



SOFTWARE PRODUCT DESCRIPTION

CHARON-AXP/DS/ES/GS for Windows 64 bit

Product version: 4.4; Build 148-02

Description

CHARON-AXP/DS/ES/GS are members 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/DS/ES/GS for Windows 64 bit are designed to replace the following AlphaServer computer systems by its virtual equivalent running on a Windows host platform:

CHARON-AXP product	Hardware to replace
CHARON-AXP/DS10	AlphaServer DS10, DS15
CHARON-AXP/DS20	AlphaServer DS20, DS25
CHARON-AXP/ES40	AlphaServer ES40, ES45, ES47
CHARON-AXP/GS80	AlphaServer GS80, GS60, ES80
CHARON-AXP/GS160	AlphaServer GS140, GS160
CHARON-AXP/GS320	AlphaServer GS320, GS1280

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 little changes required to the original software (operating system, layered products, or applications), their procedures or handling have to be applied. 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. However the 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 connecting 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.

For the reference, a 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/DS/ES/GS base license includes half of the maximum virtual Alpha CPUs. Additional CPU options 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.

CHARON-AXP Products

CHARON-AXP/DS10/DS20/ES40/GS80/GS160/GS320 for Windows 64 bit version 4.4 build 148-02

Virtualized Alpha hardware details

Emulated hardware model	AlphaServer DS10	AlphaServer DS20	AlphaServer ES40	AlphaServer GS80	AlphaServer GS160	AlphaServer GS320
Alpha CPUs (base/maximum)	1/1	1/2	2/4	4/8	8/16	16/32
Emulated RAM	Up to 32 GB	Up to 32 GB	Up to 32 GB	Up to 64 GB	Up to 128 GB	Up to 256 GB
Available virtual PCI slots	4	6	10	27	27	27
Storage adapter support	Emulated PCI SCSI KZPBA adapters (2 preloaded for DS20; 1 preloaded for GS series); Emulated PCI FC KGPSA adapters; up to 120 storage units (disks, tapes, and CD/DVD) supported simultaneously; Emulated Acer Labs 1543C IDE/ATAPI controller (1 preloaded; only virtual IDE CD/DVD devices)					
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 (2 DEC 21143 controllers preloaded for DS10)					
Fiber Channel/FDDI support	Direct connection to SAN with physical KGPSA or compatible EMULEX HBA adapters / Direct connection to FDDI network with physical DEFFPA adapters					
Console/Serial lines	OPA0 console attached to a Windows terminal emulator, a physical serial port (COMxx: device), or a TCP/IP socket					
Supported VMS versions	OpenVMS 7.1-2 – OpenVMS 8.4			OpenVMS 7.2-1H1 – OpenVMS 8.4		
Supported Tru64 versions	Tru64 UNIX 4.0F – 5.1B (also known as: Compaq or HP Tru64 UNIX)			Tru64 UNIX 4.0G – 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; mkdisk; SCSScheck; CHARON Network Control Center; DECTray					

Host system requirements

Host operating system	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 ESXi 4.1 update 1 or ESXi 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 3.0 GHz

Ordering information

Unlimited/annual license	CHAXP-801IP-WI / CHAXP-801IY-WI	CHAXP-802IP-WI / CHAXP-802IY-WI	CHAXP-804IP-WI / CHAXP-804IY-WI	CHAXP-808IP-WI / CHAXP-808IY-WI	CHAXP-809IP-WI / CHAXP-809IY-WI	CHAXP-909IP-WI / CHAXP-909IY-WI
Annual GOLD/PLATINUM Support	CHAXP-801IU-WI / CHAXP-801IT-WI	CHAXP-802IU-WI / CHAXP-802IT-WI	CHAXP-804IU-WI / CHAXP-804IT-WI	CHAXP-808IU-WI / CHAXP-808IT-WI	CHAXP-809IU-WI / CHAXP-809IT-WI	CHAXP-909IU-WI / CHAXP-909IT-WI
Backup license / Add a CPU	CHAXP-801IK-WI / CHAXP-CPUIP-WI	CHAXP-802IK-WI / CHAXP-CPUIP-WI	CHAXP-804IK-WI / CHAXP-CPUIP-WI	CHAXP-808IK-WI / CHAXP-CPUIP-WI	CHAXP-809IK-WI / CHAXP-CPUIP-WI	CHAXP-909IK-WI / CHAXP-CPUIP-WI

PRESERVING YOUR SOFTWARE INVESTMENT ACROSS HARDWARE GENERATIONS !

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