Release notes for Stromasys CHARON-AXP/SMA(+)/Station

Version 2.1.31 (16-May-2011):
Bug fixes:
- Fixed problem caused by new network mode under ndis5 driver.

Version 2.1.30 (05-May-2011):
Changes:
- Modified network mode making 'CHPACK' as default network mode.
- Added license agreement in installation procedure.

Bug fixes:
- Medium changer device can be identified now.
- Fixed problem of pool of request.
- Resolved the problem that emulator crashes when performs format command.
- Fixed the problem of physical serial port.
- Corrected incorrect chip type of network adapter.

Version 2.1.29 (01-Apr-2011):
Changes:
- Added uninstallation guide of SMA(+) in help document.
- Support a new communication mode between emulator and ndis driver, which improves some network performance.
- Updated HASP device driver to the latest version 5.95.

Bug fixes:
- iSCSI disk can be recognized rightly in Tru64.
- Now device type of physical tape can be shown correctly in OpenVMS.
- Errors occur during tape reads is handled correctly.
- Corrected incorrect configuration of LPT device in sample config file.
- Resolved a rare problem that emulator with 2 CPUs crashes during OpenVMS is rebooting.

Version 2.1.28 (20-Aug-2010):
Changes:
- Windows Server 2008 R2 and Windows 7 (64 bit) are now fully supported
- SRM command D SIRR C implemented.
- Booting from the tape implemented.
- Documentation regarding direct SCSI access updated.

Version 2.1.27 (12-Jul-2010):
Changes:
- Documentation updated regarding CD/DVD image support.
- Documentation updated regarding virtual network usage with Microsoft Loopback Adapter.

Bug fixes:
- Wrong error message that appeared on successful installation of CHARON-AXP has been removed on Windows 7.
- Appending to a log file now functions properly.
- The correct message is displayed when CTRL-P is pressed.
- PuTTY now starts automatically when configured to do so as part of a

windows service that is automatically started.
- PuTTY now pops up properly when the emulator is started from the command line.
- on Windows Server 2008 R2 and Windows 7 PuTTY now pops up properly when the emulator is started over RDP.
- A false error message is no longer displayed when installing Charon-AXP/SMA(+) on Windows Server 2008 (R2) and Windows 7.

Version 2.1.26 (07-Jun-2010):
Bug fixes:
- MKimage utility now functions properly
- Any user in the Administrators group can now start Charon-AXP on Windows Server 2008(R2) and Windows 7.
- The console command "set bootdef_dev <device> now works properly.
- PuTTY now pops up automatically on Windows Server 2008, Windows Vista, Windows 7, and Windows Server 2003.
- The SRM console command "continue" now functions properly.
- Fixed vtape file locking problem seen on Tru64 UNIX.
- Included the current hasp key driver, haspdinst.exe.

Version 2.1.25 (22-Mar-2010):
Changes:
- SMA has been qualified for Windows Server 2008.
Bug fixes:
- Fixed ndis6 driver bug (memory leak).

Version 2.1.24 (19-Oct-2009):
Changes:
- Only display VMS bugcheck in the logfile if it is fatal.
- Added the signed NDIS6 driver.
- The disk caching defaults to off.

Version 2.1.23 (07-Sep-2009):
Changes:
- Uniform configuration files between SMA and the other emulators.

Version 2.1.22 (08-Jul-2009):
Changes:
- Charon-AXP/SMA(+) is now Windows 2008 ready.

Version 2.1.21 (22-Jun-2009):
Changes:
- Changed the licensing to eliminate the C2V files.

Version 2.1.20 (04-May-2009):
Bug fixes:
- Fixed problem SCSI Passthrough tapes.

Version 2.1.19 (02-Apr-2009):
Bug fixes:
- Fixed problem BYPASS driver.
- Fixed modem status signals within serial lines.

Version 2.1.18 (17-Mar-2009):
Bug fixes:
- Fixed problem with queue instructions.
- Fixed problem with response queues.

Version 2.1.17 (06-Feb-2009):
Bug fixes:
- Fixed problem with USB floppy drives.
- Fixed problem with licensing.

