

How to build a VAX/VMS emulator on Fedora Core 3 Linux

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Hi Everyone,

I don't know if anyone is interested in this but I figured I would share how to build the Simh emulator on FC3 to run VAX/VMS.

This was very useful when retiring some of my older VAX hardware while maintaining functionality.

If anyone has questions on this, please let me know.

Thank you,
Andrew Robert

1. Download latest libpcap
2. Download latest Simh
3. Unzip libpcap
4. Extract Simh tar ball
5. As root or su, make install the libpcap for ethernet support on VAX emulator
6. Move to Simh directory

```
[root@dhcp-0-7-e9-bc-5c-fc simh]# ls
Oreadme_33.txt I1401 PDP18B sim_ether.h sim_tape.c
Oreadme_ethernet.txt I1620 PDP8 sim_fio.c sim_tape.h
ALTAIR Ibm1130 S3 sim_fio.h sim_timer.c
AltairZ80 Interdata scp.c simh_doc.txt sim_timer.h
build_mingw.bat LGP scp.h simh_faq.txt sim_tmxr.c
build_mingw_ether.bat makefile SDS simh_swre.txt sim_tmxr.h
descrip.mms NOVA sim_console.c simhv33-1.zip VAX
GRI PDP1 sim_console.h sim_rev.h
H316 PDP10 sim_defs.h sim_sock.c
HP2100 PDP11 sim_ether.c sim_sock.h
```

7. Create directory for compiled image
[root@dhcp-0-7-e9-bc-5c-fc simh]# mkdir BIN

8. Compile emulator image with ethernet support

```
[root@dhcp-0-7-e9-bc-5c-fc simh]# make USE_NETWORK=1 BIN/vax
gcc -std=c99 -O2 -U__STRICT_ANSI__ -g -lm -D_GNU_SOURCE -I . VAX/vax_cpu.c
VAX/vax_cpu1.c VAX/vax_fpa.c VAX/vax_io.c VAX/vax_cis.c VAX/vax_octa.c VAX/vax_cmode.c
VAX/vax_mmu.c VAX/vax_stddev.c VAX/vax_sysdev.c VAX/vax_sys.c VAX/vax_syscm.c
VAX/vax_syslist.c PDP11/pdp11_rl.c PDP11/pdp11_rq.c PDP11/pdp11_ts.c PDP11/pdp11_dz.c
PDP11/pdp11_lp.c PDP11/pdp11_tq.c PDP11/pdp11_xq.c PDP11/pdp11_ry.c PDP11/pdp11_vh.c scp.c
sim_console.c sim_fio.c sim_timer.c sim_sock.c sim_tmxr.c sim_ether.c sim_tape.c -DVM_VAX
-DUSE_INT64 -I VAX/ -I PDP11/ -DUSE_NETWORK -isystem /usr/local/include /usr/local/lib/libpcap.a
-o BIN/vax
```

9. Make emulator base directories

```
[root@dhcp-0-7-e9-bc-5c-fc simh]# mkdir /usr/local/vax
[root@dhcp-0-7-e9-bc-5c-fc simh]# mkdir /usr/local/vax/bin
[root@dhcp-0-7-e9-bc-5c-fc simh]# mkdir /usr/local/vax/data
```

9. Copy compiled image to binary directory

```
[root@dhcp-0-7-e9-bc-5c-fc simh]# cp BIN/vax /usr/local/vax/bin
```

10. Copy system profile file to data directory

```
[root@dhcp-0-7-e9-bc-5c-fc simh]# cp VAX/ka655.bin /usr/local/vax/data
[root@dhcp-0-7-e9-bc-5c-fc simh]# ls
0readme_33.txt HP2100 PDP11 sim_ether.c sim_sock.h
0readme_ethernet.txt I1401 PDP18B sim_ether.h sim_tape.c
ALTAIR I1620 PDP8 sim_fio.c sim_tape.h
AltairZ80 Ibm1130 S3 sim_fio.h sim_timer.c
BIN Interdata scp.c simh_doc.txt sim_timer.h
build_mingw.bat LGP scp.h simh_faq.txt sim_tmxr.c
build_mingw_ether.bat makefile SDS simh_swre.txt sim_tmxr.h
descrip.mms NOVA sim_console.c simhv33-1.zip VAX
GRI PDP1 sim_console.h sim_rev.h
H316 PDP10 sim_defs.h sim_sock.c
```

11. Extract VMS installation CD to an ISO image

```
[root@dhcp-0-7-e9-bc-5c-fc simh]# dd if=/dev/cdrom of=vmscd.iso
1069092+0 records in
1069092+0 records out
```

12. Copy the ISO image to the data directory

```
[root@dhcp-0-7-e9-bc-5c-fc simh]# cp vmscd.iso /usr/local/vax/data/cd.iso
```

13. Copy user defined device initialization file to data directory

```
[root@dhcp-0-7-e9-bc-5c-fc simh]# cp /home/arobert/vax.ini /usr/local/vax/data
```

14. Link the defined device initialization file to the binary directory

```
[root@dhcp-0-7-e9-bc-5c-fc simh]# ln -s /usr/local/vax/data/vax.ini /usr/local/vax/bin
```

15. Start the vax emulator

```
[root@dhcp-0-7-e9-bc-5c-fc libpcap-2005.02.10]# /usr/local/vax/bin/vax
```

VAX simulator V3.3-1
NVR: creating new file
NVR: buffering file in memory
RQ: creating new file
RQ: creating new file
RQ: creating new file
RQ: unit is read only
Eth: opened eth0

KA655-B V5.3, VMB 2.7
Performing normal system tests.
40..39..38..37..36..35..34..33..32..31..30..29..28..27..26..25..
24..23..22..21..20..19..18..17..16..15..14..13..12..11..10..09..
08..07..06..05..04..03..
Tests completed.

