unit of disk to be working system disk.

```
.COPY/SYS/QUERY yyn: xxn: RET
 Files copied:
yyn:aaaaaa.ttt to xxn:aaaaaa.ttt? Y RET (to include file)
yyn:zzzzzz.ttt to xxn:zzzzzz.ttt? N RET (to exclude file)
```

5. Install bootstrap on disk. (Section 5.5) Copy bootstrap to working system disk. In command, aa is BL, SJ, or FB.

```
.COPY/BOOT xyn:RT11aa.SYS xxn: RET
```

Store backup disk for future patching. Use hardware bootstrap to boot working system disk. Set date.

```
.DATE dd-mmm-yy RET
```

6. Customize system. (Section 5.6) Implement any customizations that you decided you need.

7. Compress disk. (Section 5.7) Compress working system disk to make its free space contiguous. In command, xx is device name of disk.

```
.SQU xx0: RET
```

8. Preserve working system. (Section 5.8) Protect all files in working system and preserve system on backup medium of your choice. The following shows backing up to disk. In commands, xxn is working system backup disk.

RK05 disk:

```
.FORM RKn: RET
.INIT BAD RKn: RET
```

Other type disk:

```
.INIT BAD xyn: RET
```

or

```
.INIT/REP y-n: RET
```

Copy all files in your working system. Then, copy bootstrap to disk. Store backup disk. In commands, yyn is device and unit of working system disk and xxn is the device an unit for backup working system disk and aa is BL, SJ, or FB.

```
.SQU/OUT:xxn yyn: RET
.COPY/BOOT xxn:RT11aa.SYS xxn: RET
```

9. Test working system. (Section 5.9) This test serves as a minimal integrity check. DIGITAL considers your system installed if the demonstration runs. To perform this test, you need the software components listed in Section 5.9.

Single-job monitor exercise: Bootstrap SJ monitor and set date. Display directory of system disk.

```
.DATE dd-mmm-yy RET
.DIR/BRIEF COL:1 SY: RET
```

(Directory prints on terminal.)

Remove protection from DEMOBG.MAC, then edit demonstration program.

```
.EDIT SY:DEMOBG.MAC RET
*F:TAB.ASCII ESC ESC
*LOAD ESC ESC
*EX ESC ESC
```

Assemble demonstration program.

```
.AS LP: LST: RET
```

or

```
.AS TT: LST: RET
```

```
.MACRO/LIST:LST: SY:DEMOBG RET
```

Link demonstration program.

```
.LINK DEMOBG RET
```

Run demonstration program.

```
.RUN DEMOBG RET
RT-11 DEMONSTRATION ...
... DONE.
CTRL/C
CTRL/C
```

Foreground/background monitor exercise: In this exercise, another program DEMOFG runs in the foreground and sends messages (to ring the terminal bell) to DEMOBG in the background. Other programs can execute in the background, but messages are received only when DEMOBG is active.

Use BOOT command to bootstrap FB monitor. Set time.

```
.BOOT xxO:RT11FB.SYS(RET)
.TIME hh:mm:ss(RET)
```

Assemble demonstration program.

```
.MACRO SY:DEMOFG(RET)
```

Link demonstration program.

```
.LINK/FORE DEMOFG(RET)
```

Run demonstration programs.

```
.FRUN DEMOFG(RET)
F>
FOREGROUND DEMONSTRATION ...
... BELL.
B>
RUN DEMOBG(RET)
```

(Bell rings quickly several times, then once every two seconds.)

```
RT-11 DEMONSTRATION ...
... DONE.
(CTRL/C)
(CTRL/C)
```

(Bell stops.)

```
.DIR(RET)
```

(Directory prints on terminal.)

```
.RUN DEMOBG(RET)
```

(Bell rings several times in rapid succession, then rings once every two seconds.)

```
RT-11 DEMONSTRATION ...
... DONE.
(CTRL/C)
(CTRL/C)
```

(Bell stops.)

```
(CTRL/F)
F>
(CTRL/C)
(CTRL/C)
B:
UNLOAD F(RET)
```

If you completed exercises without error, your system has passed minimal test and you can consider it successfully installed.

