



CHARON-VAX application note

AN-020 Tape support in CHARON-VAX

Author: Software Resources International

Date: 7 June 2001

The full functionality CHARON-VAX products (not the Personal Editions) support limited magnetic tape emulation and/or connection. There are essentially three ways to deal with tape media in CHARON-VAX:

1. Connecting a SCSI tape drive controller to a SCSI port of the host system and addressing it directly via SCSI commands (“Raw SCSI”).
2. Connecting a SCSI tape drive controller to a SCSI port of the host system and accessing it via its host operating system driver.
3. Converting the information on tape offline to a CHARON-VAX tape image (represented by a disk file) - and vice versa – using the CHARON-VAX MTD utility. During CHARON-VAX operation these tape images are treated as tape drives by the emulated CHARON-VAX tape controller.

The second method can only be used if a driver is available for the tape unit on the particular host system. This is usually not the case when a ‘legacy’ unit is connected. For instance, there is no driver for the TKZ50 under Windows NT4. To accommodate older unsupported tape drives, CHARON-VAX and the MTD utility implement as an alternative direct device control via SCSI commands. The choice between the first and the second method is made in the CHARON-VAX configuration file through the way in which the device is specified, as described in the CHARON-VAX manual.

Using method three has advantages. Tape image files have a universal format across host operating systems; they can be made with the standalone utility MTD under one operating system and copied for use with CHARON-VAX on another host operating system. Also, tape image files are free from physical device limitations like mechanical delays.

Physical tape drives and their drivers (if they exist) vary widely in specifications, and a specific tape unit is not guaranteed to work with CHARON-VAX on a particular host configuration. In particular older devices and multi-volume operations are very sensitive to host system characteristics. To provide recommendations for tape use in CHARON-VAX, Software Resources International tests tape operations with both tape images and a TLZ07 tape drive, which supports the common 4 mm DAT tape standard. This application note list the test results for the platforms on which CHARON-VAX is currently available (WNT4, W2000, OpenVMS/Alpha and Linux/Intel) and will be updated when new functionality is tested.

1. Tape unit with direct SCSI control.

Target OS:OVMS/VAX 7.2, Tape implementation: Physical tape using raw SCSI interface, Tape drive: TLZ07, Processor model: KA650

	Short operation description	Command entered (if applicable)	WNT	W2K	OVMS	Linux
Initialization	init (blank tape)	init mua0: test	Ok	Ok	N/A	N/A
	init (initialized tape)	init mua0: test_2/over=exp	Ok	Ok	N/A	N/A
	mount	mount mua0:/over=(id,exp)	Ok	Ok	N/A	N/A
	dismount/nounload	dismount/nounload mua0:	Ok	Ok	N/A	N/A
	dismount/unload	dismount/unload mua0:	Ok	Ok	N/A	N/A
	tape initialized under CHVX is recognized on VAX		Ok	Ok	N/A	N/A
	tape initialized on VAX is recognized under CHVX		Ok	Ok	N/A	N/A
Copying files to/from tape	copy disk->tape	copy /log dua0:[000000...]*.txt mua0:[000000]	Ok	Ok	N/A	N/A
	copy tape->disk	copy /log mua0:[000000]*.txt dua0:[tst]	Ok	Ok	N/A	N/A
	files copied from CHVX are accessible on VAX		Ok	Ok	N/A	N/A
	files copied from VAX are accessible under CHVX		Ok	Ok	N/A	N/A
Backup operations	backup disk->tape	backup/log/noassist/ignore=label dua0:[000000...]*.txt mua0:[000000]test.bck/rewind	Ok	Ok	N/A	N/A
	backup tape->disk (restore)	backup/log/noassist/ignore=label mua0:[000000]test.bck/rewind dua0:[tst...]	Ok	Ok	N/A	N/A
	saveset created under CHVX is accessible on VAX		Ok	Ok	N/A	N/A
	saveset created on VAX is accessible under CHVX		Ok	Ok	N/A	N/A
	image backup disk->tape	backup/image/log/noassist/ignore=label dua1: mua0:[000000]test.bck/rewind	Ok	Ok	N/A	N/A
	image backup tape->disk (restore)	backup/image/log/noassist/ignore=label mua0:[000000]test.bck/rewind dua1:	Ok	Ok	N/A	N/A
Misc	standalone backup tape creation	@sys\$update:stabackit	Ok	Ok	N/A	N/A
	booting from standalone backup tape		Ok	Ok	N/A	N/A
	booting from MDM tape		Ok	Ok	N/A	N/A
Multivolume backup operations	booting from ULTRIX distribution tape		Ok	Ok	N/A	N/A
	multivolume backup		---	---	N/A	N/A
	multivolume restore		---	---	N/A	N/A