16. Boot from the emulator defined CD drive which actually points to the ISO image and begin VMS installation

```
>>> b dua3  
(BOOT/R5:0 DUA3
```

```
2..  
-DUA3  
1..0..
```

```
%SYSBOOT-I-SYSBOOT Mapping the SYSDUMP.DMP on the System Disk  
%SYSBOOT-W-SYSBOOT Can not map SYSDUMP.DMP on the System Disk  
%SYSBOOT-W-SYSBOOT Can not map PAGEFILE.SYS on the System Disk  
OpenVMS (TM) VAX Version X7G7 Major version id = 1 Minor version id = 0  
%WBM-I-WBMINFO Write Bitmap has successfully completed initialization.  
PLEASE ENTER DATE AND TIME (DD-MMM-YYYY HH:MM) 10-FEB-2005 18:14
```

```
Configuring devices . . .  
Now configuring HSC, RF, and MSCP-served devices . . .
```

Please check the names of the devices which have been configured, to make sure that ALL remote devices which you intend to use have been configured.

If any device does not show up, please take action now to make it available.

```
Available device DUA0: device type RA92  
Available device DUA1: device type RA92  
Available device DUA2: device type RA92  
Available device DUA3: device type RRD40  
Available device DYA0: device type RX02  
Available device DYA1: device type RX02  
Available device MUA0: device type TK50  
Available device MUA1: device type TK50
```

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Available device MUA2: device type TK50
Available device MUA3: device type TK50

Enter "YES" when all needed devices are available: yes
%BACKUP-I-IDENT, Stand-alone BACKUP T7.2; the date is 10-FEB-2005 18:16:05.45
\$ backup dua3:vms073.b/save_set dua0:
%BACKUP-I-PROCDONE, operation completed. Processing finished at 10-FEB-2005 18:17:27.49
If you do not want to perform another standalone BACKUP operation,
use the console to halt the system.

"Enter Ctrl-E"

If you do want to perform another standalone BACKUP operation,
ensure the standalone application volume is online and ready.
Enter "YES" to continue:

Simulation stopped, PC: 839ABD34 (CLRL R6)
sim> boot cpu

KA655-B V5.3, VMB 2.7
Performing normal system tests.
40..39..38..37..36..35..34..33..32..31..30..29..28..27..26..25..
24..23..22..21..20..19..18..17..16..15..14..13..12..11..10..09..
08..07..06..05..04..03..
Tests completed.
>>>b dua0
(BOOT/R5:0 DUA0

2..
-DUA0
1..0..

%SYSBOOT-I-SYSBOOT Mapping the SYSDUMP.DMP on the System Disk
%SYSBOOT-W-SYSBOOT Can not map SYSDUMP.DMP on the System Disk
%SYSBOOT-I-SYSBOOT Mapping PAGEFILE.SYS on the System Disk
%SYSBOOT-I-SYSBOOT SAVEDUMP parameter not set to protect the PAGEFILE.SYS
OpenVMS (TM) VAX Version BI73-7G7 Major version id = 1 Minor version id = 0
%WBM-I-WBMINFO Write Bitmap has successfully completed initialization.

OpenVMS VAX V7.3 Installation Procedure

Model: VAXserver 3900 Series
System device: RA92 - _DUA0:
Free Blocks: 2854566
CPU type: 10-01

* Please enter the date and time (DD-MMM-YYYY HH:MM) 10-feb-2005 18:19

%SYSTEM-W-TZGMT, your local timezone has defaulted to GMT
%SYSTEM-I-SETTZ, to set your local timezone use:

\$ @SYS\$MANAGER:UTC\$TIME_SETUP.COM

On MIN or UPGRADE system startup – CLUE is not run.

