



# CHARON™ -VAX/XL (Plus) for Windows

Charon Version 3.2

Software Concepts International  
402 Amherst Street  
Suite 300  
Nashua, NH 03063  
USA  
Tel: 603.879.9022  
Fax: 603.879.9023  
[www.sciinc.com](http://www.sciinc.com)  
[scitechinfo@sciinc.com](mailto:scitechinfo@sciinc.com)

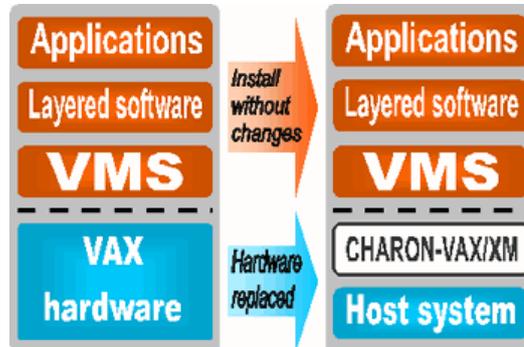
## Functionality

CHARON-VAX/XL (Plus) is designed to prolong the use of the VAX/VMS operating system, layered products and user applications. The hardware components emulated by CHARON-VAX/XL (Plus) are designed to operate like their hardware equivalents.

CHARON-VAX/XL (Plus) can in principle execute any VAX operating system or binary application that runs on its equivalent hardware VAX configuration. It is designed to replace single CPU VAX machines in administrative environments with terminals connected via terminal servers.

The emulated functionality does not include diagnostic or maintenance modes or delays to simulate mechanical device behavior. For a list of emulated components please see the Features Matrix.

For replacing real time process control applications with Programmable Logic Controllers connected via serial lines, see CHARON-VAX/Industrial.



**CHARON-VAX/XL (Plus) for Windows** is a third generation VAX system virtualization. By emulating a variety of VAX CPUs with different features, **CHARON-VAX/XL** can replace a wide range of VAX server hardware with modern Windows servers running CHARON-VAX/XL as a Windows application

**CHARON-VAX/XL** provides an exact model of the emulated CPUs, on which

VAX/VMS, layered software and user applications execute unmodified. No conversion of binary VAX code is required. The **Plus** option for the **CHARON-VAX/XL** emulator provides a 3 to 5 times improvement of VAX CPU emulation by means of Advanced CPU Emulation mode (ACE).

The compatibility of the emulator with VAX hardware is tested with the original VAX hardware design tools and diagnostics.

## Features

- Provides VAX CPU emulations for VAXserver 4000-108, MicroVAX 3100-98, or VAXserver 3600/3900. Only one of these CPUs can execute at a given time.
- Does not require VAX application code conversion nor application sources. VMS, layered software and applications can be directly installed on CHARON-VAX/XL (Plus) and do not require any modifications. The application binaries, user interface and functionality remain unchanged.
- Each emulated VAX model follows the characteristics of the VAX hardware it is derived from, requires the corresponding level of VAX/VMS license units and supports the peripherals particular to that VAX model. See the Features Matrix on the next page.
- Installs and runs the standard VAX/VMS and other standard VAX operating systems.
- CHARON-VAX/XL (Plus) can operate as an unattended Windows service.
- VMS and layered product transfer licenses from an existing VAX system to CHARON-VAX/XL (Plus) are available from HP.
- Passes HP's AXE architecture test for VAX instruction compatibility.
- CHARON-VAX/XL (Plus) emulates up to 512 MB VAX memory.
- The Ethernet adapter(s) emulator supports 10 or 100 (\*) Mbps network connections to other systems, NI clusters, terminal servers and X-terminal (emulators). Emulation is transparent to DECnet and/or TCP/IP network protocols.
- CHARON-VAX/XL (Plus) can be configured as a VMS NI-cluster member or as a cluster member with shared disk clustering.
- Upgrading to a faster host system provides an immediate emulator performance increase.
- Provides a choice between one year (extendable) or perpetual usage licenses.
- Two levels of optional software support service.

### Advanced CPU Emulation (ACE)

ACE dynamically optimizes the VAX instruction interpretation. This does not require code pre-processing and provides its full capability instantly. As the optimization takes place below the emulated hardware level, the emulator remains fully VAX hardware compatible and is completely transparent to VAX operating systems and applications.