Version 2.1.16 (30-Jan-2009):
Bug fixes:
- Fixed problem with USB floppy drives.
- Fixed problem with invalidation of DIT pages.

Version 2.1.15 (27-Jan-2009):
Bug fixes:
- Fixed problem with invalidation of DIT pages.

Version 2.1.14 (13-Jan-2009):
Bug fixes:
- Fixed check when opening the logfile within the service.

OS Support for each model:

Model	CPU count		OS Support	
Model "DEC3000"	1	CPU	VMS 6.2-1H3 and Higher	Tru64 3.2C and Higher
Model "AS200"	1	CPU	VMS 6.2-1H3 and Higher	Tru64 3.2C and Higher
Model "AS250"	1	CPU	VMS 6.2-1H3 and Higher	Tru64 3.2C and Higher
Model "AS300"	1	CPU	VMS 6.2-1H3 and Higher	Tru64 3.2C and Higher
Model "AS500"	1	CPU	VMS 6.2-1H3 and Higher	Tru64 3.2C and Higher
Model "AS600"	1	CPU	VMS 6.2-1H3 and Higher	Tru64 3.2C and Higher
Model "AS800"	1	CPU	VMS 6.2-1H3 and Higher	Tru64 3.2C and Higher
Model "AS1000"	1	CPU	VMS 6.2-1H3 and Higher	Tru64 3.2C and Higher
Model "AS1200"	1	CPU	VMS 6.2-1H3 and Higher	Tru64 3.2C and Higher
Model "AS1200"	2	CPU	VMS 7.1-2 and Higher	Tru64 4.0F and Higher
Model "AS2000"	1	CPU	VMS 6.2-1H3 and Higher	Tru64 3.2C and Higher
Model "AS2000"	2-4	CPU	VMS 7.1-2 and Higher	Tru64 4.0F and Higher
Model "AS2100"	1	CPU	VMS 6.2-1H3 and Higher	Tru64 3.2C and Higher
Model "AS2100"	2-4	CPU	VMS 7.1-2 and Higher	Tru64 4.0F and Higher
Model "AS4000"	1	CPU	VMS 6.2-1H3 and Higher	Tru64 3.2C and Higher
Model "AS4000"	2	CPU	VMS 7.1-2 and Higher	Tru64 4.0F and Higher
Model "AS4100"	1	CPU	VMS 6.2-1H3 and Higher	Tru64 3.2C and Higher
Model "AS4100"	2-4	CPU	VMS 7.1-2 and Higher	Tru64 4.0F and Higher
Model "DPW"	1	CPU	VMS 6.2-1H3 and Higher	Tru64 3.2C and Higher
Model "DMCC"	1	CPU	VMS 6.2-1H3 and Higher	Tru64 3.2C and Higher
Model "AS8200"	1	CPU	VMS 6.2-1H3 and Higher	Tru64 3.2C and Higher
Model "AS8200"	2-4	CPU	VMS 7.1-2 and Higher	Tru64 4.0F and Higher
Model "DS10"	1	CPU	VMS 7.1-2 and Higher	Tru64 4.0F and Higher
Model "DS20"	1-2	CPU	VMS 7.1-2 and Higher	Tru64 4.0F and Higher
Model "DS25"	1-2	CPU	VMS 7.1-2 and Higher	Tru64 4.0F and Higher
Model "ES40"	1-4	CPU	VMS 7.1-2 and Higher	Tru64 4.0F and Higher
Model "ES45"	1-4	CPU	VMS 7.1-2 and Higher	Tru64 4.0F and Higher
Model "XP900"	1	CPU	VMS 7.1-2 and Higher	Tru64 4.0F and Higher
Model "XP1000"	1	CPU	VMS 7.1-2 and Higher	Tru64 4.0F and Higher

Version 2.1.13 (07-Jan-2009):
Bug fixes:

- Fixed AS200 Model within the user interface.
- Problem when using a bypass disk as a quorum disk, updated Bypass Driver to version 1.4
- Makedisk displayed incorrect sizes

Version 2.1.12 (19–Dec–2008):
Changes:
- Added partial support for SCSI pass through for ATAPI devices.
- Added support for disk geometry parameters. These are advanced options that can lead to disk corruption, when used incorrectly. See the manual for usage.
- Added support for disk vendor/product/revision parameters. See the manual for details.