%%%%%%%%% OPCOM 10-FEB-2005 18:19:03.36 %%%%%%%%%

Operator _OPA0: has been enabled, username SYSTEM

%%%%%%%%% OPCOM 10-FEB-2005 18:19:03.36 %%%%%%%%%

Operator status for operator _OPA0:

CENTRAL, PRINTER, TAPES, DISKS, DEVICES, CARDS, NETWORK, CLUSTER, SECURITY,
LICENSE, OPER1, OPER2, OPER3, OPER4, OPER5, OPER6, OPER7, OPER8, OPER9, OPER10,
OPER11, OPER12

%%%%%%%%% OPCOM 10-FEB-2005 18:19:03.40 %%%%%%%%%

Logfile has been initialized by operator _OPA0:

Logfile is SYS\$SYSROOT:[SYSMGR]OPERATOR.LOG;1

%%%%%%%%% OPCOM 10-FEB-2005 18:19:03.40 %%%%%%%%%

Operator status for operator SYS\$SYSROOT:[SYSMGR]OPERATOR.LOG;1

CENTRAL, PRINTER, TAPES, DISKS, DEVICES, CARDS, NETWORK, CLUSTER, SECURITY,
LICENSE, OPER1, OPER2, OPER3, OPER4, OPER5, OPER6, OPER7, OPER8, OPER9, OPER10,
OPER11, OPER12

%SYSTEM-I-BOOTUPGRADE, security auditing disabled

%LICENSE-F-EMTLDB, license database contains no license records

%SYSTEM-I-BOOTUPGRADE, security server not started

%%%%%%%%% OPCOM 10-FEB-2005 18:19:05.80 %%%%%%%%%

Message from user JOB_CONTROL

%JBC-E-OPENERR, error opening SYS\$COMMON:[SYSEXE]QMAN\$MASTER.DAT;

%%%%%%%%% OPCOM 10-FEB-2005 18:19:05.80 %%%%%%%%%

Message from user JOB_CONTROL

-RMS-E-FNF, file not found

%%%%%%%%% OPCOM 10-FEB-2005 18:19:05.85 %%%%%%%%%

Message from user SYSTEM

%LICENSE-E-NOAUTH, DEC VAX-VMS use is not authorized on this node

-LICENSE-F-NOLICENSE, no license is active for this software product

-LICENSE-I-SYSMGR, please see your system manager

%LICENSE-E-NOAUTH, DEC VAX-VMS use is not authorized on this node

-LICENSE-F-NOLICENSE, no license is active for this software product

-LICENSE-I-SYSMGR, please see your system manager

Startup processing continuing...

%SET-I-INTSET, login interactive limit = 1, current interactive value = 0

%SET-I-INTSET, login interactive limit = 0, current interactive value = 0

If this system disk is to be used in an OpenVMS Cluster with multiple
system disks, then each system disk must have a unique volume label.

Any nodes having system disks with duplicate volume labels will fail

to boot into the cluster.

You can indicate a volume label of 1 to 12 characters in length. If you want to use the default name of OVMSVAXSYS, press RETURN in response to the next question.

* Enter the volume label for this system disk [OVMSVAXSYS]: VAXSIM

* Enter name of drive holding the OpenVMS distribution media: dua3

* Is the OpenVMS media ready to be mounted? [N] y

%MOUNT-I-MOUNTED, VAXVMS073 mounted on _DUA3:

Select optional software you want to install. You can install one or more of the following OpenVMS or DECwindows components:

- o OpenVMS library – 52200 blocks
- o OpenVMS optional – 19000 blocks
- o OpenVMS Help Message – 10400 blocks
- o OpenVMS Management Station – 20000 blocks
- o DECwindows base support – 4400 blocks
- o DECwindows workstation support – 23800 blocks
 - 75 dots per inch video fonts – (included)
 - 100 dots per inch video fonts – 6200 blocks
- o DECnet-Plus networking – 80000 blocks
- o DECnet Phase IV networking – 800 blocks

Space remaining on system disk: 2854377 blocks

* Do you want to install the OpenVMS library files? (Y/N) y

Space remaining on system disk: 2802177 blocks

* Do you want to install the OpenVMS optional files? (Y/N) y

Space remaining on system disk: 2783177 blocks

The Help Message utility (MSGHLP) provides online explanations and user actions for OpenVMS messages in place of the hardcopy OpenVMS System Messages and Recovery Procedures Reference Manual, which is now separately orderable.

The MSGHLP database file, MSGHLP\$LIBRARY.MSGHLP\$DATA, consumes approximately 10400 blocks and will be placed by default on your system disk in SYS\$COMMON:[SYSHLP] unless you specify an alternate device when prompted.

* Do you want to install the MSGHLP database? (Y/N) y

You can install this database on your system disk in SYS\$COMMON:[SYSHLP] or on an alternate device. If you specify an alternate device, but no directory, MSGHLP\$LIBRARY.MSGHLP\$DATA is placed in [HELP_MESSAGE]. When

prompted, take the default of the system disk or specify an alternate device using this format:

device:[directory]

- * Where do you want to install the MSGHLP database?
[SYS\$COMMON:[SYSHLP]]

Space remaining on system disk: 2772777 blocks

The OpenVMS Management Station is a client-server application that provides OpenVMS system management capabilities through a client application on a personal computer (PC) running Microsoft Windows.

The server application runs on OpenVMS systems and is automatically installed as part of the OpenVMS operating system.

This option provides the files used to install the PC client software. If you want to use the OpenVMS Management Station, you must install these optional files on at least one OpenVMS system and then use one or both of them to install the PC client on one or more PCs. There are two files: TNT030_I.EXE for Intel systems (Windows 95 and Windows NT), and TNT030_A.EXE for Alpha Windows NT systems.

