vtAlpha

Product Overview

Modern computer environments, such as an X86-64 computer, virtual machine or cloud computing can not support Alpha-based applications. Owners of these older Alpha systems are locked in on rare platforms, which are hard to support and can not be integrated in an organization's modern IT infrastructure.

Virtual Alpha (vtAlpha) allows the owners of Alpha computer systems to move their entire Alpha software installation to a more modern environment without changes or software migration. Six (6) vtAlpha variants are available to cover the whole range of Alpha systems that were manufactured during its lifetime. Transitioning to vtAlpha save enormous amounts of effort, time, and money.

How vtAlpha Works

Since Alpha-based applications won't run on modern computers, vtAlpha creates the Alpha hardware interfaces that the original operating system and user programs expect to find. By mimicking the old Alpha software, vtAlpha allows systems to continue running without requiring changes.

vtAlpha translates in real-time between the old and the new world. vtAlpha uses modern storage, backup and IT infrastructures. By simply specifying the configuration of the current Alpha computer, a virtual equivalent of that old hardware can be built with vtAlpha. After creating a virtual Alpha, binary image copies of the original Alpha disks are transferred to the virtual Alpha host. System managers can boot from these copied disks and resume operation as usual, without changes to the Alpha software itself.

System Subsystem

vtAlpha presents all the hardware interfaces the virtualized Alpha expects, such as: KZPBA SCSI and KGPSA FibreChannel, and the storage devices with which the Alpha is accustomed.

The vtAlpha host system can use more modern storage elements, like SAS, SATA, modern SAN, or other forms of network-based storage, like iSCSI and NFS. These types of storage elements are transparent for the Alpha software, which still sees the old device types. So vtAlpha seamlessly connects the old Alpha world to the modern storage equipment.

Host Computer Environment

vtAlpha is installed directly on a host, such as x86 hardware, virtual machine or cloud computing, without the need for a preinstalled operating system, like Windows or Linux. This direct installation assures security and availability of the virtual Alpha.

Table 1—vtAlpha Product Offerings

Product	CPUs	Alpha Model
vtAlpha-AS (Alpha Start)	1	AlphaStation 200, 250 AlphaServer 300, 400 DEC3000
vtAlpha-BS (Basic Systems)	1	AlphaServer 800, 1000 AlphaStation 500, 600, DPW AlphaStation XP900, XP1000
vtAlpha-CS (Classic Systems)	1 - 4	AlphaServer 2000, 2100 AlphaServer 4000, 4100
vtAlpha-DS (DS Systems)	1 - 2	AlphaServer DS10, DS15 AlphaServer DS20, DS25 AlphaServer 1200
vtAlpha-ES (ES Systems)	1 - 4	AlphaServer ES40, ES45, ES47
vtAlpha-GS (GS Systems)	1 - 32	AlphaServer ES80, GS80, GS160, GS320, GS1280

System managers can avoid the extra overhead to purchase and maintain an additional operating systems. The vtAlpha product includes everything that is required to run the virtual Alphas and control the host environment. Often this set-up is referred to as **Bare Metal** installation.

Storage

For host-based storage, any type of these devices can be selected: FibreChannel, SCSI, iSCSI, SATA, SAS, NAS, SAN or NFS. vtAlpha translates between the storage that the Alpha software expects and what the host has to offer.

Supported Storage Devices

- Physical disks, such as direct-attached hardware.
- Logical disks, such as container files on the host storage.
- Physical tapes.
- Logical tapes.
- CD-ROM, both logical and physical.
- Direct SCSI-attached devices of unknown origin.

All Alpha disk types and sizes are supported by vtAlpha.

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Supported Storage Devices (continued)

Logical Disks and Tapes

To the virtual Alpha, these logical devices appear as regular types, which are attached to one of the virtual storage adapters in the virtual Alpha. On the host system, these logical types are files in directories on the host-attached storage. This type of storage allows multiple virtual Alpha disks to be on a single host disk. With a combination of virtual Alpha disks on a single host device, logical tapes can be quickly backed up. Then, when dismounted, these logical tape files can be included in an organization's regular backup process.

Physical Disks and Tapes

Direct access to physical disks and tapes is supported, by either assigning a physical disk or partition to a virtual disk in vtAlpha, or by connecting a physical tape or disk drive to a virtual Alpha tape or disk.

CD-ROM

Physical DVD and CD-ROMs as Virtual DVD/CD-ROMs (ISO images) are supported. These physical devices can be connected as CD-ROM to vtAlpha.

Direct SCSI Device

Direct SCSI-attached devices allow connection of generic SCSI devices for which a custom peripheral driver is present in the Alpha Operating System (OS). vtAlpha only processes the SCSI communication.

Network Subsystem

vtAlpha offers support for the following Ethernet adapters:

- DEGXA, EI1000 (model dependent).
- DE600, DE500.
- DE450, DE435.

Virtual-network-switch-support enables the host Ethernet links to be shared with multiple virtual Alphas. All Alpha-guest OS supported-protocols 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.

Serial Lines

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

- A physical VT-like device that is connected to the host.
- Any VT-terminal emulator through telnet or Secure SHell (SSH).
- A pseudo-terminal on the host's console.

vtAlpha also includes support for the PBXDA serial lines adapter, which can add eight serial lines to the two lines that are already available. Up to seven PBXDA adapters are supported.

License Protection

vtAlpha is a software product available under **End-User License**. The licenses are stored on a smart card device with USB connector for maximum compatibility and flexibility. This license key is only 3 mm high. This short height limits the risk of damage or accidental removal during operation.

The **License Protection Mechanism** can control multiple instances of vtAlpha inside one host computer or in a company network. This mechanism provides maximum flexibility and fail-over capabilities, which allows a low-cost, disaster-tolerant installation.

System Management

The product includes the **vtMonitor** management tool, which helps organize and control the virtual Alpha environment from any location with network access to the vtAlpha host. **vtMonitor** is an easy-to-use and intuitive user-interface that facilitates the management of the virtual Alpha systems and their host environments.

Secure Environment

vtAlpha creates a secure environment that can be configured by the system manager to meet specific security needs.

Security Highlights:

- Access roles and configurable security levels.
- Secure communication protocols.
- Encrypted environment in the cloud service.
- Event logging and alerts (configurable).

Orderable Items

Software License to run a single virtual Alpha system. This software license includes all virtualize Alpha hardware, up to 32 GB Alpha memory and a specified number of Alpha CPUs.

Annual Software Support Service provides 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 the selected vtAlpha product to survive a breakdown of the host hardware.

Product Origin

vtAlpha is developed, maintained, and owned by Advanced Virtualization Technologies (www.avtware.com); distributed in the Americas by Vere Technologies LLC. Salem Automation, Inc. (www.salemautomation.com) is largest value-added reseller (VAR) of Vere Technologies' emulation software in the Americas.