



Consulting
Software Specialties
Internet / Intranet Servers

OpenVMS Hobbyist Support Page

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Information is presented here as a single large HTML file to allow for easy printing of a single web page (multiple printed pages, of course). This gives you a "cookbook" of sorts. Note that this page is still under construction and some information may be missing or incomplete.

Getting Started

Getting started with OpenVMS as a hobbyist is much like getting started with any other operating system. At the very least, you need a machine, a license for the operating software and a distribution (media kit) for the operating software.

Where we refer to "OpenVMS", we're actually referring to all versions of VMS from VAX/VMS through OpenVMS-Alpha. The hobbyist license, according to Compaq, includes all versions of VMS, even those which are non-LMF compliant (LMF = License

Management Facility), from VAX/VMS V1.0 on through OpenVMS V7.2 for VAX or Alpha.

Note that this page and many others in this OpenVMS hobbyist area are under construction. They may be incomplete or missing, and may contain links to pages which do not yet exist or which are placeholders for pages which are still being written.

Hardware

First, you'll need to acquire a machine. Here are some links for resellers where you can get old MicroVAXes and VAXstations, as well as some sources for new and used Alpha machines (small servers, DECstations, etc.):

- [Great Lakes Computer](#)
- [The Newman Group](#)
- [Island Computer](#)

Be sure to see the discussion below, [Workstations Vs. Interactive \(Multiuser\) Systems](#). Any other vendors who would like to be listed here should [contact us](#) by e-mail.

License

Then, you'll need to acquire the Hobbyists' License. See the [OpenVMS Hobbyist "home" page](#), or go directly to the [Hobbyist license registration page](#). You'll need your DECUS membership number, and you'll need to choose between an OpenVMS license or licenses for "layered products". For the OpenVMS license, you will also need the serial number of your VAX or Alpha computer. It will become part of the license. (Licenses are not transferable.)

The license are sent in the form of DCL procedures which will register the license(s) in your OpenVMS system's license database. The licenses are sent by e-mail, so you'll need to enter a valid e-mail address, also.

OpenVMS Media

Next, you'll need to acquire the OpenVMS operating system software. The [OpenVMS Hobbyist "home" site](#) has a page where you can order [OpenVMS and some other goodies on CD-ROM](#).

DJE Systems can provide OpenVMS and layered product distributions on TK50 tapes (now), or Orb or Zip-100 disks (future). We may some day also be able to supply software on a custom CD-ROM. Watch this page for an update.

Alternate Media

If you don't have a CD-ROM on your VAX or Alpha system, there are a couple of other choices:

- [Castlewood Orb Disks](#) (future)
- [Iomega Zip / Jaz Disks](#) (future)
- TK50 Tape (TK50Z, TZ30)
- TK70 Tape (TZ70)
- TK85, TK86 and TK87 Tape (TZ85, TZ86)

DJE Systems can provide OpenVMS and layered product distributions on TK50 tapes (now), or Orb or Zip-100 disks (future).

For "TK" tapes, the "Z" or "TZxx" indicates the SCSI variant of the device. There are other interfaces, such as DSSI, SDI/STI and CI. However, as a hobbyist you're less likely to encounter these than you are to find the SCSI variant. Some MicroVAXes and VAXservers do have DSSI (TFxx); so, you may actually find one at an affordable price. MicroVAX-II and VAXstation-II systems are usually found having an internal TK50 drive. The MicroVAX-2000 and VAXstation-2000 systems sometimes use a special TK50Z(-FA) variant in an expansion cabinet. The TK50Z-FA may also work with other MicroVAX and VAXstation systems with some caveats. MicroVAX-3100 systems are usually found having TZ30 (TK50-compatible) drives, or RRD40 - RRD42 CD-ROM drives. Some VAX-3000 and -4000 systems may be found having TK70 drives.

The TK70 (TZ70, TF70) drive will read TK50 tapes (CompacTape, TK50-K), but will not write them. It will only write on TK52-K (CompacTape-II) cartridges.

The TK85, TK86 and TK87 (Tx85, Tx86, Tx87) drives will read TK50 tapes, but will not write them. They will only write on CompacTape-III cartridges, sometimes called DLT-2000 tapes.

Tx88 (DLT-4000) and Tx89 (DLT-7000) drives will not read TK50 tapes, and will only write CompacTape-IV cartridges.

Castlewood Orb Drives

The [Castlewood](#) Orb drive is a 3-1/2 removeable cartridge drive. The Orb is a true hard disk and employs MR (magneto-resistive) technology. Current storage capacity of an Orb cartridge is 2.2GB unformatted, approximately 2.05GBF (ODS) (7304184 blocks, clustersize 5).

Field experience shows that the Castlewood Orb drive is subject to most of the general rules about third party SCSI drives in relation to OpenVMS. Getting an Orb to work with OpenVMS can be tricky. Experience reported here is from OpenVMS-VAX V7.2 on a MicroVAX 3100/30 and from OpenVMS-Alpha V7.1-2 on an AlphaStation 200 4/233

using an external SCSI Orb drive.