The OpenVMS Management Station optional files consume approximately 20000 blocks and will be placed on your system disk in SYS\$COMMON:[TNT.CLIENT].

- * Do you want to install the optional OpenVMS Management Station files? (Y/N) y

Space remaining on system disk: 2752777 blocks

You can select DECwindows now, or you can use the DECW\$TAILOR utility to provide or remove DECwindows support after the installation.

Some media, TK50s in particular, can be very slow when tailoring on files. You might want to select DECwindows now and tailor off unwanted files later. NOTE: This kit does NOT contain full DECwindows.

To obtain full DECwindows, you must also install the separate layered product, DECwindows Motif for OpenVMS VAX.

V1.2-3 is the minimum version of DECwindows Motif for OpenVMS VAX that can be used with OpenVMS VAX V7.3.

The DECwindows components provided in this kit requires approximately 34400 blocks, broken down as follows:

- o DECwindows base support – 4400 blocks
- o DECwindows workstation support – 23800 blocks
 - 75 dots per inch video fonts – (included)
 - 100 dots per inch video fonts (optional) – 6200 blocks

You must select the DECwindows base support option if

- you plan to run DECwindows software, or
- you are installing this kit on
 - * a workstation or
 - * an OpenVMS Cluster that contains workstations, or
- you want to provide font files for Xterminals.

If you are installing this kit on a system that includes Xterminals and you do NOT select DECwindows base support, then you will have to use the DECW\$TAILOR utility to provide font files.

* Do you want the DECwindows base support? (Y/N) y

Space remaining: 2748377 blocks

You must select the DECwindows workstation support option if

- you are installing this kit on
 - * a workstation or
 - * an OpenVMS Cluster that contains workstations, or
- you want to provide font files for Xterminals.

If you are installing this kit on a system that includes Xterminals and you do NOT select DECwindows workstation support, then you will have to use the DECW\$TAILOR utility to provide font files.

* Do you want to install DECwindows workstation support? (Y/N) y

Space remaining: 2724577 blocks

DECwindows workstation support includes the 75 dots per inch video fonts.

All DECwindows applications run with 75 dots per inch video fonts. By default, most systems startup with 75 dots per inch video fonts. Certain applications can take advantage of 100 dots per inch video fonts.

For the VAXstation 4000 series machines, 100 dots per inch video fonts are used by default. If you decide not to install 100 dots per inch video fonts, you must edit SYS\$MANAGER:DECW\$PRIVATE_SERVER_SETUP.COM to force 75 dots per inch video fonts to be the default. Otherwise, certain applications may not space text properly.

For instructions on how to configure your system with both 75 and 100 dots per inch video fonts, see the installation guide or look at the template command procedure SYS\$MANAGER:DECW\$PRIVATE_SERVER_SETUP.TEMPLATE.

* Do you want 100 dots per inch video fonts installed? (Y/N) y

Space remaining: 2718377 blocks

Beginning with OpenVMS V7.1, the DECnet-Plus kit is provided with the OpenVMS operating system kit. Compaq strongly recommends that

DECnet users install DECnet-Plus. DECnet Phase IV applications are supported by DECnet-Plus.

DECnet Phase IV is also provided as an option. Support for DECnet Phase IV is available through a Prior Version Support Contract.

If you install DECnet-Plus and TCP/IP you can run DECnet applications over a TCP/IP network. Please see the OpenVMS Management Guide for information on running DECnet over TCI/IP.

If you plan to install DECnet Phase IV do NOT select DECnet-Plus.

* Do you want to install DECnet-Plus? (Y/N) y

Space remaining on system disk: 2638377 blocks

DECnet Phase IV will not be installed.

The following options will be provided:

- OpenVMS library
- OpenVMS optional
- OpenVMS Help Message
- OpenVMS Management Station Software -- PC files
- DECwindows base support
- DECwindows workstation support with:
 - 75 dots per inch video fonts
 - 100 dots per inch video fonts
- DECnet-Plus

Space remaining on system disk: 2638377 blocks

* Is this correct? (Y/N) y

Restoring OpenVMS library save set ...

%BACKUP-I-STARTVERIFY, starting verification pass

Restoring OpenVMS optional save set ...

%BACKUP-I-STARTVERIFY, starting verification pass

Restoring OpenVMS Help Message save set ...

%BACKUP-I-STARTVERIFY, starting verification pass

Restoring OpenVMS Management Station Software -- PC files

%BACKUP-I-STARTVERIFY, starting verification pass

Restoring DECwindows base support save set ...

%BACKUP-I-STARTVERIFY, starting verification pass

Restoring DECwindows workstation support save set ...

%BACKUP-I-STARTVERIFY, starting verification pass

Restoring DECwindows 75 dots per inch video fonts save set ...
%BACKUP-I-STARTVERIFY, starting verification pass

Restoring DECwindows 100 dots per inch video fonts save set ...
%BACKUP-I-STARTVERIFY, starting verification pass

Now registering the OpenVMS operating system in the
POLYCENTER Software Installation product database

The following product will be registered:

DEC VAXVMS VMS V7.3 DISK\$VAXVMSV73:[VMS\$COMMON.]