Bug fixes:
- SCSI pass through for unit with sector size other than 512 did not work.
- Tsunami emulator crash with 256MB memory.
- TOY clock in unix always gives "preposterous time"
- When the TOY clock filer removed, Windows time is used instead of zero time. With zero time VMS would ask to input the time.
- External interrupt delivery was sometimes inefficient.
- RAM disk did not work

Version 2.1.11 (29–Sep–2008):
Changes:
- Changed Installer to display the version number.

Version 2.1.10 (16–Sep–2008):
Changes:
- Switched to new HASP runtime (version 5.50).

Version 2.1.9 (07–Sep–2008):
Changes:
- Changed floating point routines.

Version 2.1.8 (14–Aug–2008):
Bug fixes:
- Incorrect thread affinity fixed.

Changes:
- Added extra licensing information.

Version 2.1.7 (04–Aug–2008):
Changes:
- Changed Manufacturer name to Stromasys.
- Changed Icons to the new CHARON Icons.
- The SRM wil now display the actual tape and disk information.
- Fixed detection of CDROM devices/virtual images.
- Added a new tool hasp_hl_view to view the contents of the license key.
- New Bypass driver included (v1.2) which supports VMS6.2.
  This Bypass driver cannot be used for booting VMS6.2.

Version 2.1.6 (17-Jul-2008):
Bug fixes:
- Physical serial lines parity setting fixed.
- PBXDA parity setting fixed.
- Fixed loading of PBXDA for slots 1-4, when using more than 4 controllers.
- Fixed handling of DTR/RTS and stopbits for physical serial lines
- Fixed handling of line characteristics for tta0

Version 2.1.5 (17-Jun-2008):
Changes:
- In the release 2.0.x the file tape was auto-loaded. That means that if the file is available it is loaded automatically. In earlier 2.1.x this functionality was disabled because it caused problems by multi-volume backups. Namely, if the tape size reaches maximum, it unloads the tape and immediately checks for new volume load. It sees the same tape file and overwrites it with the new volume. In this release the user has an option to control autoload. By default we chose the safe variant, for example, MKA500.autoload=off. Users that are sure that there is no multivolume backup done and that the tape file does not overflow the disk can explicitly specify the auto load option, for instance, MKA500.autoload=on.
- VMS Bugcheck, halt and invalid operations conditions are now logged.
Bug fixes:
- SMP DIT page invalidation fixed. This caused random crashes.
- DMA DIT invalidation for disk devices. This caused random crashes.
- SRM crash command does not work after halt instruction.

Version 2.1.4 (13-May-2008):
Changes:
- Support for SMP ES40 for early VMS versions, starting from 7.1-2.
- Added support for a shared memory based network backend. This network can be used to connect emulator instances running on the same host. Configurations example:

  ```
  load 1 EW
  EWA0.iface="memory"
  EWA0.macaddr="aa-00-04-00-00-10"
  ```

  The address must be unique for each instance. The address may be omitted. A unique one will be assigned automatically.

Version 2.1.3 (15-Apr-2008):
Bug fixes:
- Corrected SoftTrap handling.

