



Advanced Virtualization Technologies

vtAlpha-GS (GS-series), Product Description



vtAlpha-GS (GS-systems) is developed to replace one of the following Alpha computer systems:

- *AlphaServer ES80, GS80*
- *AlphaServer GS160, GS320*
- *AlphaServer GS1280* *)

Emulated GS-models

vtAlpha-GS can virtualize the AlphaServer ES80, GS80, GS160 and GS320 models. It also can replace AlphaServer GS1280 models with up to 32 Alpha CPU's.

*) Support for 128 CPU Alpha's is not necessary since these larger systems were hard-partitioned into smaller logical machines with maximum 32 CPUs.

vtAlpha runs on a general purpose computer with a 64-bit Intel or AMD processor architecture. It does not require the installation of a host operating system and runs on physical and virtual machines.

Just specify the characteristics of the Alpha computer to replace and vtAlpha will build an exact image of the Alpha hardware your software is used to seeing. This ensures that you don't need to change your software.

vtAlpha includes a straight forward management tool that helps to configure and maintain virtual Alpha machines.

Backplane Architecture

The AlphaServer GS system architecture consisted of QBB's, each of which supporting up to 4 Alpha CPU's, 32 GB memory and 32 PCI slots. Depending on the GS-model it can contain two, four or eight QBB's. This architecture is emulated in vtAlpha-GS.

Virtual Alpha Memory

vtAlpha-GS supports up to 256 GB of virtual Alpha memory

System Performance

When installed on a host system with Intel Xeon E5v4 or E7v4 processor (3.0 GHz frequency or better), it will perform at the speed level of an Alpha EV67 processor.

Supported Alpha Operating Systems

vtAlpha supports both OpenVMS and Tru64 as guest operating systems. Current minimum releases:

- OpenVMS 7.2-1h1
- Tru64 4.0G

Clustering is supported (both OpenVMS and Tru64).

Storage Subsystem

vtAlpha offers the virtualized Alpha the hardware interface it expects (KZPBA SCSI and KGPSA FibreChannel) and the storage devices it is used to work with.

The vtAlpha host system can use more modern storage elements, like SAS, SATA, the company SAN or network based storage (iSCSI and NFS).

This is all transparent for the Alpha software, which still 'sees' the old device types. vtAlpha seamlessly connects the old Alpha world to the modern storage equipment.

Supported storage devices:

- Physical disks (direct-attached hardware)
- Logical disks (container files on the host storage)
- Physical tapes
- Logical tapes
- CD-ROM (logical and physical)
- Direct SCSI-attached devices of unknown origin

All Alpha disk types and sizes are supported by vtAlpha.

Logical Disks and Tapes

For the virtual Alpha these appear as regular disks or tapes, attached to one of the virtual storage adapters configured in the virtual Alpha.

On the host system these will be files in the directories in the host attached storage.

This allows to combine multiple virtual Alpha disks on a single host disk. Or make really fast backups to logical tapes and include these logical tape files after dismount in a regular backup process that is used in your organization.

Physical Disks and Tapes

Direct access to physical disks and tapes is also supported, as-signing a physical disk or partition to a virtual disk in vtAlpha. Or to connect a physical tape drive to a virtual Alpha tape. Reconnecting physical Alpha disks to your virtual Alpha is also an option.

CD-ROM

This is in fact a physical or logical disk in a prepared setting, already matching CD-ROM specifications.

Direct SCSI device

This allows to connect generic SCSI devices for which a custom peripheral driver is present in the Alpha Operating System. vtAlpha only processes the line traffic.

Network Subsystem

vtAlpha offers support for the following Ethernet adapters:

- DEGXA, EI1000
- DE600, DE500
- DE450, DE435

In addition vtAlpha includes virtual network switch support, enabling sharing of physical Ethernet adapters by multiple virtual Alphas.

All Alpha supported protocols will run on vtAlpha.

Virtual LAN (VLAN) infrastructure is supported.

The actual speed of the vtAlpha supported network connections may be better than what the original Alpha Ethernet adapters could deliver, given the higher capacity of the modern network adapters in the host. Actual network speed may be better than from the original Alpha.

Serial Lines

vtAlpha includes support for the two COM ports that are available on every Alpha system: OPA0 and COM2. These virtual devices can be mapped to:

- a VT-like device connected to the host
- Any VT-terminal emulator via Ethernet
- Pseudo terminal on the host system

vtAlpha also includes support for the PBXDA serial lines adapter, that can add 8 serial lines to the two that are always available. Up to 7 PBXDA adapters are supported.

License Protection

vtAlpha is a software product, under End-User License Agreement. The licenses are stored on a license container equipped with USB connector to maximum compatibility. The vtAlpha license key is only 3 mm high, limiting the risk of damage or accidental removal when in use.

The License Protection Mechanism can control multiple instances of vtAlpha inside one host computer or in a company network, providing maximum flexibility and fail-over capabilities allowing to setup a low-cost disaster-tolerant installation.

System Management

The product includes the vtMonitor management tool that helps manage and control the virtual Alpha environment from any location that has access to the vtAlpha host.

It is an easy to use and intuitive user interface that facilitates the management of the virtual Alpha systems as well as the host environment they run in.

Host Computer Recommendations

vtAlpha requires a host system that supports 64-bit operation, since the Alpha was a 64-bit system.

A computer of the x86-x64 architecture will be sufficient to run vtAlpha.

Host System Advisory

Current computer hardware with Intel Xeon or AMD multi-core processors, 3.0 GHz or better provide adequate performance.

Physical and Virtual Systems Supported.

vtAlpha applies the ***Bare Metal*** approach and will run directly on the host system you assign to it. This host can be real hardware or a Virtual Machine as you may use these in your organization.

CPU and memory

Depending on the virtualized GS-model:

- Up to 32 Alpha CPUs
- Up to 256 GB virtual Alpha memory

Host computer sizing recommendations can be found on:

www.avtware.com/vtalpha-x86

Storage

For host based storage you can select any type of device: FibreChannel, SCSI, iSCSI, SATA, SAS, NAS, SAN or NFS. vtAlpha translates between the storage component the Alpha software expects and what the host has to offer.

Orderable Items

Base License to run one virtual Alpha system. This base license includes one virtual Alpha CPU.

Additional CPU license for one additional virtual Alpha CPU. Maximum 31 extra CPUs supported.

Annual Software Support Service providing free access to the vtAlpha support group as well as the right to obtain and install newer product versions during the term of the support agreement.

Disaster Recovery License, offers 720 hours of vtAlpha-ES usage that can be consumed in 10 minute intervals to survive a host hardware break-down.

Product Origin

vtAlpha is developed, maintained and owned by Advanced Virtualization Technologies (www.avtware.com).