The following product has been registered:

DEC VAXVMS VMS V7.3 Transition (registration)

You can now remove the distribution kit from DUA3:.

In an OpenVMS Cluster, you can run multiple systems sharing all files
except PAGEFILE.SYS, SWAPFILE.SYS, SYSDUMP.DMP, and VAXVMSSYS.PAR.

Cluster configuration cannot be done at this time because no network
is present. In order to configure a cluster you must FIRST do one
or both of the following:

- o Install DECnet-Plus (or DECnet Phase IV), or
- o Execute SYS\$STARTUP:LAN\$STARTUP.COM by removing the
comment delimiter ("!") from the line

```
$! @SYS$STARTUP:LAN$STARTUP
```

in SYS\$MANAGER:SYSTARTUP_VMS.COM.

Then configure the cluster by executing the following command:

```
@ @SYS$MANAGER:CLUSTER_CONFIG
```

See the OpenVMS System Manager's Manual: Essentials for more information.

* Do you want DECwindows Motif as the default windowing system? (Y/N) y

Now we will ask you for new passwords for the following accounts:

SYSTEM, SYSTEST, FIELD

Passwords must be a minimum of 8 characters in length. All passwords
will be checked and verified. Any passwords that can be guessed easily
will not be accepted.

* Enter password for SYSTEM:

* Re-enter for verification:

%UAF-I-MDFYMSG, user record(s) updated

% VMS-I-PWD_OKAY, account password for SYSTEM verified

* Enter password for SYSTEST:

* Re-enter for verification:

% UAF-I-MDFYMSG, user record(s) updated

% VMS-I-PWD_OKAY, account password for SYSTEST verified

The SYSTEST_CLIG account will be disabled. You must re-enable it before running UETP but do not assign a password.

% UAF-I-PWDLESSMIN, new password is shorter than minimum password length

% UAF-I-MDFYMSG, user record(s) updated

* Enter password for FIELD:

* Re-enter for verification:

% UAF-I-MDFYMSG, user record(s) updated

% VMS-I-PWD_OKAY, account password for FIELD verified

Creating RIGHTS database file, SYSS\$SYSTEM:RIGHTSLIST.DAT
Ignore any "-SYSTEM-F-DUPIDENT, duplicate identifier" errors.

% UAF-I-RDBCREMSG, rights database created

% UAF-I-RDBADDMSGU, identifier DEFAULT value [000200,000200] added to rights database

% UAF-I-RDBADDMSGU, identifier FIELD value [000001,000010] added to rights database

% UAF-I-RDBADDMSGU, identifier SYSTEM value [000001,000004] added to rights database

% UAF-I-RDBADDMSGU, identifier SYSTEST value [000001,000007] added to rights database

% UAF-E-RDBADDERRU, unable to add SYSTEST_CLIG value [000001,000007] to rights database
-SYSTEM-F-DUPIDENT, duplicate identifier

% UAF-I-NOMODS, no modifications made to system authorization file

% UAF-I-RDBDONEMSG, rights database modified

Creating MODPARAMS.DAT database file, SYSS\$SYSTEM:MODPARAMS.DAT

* Please enter the SCSNODE name: NEWBB

* Please enter the SCSSYSTEMID: 1099

After the installation finishes, you might want to do one or more of the following tasks:

- o DECOMPRESS THE SYSTEM LIBRARIES – To save space, many of the system libraries are shipped in a data-compressed format. If you have enough disk space, you can decompress the libraries for faster access. To data expand the libraries, type:

\$ @SYSS\$UPDATE:LIBDECOMP.COM

If you do not decompress these libraries, you will experience slower response to the HELP and LINK commands.

- o BUILD A STANDALONE BACKUP KIT – You can build a standalone backup kit using the procedure described in the "Backup Procedures" chapter of the upgrade and installation supplement provided for your VAX computer.
- o TAILOR THE SYSTEM DISK – You might want to review the files provided or not provided during this installation. If you find there are files you want to remove from the system disk (TAILOR OFF) or files you want to add (TAILOR ON), use the following utilities to perform the desired tailoring.

OpenVMS tailoring: \$ RUN SYSS\$UPDATE:VMSTAILOR

DECwindows tailoring: \$ RUN SYSS\$UPDATE:DECW\$TAILOR

NOTE: The tailor procedure cannot be used to TAILOR ON or TAILOR OFF files located on an alternate disk.

=====
Continuing with OpenVMS VAX V7.3 Installation Procedure.

Configuring all devices on the system ...

If you have Product Authorization Keys (PAKs) to register, you can register them now.

* Do you want to register any Product Authorization Keys? (Y/N): n

After the system has rebooted you must register any Product Authorization Keys (PAKs) that you have received with this kit. You can register these PAKs by executing the following procedure:

\$ @SYSS\$UPDATE:VMSLICENSE

See the OpenVMS License Management Utility Manual for any additional information you need.