Version 2.1.2 (11-Apr-2008):
Changes:
- We now support the following models:
  AlphaServer 300   AS300

```
        AlphaServer 800                    AS800
        AlphaServer 1000                   AS1000
        AlphaServer 1200                   AS1200
        AlphaServer 2000                   AS2000
        AlphaServer 2100                   AS2100
        AlphaServer 4000                   AS4000
        AlphaServer 4100                   AS4100
        AlphaServer DS10                   DS10
        AlphaServer DS20                   DS20
        AlphaServer DS25                   DS25
        AlphaServer ES40                   ES40
        AlphaServer ES45                   ES45
        AlphaServer 8200                   AS8200
        AlphaServer 8400                   AS8400
        AlphaStation 200                   AS200
        AlphaStation 250                   AS250
        AlphaStation 500                   AS500
        AlphaStation 600                   AS600
        DIGITAL Personal Workstation au    DPW
        AlphaStation XP1000                XP1000
        AlphaStation XP900                 XP900
        DIGITAL 21164 PICMG SBC            DMCC
        DEC 3000 Model 400                 DEC3000
```
Bug fixes:
- Corrected license units.
- PC alignment bug in REI.
- SMP crash fixed.
- OPA freezes when using certain terminal emulators.
- CPU slot release when the emulator isn't started successfully.
- DEC 3000 is now based on the eb164 PCI emulator and not the TurboChannel anymore. DEC 3000 now supports VMS 6.2-1h3 and up, and DUnix 4.0 and up.
  If the original DEC 3000 with turbo channel is required Charon-AXP 2.0.10 must be used.

Version 2.1.1 (22-Feb-2008):
Changes:
- A new version (V 1.2) of the IDLE mechanism is available and it is advised to upgrade to this version.
Bug fixes:
- Crash when running VMS monitor system, Floating point bug.
- Removable disk support for bypass disks.
- Error handling when using more than 31 PCI slots.
- VIRBND was enabled. Now disabled.
- Incorrect fault-on-execute failing address.
- DEC3000 reboot problems.
- CPU attention check missing.
- PBXDA/DIGI/EPCA caused system hang-up.
- Service crash when starting without a key.
- Clearing of SRM variables using set <varname> "".

Version 2.0.1 (03-Dec-2008):
Bug fixes:

- The configurations within the User Interface are sorted on the
  configuration nam.

Version 2.0.0 (18-Dec-2007):
Changes:
- CPU performance improvements. The performance figures highly depend on
  the application. Integer arithmetic intensive applications can gain up
  to 100% on Intel and up to 50% on AMD. The floating point performance
  increase is about 5-10%.
- The disk container file caching is now by default disabled. This makes
  writes more reliable in case of power failures and enables shared
  access in a cluster environment. To enable caching use read_cache and
  write_cache options. Also, the container file memory mapping option
  improves performance. However, by power failures some of the write data
  might be lost. Example with no cache and with sharing:

  ```
  load DKA0
  DKA0.image="my.vdisk"
  DKA0.shared=on
  DKA0.read_cache=off     # default
  DKA0.write_cache=off    # default
  DKA0.mapped=off         # default
  ```
  Example with caching and memory mapping:
  ```
  load DKA0
  DKA0.image="my.vdisk"
  DKA0.read_cache=on
  DKA0.write_cache=on
  DKA0.mapped=on
  ```
- SCSI pass through now uses the image option instead of the device
  option to specify the mapping. For instance:
  ```
  load GKA300
  GKA300.image="\\.\Scsi1: 0 1 0"
  ```
- Multiple instances of the emulator on a single machine are supported.
  Please see the documentation for details.
- Configuration file is made case-insensitive.
- Idle package updated. From now on it supports all VMS from 6.2. The
  idle driver resides on the disk image drivers.vdisk included in the
  emulator kit.
- Network card model can be specified. You can choose from DE435
  (default), DE450, and DE500. For instance,
  ```
  load 1 EW DE500
  ```
- Multiple PBXDA devices are now supported. The driver limit is 7.
  Example:
  ```
  load 7 TX
  ```
- Special fast IO facility called "disk IO bypass" is added. It
  significantly increases disk IO throughput. The bypass requires
  installing a special driver in VMS. The driver resides on the disk
  image drivers.vdisk included in the emulator kit. Please see manual for
  more details.

Bug fixes:
- SCSI pass through tapes and Windows tape did not work in Digital UNIX.
- SRM boot* and booted* variables were not correctly used in system
  restarts. For instance, this caused DU installer to reboot from the CD
  instead of the just installed disk.
- Long network interface names caused overflow of some logging buffers.

