

CHARON™ -TB for Windows

Charon Version 1.0.67

Stromasys
P.O. Box 156
1228 Plan-les-Ouates,
Geneva
Switzerland
Tel: +41 22 794 1070
Fax: +41 22 794 1073
www.stromasys.com
info@stromasys.com

Functionality

CHARON-TB is designed to replace complex legacy systems based on VAX or PDP-11 CPUs, such as industrial real time process control applications, military applications or embedded systems.

CHARON-TB allows the development of 3rd party plug-ins to extend its functionality. 3rd party developed extensions can be protected with CHARON's license key.

CHARON-TB can in principle execute any VAX or PDP-11 operating system or binary application that runs on its equivalent hardware.

The virtualization does not include diagnostic or maintenance modes or delays to simulate mechanical device behavior. For a list of virtualized components please see the Components List.

Typical application

Replacing custom industrial, embedded, process control or military systems that were designed as building blocks around a PDP-11 or VAX system.



CHARON-TB is an accurate virtualization layer for both VAX and PDP-11 hardware on Windows host systems. It includes a set of development tools that facilitate the creation of additional system components, plus a software interface to add them to the virtual system. **CHARON-TB** is a “Toolbox” designed to replace legacy systems that are based on PDP-11 or VAX CPUs and that may include legacy parts or non-standard hardware and peripherals, such as embedded systems or industrial process control systems or military systems.

The core of **CHARON-TB** contains sufficient peripheral devices support to create a basic virtual UNibus or Qbus PDP-11 or a MicroVAX system. A documented software interface (CHAPI) allows the extension of the virtual system in the same way the original hardware systems could be extended with many different I/O modules. A set of development tools allows the creation of such extension modules.

For designing and implementing additional peripheral device virtualizations, CHARON-TB includes a library of callable software modules and examples of how to map peripheral functionality to host system functions. The source code of some typical examples is available on request.

Interfacing with bespoke hardware or virtual bus adapters is also possible via a specific set of callable software modules that provide full access to the virtual Q-bus or UNibus.

Once developed with CHARON-TB for Windows, CHAPI-based peripheral modules can be used with other CHARON-VAX products of the same architecture. They can be made to lock on a specific CHARON license key number.

Features

- Various VAX and PDP-11 CPU models, as per the Components List. Only one of these CPUs can execute at a given time.
- Does not require application code conversion nor application sources. The original operating system, layered software and applications can be directly installed on CHARON-TB and do not require any modifications. The application binaries, user interface and functionality remain unchanged.
- Each virtualized system model follows the characteristics of the original system hardware it is derived from, requires the corresponding level of software licenses and can support the peripherals particular to that model.
- Installs and runs the standard VAX or PDP-11 operating systems.
- CHARON-TB for Windows can operate as an unattended Windows service.
- VMS and layered product transfer licenses from an existing VAX system to CHARON-TB are available from HP.
- Passes HP's AXE architecture test for VAX instruction compatibility.
- The Ethernet adapter virtualization supports 10 or 100 (*) Mbps network connections to other systems, terminal servers and X-terminal (emulators) by directly accessing the host communication hardware.
- When used as a virtual VAX, CHARON-TB 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 performance increase.
- Self-developed extensions will run on other CHARON-VAX products of the same architecture and can be protected using the CHARON license key.
- Provides a choice between one year (extendable) or perpetual usage licenses.
- Two levels of optional software support service.

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

Host system requirements

A dedicated 32-bit Windows XP or 2003 Server Standard Edition host system with a dual CPU of at least 2 GHz, 1 GB host memory, a CD-ROM, a USB port for the license key, enough storage space for the disk images and one (1) dedicated Ethernet adapter, if Ethernet is used. For a list of virtualized components please see the Components List.

License key

The CHARON hardware license key is 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.

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.