%UTC-I-UPDTIME, updating Time Zone information in SYSS\$COMMON:[SYSEXE]

Configuring the Local Time Zone

TIME ZONE SPECIFICATION -- Main Time Zone Menu

- 1) Australia 11) GMT 21) Mexico 31) Turkey
- 2) Brazil 12) Greenwich 22) NZ 32) UCT
- 3) CET 13) Hong Kong 23) NZ-CHAT 33) US
- 4) Canada 14) Iceland 24) Navajo 34) UTC
- 5) Chile 15) Iran 25) PRC 35) Universal
- 6) Cuba 16) Israel 26) Poland 36) W-SU

- 7) EET 17) Jamaica 27) ROC 37) WET
- 8) Egypt 18) Japan 28) ROK 38) Zulu
- 9) Factory 19) Libya 29) Singapore
- 10) GB-Eire 20) MET 30) SystemV

0) None of the above

Select the number above that best describes your location: 33

You selected US as your time zone.

Is this correct? (Yes/No) [YES]:

US Time Zone Menu

- 1) Alaska 4) Central 7) Hawaii 10) Mountain
- 2) Aleutian 5) East-Indiana 8) Indiana-Starke 11) Pacific
- 3) Arizona 6) Eastern 9) Michigan 12) Samoa

0) None of the above

Select the number above that best describes your location: 6

You selected US/Eastern as your time zone.

Is this correct? (Yes/No) [YES]:

Default Time Differential Factor for standard time is -5:00.

Default Time Differential Factor for daylight saving time is -4:00.

The Time Differential Factor (TDF) is the difference between your system time and Coordinated Universal Time (UTC). UTC is similar in most respects to Greenwich Mean Time (GMT).

The TDF is expressed as hours and minutes, and should be entered in the hh:mm format. TDFs for the Americas will be negative (-3:00, -4:00, etc.); TDFs for Europe, Africa, Asia and Australia will be positive (1:00, 2:00, etc.).

Is Daylight Savings time in effect? (Yes/No): no

Enter the Time Differential Factor [-5:00]:

NEW SYSTEM TIME DIFFERENTIAL FACTOR = -5:00.

Is this correct? [Y]:

DECnet-Plus will now be installed.

Media containing the DECnet-Plus kit must be available.

If you are installing OpenVMS from an Infoserver (DAD1) or local CD-ROM, there is a DECnet-Plus kit on the CD-ROM.

If you are installing from a cartridge tape (TK50) or from an open reel tape, you should have a DECnet-Plus kit on cartridge tape or open reel tape.

An appropriate DECnet-Plus kit may also be available on the Consolidated Distribution CD-ROM, or you may have a separate DECnet-Plus kit.

NOTE: You may choose any available media for the DECnet-Plus kit. It is NOT NECESSARY to use the same type of media that contained the OpenVMS kit.

If you do not have a DECnet-Plus kit available, or if you have decided NOT to install/upgrade DECnet-Plus, you can bypass the DECnet-Plus installation by entering "EXIT" for the "name of drive holding the DECnet-Plus kit".

* Enter name of drive holding the DECnet-Plus kit: EXIT

"EXIT" indicates that you do NOT want to install or upgrade DECnet-Plus.

* Is this correct? (Y/N) Y

Running AUTOGEN to compute the new SYSTEM parameters ...

%AUTOGEN-I-BEGIN, GETDATA phase is beginning.

%AUTOGEN-I-NEWFILE, Previous contents of SYSS\$SYSTEM:CLU\$PARAMS.DAT have been copied to SYSS\$SYSTEM:CLU\$PARAMS.OLD. You may wish to purge SYSS\$SYSTEM:CLU\$PARAMS.OLD.

%AUTOGEN-I-NEWFILE, A new version of SYSS\$SYSTEM:PARAMS.DAT has been created. You may wish to purge this file.

%AUTOGEN-I-END, GETDATA phase has successfully completed.

%AUTOGEN-I-BEGIN, GENPARAMS phase is beginning.

%AUTOGEN-I-NEWFILE, A new version of SYSS\$MANAGER:VMSIMAGES.DAT has been created. You may wish to purge this file.

%AUTOGEN-I-NEWFILE, A new version of SYSS\$SYSTEM:SETPARAMS.DAT has been created. You may wish to purge this file.

%AUTOGEN-I-END, GENPARAMS phase has successfully completed.

%AUTOGEN-I-BEGIN, GENFILES phase is beginning.

%SYSGEN-I-EXTENDED, SYSS\$SYSROOT:[SYSEXE]PAGEFILE.SYS;1 extended

%SYSGEN-I-EXTENDED, SYSS\$SYSROOT:[SYSEXE]SWAPFILE.SYS;1 extended

%SYSGEN-I-CREATED, SYSS\$SPECIFIC:[SYSEXE]SYSDUMP.DMP;1 created

%SYSGEN-I-CREATED, DUA0:[SYS0.SYSEXE]ERRORLOG.DMP;1 created

%AUTOGEN-I-REPORT, AUTOGEN has produced some informational messages which have been stored in the file SYSS\$SYSTEM:AGEN\$PARAMS.REPORT. You may wish to review the information in that file.

```
%AUTOGEN-I-END, GENFILES phase has successfully completed.  
%AUTOGEN-I-BEGIN, SETPARAMS phase is beginning.  
%AUTOGEN-I-END, SETPARAMS phase has successfully completed.  
%AUTOGEN-I-BEGIN, REBOOT phase is beginning.
```

The system is shutting down to allow the system to boot with the generated site-specific parameters and installed images.