Known problems:

- File tape does not implement the size limit, nor does it check for disk overflow. Essentially it implements an infinite tape. The behavior in case of disk overflow is unpredictable.

Version 1.2.2 (28-Sep-2007):

Bug fixes:
   - SRM auto_action and boot_dev bug fixed.

Version 1.2.1 (30-Aug-2007):

Bug fixes:
   - Fixed initialization of the serial lines.
   - Fixed setting of the baud rate.
   - DEC3000: Reinitialized console after leaving the OS.

Version 1.2.0 (23-Aug-2007):

Changes:
   - Extended SRM console support.
   - Charon-AXP DMCC, Charon-AXP DEC3000 and Charon-AXP AlphaServer have been merged within a single product.
   - Digital Unix/Tru64/OSF1 beta level support for versions 3.2C to 5.1B
   - Changes to the configuration file:
      - The system type is given with the line model <system type>

         Example   model AS4000

      - The network adapters are renamed from EWx to EWx0.

      - The set_env SRM parameters settings are no longer needed. This functionality is provided with the new SRM console.

      - Start of the emulator and SRM console using the command power on

Bug fixes:
   - Real SCSI disk support with Tru64.

Version 1.1.7 (24-Jul-2007):

Minor bug fixes.

Version 1.1.6 (23-Jul-2007):

Changes:
- Now not only time but also the date is logged

Bug fixes:
- Issues with memory above 4GB. Now up to 8GB is supported.

Version 1.1.5 (26-Jun-2007):

Bug fixes:
- Bugcheck in x86asm.cxx:127. Code buffers are too small for some

applications.

Version 1.1.4 (01-Jun-2007):

Changes:
  - Switched to HASP HL 5.22 driver.

Version 1.1.3 (30-May-2007):

Changes:
  - Emulator internal memory layout changed because to support some
    configurations.
  - Putty release switched from 0.58 to 0.60

Bug fixes:
  - Disk images not multiple of 512 bytes caused bug check. Now truncated.

Version 1.1.2 (11-May-2007):

Bug fixes:
  - PAL IMB bug fixed.
  - SRM variable bugs fixed.
  - HWRPB bugs fixed.
  - SCSI selection with the target id equal to the initiator id bug fixed.
  - Some unimplemented SCSI messages implemented.
  - Some unimplemented ISP1040 commands implemented.
  - The NCR SCSI controller message handling bugs fixed.
  - Problems accessing memory above 4GB.

Version 1.1.1 (27-Apr-2007):

Changes:
  - A list of known disk geometries added. The list includes geometries for
    all supported disk image file sizes. This should fix some geometry
    related problems. NOTE: In this release the known vendor and product
    ids are still not passed to VMS. So VMS still displays some fake disk
    name. This will be fixed in the near future.
  - Loaded but unspecified network interfaces are mapped to a dummy.
    Network interfaces specified but not found cause an error and stop the
    emulator.

Bug fixes:
  - Removable devices sometimes do not see new medium.
  - Sometimes CDROM read incorrect data.
  - Various SRM bugs.

Version 1.1.0 (13-Apr-2007):

Changes:
  - Reworked the disk device recognition mechanism. For instance, the
    earlier version did not support DVD and USB devices with changeable
    media. This version should work fine with any windows disk device.
    Rewritable and write-once functions are still not supported.
  - Disk geometry for file and memory mapped disks changed to fit VMS-
    supported geometry of spt*tpc*cyls ~ byte*byte*word.
  - Accelerated the disk Physical Drive IO for disks with the blocks size
    of 512 bytes. This does not include the CD/DVD drivers, thus, which

have block size of 2k.
- Accelerated the PCI emulation.
- Memory mapping reworked. Now the emulator uses a fixed amount of memory for the emulated pages. The memory is mapped at fixed address.
- Emulator now stops when it cannot map disks, tapes or Ethernet devices.
- Since the introduction of the Asynchronous DIT (Dynamic Instruction Translation) the CPU performance degraded due to the synchronization overhead. Tuned the performance back to the original value.
- Improved the DIT code page reuse by implementing the last-recently used algorithm.
- Changed the thread affinities. The emulator CPU thread now runs on the host CPU1, and the emulator DIT thread runs on CPU0. The CPU1 has less chance to run Windows code, which improves the performance.