RT–11 INSTALLATION SUMMARY CARD 4
System Distributed on RX02 Diskettes to Run on RX02

NOTE

This installation card is intended to be used at the computer after you have thoroughly studied the *RT–11 Installation and System Generation Guide*. You should not attempt to use this card to install your system unless you have read the required chapters. The steps on this card briefly summarize the procedures described in Chapter 6 of the installation guide. The section numbers in parentheses after each step refer to the corresponding section in the *RT–11 Installation and System Generation Guide*. In the command lines, red indicates your input.

1. Bootstrap distribution diskette. (Section 6.1) Make sure that processor is powered up but not running. Insert distribution diskette 1 in RX02 Unit 0. Use hardware bootstrap to boot diskette. Then set date.

```
.DATE dd-mmm-yy
```

2. Preserve distribution diskettes. (Section 6.2) Format and initialize 4 diskettes.

```
.FORM DY1:
.INIT/BAD DY1:
```

Copy all files from distribution diskettes to initialized blank diskettes. Label backup diskettes.

Commands for bootable diskette:

```
.SQU/OUT:DY1: DY0:
.COPY/BOOT DY1:RT11SJ.SYS DY1:
```

Command for nonbootable diskettes:

```
.SQU/WAIT/OUT:DY1: DY0:
Mount output volume in DY1:; Continue?
```

Insert blank diskette in Unit 1 and type "Y."

```
Mount input volume in DY0:; Continue?
```

Replace diskette in Unit 0 with volume you want to copy and type "Y."

```
Mount system volume in DY0:; Continue?
```

Replace diskette in Unit 0 with distribution diskette 1 and type "Y."

Store distribution diskettes. Use hardware bootstrap to boot backup diskette 1 in Unit 0. Set date. Remove protection from files on backup diskettes.

```
.REN/SYS/NOPRO DY1:*.* DY1:*.*
```

3. Install mandatory patches. (Section 6.3)

To install binary patches: Run SIPP and enter patch as published in *RT–11 Software Dispatch Review.*

```
.R SIPP
```

To install source patches: Use editor to create SLP command file, filnam.SLP. Then use SLP utility to patch filnam.MAC.

```
.R SLP
*filnam.MAC=filnam.MAC,filnam.SLP
```

4. Create working system from chosen components. (Section 6.4) Format and initialize a number of blank diskettes.

```
.FORM DY1:
.INIT/BAD DY1:
```

Copy components that you have selected for your working system to initialized diskettes.

To copy components from bootable diskettes:

```
.COPY/SYS/QUERY DY0: DY1:
 Files copied:
DY0:aaaaaa.ttt to DY1:aaaaaa.ttt? Y (to include file)
DY0:zzzzzz.ttt to DY1:zzzzzz.ttt? N (to exclude file)
```

To copy components from nonbootable diskettes:

```
.SET USR NOSWAP
.COPY/SYS/WAIT DY1:filnam.typ DY0:filnam.typ
Mount input volume in DY1:; Continue?
```

Place diskette containing file you want to copy in Unit 1 and type "Y."

```
Mount output volume in DY0:; Continue?
```

Replace system diskette in Unit 0 with diskette to which you want to copy filnam.typ and type "Y."

```
Mount system volume in DY0:; Continue?
```

Replace diskette in Unit 0 with system volume and type "Y."

Label each working system diskette (RT–11 V04 1/x, and so on).

```
.SET USR SWAP
```

5. Install bootstrap on diskettes that need to be bootable. (Section 6.5) Insert in Unit 1 the diskette on which you need to install bootstrap. In command, yy is BL, SJ, or FB.

```
.COPY/BOOT DY1:RT11yy.SYS DY1:
```

Then, insert working system diskette number 1 in Unit 0 and use hardware bootstrap to boot your working system. Set date. Store patched backup diskettes for future patching purposes.