Generally, when the system is first booted after connecting the Orb drive, when MOUNTing the Orb drive for the first time, you must power cycle the drive shortly after issuing the MOUNT command. While the drive is powering back up, VMS should report that the drive has gone offline, and has gone into MountVerify. When the drive comes ready, VMS should report that the drive has completed mount verification. If booting from the Orb drive (it has been done using an AlphaStation 200 4/233 running OpenVMS V7.1-2), you must do this at the appropriate time. For this reason, booting from an Orb drive is possible, but not advisable. This is necessary on the first MOUNT after booting. After that, it should work fine unless a DISMOUNT/UNLOAD occurs for any reason. Then, it may be necessary to repeat the process in order for the next MOUNT of the Orb drive to succeed.

While the Orb drive was connected to the AlphaStation 200 4/233, an effort was made to install OpenVMS-Alpha V7.2 from the OpenVMS-Alpha Hobbyist CD (DFW004). The installation repeatedly returned an error about a corrupted directory on the target disk (presumably, VMS\$COMMON.DIR, based on the results of ANALYZE/DISK /NOREPAIR). The installation must be aborted at the first occurrence of this error as attempting to continue left the resulting disk structure totally corrupted. No effort was made to attempt an install to a "supported" disk drive (such as an RZ26). (27- and 28-Jun-2000).

Also, the Orb drive will spin down on its own after a while. Upon the next access, the drive will spin back up and again go through the MountVerify cycle. An error will be logged every time this happens. There is currently no known way to overcome this but the search for a solution continues.

The external SCSI Orb drive allows selection of SCSI Id.'s 0, 4, 5 or 6.

DJE Systems has no experience with the internal SCSI Orb drive. If the operational difficulties can be overcome, the internal Orb drive should fit in any 3-1/2 inch (or 5-1/4 inch, with an appropriate kit) mounting location accessible from the front of any (Micro)VAX or Alpha machine.

Iomega Zip / Jaz Drives

The [Iomega](#) external SCSI Jaz or Zip drives can only be set to SCSI id. 5 or 6. Plan your disk subsystem carefully. Jaz disks have not been tested with VMS by DJE Systems. Input from our fellow hobbyists is welcome and encouraged. Zip disks have a capacity of roughly 96 MB (approx. 196608 disk blocks, clustersize = 1 block).

Orb Drives and Zip Drives

Out of the box, the Castlewood Orb SCSI drive or the Iomega SCSI Jaz or Zip drive should be compatible (with some caveats) with VAX and Alpha systems running OpenVMS V7.1 and later. For earlier VMS versions, you'll need a [modified drive](#), or you'll need to [modify](#)

[one yourself](#). The SCSI disk driver (DKDRIVER and SYS\$DKDRIVER) in earlier versions of OpenVMS does not handle certain characteristics of non-"DEC" SCSI disks.

External SCSI Orb, Jaz and Zip drives can be used with almost any OpenVMS system. Internal SCSI drives ("SCSI Insider") will mount directly in the half-height bay of a MicroVAX-3100 system box, though you may need to hunt for some of the mounting hardware, or make it yourself.

DJE Systems can (hopes to) provide OpenVMS and layered product distributions on Orb 2GB and on Zip-100 disks. We'll pursue Jaz disks if there's enough demand.

Console Mode

Unlike "Intel" machines, VAX and Alpha systems have sort of an intelligent "BIOS" known as a console monitor.

At the console prompt, you can test your system, display its hardware configuration, tell it what disk to boot from by default, whether it should boot up on power up or come up only to the console prompt, and define certain characteristics which determine how the operating system will run once it boots.

Like most command line situations you encounter in the world of OpenVMS, the console has a HELP command. Some older MicroVAXes have a very limited set of console mode commands. Most Alphas have a larger set of console mode commands.

Installing OpenVMS

We've included here some tips related to installing OpenVMS on the machines you'll most likely encounter as a hobbyist. Please feel free to [contribute information](#) based on your experiences.

- MicroVAX-II & III, VAXstation-II & III
- MicroVAX 2000, VAXstation 2000
- MicroVAX 3100, VAXstation 3100
- VAX and VAXstation 4000
- Small Alpha Servers and Workstations

See the [Multia](#) section below, also.

Installation information: for [VAX](#) and [Alpha](#)

Tuning OpenVMS

There is plenty of good documentation on setting OpenVMS system parameters. We'll include pointers to the documentation, as well as some tips here.

Installing Layered Products

Installing "layered products" (compilers, tools, applications, etc.) is very much like installing the operating system. We'll include some tips here as well as pointers to some helpful documentation.

Workstations Vs. Interactive (Multiuser) Systems

Here we'll provide a discussion of MicroVAXes and small Alphas as compared to VAXstations and DECstations, especially with regard to DECwindows/MOTIF and the CDE (Common Desktop Environment).

Multia - OpenVMS

A recent discovery is that most of the Alpha-based Multia workstations can be made to run OpenVMS. However, this is totally unsupported by OpenVMS engineering and/or Compaq. Here is [some of the information that has been gathered](#).

Other OpenVMS-related pages:

[OpenVMS Page](#)

[OpenVMS Hobbyist Page](#)

[OpenVMS Freeware Page](#)

[ZIP](#) and [UNZIP](#) for OpenVMS

[Using Zip and Unzip on OpenVMS](#)

[The REAL Story about "tarballs"](#) (GZIP and TAR for OpenVMS)

[VAX Linux](#)

"Vaporware"

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