Bug fixes:
- CPU multiplication with overflow bug fixed.
- CPU CVTTQ/SVI overflow bug fixed. Integer register numbers where marked as changed instead of the floating pointer registers.
- Windows tape device mapping fixed: the verification phase of backup was too slow.
- DEC3000 sometimes bugchecks when the tape loading takes long. This is because some connected (non-disconnected) SCSI command implementation exceeds the limit of the NCR driver (e.g. TEST UNIT READY). Fixed by making the tape status update asynchronous.
- The serial console (OPA0) did not support setting of the line characteristics like baud rate.
- Ethernet shared mode emulated permanent address was the same as the real one. This prevents working of TCP/IP in the emulator and in Windows. Now the emulator returns permanent MAC address which is equal to the real permanent MAC address with the last two octets incremented by one. Note that the emulated permanent MAC address can be explicitly specified by the macaddr option.
- The emulator showed non-exiting PCI devices because the invalid PCI access returned -1 instead of generating the machine check.

Version 1.0.22 (07-Mar-2007):

Changes:
- Added BETA-level support for windows tape device mapping. In this case the emulator works with the tape not via SCSI PASS THROUGH mechanism, but via Windows tape API functions.
    o Configuration example
        ▪ Load MKA500
        ▪ MKA500.image="\\.\Tape0"
o   Advantages: Not only SCSI tapes supported by VMS can be used. For instance, USB tapes can be used. For SCSI tapes, the user does not have to know the SCSI id of the tape: if there is only one tape in the system, its name is \\.\Tape0. Thus, it is easier to configure.
o   Disadvantages: there is an emulation and windows layer between VMS and the hardware that can compromise performance and block access to some advanced tape functionality.
- Added BETA-level support for memory mapped disk images. Usually the emulator uses the file read/write operations to transfer data from/to the disk image. With memory mapping option the emulator maps the image file into the emulator process memory and uses memory reads/writes. In this case Windows takes care of flushing the memory to the disk.
    o Advantages comparing to the disk image file IO: performance

improvement. We measured ~20% improvement with backup /image/verify.
- o Disadvantages: less reliable with respect to data integrity by power failures or crashes.
- o Configuration is the same as for the usual mapping except that the "mapped" has to be set. By default the disk images are not memory mapped. Configuration example:
    - ▪ Load DKA0
    - ▪ DKA0.image="my.vdisk"
    - ▪ DKA0.mapped=yes

Bug fixes:
- – Emulator was reporting incorrect disk geometry: one sector too many. This caused failures reading/writing the last sector.

Version 1.0.21 (20–Feb–2007):

Changes:
- – Added support for OpenVMS remote boot via MOP.
    - o Use "boot EWA" to boot from EWA network card and BOOT_FILE SRM variable to specify boot file if needed.
    - o On DEC3000 use boot ESA or ECA, ECB, ECC.
- – Station MAC address emulation is changed. This change was needed to make the remote boot identification possible.
    - o The emulated permanent address is equal to the real permanent address. It can be redefined like EWA.macaddr="00–01–02–03–04–05"
    - o The emulator starts with the physical address equal to the permanent address.
- – Extra MAC address changing mode added to the system: EXCLUSIVE_ASYNC. This mode used asynchronous address change. While the address is changes the emulator does not receive packets and drops the send requests. The emulator is not blocked waiting for address change to complete. Please check the documentation.
    - o No promiscuous mode needed for the address change. This is beneficial for busy networks where many promiscuous packets come across.
    - o Some adaptors (Broadcom NetXtreme Gigabit Ethernet adaptor) require a very large time to change the MAC address, more then 20 seconds. Clusters may timeout with such an interval. Please consider the EXCLUSIVE_DELAYED mode instead.
    - o EXCLUSIVE_DELAYED mode remains default.
- – Terminal emulator processes are now stopped automatically. To avoid change this behavior specify OPA0.stop_process=no
- – Terminal emulator configuration options changed:
    - o OPA0.baud_rate option removed because the speed is selected by VMS.
    - o OPA0.emulate_speed option is added to turn of the speed emulation delays for the telnet/socket lines off.
- – BETA–level support for Digital Unix added. Known problems:
    - o DEC3000: Only 4.x versions are support. Version 3.2 does not work yet (Versions 5.x do not run DEC3000).
    - o Direct SCSI mapping for disks does not work. It works for tapes.
    - o SRM functionality is more limited then that of VMS. In particular reboot does not work properly.
    - o Remote boot is not supported.