6. Customize system. (Section 6.6) Implement any customizations that you decided you need.

7. Compress each diskette. (Section 6.7) Compress each working system diskette to make its free space contiguous.

```
.SQU DYn:
```

8. Preserve working system. (Section 6.8) Protect all files in working system and copy system to backup diskettes. Store backup diskettes.

```
.REN/SYS/PRO DYn:*.* DYn:*.*
.INIT/BAD DY1:
```

Commands to copy bootable diskette:

```
.SQU/OUT:DY1: DY0:
.COPY/BOOT DY1:RT11yy.SYS DY1:
```

Command to copy nonbootable diskettes:

```
.SQU/WAIT/OUT:DY1: DY0:
```

9. Test working system. (Section 6.9) This test serves as a minimal integrity check. DIGITAL considers your system installed if the demonstration runs. To perform this test, you need the software components listed in Section 6.9.

Single-job monitor exercise: Bootstrap SJ monitor and set date. Assign default device to Unit 1, and initialize blank diskette in Unit 1. Then display directory of system diskette.

```
.FORM DY1:
.INIT/BAD DY1:
.AS DY1: DK:
.DIR/BRIEF/COL:1 SY:
```

(Directory prints on terminal.)

Remove protection from DEMOBG.MAC, then edit demonstration program.

```
.EDIT SY:DEMOBG.MAC
*F;TAB.ASCII ESC ESC
*OAD ESC ESC
*EX ESC ESC
```

Assemble demonstration program.

```
.AS LP: LST:
```

or

```
.AS TT: LST:
```

```
.MACRO/LIST:LST: SY:DEMOBG
```

Link demonstration program.

```
.LINK DEMOBG(RET)
```

Run demonstration program.

```
.RUN DEMOBG(RET)
RT-11 DEMONSTRATION ...
... DONE.
(CTRL/C)
(CTRL/C)
```

Foreground/background monitor exercise: In this exercise, another program DEMOFG runs in the foreground and sends messages (to ring the terminal bell) to DEMOBG in the background. Other programs can execute in the background, but messages are received only when DEMOBG is active.

Use BOOT command to bootstrap FB monitor. Assign default device to Unit 1 and set time.

```
.BOOT xx0:RT11FB.SYS(RET)
.AS DY1: DK:(RET)
.TIME hh:mm:ss(RET)
```

Assemble demonstration program.

```
.MACRO SY:DEMOFG(RET)
```

Link demonstration program.

```
.LINK/FORE DEMOFG(RET)
```

Run demonstration programs.

```
.FRUN DEMOFG(RET)
F>
FOREGROUND DEMONSTRATION ...
... BELL.
B>
RUN DEMOBG(RET)
```

(Bell rings quickly several times, then once every two seconds.)

```
RT-11 DEMONSTRATION ...
... DONE.
(CTRL/C)
(CTRL/C)
```

(Bell stops.)

```
.DIR(RET)
```

(Directory prints on terminal.)

```
.RUN DEMOBG(RET)
```

(Bell rings several times in rapid succession, then rings once every two seconds.)

```
RT-11 DEMONSTRATION ...
... DONE.
(CTRL/C)
(CTRL/C)
```

(Bell stops.)

```
(CTRL/F)
F>
(CTRL/C)
(CTRL/C)
B>
UNLOAD F(RET)
```

If you completed exercises without error, your system has passed minimal test and you can consider it successfully installed.

RT–11 INSTALLATION SUMMARY CARD 5
System Distributed on Magtape to Run on Disk

NOTE

This installation card is intended to be used at the computer after you have thoroughly studied the *RT–11 Installation and System Generation Guide*. You should not attempt to use this card to install your system unless you have read the required chapters. The steps on this card briefly summarize the procedures described in Chapter 7 of the installation guide. The section numbers in parentheses after each step refer to the corresponding section in the *RT–11 Installation and System Generation Guide*. In the command lines, red indicates your input.

1. Bootstrap distribution magtape. (Section 7.1) Make sure processor is powered up but not running. Mount distribution magtape labelled 1/2 (remove write ring from back of tape reel). Ensure that magtape is positioned at load point; if it is not, manually position magtape. Use hardware bootstrap to boot tape. Magtape moves as primary bootstrap loads secondary bootstrap file MSBOOT.BOT.

```
MSBOOT V0x-yy
*
```

Use appropriate magtape build program, MDUP.MT or MDUP.MM.

```
MDUP.MT(RET)
MDUP V0x.yy
*
```

or

```
MDUP.MM(RET)
MDUP V0x.yy
*
```

Initialize disk (if RK05, use a formatted disk).

```
xx0:/Z/B(RET)
```

Build a minimal system on the disk.

