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*Continuity in Computing*

## Virtual Alpha Solutions

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Eliminating legacy hardware without impacting the applications it supports is the easiest way to port old software to new hardware. **FreeAXP™**, **Avanti™**, and **AvantiFlex™** virtualize legacy Alpha hardware running **OpenVMS** or **Tru64 Unix** quickly and easily. FreeAXP is a free product that provides a light weight solution for non-critical Alpha hardware. Avanti and AvantiFlex are commercial virtual Alpha solutions supplying more power and features to support critical Alpha applications.



### ALPHA VIRTUALIZATION ADVANTAGES

Replacing an Alpha system with a virtual Alpha is like upgrading hardware in place. It supplies new hardware while retaining important software intact and unmodified, providing the following benefits:

- Provides a **virtual OpenVMS and Tru64 Unix** environment.
- Offers **quick deployment**, often achieved **in 3 to 5 days**.
- Replace legacy hardware with **new hardware**, improving reliability, performance, and energy efficiency.
- Can be **run under VMs** such as VMware, Hyper-V, and others.
- Allows **multiple instances** on a single host.
- **Improves integration** with Microsoft Windows operating environments.
- **Lowers operating costs** with a smaller data center footprint.
- Provides **binary compatibility** with legacy applications. No source code or recompilation required.
- Delivers **high ROI** through continued leveraging of existing software and vested employee knowledge.
- **No user retraining** required.

An Avanti virtualized Alpha also provides a host of new features. *Remote hosting, remote backups, portability, experimentation, training environments, snapshots*, and the like all become options with Avanti that were simply impossible with legacy Alpha equipment.

### AVANTI AND AVANTIFLEX

Avanti is a commercial virtual Alpha solution designed to support demanding Alpha replacements. Avanti is faster and more powerful than FreeAXP. Avanti is suitable to replace low end Alpha systems outright. Avanti can be used to replace high end Alpha systems where performance is not a critical component.

AvantiFlex is a customer configurable version of Avanti. Customers that do not require the full power of Avanti, but need some of its features, can create an al la carte Avanti configuration with just the components they require at a reduced cost.

### FREEAXP

FreeAXP is a free virtual Alpha technology demonstrator. It is designed for hobbyist and non-critical system use. FreeAXP is suitable to conduct feasibility testing, personal development, and low demand Alpha replacements.

## VIRTUAL ALPHA ENVIRONMENT

Avanti and FreeAXP create a virtual Alpha environment within the context of the host O/S. The operating environment is indistinguishable from the Alpha being replaced. The emulated Alpha environment is so accurate that operations like restoring cluster quorum work (<Ctrl-P>, DEP SIRR C, CONT, Q, Ctrl-Z). Migration Specialties virtual Alpha solutions support all original Alpha console's commands (like deposit and examine), allowing low-level debugging of the software running on the emulator.

## BINARY COMPATIBILITY

Avanti is binary compatible with real Alpha hardware, allowing the resident operating system and software to be ported to FreeAXP without modification or the need for source code. These solutions offer a simple way to upgrade existing Alpha systems to new hardware.

Virtual Alpha Comparison	FreeAXP	Avanti Flex	Avanti
<b>OpenVMS Min Ver: 6.2</b>	✓	✓	✓
<b>Tru64 Unix Min Ver: 3.2C</b>	✓	✓	✓
<b>CPU<sup>1</sup></b>	1	1	1
<b>Maximum Memory<sup>2</sup></b>	128MB	≤ 3GB	3GB
<b>Performance<sup>3</sup></b>	130%	≤ 400%	400%
<b>Disks</b>	1 - 15	1 - 45	1 - 45
<b>Virtual Tape</b>	No	Yes	Yes
<b>NIC</b>	2	≤ 3	3
<b>Virtual/Physical Serial Ports</b>	2/0	2/2	2/2
<b>Single Host / Multiple Alpha</b>	Yes	Yes	Yes
<b>Price</b>	<i>Free!</i>	Starting at \$750US	\$6,500US
<b>Annual Support</b>	\$995US	\$995US	\$995US

## PORTING TO A VIRTUAL ALPHA

Porting applications to an Alpha emulator is similar to migrating them to a new physical Alpha system. The virtual Alpha is first configured to look like the Alpha system it is replacing. The O/S, software applications, and data are then copied to the emulated Alpha system. With the O/S and applications in place, the virtual Alpha is ready to boot and run.

## TURNKEY SOLUTIONS

Trouble-free virtual Alpha installations require correct initial product configuration and proper porting of the applications. Configuration is a one-time process that requires knowledge and experience in Alpha hardware and its mapping within the virtual Alpha environment. Porting requires knowledge of OpenVMS or Tru64 porting tools and methodologies. Migration Specialties offers turnkey installation services as part of our Alpha replacement solutions to make configuration and porting quick and easy. Turnkey services include system configuration, software porting, and onsite installation.

<sup>1</sup> Native support for EV4, EV5 and EV6 instruction sets.

<sup>2</sup> Tru64 installations are limited to 1GB of memory.

<sup>3</sup> Performance measured against AlphaServer 400/166, 384MB memory, 100Mb DE500 NIC, OpenVMS 7.3-2. Virtual Alpha

hosted on Intel Core i7-7500U quad core with hyperthreading enabled, 3.5GHz, 16GB memory Windows 10 Pro..