SOFTWARE PRODUCT DESCRIPTION

Charon-VAX/66x0 PLUS for Linux

Product version 4.11

Document version 2

DESCRIPTION

Stromasys **Charon-VAX/6610 PLUS, Charon-VAX/6620 PLUS, Charon-VAX/6630 PLUS, and Charon-VAX/6660 PLUS** are members of the Charon-VAX cross-platform hardware virtualization product family. They are designed to replace **XMI based VAX 6000, 7000, 8000, and 10000 series** systems by their virtual equivalents running on an x86-64 compatible standard computer system. Charon-VAX creates a virtual replica of the original DEC VAX hardware, allowing the VAX/VMS operating system and all software running in that environment to continue to work as before in their existing, binary form. No or only 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 supported on these controllers (DECnet, TCP/IP, LAT) will work on the 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 the VAX storage to any modern technology (SCSI, SATA, SAS) by means of virtual disk images on a Linux 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 Gold and Platinum CPUs with a clock frequency of 3GHz and above are recommended; the number of available CPU cores should be greater or equal to the number 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 3 for details).

OPERATING SYSTEM REQUIREMENTS

Red Hat Enterprise Linux (RHEL) and Oracle Linux 7.x to 9.x, CentOS 7.x, Rocky Linux 8.x and 9.x on a physical host, or on a hypervisor; on-premises or on AWS, Azure, OCI, and GCP clouds. Supported hypervisors: VMware ESXi 5.5 – 8.0; Microsoft Hyper-V on Windows Server 2012 R2, 2016 and 2019; KVM.

SYSTEM MAINTENANCE

Once installed and configured, Charon system behaves like the original VAX system, and can be treated as a VAX. Guest OS and applications operating procedures remain the same. The host operating system does not require a network connection and regular patching after the installation. See user's guide for requirements regarding any updates to the host OS.

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

LICENSE PROTECTION

A valid license should be permanently available to Charon in the form of a local or network attached USB HASP license dongle, or a Software License. The license contains customer specific parameters and allows remote electronic updates. USB dongles enable a rapid switch-over to another host system as the Charon executable itself can be installed on multiple systems for disaster recovery purposes. Flexible licensing options allow 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 host hardware resources for Charon needs, synchronized host and guest OS shutdown, etc. The following 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 the content of Charon-VAX licenses
- **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 saving mode when a virtual VAX CPU is idle
- **Slowdown VMS utility** for slowing down Charon virtual CPU to match hardware VAX performance level
- **Shutdown VMS utility** for an 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. It requires 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 [1)]

License Name	Product Code	Description
Charon-VAX/6610+	P1-VAX-61PA-5y	Model 6610. 1 accelerated VAX CPU, 1GB RAM (5-year license term)
Charon-VAX/6620+	P1-VAX-62PA-5y	Model 6620. 2 accelerated VAX CPU, 2GB RAM (5-year license term)
Charon-VAX/6630+	P1-VAX-63PA-5y	Model 6630. 3 accelerated VAX CPU, 2GB RAM (5-year license term)
Charon-VAX/6660+	P1-VAX-66PA-5y	Model 6660. 6 accelerated VAX CPU, 3.5GB RAM (5-year license term)
Gold support annual subscription [2)]	Model 6610: P1-VAX-61PG-1y; model 6620: P1-VAX-62PG-1y; model 6630: P1-VAX-63PG-1y; model 6660: P1-VAX-66PG-1y	
Platinum support annual subscription [2)]	Model 6610: P1-VAX-61PP-1y; model 6620: P1-VAX-62PP-1y; model 6630: P1-VAX-63PP-1y; model 6660: P1-VAX-66PP-1y	

1) Please contact the Stromasys Sales team for Charon licensing details and commercial discussions.

2) Please refer to the Charon Service Descriptions for GOLD and PLATINUM terms, conditions, and SLAs.