The system will automatically reboot after the shutdown and the installation will be complete.

SHUTDOWN -- Perform an Orderly System Shutdown

```
%SHUTDOWN-I-BOOTCHECK, performing reboot consistency check...  
%SHUTDOWN-I-CHECKOK, basic reboot consistency check completed  
  
%SHUTDOWN-I-OPERATOR, this terminal is now an operator's console  
%OPCOM-W-NOOPCOM, the request was not sent, the OPCOM process is not running  
%SHUTDOWN-I-DISLOGINS, interactive logins will now be disabled  
%SET-I-INTSET, login interactive limit = 0, current interactive value = 0  
%SHUTDOWN-I-STOPQUEUES, the queues on this node will now be stopped  
%JBC-E-OPENERR, error opening SYS$COMMON:[SYSEXE]QMAN$MASTER.DAT;  
-RMS-E-FNF, file not found
```

SHUTDOWN message from user SYSTEM at Batch 18:37:50
The system will shut down in 0 minutes; back up SOON. Please log off.
Reboot system with AUTOGENERATED parameters

```
%SHUTDOWN-I-STOPUSER, all user processes will now be stopped  
%SHUTDOWN-I-REMOVE, all installed images will now be removed  
%SHUTDOWN-I-DISMOUNT, all volumes will now be dismantled  
%OPCOM-W-NOOPCOM, the request was not sent, the OPCOM process is not running  
%OPCOM-W-NOOPCOM, the request was not sent, the OPCOM process is not running  
HALT instruction, PC: 8443B709 (MOVB 400(R1),R0)  
sim> boot cpu
```

```
KA655-B V5.3, VMB 2.7  
Performing normal system tests.  
40..39..38..37..36..35..34..33..32..31..30..29..28..27..26..25..  
24..23..22..21..20..19..18..17..16..15..14..13..12..11..10..09..  
08..07..06..05..04..03..  
Tests completed.  
>>>b dua0
```

```
2..  
-DUA0  
1..0..
```

```
%SYSBOOT-I-SYSBOOT Mapping the SYSDUMP.DMP on the System Disk  
%SYSBOOT-I-SYSBOOT SYSDUMP.DMP on System Disk successfully mapped  
%SYSBOOT-I-SYSBOOT Mapping PAGEFILE.SYS on the System Disk
```

```
%SYSBOOT-I-SYSBOOT SAVEDUMP parameter not set to protect the PAGEFILE.SYS
OpenVMS (TM) VAX Version V7.3 Major version id = 1 Minor version id = 0
%WBM-I-WBMINFO Write Bitmap has successfully completed initialization.
```

OpenVMS VAX V7.3

You have SUCCESSFULLY installed the OpenVMS VAX Operating System.

