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.

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.

PERFORMANCES

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.

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.

DISTRIBUTION KITS

CHARON Installation kits, Release notes, User manuals, Software Product Descriptions, Patches. Available for download through partner's login on Stromasys web site

CHARON UTILITIES

- **HASP_View**: for viewing CHARON license content
- **HASPRUS**: for updating CHARON license
- **Network Control Center:** to manage CHARON network drivers and settings
- **DEVcheck:** provides configuration assistance for directly connected SCSI devices
- **MKdisk:** create empty AXP disk images
- **MTD:** transfer the data between physical tape and CHARON tape container file
- **CHARON Launcher:** start/stop/configure CHARON, setup CHARON services
- **Service Manager:** manage CHARON instances as services
- **HOSTprint:** redirect virtual parallel port (LPV11) to a Windows local or network printer (applicable to QBUS based CHARON systems only).
- **IDLE VMS utility:** suspend host CPU utilization if VMS is idle – energy save mode.

USER ENVIRONMENT

After installation the system will behave like the AXP it replaces and should be treated like that AXP. Operating procedures will be the same and we advise not to treat it as a Windows system, despite the fact it runs on a Windows kernel. The product documentation includes an advisory for switching off unused Windows services and the Windows kernel can be disconnected from the network after installation.

VIRTUALIZED HARDWARE

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	OPA0 console attached to a Windows terminal emulator, a physical serial port (COMxx: device), or a TCP/IP socket							
Supported operating systems	OpenVMS 6.2-1H3 – OpenVMS 8.4, Digital UNIX 3.2 – 4.0E; Tru64 UNIX 4.0F – 5.1B (also known as: Compaq or HP Tru64 UNIX)							

Host system requirements

Host operating system	Windows Server 2012 (R2) Standard Edition 64 bit, Windows Server 2008 R2 Standard and Enterprise (SP1) Editions 64 bit (please notice that only R2 revision is supported), Windows 7 Professional, Enterprise and Ultimate (SP1) Editions 64 bit, Windows 8.1 64 bit 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 Haswell CPU family (Xeon E5 v3 or Core i7 v4); frequency at least 3 GHz

Ordering information

Unlimited license	CHAXP-806IP-WI
Annual license	CHAXP-806IY-WI
Annual GOLD Support	CHAXP-806IU-WI
Annual PLATINUM Support	CHAXP-806IT-WI
Backup license	CHAXP-806IK-WI
Additional CPU	CHAXP-CPUIP-WI

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