### Host system requirements

A dedicated 32-bit Windows 2000, XP or 2003 Server Standard Edition host system with a dual CPU of at least 1 GHz, a CD-ROM, minimum one (1) dedicated Ethernet adapter, a USB port for the license key and enough storage space for the VAX disks. The minimum host memory requirement depends on the CPU emulated and whether ACE is used. For a list of emulated components please see the Features Matrix.

### Recommended tools

HP Pathworks 32:

- VT525 terminal emulator
- X-terminal emulator
- Windows file copy

### Product contents

Distribution CD  
License key

### License key

The CHARON hardware 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.

The MTBF of the key is more than 100 years. For mission critical applications a backup key containing 720 hours execution time can be ordered to meet any disaster recovery plan that requires replacement hardware.

### Warranty

The 3 months standard warranty for this product is the readability of the distribution media.

## Typical applications

- Replacing any VAX platform requiring up to 512 MB of VAX memory with a Windows host system while using unmodified VAX application software.
- With the Plus version, improving VAX system performance for CPU or I/O intensive workloads (up to 100 VUPs depending on the host platform), while replacing the hardware with a Windows platform.
- Replacing departmental or corporate VAX computers by modern host systems to reduce maintenance, space and operating costs.

## Features Matrix

	VAX 4000-108	VAX 3100-98	VAX 3600/3900
<b>Emulated VAX CPU</b>	KA57-A	KA59-A	KA650-B / KA655-B
<b>Earliest VMS version supported</b>	5.5-2	5.5-2	4.6
<b>Maximum VAX memory emulated</b>	512 MB	512 MB	512 MB
<b>(T)MSCP Device Controller</b>	Yes. (**) (***)	n/a	Yes. (**) (***)
<b>SCSI Subsystem</b>	Two (2) controllers, each supporting seven (7) addresses; using LUNs each address supports eight (8) similar devices	Two (2) controllers, each supporting seven (7) addresses; using LUNs each address supports eight (8) similar devices	n/a
<b>VAX SCSI disks</b>	VAX SCSI disks can be represented by physical SCSI disks or disk image files	VAX SCSI disks can be represented by physical SCSI disks or disk image files	n/a
<b>VAX SCSI tapes</b>	SCSI tape drives connect via a host SCSI port	SCSI tape drives connect via a host SCSI port	n/a
<b>Ethernet</b>	Up to five (5) Ethernet adapters in total, including one SGEC. Connections to 100 Mbps are possible with the Plus option (*). Non-Plus option connects to 10 Mbps.	One (1) SGEC adapter. Connection to 100 Mbps is possible with the Plus option (*). Non-Plus option connects to 10 Mbps.	Up to four (4) Ethernet adapters. Connections to 100 Mbps possible with the Plus option (*). Non-Plus option connects to 10 Mbps.
<b>VAX/VMS clustering</b>	NI Cluster or Shared Disk Clustering with simulated MSCP controllers	NI Cluster	NI Cluster or Shared Disk Clustering with simulated MSCP controllers
<b>Asynchronous serial line emulation</b>	CXA16, CXB16, CXY08, DHQ11, DHV11, DHW42-AA, DHW42-BA, DHW42-CA	DHW42-AA, DHW42-BA, DHW42-CA	CXA16, CXB16, CXY08, DHQ11, DHV11
<b>Qbus subsystem</b>	Yes. (**)	n/a	Yes. (**)
<b>Host memory requirement</b>	1 GB (2 GB with ACE)	1 GB (2 GB with ACE)	1 GB (2 GB with ACE)

(\*) The effective aggregate throughput depends on the host system's performance.

(\*\*) 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.

(\*\*\*) MSCP disk emulation is the preferred storage device emulation in the case of heavy disk I/O.

## Ordering information

	CHARON-VAX/XL for Windows	CHARON-VAX/XL Plus for Windows
Unlimited run time license	CHVX-021-PF-WI	CHVX-221-PF-WI
Initial (one year) license	CHVX-021-BF-WI	CHVX-221-BF-WI
License extension for one year	CHVX-021-EF-WI	CHVX-221-EF-WI
Back-up key	CHVX-021-KF-WI	CHVX-221-KF-WI
GOLD Support	CHVX-021-UF-WI	CHVX-221-UF-WI
PLATINUM Support (***)	CHVX-021-TF-WI	CHVX-221-TF-WI

(\*\*\*) Subject to geographical availability.