



# SOFTWARE PRODUCT DESCRIPTION

## CHARON-VAX/XL (PLUS) for Windows

Product version: 4.0; Build 122-04

### Description

CHARON-VAX/XL (PLUS) is a member of the CHARON cross-platform hardware virtualization product-family by Stromasys. CHARON-VAX creates the virtual replica of the original VAX hardware interface inside a standard computer system. It will run the VAX operating system and application software in their existing, binary form. It quickly moves your VAX software to a more modern general purpose computer.

**CHARON-VAX/XL (PLUS) for Windows** is designed to replace VAX4000-108, VAX3100-98, VAX3600, and VAX3900 systems (having up to 128 MB memory) by its virtual equivalent with 512 MB emulated VAX memory running on a Windows host platform. Most VAX hardware is virtualized, allowing the VAX/VMS operating system and all software that is running in that environment to remain working as always. No changes to the original software (operating system, layered products or applications), its procedures or handling have to be applied.

CHARON-VAX/XL is available in a standard and a PLUS version. The PLUS version includes Advanced CPU Emulation (ACE) providing 3 - 5 times better CPU performance compared to the Standard product.

### Network

CHARON-VAX virtualizes the Ethernet controllers as included in the original VAX hardware that is replaced. Any protocol that ran on these controllers (DECnet, TCP/IP, LAT) will run over this virtualized link.

### Storage

CHARON-VAX/XL (PLUS) provides support for the following VAX storage device types: (T)MSCP, DSSI and SCSI. CHARON translates all these VAX types to any modern technology (SCSI, IDE, SATA, SAS, iSCSI, or SAN) by means of logical files in a Windows directory, physical Windows disks or physical SCSI devices.

### Host system requirements

A dedicated Windows 7, Windows Server 2003 (R2), Server 2008 (R2) Standard or Enterprise Edition host system (32 or 64 bit version), with a dual CPU of at least 2 GHz, a CD-ROM, minimum one dedicated Ethernet adapter, a USB port for the license key and enough disk space for the VAX disks. The minimum host memory requirement depends on the CPU emulated and whether ACE is used. CHARON-VAX/XL (standard) requires a minimum of 1 GB host memory; CHARON-VAX/XL PLUS requires 2 GB.

### Performance

The CHARON-VAX/XL (PLUS) CPU performance scales with the clock frequency of the host CPUs provided the host memory latency is increased by the same factor. The performance also depends on the CHARON-VAX version.



The "PLUS" version is identical to the standard version with the exception that it includes the advanced VAX CPU emulation mode (ACE), significantly improving the virtual VAX CPU speed at the expense of additional host memory. On an Intel Core i7 965 (3.2 GHz) based system, the CHARON-VAX/XL PLUS virtual CPU delivers approximately 125 VUPS. The standard CHARON-VAX/XL CPU (without Plus) emulator provides about one third of this.

The original hardware VAX CPU provided 1 VUP (MicroVAX II) up to 38 VUPS (VAX3100-98), therefore VAX virtualization will deliver a major performance increase. Faster storage and memory components of the modern host computer equipment will increase the overall performance of the virtual VAX even more.

### Product license key

The CHARON HASP-HL USB-type license key is permanently connected to the host system running the emulator. 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.

HASP-HL allows running multiple CHARON-VAX and CHARON-AXP instances on a single host computer.

### Documentation

- User manual, on the installation CD and on the web.
- Release notes, on the installation CD and the web.
- SPD, on the installation CD and the web.

### Additional utilities

**Program Launcher:** start/stop/manage CHARON-VAX

**Service Manager:** manage CHARON-VAX as a service

**MKdisk:** Create empty VAX disk images

**DECTray:** Taskbar icon for network activity display

**Network Control Center:** Manage CHARON network components

**Idle:** Suspends host CPU usage when the VAX OS is idle (energy save mode). Applicable to single CPU CHARON systems only.



## User environment

After installation the system will behave like the VAX it replaces and should be treated like that VAX. 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

	VAX4000-108	VAX3100-98	VAX3600/3900
Virtualized VAX CPU	KA54-A	KA56-A	KA650-A/B KA655-A/B
Earliest VMS version	5.5-2	5.5-2	4.6
Max. virtual VAX memory	512 MB	512 MB	512 MB
(T)MSCP device controller	Yes <sup>1) 2)</sup>	No	Yes <sup>1)</sup>
SCSI subsystem	2 Controllers, each supporting 7 addresses. Using LUN's each address supports 8 similar devices	2 Controllers, each supporting 7 addresses. Using LUN's each address supports 8 similar devices	No
VAX SCSI disks	Physical SCSI disks or image files	Physical SCSI disks or image files	No
VAX SCSI tapes	SCSI tape drives via a SCSI port	SCSI tape drives via a SCSI port	No
Ethernet	Up to 5 Ethernet controllers in total. Connections up to 100 Mbps with the PLUS version. The Standard version supports 10 Mbps	1 Ethernet controller. Connections up to 100 Mbps with the PLUS version. The Standard version supports 10 Mbps	Up to 4 Ethernet controllers in total. Connections up to 100 Mbps with the PLUS version. The Standard version supports 10 Mbps
VAX/VMS clustering	NI cluster or Shared Disk Cluster with simulated MSCP controllers	NI Cluster	NI cluster or Shared Disk Cluster with simulated MSCP controllers
Asynchronous Serial Lines	CXA16, CXB16, CXY08, DHQ11, DHV11, DHW42-AA, -BA, -CA	DHW42-AA, -BA, -CA	CXA16, CXB16, CXY08, DHQ11, DHV11
QBUS subsystem	Yes <sup>2)</sup>	No	Yes <sup>2)</sup>
DSSI subsystem	HSD50 controller	No	No

<sup>1)</sup> Configurable Qbus components are the MSCP disk controller RQDX3, the TMSCP tape controller TQK50, the serial line controllers as above and the Ethernet controllers DEQNA, DELQA and DESQA.

<sup>2)</sup> MSCP disk emulation is the preferred storage device emulation in the case of heavy disk I/O.

Each virtual VAX model follows the characteristics of its VAX hardware equivalent, requiring the corresponding level of license units and supports the peripherals particular to that VAX model. The virtual VAX does not include diagnostic and maintenance modes or delays to simulate mechanical device behavior.

## Ordering information

	CHARON-VAX/XL	CHARON-VAX/XL PLUS
Unlimited Run time license	CHVX-021-PF-WI	CHVX-221-PF-WI
One year license	CHVX-021-YF-WI	CHVX-221-YF-WI
720 hour disaster recovery license	CHVX-021-KF-WI	CHVX-221-KF-WI
GOLD-support (9x5)	CHVX-021-UF-WI	CHVX-221-UF-WI
Platinum support (24x7)	CHVX-021-TF-WI	CHVX-221-TF-WI

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