Components

Core Components

Virtualized CPU models

MV3K6_512_MA.EXE – A MicroVAX 3600 with extended (512 MB) memory
MV3K6_MA.EXE – A MicroVAX 3600 (standard 64 MB memory)
MVII_MA.EXE – A MicroVAX II
PDP1193_MA.EXE – A PDP-11/93
PDP1194_MA.EXE – A PDP-11/94
VX3K6_512_MA.EXE – A VAX Server 3600 with extended (512 MB) memory
VX3K6_MA.EXE – A VAX Server 3600 (standard 64 MB memory)

Peripheral components

DEQNA.DLL – Implements the DELQA/DEQA/DEQNA network adapters;
DHV11.DLL – Implements the DHV11 serial line multiplexer;
DL11.DLL – Implements the UART/DL11 models;
DZ11.DLL – Implements the DZ11 models;
MSGID_*.DLL – the system message databases;
RQDX3.DLL – implementation of the MSCP disk controller;
TQK50.DLL – implements the TQK50 tape controller;
TUK50.DLL – implements the TUK50 tape controller;
UDA50.DLL – implements the UDA50 MSCP disk controller

Additional Virtualized Components

These components are provided “as-is” and not included in GOLD or PLATINUM support.

CHAPI components shared by all system models

CHAPI(D).DLL – general CHAPI support library and its debug version;
CHAPI_DHV11.DLL – CHAPI implementation of DHV-11;
CHAPI_DLV11.DLL – CHAPI implementation of DLV-11;
CHAPI_DRV11WA.DLL – CHAPI DRV11-WA proof of concept using the DCI-1100;
CHAPI_HTIME.DLL – CHAPI device to import host system time into RSX11 system;
HTIM.TSK – RSX11 task for CHAPI_HTIME.DLL;
CHAPI_HW(D).DLL – Hardware substitution library and its debug version;
CHAPI_QBUS.DLL – bus adapter link proof of concept using the BCI-2104 bus adapter;
CHAPI_RLV12.DLL – CHAPI implementation of the RL11 / RLV12 disk controllers;
CHAPI_SERIAL(D).DLL – serial I/O CHAPI support library and its debug version;
CHAPI_STORAGE(D).DLL – CHAPI Storage I/O support library and its debug version;
CHAPI_TSV05.DLL – CHAPI implementation of the TS11/TSV11/TSV05 tape controllers;
CHAPI_VCB02.DLL – CHAPI proof of concept of the VCB02 video subsystem;
LPV11.DLL – CHAPI implementation of the LPV11 parallel port controller;
CHKERNEL.DLL – CHAPI kernel support functionality;
CHNETWRK.DLL – CHAPI network I/O subsystem support;
CHSERIAL.DLL – CHAPI serial I/O subsystem support;
CHSTORGE.DLL – CHAPI disk/tape I/O subsystem support;
External boot files for (T)MSCP / RL11 / RLV12 / TS11 / TSV05 devices

Development libraries

CHAPI.LIB – Common function release build development library;
CHAPIID.LIB – The debug version of the CHAPI.LIB library;
CHAPI_SERIAL.LIB – Serial line base classes, release build;
CHAPI_SERIALD.LIB – The debug version of CHAPI_SERIAL.LIB;
CHAPI_STORAGE.LIB – Disk/Tape base classes, release build;
CHAPI_STORAGE.D.LIB – The debug version of CHAPI_STORAGE.LIB;
CHAPI_HW.LIB – Hardware substitution components, release build;
CHAPI_HWD.LIB – The debug version of CHAPI_HW.LIB;

CHARON-TB specific drivers

SRIPACKET.SYS – CHARON network packet filter driver;
SRIMUX.SYS, SRIMUX.DLL – Virtual Ethernet multiplexer;
BCI2X0X.SYS – Proof of concept BCI-2104/BCI-2004 bus adapter driver;
DCI1100.SYS – Proof of concept DCI-1100 adapter driver;

The CHARON-TB utilities

The CHARON CHAPI device creation wizard; generates Visual Studio C++ project files;
The CHARON Launcher; manages installed virtual PDP-11 or VAX instances;
The CHARON Service Manager for CHARON virtualizations installed as services;
The CHARON Network Control Center
The Mkdisk utility to create virtual disks;
SCSI_Check to enumerate hardware storage devices on the host system;
DECtray to display the actual DECnet address for a network adapter;
HOSTprint to map the host system printer to the virtual systems

Ordering information

CHARON-TB for Windows

Unlimited run time license	CHTB-010-PX-WI
Initial (one year) license	CHTB-010-BX-WI
License extension for one year	CHTB-010-EX-WI
Back-up key	CHTB-010-KX-WI
GOLD Support	CHTB-010-UX-WI
PLATINUM Support (**)	CHTB-010-TX-WI
Implementation Support	CHTB-010-IX-WI

(**) Subject to geographical availability.