For TM11 magtape:

```
xx0:A=MT0:(RET)
```

For TJU16 magtape:

```
xx0:A=MM0:(RET)
```

When files are copied, MDUP boots minimal system from disk. Set date.

```
.DATE dd-mmm-yy(RET)
```

Now copy rest of files from distribution magtape number 1 to disk (xx is MT or MM).

```
.COPY/SYS/NOREPLACE xx0: DK:(RET)
```

2. Preserve distribution magtapes. (Section 7.2) Copy distribution magtapes for backup. Remove distribution magtape 1 and mount blank magtape on drive (write ring in back of reel). Position tape at load point. Initialize magtape and write primary bootstrap on it (xx is MT or MM).

```
.INIT/FILE:MBOOT.BOT xx0:(RET)
```

Copy all files from disk to magtape in correct order. Use indirect command file. In commands, xx is MT or MM and yy is your disk.

```
.ASSIGN xxn: TAP:(RET)
.ASSIGN yyn: DIS:(RET)
.@DISMT1.COM(RET)
```

Rewind backup magtape, remove it, and label it "Backup RT–11 V04 1/2."

Mount distribution magtape 2 (remove write ring from back of reel). Copy all files from distribution magtape 2 to disk. In commands, xx is MT or MM.

```
.COPY/SYS/NOREP xx0: DK:(RET)
```

Rewind distribution magtape and remove it. Mount another blank magtape (write ring in back of reel). Position tape at load point. Initialize blank magtape.

```
.INIT xx0:(RET)
```

Copy distribution magtape 2 files from disk to magtape. Make assignments of TAP and DIS.

```
.@DISMT2.COM(RET)
```

Rewind backup magtape, remove it, and label it "Backup RT–11 V04 2/2." Store distribution magtapes.

3. Install mandatory patches. (Section 7.3)

To install binary patches: Run SIPP and enter patch as published in *RT–11 Software Dispatch Review.*

```
.R SIPP(RET)
```

To install source patches: Use editor to create SLP command file, filnam.SLP:. Then use SLP utility to patch filnam.MAC.

```
.R SLP(RET)
*filnam.MAC=filnam.MAC,filnam.SLP(RET)
```

4. Create patched master magtapes. (Section 7.4) Copy all files to blank magtapes to create patched masters. In the commands, xx is MT or MM. Don't forget to make assignments of DIS and TAP.

```
.INIT/FILE:MBOOT.BOT xx0:(RET)
.@DISMT1.COM(RET)
.INIT xx0:(RET)
.@DISMT2.COM(RET)
```

Label magtapes "Patched Master RT–11 V04 1/2" and "Patched Master RT–11 V04 2/2." Store patched master magtapes for future patching purposes.

5. Create working system from chosen components. (Section 7.5) Leave components you have selected for your working system on the disk. Delete other components from disk.

```
.DEL'SYSTEM *.*(RET)
 Files deleted:
DK:aaaaaa.ttt? Y(RET) (to delete a file)
DK:zzzzzz.ttt? N(RET) (to include a file)
```

6. Install bootstrap on disk. (Section 7.6) Copy bootstrap to disk. In command, xx is device name for your disk and yy is BL, SJ, or FB.

```
.COPY/BOOT xx0:RT11yy.SYS xx0:(RET)
```

Halt processor and use hardware bootstrap to boot working system disk. Set date.

```
.DATE dd-mmm-yy(RET)
```

7. Customize system. (Section 7.7) Implement any customizations that you decided you need.

8. Compress disk. (Section 7.8) Compress working system disk to make its free space contiguous.

```
.SQU SY:(RET)
```

9. Preserve working system. (Section 7.9) Protect all files in working system and preserve it on the backup medium of your choice. The following shows backing up to magtape.

```
.REN/SYS/PRO *.* *.*(RET)
```

