

vtVAX for Bare Metal Product Overview

vtVAX is a cost-effective replacement for almost any DEC VAX server or workstation. This affordable VAX virtualization software runs on modern commodity hardware, reducing maintenance and operating cost and yielding 'green' benefits for both the datacenter and the bottom-line.

*The OpenVMS operating system, user interface and applications run unmodified on vtVAX. No conversion of VAX source code is required. No retraining is required. **Your investment is protected.***

vtVAX runs on x86-compatible processors either as an application under Microsoft Windows or installed on Bare Metal (no pre-installed operating system). You are no longer locked in; you can now easily move to a more common platform and integrate your VAX systems in the IT infrastructure of your organization.

vtVAX is hardware-compatible with the original VAX **with significantly increased CPU and disk performance**, improving both boot and response times; often these are the only changes users will notice. Programmer productivity is enhanced through faster build times. The vtVAX Instruction Caching option dramatically improves the performance of CPU-intensive applications such as floating point, statistical analysis, and data warehouse business analytics.

The compatibility of vtVAX with VAX hardware has been tested using the DEC VAX diagnostics and architecture verification tools. Compatibility with legacy DEC physical devices including SCSI disks and tapes, serial ports (including full modem control) and Ethernet cards preserves real-time process control applications in industrial environments. Costly re-certification of systems can thus be avoided.

vtVAX brings OpenVMS Clusters' well-deserved reputation for high-availability and reliability into the modern datacenter, providing flexible, cost-effective disaster recovery options for small businesses and global enterprises alike.

vtVAX is **very easy to use**. Using the graphical configuration interface, you specify the characteristics and configuration of your existing VAX computer. vtVAX then builds an exact image of the VAX hardware your software is used to seeing. This ensures that you don't need to change your software or your processes.

After your virtual VAX is up and running, vtVAX provides the capability to start, stop, and maintain your installed base of virtual VAX systems from a single management interface.

System Performance

The vtVAX solution will easily meet or exceed the performance of almost every VAX computer it replaces. With the Instruction Caching option, it scales nicely against even multi-CPU high-end VAX servers.



Storage Subsystem

Logical Disks and Tapes

vtVAX logical disk and tape devices are implemented using container files: a single host file that contains the entire contents of a single OpenVMS disk or tape volume. Container files reside on storage devices that are mounted as part of the host PC file system. They may reside on disks directly attached to the PC host (including solid state, USB, CD or DVD drives), or on remote storage (NAS, SAN, iSCSI, or cloud-based storage). Logical devices can be backed up using the OpenVMS BACKUP utility, as on the VAX system being replaced, or the container files can be backed up using host-based backup or file copy utilities.

Using logical disks, multiple small VAX disks may be consolidated using a single larger host disk to streamline the disk configuration. Logical disks also provide the option to expand the number of drives configured on the virtualized VAX system. This opens up possibilities for load-balancing and performance tuning that may not exist for you today.

The use of logical tape devices allows existing OpenVMS disk-to-tape backup and restore procedures to run many times faster, at disk-to-disk speeds, with much higher reliability. After the backup operation is complete the container file may be copied using PC-based utilities for data archival purposes.

Physical Disks and Tapes

VAX SCSI disk and tape drives may be connected to SCSI adapters on the PC host system and accessed directly, as when they were connected to the existing VAX system.

We recommend that, whenever possible, legacy devices not be used for daily operations, since modern disks are significantly faster and more reliable than tapes and older disks.

VAX SCSI tape devices connected to the host PC can be used to read previously recorded tapes, eliminating the need to convert tape libraries as part of the migration process.

Supported VMS Configurations

vtVAX supports VAX/VMS and OpenVMS versions 4.3 and later with memory configurations up to 512 MB; VAX 7000 systems can be configured with up to 3.5 GB on Bare Metal.

The OPA0 VAX Console can be configured using a COM port or Telnet connections. VT-series terminals are supported using a variety of popular third-party X-terminal emulation packages. Console ports may be password-protected for security.

