



SOFTWARE PRODUCT DESCRIPTION

CHARON-AXP/4100 for Windows 64 bit

Product version: 4.5; Build 153-03

Description

CHARON-AXP/4100 is a member of the CHARON cross-platform hardware virtualization product family. CHARON-AXP creates the virtual replica of the original Alpha Hardware inside a standard 64 bit x86 compatible computer system. It will run the original Alpha binary code, including operating systems OpenVMS and Tru64 UNIX, the layered products, and applications.

CHARON-AXP/4100 for Windows 64 bit is designed to replace the AlphaServer 400, 800, 1000, 1000A, 1200, 2000, 2100, 4000, and 4100 computer systems by its virtual equivalent running on a Windows host platform.

Most of the original Alpha-hardware is virtualized, allowing the **OpenVMS** or **Tru64** operating system and all software that is running in that environment to remain working as always. Very few changes are required to the original software (operating system, layered products, or applications). The Tru64 kernel might require a rebuild.

Network

CHARON-AXP virtualizes the 10/100 Mbps Ethernet controllers from DEC 21x4x family, ensuring support of any AlphaServer installation. Any protocol that ran over a physical Ethernet link (DECnet, TCP/IP, and LAT) will run over a virtualized link. The virtual network adapter is recognized by the operating system which assumes it will run at 10/100Mbps, but since it's virtualized it may exceed that speed when connected to a 1/10Gbps adapter in the host system. The measured network performance also depends on design limitations of the guest VMS/Tru64 OS.

Storage

CHARON-AXP provides support for Alpha storage devices: disk, tape, and CD/DVD drives via virtual KZPBA SCSI and virtual KGPSA FC adapters. CHARON-AXP allows connecting SCSI devices to logical disks or tapes which appear as container files in the host operating system; as well as connected physical SCSI devices.

Pass Through

FDDI DEPFA adapter and Emulex FC adapters compatible with original AlphaServer hardware (FC KGPSA) could be used by CHARON-AXP to provide direct access to FDDI network and SAN.

Performance

CHARON-AXP running Tru64 5.1B delivers (per CPU) 403 SPEC2000 INT and 379 SPEC2000 FP on an Intel Core i7 965 (3.2 GHz) host system.

CHARON-AXP benefits from the newer, faster hardware, offering owners of most Alpha systems equal or better performance. The constant improvements Stromasys makes to the CHARON products, together with rapidly developing faster hardware, will further shift the balance in favor of cross-platform virtualization.



As a reference, the table below shows performance measurements of the original Alpha hardware using the standard SPEC2000 benchmark. Those numbers are available online from official SPEC2000 web page.

Single CPU benchmark	SPEC2000 INT	SPEC2000 FP
AlphaServer 4100 5/533	176	176
AlphaServer DS10 6/500	300	383
AlphaServer DS20 6/677	425	455
AlphaServer ES40 6/500	299	382
AlphaServer GS80 6/731	352	405
AlphaServer GS160 68/1000	561	581

Product license key

The CHARON USB HASP license key must be permanently connected to the host system. It preserves the customer specific license parameters, allows remote electronic updates and enables rapid change of host systems as the CHARON executable itself can be installed on multiple systems.

Licensing

The CHARON-AXP/4100 base license includes 1 virtual Alpha CPU for AlphaServer 400; 800, 1000, 1000A, 1200, 2000, and 4000; and 1 or 2 virtual Alpha CPUs for AlphaServer 2100 and 4100. An additional CPU option can be purchased separately. Amount of emulated RAM is set to maximum supported by model.

CHARON-AXP licensing allows combining multiple instances of CHARON-VAX and CHARON-AXP on a single multi-core host system.

Hosting server hardware recommendations

HP Proliant G7 with Intel Xeon 5600 series and G8 servers with E5 and E7 CPUs, at least 3GHz frequency are recommended, however CHARON runs on any Intel / AMD powered host with sufficient hardware resources. For every emulated AXP CPU, CHARON must have exclusive access to at least 2 CPU cores on the host server.



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Virtualized Alpha hardware details

Emulated hardware model	AlphaServer 400	AlphaServer 800	AlphaServer 1000/1000A	AlphaServer 1200	AlphaServer 2000	AlphaServer 2100	AlphaServer 4000	AlphaServer 4100
Alpha CPUs (base/maximum)	1/1	1/1	1/1	1/2	1/2	1 or 2 / 4	1/2	1 or 2 / 4
Emulated RAM	Up to 1GB	Up to 8 GB	Up to 1 GB	Up to 32 GB	Up to 2 GB	Up to 2 GB	Up to 32 GB	Up to 32 GB
Available virtual PCI slots	3	4	3/7	6	3	3	16	8
Storage adapter support	Emulated PCI SCSI KZPBA adapters (1 preloaded); emulated PCI FC KGPSA adapters; Up to 120 storage units (disks, tapes, and CD/DVD) supported simultaneously							
Disk storage support	Virtual disk images on a local and remote Windows file system (.vdisk container files); physical SCSI disks and partitions; iSCSI disks; SAN attached storage volumes (\\PhysicalDriveX devices)							
Tape storage support	Virtual tape images on a local and remote Windows file system (.vtape container files); physical SCSI tape drives (\\Tapex or \\SCSI devices)							
CDROM/Floppy disk support	Virtual CD/DVDs images (iso container files); physical CD/DVD drives (\\CDRomX devices) / Physical floppy drive 1.44 MB (\\A: device)							
Ethernet Network support	Emulated PCI DEC 21x4x adapter family: DE435, DE450, DE500AA, DE500BA (1 preloaded DEC TULIP 21040 controller for models AS2000 and AS2100)							
Fiber Channel/FDDI support	Direct connection to SAN with physical KGPSA or compatible EMULEX HBA adapters / Direct connection to FDDI network with physical DEFPA adapters							
Console/Serial lines	OPAO console attached to a Windows terminal emulator, a physical serial port (COMxxx: device), or a TCP/IP socket							
Supported VMS versions	OpenVMS 6.2-1H3 – OpenVMS 8.4							
Supported Tru64 versions	Digital UNIX 3.2 – 4.0E; Tru64 UNIX 4.0F – 5.1B (also known as: Compaq or HP Tru64 UNIX)							
Additional CHARON utilities	IDLE (supported for single AXP CPU configurations only); CHARON Launcher; CHARON Service Manager; HASP_VIEW; HASPRUS; mklisk; SCSIcheck; CHARON Network Control Center; DECtray							
Host operating system	Host system requirements 64bit Microsoft Windows Server 2008 R2, Server 2003 R2 (Standard and Enterprise editions), Windows 7, and Windows XP (Professional and Ultimate editions) on top of a physical host or on VMware ESX 4.1 update 1 or ESX 5.x							
Host CPU/RAM	Amount of host system CPU cores ≥ 2 * (amount of emulated AXP CPU cores); Host RAM ≥ 2 GB + (amount of emulated AXP RAM)							
Recommended Hardware	HP Proliant servers; Intel Xeon E7, E5, 5600 CPU family, or Intel Core i7 G2 and G3 CPU family, frequency at least 3 GHz							
Unlimited/annual license	Ordering information							
Annual GOLD/PLATINUM Support	CHAXP-806P-WI / CHAXP-806V-WI							
Backup license / Add a CPU	CHAXP-806U-WI / CHAXP-806T-WI CHAXP-806K-WI / CHAXP-CPUP-WI							



PRESERVING YOUR SOFTWARE INVESTMENT ACROSS HARDWARE GENERATIONS !

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