Initialize another blank magtape and copy all files to it. You may be able to fit working system on one backup magtape. Copy individual files in order shown. Keep track of all files you copy.

```
.INIT/FILE:MBOOT.BOT xx0:(RET)
.COPY/SYS MSBOOT.BOT xx0:MSBOOT.BOT/POS:-1(RET)
.COPY/SYS MDUP.* xx0:MDUP.*/POS:-1(RET)
.COPY/SYS SWAP.SYS xx0:SWAP.SYS/POS:-1(RET)
.COPY/SYS RT11SJ.SYS xx0:RT11SJ.SYS/POS:-1(RET)
.COPY/SYS TT.SYS xx0:TT.SYS/POS:-1(RET)
.COPY/SYS D%.SYS xx0:*.SYS/POS:-1(RET)
.COPY/SYS R%.SYS xx0:*.SYS/POS:-1(RET)
.COPY/SYS M%.SYS xx0:*.SYS/POS:-1(RET)
.COPY/SYS L%.SYS xx0:*.SYS/POS:-1(RET)
.COPY PIP.SAV xx0:PIP.SAV/POS:-1(RET)
.COPY DUP.SAV xx0:DUP.SAV/POS:-1(RET)
.COPY DIR.SAV xx0:DIR.SAV/POS:-1(RET)
```

Copy rest of files in working system.

```
.COPY/SYS/QUERY DK: xx0:/POS:-1(RET)
```

Store backup.

10. Test working system. (Section 7.10) This test serves as a minimal integrity check. DIGITAL considers your system installed if the demonstration runs. To perform this test, you need the software components listed in Section 7.10.

Single-Job monitor exercise: Bootstrap SJ monitor and set date. Then display directory of system volume.

```
.DATE dd-mmm-yy(RET)
.DIR/BRIEF/COL:1 SY:(RET)
```

(Directory prints on terminal.)

Remove protection from DEMOBG.MAC, then edit demonstration program.

```
.EDIT SY:DEMOBG.MAC(RET)
*F;(TAB).ASCII(ESC)(ESC)
*OAD(ESC)(ESC)
*EX(ESC)(ESC)
```

Assemble demonstration program.

```
.AS LP: LST:(RET)
```

or

```
.AS TT: LST:(RET)

.MACRO/LIST:LST: SY:DEMOBG(RET)
```

Link demonstration program.

```
.LINK DEMOBG(RET)
```

Run demonstration program.

```
.RUN DEMOBG(RET)
RT-11 DEMONSTRATION ...
... DONE.
(CTRL/C)
(CTRL/C)
```

Foreground/background monitor exercise: In this exercise, another program DEMOFG runs in the foreground and sends messages (to ring the terminal bell) to DEMOBG in the background. Other programs can execute in the background, but messages are received only when DEMOBG is active.

Use BOOT command to bootstrap FB monitor. Set time.

```
.BOOT xx0:RT11FB.SYS(RET)
.TIME hh:mm:ss(RET)
```

Assemble demonstration program.

```
.MACRO SY:DEMOFG(RET)
```

Link demonstration program.

```
.LINK/FORE DEMOFG(RET)
```

Run demonstration programs.

```
.FRUN DEMOFG(RET)
F>
FOREGROUND DEMONSTRATION ...
... BELL.
B>
RUN DEMOBG(RET)
```

(Bell rings quickly several times, then once every two seconds.)

```
RT-11 DEMONSTRATION ...
... DONE.
(CTRL/C)
(CTRL/C)
```

(Bell stops.)

```
.DIR(RET)
```

(Directory prints on terminal.)

```
.RUN DEMOBG(RET)
```

(Bell rings several times in rapid succession, then rings once every two seconds.)

```
RT-11 DEMONSTRATION ...
... DONE.
(CTRL/C)
(CTRL/C)
```

(Bell stops.)

```
(CTRL/F)
F>
(CTRL/C)
(CTRL/C)
B>
UNLOAD F(RET)
```

If you completed exercises without error, your system has passed minimal test and you can consider it successfully installed.