OpenVMS Clusters

vtVAX supports VMS clustering using the Ethernet (NI) or virtual MSCP shared disk interconnects. The Maintenance Operations Protocol (MOP) is supported for VMS system administration functions and remote booting.

Storage Subsystem

Emulated Qbus systems may have up to 4 virtual RQDX3 controllers, each supporting 32 disk or tape drives. SCSI bus systems support the configuration of 2 virtual SCSI controllers, each supporting 7 disk or tape devices. The SCSI devices may be logical devices or physical VAX SCSI devices connected via a PC host SCSI adapter. VAX 7000 systems may be configured with up to 448 virtual DSSI disks.

Network Subsystem

vtVAX emulates DELQA/DEQNA (XQ), SGEC (EZ), or DEMNA (EX) Ethernet adapters, depending on the emulated system model. Network throughput is determined by the host adapter speed, not the speed limitations of the emulated device. Using Fast Ethernet (100Mbit/sec) or Gigabit adapters, throughputs well in excess of those of the original VAX system may be obtained.

All VAX supported network protocols (TCP/IP, DECnet, LAT, MOP, etc.) will run on **vtVAX**.

Each virtual network adapter may be configured to connect to a dedicated physical network interface or to a vtServer **virtual network switch**. The virtual switches may be configured to allow sharing of physical network interfaces, provide redundant network connectivity, or to connect multiple virtual VAX and Alpha systems running on the same host without connecting to the physical network. *Care should be taken to prevent saturation of lower speed physical interfaces which are shared by multiple virtual adapters.* The virtual network switches support both VLANs and Spanning Tree Protocol.

Serial Lines

For Qbus systems, **vtVAX** emulates the DHQ11, DHV11, CXA16, CXB16, and CXY08 serial interfaces, up to 32 ports. On the 3100 models, a quad UART is available.

Each emulated serial port requires a dedicated connection on the host: a serial COM port or a Telnet connection. Only the ports actually used need to be configured.

Software License Protection

vtVAX is a software product available under a perpetual use or annually renewable end-user license.

The OpenVMS operating system and all DEC/Compaq/HP layered software products require a transfer license in addition to the original software product licenses before the products may be used in a virtualized environment. One transfer license is required for the operating system and one transfer license is required for all layered products (combined). These transfer licenses may be acquired from your **vtVAX** reseller or directly from HP.

The DEC/Compaq/HP operating system and layered software product license requirements are the same running under **vtVAX** as running on the native processor being emulated. In general, your existing OpenVMS-based and third-party software licenses will transfer to **vtVAX** 'as is'. Contact your **vtVAX** reseller for information regarding the use of third-party software applications in a virtualized environment.

Host Computer Requirements

vtVAX for Bare Metal runs on multi-core 64-bit Intel or AMD x86 architecture processors, either physical or virtualized, without a pre-installed operating system. The Bare Metal approach provides enhanced performance, security, and stability and simplified host system management compared to products running as an application under a general-purpose operating system.

The minimum supported CPU clock speed is 1.6 GHz; for adequate performance, it is recommended that processors have a minimum 2.4 GHz clock speed and a 1333 MHz Front Side Bus (FSB). Systems with the latest Intel Xeon or AMD Opteron multi-core processors will provide adequate performance. Intel i7 and AMD Phenom-based computers or other less powerful CPUs provide reduced CPU and I/O subsystem performance.

vtVAX for Bare Metal requires an amount of memory equal to that configured on the virtualized VAX systems plus an additional 1.5 GB plus 25% of the emulated memory.

VAX System Consolidation

vtServer, the Bare Metal infrastructure common to **vtVAX** and **vtAlpha**, is capable of running multiple instances of **vtVAX** and **vtAlpha** concurrently on the same host system. The hardware requirements are the sum of the requirements for each instance that will be executing simultaneously.

Contact Us



More information about **vtVAX** may be obtained from our web site: www.vax-alpha-emulation.com/vtvox

For a list of **vtVAX** resellers, see: www.vax-alpha-emulation.com/contact