Bug fixes:
   - DEC3000 mapping of TTA1 to a physical port does not work.
   - Serial line characteristics are not set on the physical lines.

Version 1.0.20 (17-Jan-2007):

Changes:
   - DEC3000: SCSI disconnect-reconnect functionality implemented. This
     enables usage of slow physical devices like tapes and improves the IO
     response time on system with high IO load.
   - CDROM locking support added.
   - Added UI menu option to edit the current configuration file.
   - Added logging of the license key information at the emulator startup.
   - Socket serial line input speed control added. This is needed to make
     copy-paste to the terminal emulator possible.
        o To enable (default) use
             ▪ OPA0.baud_rate=9600
        o To disable use (maybe needed for binary lines)
             ▪ OPA0.baud_rate=0

Bug fixes:
   - DEC3000 physical tape support.
   - Serial line bugs: timeout and corrupted output.
   - SCSI pass-through: support for large transfers added.
   - IDLE support fixed: sometimes the emulator hung when using IDLE.

Known bugs:
   - Serial line characteristics are not passed correctly from VMS to the
     host serial line (COM port). This is important for hardware COM port
     mappings. Workaround: use the Windows command prompt "mode" command to
     set the COM port characteristics that match those used by VMS.
   - In some cases the SRM console Ctrl-P/boot command combination does not
     work as expected. Workaround: stop the emulator and start it again with
     the new boot argument.
   - DEC3000 SCC0.B (TTA1) port does not work correctly.
   - Network boot is not implemented.

Version 1.0.19 (08-Dec-2006):

Bug fixes:
- On certain types of the host systems the emulator hangs.

Version 1.0.18 (30-Nov-2006):

Bug fixes:
- RDB performance on the emulator is very poor. The emulator had this problem
with on-the-fly-generated code.

Version 1.0.17 (14-Nov-2006):

Bugs fixed:
 - Cluster reboot fails.

Version 1.0.16 (07-Nov-2006):

Bugs fixed:

– Virtual tape is too slow.
  – Disk offline on CDROM attached to ISP1040 controller.
  – Emulator crashes with 1536MB emulated memory.
  – Console output is not complete in SRM console mode.
  – Invalid DECNET address output removed.
Known problems:
  – Cluster node reboot fails. Workaround: shutdown the emulator, stop it,
    and start again.
  – Cannot boot from a different disk after halting. Workaround: stop the
    emulator, start it and boot again from a different disk.
  – SRM variable AUTO_ACTION is not implemented correctly.

Version 1.0.15 (30–Oct–2006):

Bugs fixed:
  – DEC3000: a disk goes offline when using two SCSI controllers.
  – PCI based systems: VMS 7.1, 7.1–1h2 does not install.
  – Incorrect virtual tape file mark positioning.
  – Seek errors with disks mapped to real disks (CDROM).
  – PBXDA dir hangs.
Known problems:
  – Virtual tape is too slow.

Version 1.0.14 (11–Oct–2006):

Bug fixes:
   – DEC3000 problem booting some VMS releases solved.
   – Installer problem with removing previous version solved

Version 1.0.13 (10–Oct–2006):

Bug fixes:
   – Large block size bug for virtual tape.
   – Read-only virtual disk image files did not mount read-only causing
     problems. Now read-only image files are exposed as CD's.
Changes:
   – Early VMS version support added
         o AS1000: 6.2–1h3 and later
         o AS4000: 6.2–1h3 and later
         o DEC3000: 6.1 and later
         o Station: 6.2–1h3 and later
   – Multi-LUN support for SCSI devices. See the help for details.