The system is now executing the STARTUP procedure. Please wait for the completion of STARTUP before logging in to the system.

```
%STDRV-I-STARTUP, OpenVMS startup begun at 10-FEB-2005 18:40:18.36
%RUN-S-PROC_ID, identification of created process is 00000206
%DCL-S-SPAWNED, process SYSTEM_1 spawned
%%%%%%%%% OPCOM 10-FEB-2005 18:40:29.84 %%%%%%%%%%
Operator _NEWBB$OPA0: has been enabled, username SYSTEM
```

```
%%%%%%%%% OPCOM 10-FEB-2005 18:40:29.85 %%%%%%%%%%
Operator status for operator _NEWBB$OPA0:
CENTRAL, PRINTER, TAPES, DISKS, DEVICES, CARDS, NETWORK, CLUSTER, SECURITY,
LICENSE, OPER1, OPER2, OPER3, OPER4, OPER5, OPER6, OPER7, OPER8, OPER9, OPER10,
OPER11, OPER12
```

```
%%%%%%%%% OPCOM 10-FEB-2005 18:40:29.86 %%%%%%%%%%
Logfile has been initialized by operator _NEWBB$OPA0:
Logfile is NEWBB::SYS$SYSROOT:[SYSMGR]OPERATOR.LOG;1
```

```
%%%%%%%%% OPCOM 10-FEB-2005 18:40:29.86 %%%%%%%%%%
Operator status for operator NEWBB::SYS$SYSROOT:[SYSMGR]OPERATOR.LOG;1
CENTRAL, PRINTER, TAPES, DISKS, DEVICES, CARDS, NETWORK, CLUSTER, SECURITY,
LICENSE, OPER1, OPER2, OPER3, OPER4, OPER5, OPER6, OPER7, OPER8, OPER9, OPER10,
OPER11, OPER12
```

```
%%%%%%%%% OPCOM 10-FEB-2005 18:40:30.51 %%%%%%%%%%
Message from user AUDIT$SERVER on NEWBB
%AUDSRV-I-NEWSERVERDB, new audit server database created
```

```
%%%%%%%%% OPCOM 10-FEB-2005 18:40:30.90 %%%%%%%%%%
Message from user AUDIT$SERVER on NEWBB
%AUDSRV-I-REMENABLED, resource monitoring enabled for journal SECURITY
```

```
%%%%%%%%% OPCOM 10-FEB-2005 18:40:30.91 %%%%%%%%%%
Message from user AUDIT$SERVER on NEWBB
%AUDSRV-I-NEWOBJECTDB, new object database created
```

```
%SET-I-NEWAUDSRV, identification of new audit server process is 0000020C
%%%%%%%%% OPCOM 10-FEB-2005 18:40:31.94 %%%%%%%%%%
Message from user JOB_CONTROL on NEWBB
%JBC-E-OPENERR, error opening SYS$COMMON:[SYSEXE]QMAN$MASTER.DAT;

%%%%%%%%% OPCOM 10-FEB-2005 18:40:31.95 %%%%%%%%%%
Message from user JOB_CONTROL on NEWBB
-RMS-E-FNF, file not found

%LICENSE-F-EMTLDB, license database contains no license records
%%%%%%%%% OPCOM 10-FEB-2005 18:40:32.71 %%%%%%%%%%
Message from user SYSTEM on NEWBB
%SECSRV-E-NOPROXYDB, cannot find proxy database file NET$PROXY.DAT
%RMS-E-FNF, file not found

%%%%%%%%% OPCOM 10-FEB-2005 18:40:32.73 %%%%%%%%%%
Message from user SYSTEM on NEWBB
%SECSRV-E-NOPROXYDB, cannot find proxy database file NET$PROXY.DAT
%RMS-E-FNF, file not found

%%%%%%%%% OPCOM 10-FEB-2005 18:40:32.75 %%%%%%%%%%
Message from user SYSTEM on NEWBB
%SECSRV-I-CIACRECLUDB, security server created cluster intrusion database

%%%%%%%%% OPCOM 10-FEB-2005 18:40:32.76 %%%%%%%%%%
Message from user SYSTEM on NEWBB
%SECSRV-I-SERVERSTARTINGU, security server starting up

%%%%%%%%% OPCOM 10-FEB-2005 18:40:32.83 %%%%%%%%%%
Message from user SYSTEM on NEWBB
%SECSRV-I-CIASTARTINGUP, breakin detection and evasion processing now starting up

%%%%%%%%% OPCOM 10-FEB-2005 18:40:34.45 %%%%%%%%%%
Message from user SYSTEM on NEWBB
%LICENSE-E-NOAUTH, DEC VAX-VMS use is not authorized on this node
-LICENSE-F-NOLICENSE, no license is active for this software product
-LICENSE-I-SYSMGR, please see your system manager

%LICENSE-E-NOAUTH, DEC VAX-VMS use is not authorized on this node
-LICENSE-F-NOLICENSE, no license is active for this software product
-LICENSE-I-SYSMGR, please see your system manager
Startup processing continuing...

%%%%%%%%% OPCOM 10-FEB-2005 18:40:34.87 %%%%%%%%%%
Message from user SYSTEM on NEWBB
Warning: DECdtm log file not found (SYS$JOURNAL:SYSTEM$NEWBB.LM$JOURNAL)
  %RMS-E-FNF, file not found
  TP server process waiting

%%%%%%%%% OPCOM 10-FEB-2005 18:40:35.90 %%%%%%%%%%
Message from user AUDIT$SERVER on NEWBB
```

Security alarm (SECURITY) and security audit (SECURITY) on NEWBB, system id: 1099
Auditable event: Audit server starting up
Event time: 10-FEB-2005 18:40:35.78
PID: 00000203
Username: SYSTEM

%STARTUP-I-AUDITCONTINUE, audit server initialization complete

The OpenVMS VAX system is now executing the site-specific startup commands.

%%%%%%%%% OPCOM 10-FEB-2005 18:40:36.49 %%%%%%%%%%
Message from user AUDIT\$SERVER on NEWBB
Security alarm (SECURITY) and security audit (SECURITY) on NEWBB, system id: 1099
Auditable event: Identifier added
Event time: 10-FEB-2005 18:40:36.47
PID: 00000203
Process name: STARTUP
Username: SYSTEM
Process owner: [SYSTEM]
Image name: NEWBB\$DUA0:[SYS0.SYSCOMMON.][SYSEXE]AUTHORIZE.EXE
Identifier name: SYS\$NODE_NEWBB
Identifier value: %X80010000
Attributes: none

%UAF-I-RDBADDMSG, identifier SYS\$NODE_NEWBB value %X80010000 added to rights database
%SET-I-INTSET, login interactive limit = 64, current interactive value = 0
SYSTEM job terminated at 10-FEB-2005 18:40:37.83

Accounting information:
Buffered I/O count: 1508 Peak working set size: 1675
Direct I/O count: 566 Peak page file size: 4967
Page faults: 4712 Mounted volumes: 0
Charged CPU time: 0 00:00:16.72 Elapsed time: 0 00:00:22.10