CHARON-VAX/66x0 PLUS for Linux
Product version 4.8

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DESCRIPTION

Stromasys **CHARON-VAX/6610 PLUS, CHARON-VAX/6620 PLUS, CHARON-VAX/6630 PLUS, and CHARON-VAX/6660 PLUS** are members of CHARON-VAX cross-platform hardware virtualization product family. They are designed to replace **XMI based VAX 6000, 7000, 8000, and 10000 series** systems by its virtual equivalent running on an x86-64 compatible standard computer system. CHARON-VAX creates the virtual replica of the original DEC VAX hardware, allowing the VAX/VMS operating system and all software that is running in that environment to remain working as always in their existing, binary form. No or minimal configuration changes to the original software (operating system, layered products, and applications), operational procedures, and management are required.

VAX hardware		Virtual VAX 66x0 product
VAX 6610, VAX 7610	⇨	CHARON-VAX/6610 PLUS
VAX 6620, VAX 7620	⇨	CHARON-VAX/6620 PLUS
VAX 6630, VAX 7630	⇨	CHARON-VAX/6630 PLUS
VAX 6660, VAX 7660	⇨	CHARON-VAX/6660 PLUS

NETWORK

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

STORAGE

CHARON-VAX/66x0 PLUS provides support for the following VAX storage device types: XMI, BI, (T)MSCP, Ci, and DSSI. CHARON translates VAX storage to any modern technology (SCSI, SATA, SAS) by means of virtual disk images on a Windows filesystem or physical LUNs attached locally or remotely by iSCSI, SAN, or NAS.

HOST SYSTEM REQUIREMENTS

A physical system or virtual appliance with a multi core CPU (Intel Xeon v4 E3, E5, and E7 CPUs with a clock frequency of 3GHz and above are recommended; the amount of available CPU cores should be greater or equal to amount of emulated VAX CPUs plus 2), dedicated Ethernet adapters, an optional USB port for the license key and enough disk space to keep the VAX/VMS data. CHARON-VAX/66x0 requires up to 6 GB host RAM (refer to page 2 for details).

OPERATING SYSTEM REQUIREMENTS

Linux Red Hat Enterprise (RHEL) 6.5 and above; RHEL 7.x, and CentOS 7.x (32 bit or 64 bit) on top of a physical host or VMware ESXi 5.5 and 6.x

SYSTEM MAINTENANCE

Once installed and configured, CHARON system will behave like the original VAX system, and can be treated like VAX. Guest OS and applications operating procedures will remain the same, and it's advised not to treat the system as a Linux box, despite the fact it runs on a Linux kernel. Hosting OS does not require maintenance or patching; it can be cut off the network completely.

PERFORMANCE

	Hardware VAX	CHARON-VAX *)
VAX 6610	32 VUPS	150 VUPS
VAX 6620	50 VUPS	275 VUPS
VAX 6630	75 VUPS	400 VUPS
VAX 6660	150 VUPS	800 VUPS

*) On an Intel Core 7th generation 3.2 GHz based system

LICENSE PROTECTION

A valid license should be permanently available to CHARON. It can be represented by a local or network attached USB HASP license dongle, or a Software License. The license preserves customer specific parameters and allows remote electronic updates. USB dongle enables rapid change of host systems as the CHARON executable itself can be installed on multiple systems for disaster recovery purposes. License flexibility allows combining multiple instances of different CHARON products on a single host system.

DISTRIBUTION

CHARON Release notes, User manuals and Software Product Descriptions are available for download from the Stromasys Product Documentation and Knowledge Base web pages. Downloading installation kits and patches requires a partner account or credentials provided by Stromasys on an individual basis.

CHARON UTILITIES

CHARON-VAX on Linux is delivered with the **CHARON Linux Toolkit** which consolidates all CHARON management tasks: creating and configuring CHARON instances, monitoring and managing CHARON licenses and logs, configuring hosting hardware resources for CHARON needs, synchronized host and guest OS shutdown, etc. The following functional applications are invoked form CHARON Linux Toolkit:

- **menu** is a text based interactive menu system for setting up / configuring / monitoring / managing CHARON instances
- **hasp_srm_view** displays content of CHARON-VAX license
- **ncu** ("Network Control Utility") is used to dedicate a host network interface to CHARON-VAX, to release it back to the host, and to manage CHARON virtual interfaces (TAPs)

The following command line utilities are also available:

- **mkdskcmd** is used to create empty VAX disk images and extend existing disk images
- **mtd** for transferring data between physical tapes and CHARON tape container files

Stromasys **CHARON Guest Utilities for OpenVMS** version 6.1 and above are supplied on a disk image to provide the following functionality:

- **Tape Utilities Package** for manipulating virtual tape images and managing a virtual SCSI tape changer
- **Power consumption optimization (IDLE) VMS utility** for implementing energy save mode when virtual VAX CPU is idle
- **Slowdown VMS utility**: for slowing down CHARON virtual CPU to match hardware VAX performance level
- **Shutdown VMS utility** for orderly shutdown CHARON after VMS

VIRTUALIZED HARDWARE

	CHARON-VAX/6610 PLUS	CHARON-VAX/6620 PLUS	CHARON-VAX/6630 PLUS	CHARON-VAX/6660 PLUS
Virtualized VAX model	VAX6000-610	VAX6000-620	VAX6000-630	VAX6000-660
Virtualized VAX CPU	KA66-A 1 VAX CPU	KA66-A 2 VAX CPU's	KA66-A 3 VAX CPU's	KA66-A 4, 5, or 6 VAX CPU's
Earliest VMS version	5.5-2			
Max. virtual VAX memory	1 GB	2 GB	3 GB	3.5 GB
Internal bus	XMI; BI through virtual XMI to BI controller			
SCSI and QBUS buses	N/A			
Emulated VAX disks	Virtual disk images (container files) and physical SCSI disks and partitions on KDM70 XMI disk/tape controllers; CIXCD CI disk controllers; HSJ50 storage controllers			
Emulated VAX tapes	KDM70 XMI disk/tape controller with container files (boot from tape not supported)			
Ethernet	Multiple emulated DEMNA Ethernet adapters up to the available maximum slots on the emulated XMI bus. Connection speed on the emulated VAX level is 10, 100 Mbps, and 1Gbps [1]			
VAX/VMS clustering	NI clusters; Shared Disk Clusters with emulated CIXCD and HSJ50 controllers			
Host memory requirements	3 GB	4 GB	6 GB	6 GB

[1] The effective aggregate throughput depends on the host system performance

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/6610 PLUS	CHARON-VAX/6620 PLUS	CHARON-VAX/6630 PLUS	CHARON-VAX/6660 PLUS
Perpetual runtime license	CHVX-261-PG	CHVX-262-PH	CHVX-263-PH	CHVX-260-PH
One year license	CHVX-261-YG	CHVX-262-YH	CHVX-263-YH	CHVX-260-YH
Backup license (720 hours)	CHVX-261-KG	CHVX-262-KH	CHVX-263-KH	CHVX-260-KH
Annual GOLD support (9*5)	CHVX-261-UG	CHVX-262-UH	CHVX-263-UH	CHVX-260-UH
Annual PLATINUM support (24*7)	CHVX-261-TG	CHVX-262-TH	CHVX-263-TH	CHVX-260-TH

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