

CHARON-PDP for Windows

Product version 4.5

Document: 30-15-062-007



DESCRIPTION

CHARON-PDP is a member of CHARON-VAX cross-platform hardware virtualization family of products by Stromasys. It is designed to replace PDP-11/93 and PDP-11/94 systems by its virtual equivalent running on a standard computer system. CHARON-PDP creates the virtual replica of the original PDP-11 hardware, allowing the RT-11, RSX-11, RSTS, and other operating systems and all software that is running in that environment to remain working as always in their existing, binary form. No or minor changes to the original software (operating system, layered products or applications), its procedures or handling have to be applied.

NETWORK

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

STORAGE

CHARON-PDP provides support for (T)MSCP storage devices. CHARON translates all these PDP types to any modern technology (SCSI, SATA, SAS) by means of logical files in a Windows directory or physical LUNs attached locally or remotely by iSCSI, SAN, or NAS.

HOST SYSTEM REQUIREMENTS

A physical system or virtual VMware appliance (ESXi 4.1 update 1 - ESXi 5.x) running on Windows Server 2012 (R2) Standard Edition - 64 bit version, Windows Server 2008 R2 (SP1) Standard and Enterprise Editions - 64 bit version, Windows 7 Professional and Ultimate (SP1) Editions - 32 bit and 64 bit versions, Windows 8.1 Professional Edition - 32 and 64 bit versions, with a dual CPU of at least 2 GHz, one dedicated Ethernet adapter, a USB port for the license key and enough disk space to keep the PDP disks. CHARON-PDP requires a minimum of 2 GB host memory.

The CHARON-PDP device drivers for external PCI to QBUS adapter and for FPGA Cesium board, and other serial line interfaces require 32bit Windows 7 version and cannot be used on 64bit Windows. Those devices also cannot be used on VMware.

PERFORMANCE

CHARON-PDP provides options to fine tune the virtual PDP performance by setting the emulated PDP-11 CPU frequency and defining individual PDP CPU instructions timings. Please refer to the user manual for details.

CHARON APPLICATION PROGRAM INTERFACE (CHAPI)

CHAPI is an open API to emulated QBUS bus, thus available for QBUS based emulators. It allows creation of emulated QBUS devices, and connects emulated peripherals which are designed as external C++ modules to the emulator kernel. CHAPI library functions provide standard device elements like registers, interrupt logic, etc.

PRODUCT LICENSE KEY

The HASP USB license key should 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.

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

DISTRIBUTION KITS AVAILABLE

CHARON Installation kits, Release notes, User manuals, Software Product Descriptions, Patches

Available for downloads through our partner login

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 VAX 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 net-work printer (applicable to QBUS based CHARON systems only).
- **IDLE VMS utility**: suspend host CPU utilization if VMS is idle – energy save mode.
- **Slowdown VMS utility**: slow down CHARON virtual CPU to match original VAX performance level
- **Shutdown VMS utility**: shutdown CHARON
- **Web based User Interface**: CHARON-VAX instances could be started, stopped, and configured using a local or remote web browser.

USER ENVIRONMENT

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

	PDP-11/93	PDP-11/94
Virtualized PDP CPU	J11	
Virtual PDP memory	2MB or 4MB	
Operating systems	RSX-11M, RT11, RSTS	RSX-11M, RT11, RSTS
Internal bus	QBUS ¹⁾	UNIBUS ²⁾
Emulated disks	Container files; Local, iSCSI and SAN partitions; physical SCSI disks	
Emulated tapes	Container files, Windows tape drives, physical SCSI tape drives	
Network	1 QBUS Ethernet controller	1 UNIBUS Ethernet controller
Network performance	10 Mbps	
Asynchronous Serial Lines	UART (console), DHV11, DLV11(-J)	UART (console), DHU11, DL11
KW11 line clock	50, 60 and 70 Hz	
Connection to physical peripherals	Physical QBUS (additional hardware is required) ³⁾	-

¹⁾ 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.

²⁾ Configurable UNIBUS components are the MSCP disk controller UDA50, the TMSCP tape controller TUK50, the serial line controllers as above and the Ethernet controllers DEUNA and DELUA.

³⁾ QBUS basket hardware (original VAX QBUS basket or custom 3rd party custom QBUS basket) and PCI to QBUS hardware and software interface are required. Please contact Stromasys for details

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

Ordering information

Unlimited	CHVX-011-PX-WI
Annual	CHVX-011-YX-WI
Backup license	CHVX-011-KX-WI
Annual GOLD support	CHVX-011-UX-WI
Annual PLATINUM support	CHVX-011-TX-WI

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