



# CHARON™-AXP/SMA for Windows

## SALEM AUTOMATION INCORPORATED

1598 Westbrook Plaza Drive  
Suite 102  
Winston-Salem, NC 27103

Phone: 336-661-0890, ext 106  
Fax: 336-661-9575

CharonSales@salemautomation.com  
www.CHARONVAX.com

### Functionality

CHARON-AXP/SMA for Windows can be used to replace aging Alpha hardware. Your unmodified application code and the Alpha operating system still 'sees' the Alpha CPU, memory and peripherals recreated in real-time by the HAL software layer.

CHARON-AXP/SMA for Windows can in principle execute any Alpha operating system or binary application that runs on the equivalent hardware Alpha configuration. The version 1.0 is tested with OpenVMS, only. For efficiency reasons, the HAL software 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.

The **CHARON AXP** family of products allows you to replace your existing Alpha computer systems with a general purpose computer without making changes to your software. It provides a very quick, low risk, and inexpensive method of replacing your Alpha systems now that they have been retired by Hewlett-Packard. The benefit of CHARON AXP solutions is that you can continue using your valuable applications with no change, maintain your existing operating procedures, cut down on operational costs, and reduce energy consumption. The CHARON AXP family can replace almost every Alpha computer that has ever been manufactured.

CHARON-AXP/SMA for Windows is designed to replace the lower end of the **Small and Medium Alpha** product range. CHARON AXP/SMA is typically suited to replace the following Alpha systems:

- AlphaServer 300
- AlphaServer 400
- AlphaServer 1000

CHARON-AXP/SMA PLUS has passed the original hardware qualification tests and is recognized by Hewlett-Packard as a valid AlphaServer replacement platform to run OpenVMS or Tru64. HP provides transfer licenses for the Alpha operating system and layered products, so that customers can continue their HP software support contracts without modification.

The Alpha operating system procedures, user interface, network functionality and clustering are indistinguishable from a hardware-based Alpha environment. The virtual system has been extensively tested with the standard OpenVMS and Tru64 software, without software modification of any kind. There is no need for application sources; binary code and data can be copied in the usual manner.

### Base product details

- ◆ Runs on a standard Intel/AMD based system with Windows x64 2003 Server or XP professional installed
- ◆ The CHARON-AXP/SMA PLUS base license provides a virtual Alpha system with 1 CPU and 4 GB of memory.
- ◆ Disk and tape storage are virtual, using container files or physical drives on the host system or on a storage server allowing backup with standard tools.
- ◆ Industry standard Ethernet adapters are used for Local Area Network connection.

### PRODUCT LICENSE KEY

The CHARON USB-type 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.



Salem Automation  
Legacy Systems Virtualization

### Host system requirements

A dedicated Windows 2003 Server Standard Edition or XP host system with two (2) or more hardware CPUs of at least 2 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 is reflected in the Features Matrix. 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*

### Advanced CPU Emulation

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.

### 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

| VIRTUALIZED HW            | VAX4000-108                                                                                                                    | VAX3100-98                                                                                                     | VAX3600/3900                                                                                                                   | MicroVAX II                                                                                                    |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Virtualized CPU           | KA54-A                                                                                                                         | KA56-A                                                                                                         | KA650-A/B<br>KA655-A/B                                                                                                         | KA630-A                                                                                                        |
| Earliest VMS version      | 5.5-2                                                                                                                          | 5.5-2                                                                                                          | 4.6                                                                                                                            | 4.6                                                                                                            |
| Max. virtual memory       | 128 MB                                                                                                                         | 128 MB                                                                                                         | 128 MB                                                                                                                         | 16 MB                                                                                                          |
| SCSI subsystem            | 2 Controllers, each supporting 7 addresses. Using LUN's each address supports 8 similar devices                                | 2 Controllers, each supporting 7 addresses. Using LUN's each address supports 8 similar devices                | No                                                                                                                             | No                                                                                                             |
| SCSI Disks                | Physical SCSI disks or image files                                                                                             | Physical SCSI disks or image files                                                                             | No                                                                                                                             | No                                                                                                             |
| SCSI Tapes                | SCSI tape drives via a SCSI port                                                                                               | SCSI tape drives via a SCSI port                                                                               | No                                                                                                                             | No                                                                                                             |
| Ethernet                  | Up to 5 Ethernet controllers in total. Connections up to 100 Mbps with the PLUS version. The Standard version supports 10 Mbps | 1 Ethernet controller. Connections up to 100 Mbps with the PLUS version. The Standard version supports 10 Mbps | Up to 4 Ethernet controllers in total. Connections up to 100 Mbps with the PLUS version. The Standard version supports 10 Mbps | 1 Ethernet controller. Connections up to 100 Mbps with the PLUS version. The Standard version supports 10 Mbps |
| VAX/VMS clustering        | NI cluster or Shared Disk Cluster with simulated M SCP controllers                                                             | NI Cluster                                                                                                     | NI cluster or Shared Disk Cluster with simulated M SCP controllers                                                             | No                                                                                                             |
| Asynchronous Serial Lines | CXA16, CXB16, CXY08, DHQ11, DHV11, DHW42-AA, -BA, -CA                                                                          | DHW42-AA, -BA, -CA                                                                                             | CXA16, CXB16, CXY08, DHQ11, DHV11                                                                                              | CXA16, CXB16, CXY08, DHQ11, DHV11                                                                              |

### SALEM AUTOMATION CUSTOMERS' TESTIMONIALS:

#### LARGE MID-WEST MUNICIPALITY SENT APRIL 16, 2009

Salem Automation Incorporated provided excellent value, and that the expertise of the engineer who helped us was amazing. I would not want to do another migration without their support. By implementing this solution I'm convinced we avoided significant downtime of key systems (courts and police records) for which no other effective solution was available.

#### MANUFACTURING FACILITY: EMAIL SENT FEBRUARY 17, 2009

I wanted to take this opportunity to express my gratitude for Salem's considerable effort in making the Alpha System swap-over a success. Your extensive knowledge allowed for a smooth transition to the virtual server, and provided us with the correct way to backup our system in the event a restore should be required. It was a pleasure

### For Sales Information, Please Contact:

**Stacy Griffith**  
Southeast Regional  
Sales Assistant  
Winston-Salem, NC  
336-661-0890, ext 102

**Bob Gyles**  
Northeast Regional  
Sales Manager  
Boston, MA  
978-425-2582

**John Mercier**  
Western Regional  
Sales Manager  
Phoenix, AZ  
480-633-5739

E-mail: [charon\\_sales@salemautomation.com](mailto:charon_sales@salemautomation.com)



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