Version 1.0.12 (11–Sep–2006):

Changes:
   – telnet serial line support has been split in two parts:
         o "telnet" serial line – ASCII based connection to a telnet client
         o "socket" serial line – RAW BINARY mode TCPIP connection

Version 1.0.11 (08–Sep–2006):

Fixed bugs:
   – Virtual 2nd mount problem. Tape dismount unloaded the tape and the tape
     could not be loaded any more. Now the tape is automatically loaded by
     the next mount command.

Version 1.0.10 (06-Sep-2006):

Fixed bugs:
    - Virtual tape READ POSITION bugs fixed.
Changes:
    - PUTTY is now the default terminal emulator. Putty is a freeware
      terminal emulator included in the CHARON-AXP setup kit.
Known problems:
    - When the emulator exits PUTTY shows an error box: "Network Error:
      Software caused connection abort".
    - Backspace and delete do not work in the SRM console.

Version 1.0.9 (31-Aug-2006):

Fixed bugs:
    - Virtual tape bugs fixed in DEC3000.

Version 1.0.8 (29-Aug-2006):

Changes:
    - Added the dongle key update utility (hasprus.exe) to the emulator UI
menu.
Fixed bugs:
    - Bug in writing the second backup on a virtual tape fixed for AS4000 and
      AS1000 products
    - Fixed the bug: UETP test does not work for dummy network mapping.
    - Bugs in the installer.
Known problems:
    - Virtual tape still causes problems on the DEC3000 product.

Version 1.0.7 (04-Aug-2006):

Changed:
    - Switched from PUTTY to HYPERTERM as the default terminal emulator. The
      problem with PUTTY is that the "set password" does not properly work.
      Please do not forget to install HYPERTERM if not installed and check
      that the path to it is correct in the configuration file.
Fixed bugs:
    - Loopback mode is implemented for the network cards.
    - UETP disk uetp passes.
    - UETP network test passes.
Known problems:
    - UETP disk test for DEC3000 on a multi-cpu system hangs.
    - UETP tape test does not pass.

Version 1.0.6 (31-Jul-2006):

Changes:
    - Support for the terminal_emulator has been dropped. Instead PuTTY
      terminal is now used as the default terminal emulator.
Fixed bugs:
    - SCSI mode sense bugs fixed.
    - DEC3000: VMS 6.2 and 6.1 support added
Known problems:
    - DEC3000: IO is still synchronous.
    - Multiple backups on single tape fail for virtual tapes.

Version 1.0.5 (16-Jun-2006):

Fixed problems:
   – Problem with installing VMS 7.1 from CD (NOTIFY ACK log message)
   – Other minor bug fixes

Version 1.0.4:

Changes:
   – The licensing changed. You probably need a dongle update to work with
     the new version. Contact us for the update.
   – The installation procedure changed
   – Minor bug fixes

Version 1.0.3:

Fixed problems:
   – Bugcheck in DE500 using sysman on VMS8.x. Now the emulator does not
     crash. However, sysman raises an error on the network interface because
     MII is not implemented. The network is operational.
   – Network adaptor naming problem with names like "Realtek #2" is solved.
   – Network mac address for shared mode is now generated automatically from
     the real address by adding 1 to the two last bytes of the address.
   – The TX device is mapped on a lower slot because it does not work on
     higher slots.

Version 1.0.2:

Fixed problems:
– Telnet serial lines did not start the terminal emulator specified by the
command option.
– The tray menu of the emulator Control did not disappear when clicked
outside.
– Cannot open pipe error message.
– boot_osflags default value was incorrect.

Version 1.0.1:

Major changes:
– Devices can be loaded in the configuration file
– The memory size has been made configurable
Fixed problems:
– Telnet serial lines did not allow reconnection.
– Telnet serial lines lost symbols on a multi-CPU.