2. Tape unit with host driver.

Target OS:OVMS/VAX 7.2, Tape implementation: Physical tape using driver, Tape drive: TLZ07, Processor model: KA650

	Short operation description	Command entered (if applicable)	WNT	W2K	OVMS	Linux
Initialization	init (blank tape)	init mua0: test	Ok	Ok	Ok	N/A
	init (initialized tape)	init mua0: test_2/over=exp	Ok	Ok	Ok	N/A
	mount	mount mua0:/over=(id,exp)	Ok	Ok	Ok	N/A
	dismount/nounload	dismount/nounload mua0:	Ok	Ok	Ok	N/A
	dismount/unload	dismount/unload mua0:	Ok	Ok	Ok	N/A
	tape initialized under CHVX is recognized on VAX		Ok	Ok	Ok	N/A
	tape initialized on VAX is recognized under CHVX		Ok	Ok	Ok	N/A
Copying files to/from tape	copy disk->tape	copy /log dua0:[000000...]*.txt mua0:[000000]	Ok	Ok	Ok	N/A
	copy tape->disk	copy /log mua0:[000000]*.txt dua0:[tst]	Ok	Ok	Ok	N/A
	files copied from CHVX are accessible on VAX		Ok	Ok	Ok	N/A
	files copied from VAX are accessible under CHVX		Ok	Ok	Ok	N/A
	backup disk->tape	backup/log/noassist/ignore=label dua0:[000000...]*.txt mua0:[000000]test.bck/rewind	Ok	Ok	Ok	N/A
Backup operations	backup tape->disk (restore)	backup/log/noassist/ignore=label mua0:[000000]test.bck/rewind dua0:[tst...]	Ok	Ok	Ok	N/A
	saveset created under CHVX is accessible on VAX		Ok	Ok	Ok	N/A
	saveset created on VAX is accessible under CHVX		Ok	Ok	Ok	N/A
	image backup disk->tape	backup/image/log/noassist/ignore=label dua1: mua0:[000000]test.bck/rewind	Ok	Ok	Ok	N/A
	image backup tape->disk (restore)	backup/image/log/noassist/ignore=label mua0:[000000]test.bck/rewind dua1:	Ok	Ok	Ok	N/A
Misc	standalone backup tape creation	@sys\$update:stabackit	Ok	Ok	Ok	N/A
	booting from standalone backup tape		Ok	Ok	Ok	N/A
	booting from MDM tape		Ok	Ok	Ok	N/A
Multivolume backup operations	booting from ULTRIX distribution tape		Ok	Ok	Ok	N/A
	multivolume backup		---	---	---	N/A
	multivolume restore		---	---	---	N/A

3. Using a tape image made with the MTD utility

Target OS:OVMS/VAX 7.2, Tape implementation: Image file, Tape drive: Not applicable, Processor model: KA650

	Short operation description	Command entered (if applicable)	WNT	W2K	OVMS	Linux
Initialization	init (blank tape)	init mua0: test	Ok	Ok	Ok	---
	init (initialized tape)	init mua0: test_2/over=exp	Ok	Ok	Ok	---
	mount	mount mua0:/over=(id,exp)	Ok	Ok	Ok	---
	dismount/nounload	dismount/nounload mua0:	Ok	Ok	Ok	---
	dismount/unload	dismount/unload mua0:	Ok	Ok	Ok	---
	tape initialized under CHVX is recognized on VAX		N/A	N/A	N/A	N/A
	tape initialized on VAX is recognized under CHVX		N/A	N/A	N/A	N/A
Copying files to/from tape	copy disk->tape	copy /log dua0:[000000...]*.txt mua0:[000000]	Ok	Ok	Ok	---
	copy tape->disk	copy /log mua0:[000000]*.txt dua0:[tst]	Ok	Ok	Ok	---
	files copied from CHVX are accessible on VAX		N/A	N/A	N/A	N/A
	files copied from VAX are accessible under CHVX		N/A	N/A	N/A	N/A
	backup disk->tape	backup/log/noassist/ignore=label dua0:[000000...]*.txt mua0:[000000]test.bck/rewind	Ok	Ok	Ok	---
Backup operation	backup tape->disk (restore)	backup/log/noassist/ignore=label mua0:[000000]test.bck/rewind dua0:[tst...]	Ok	Ok	Ok	---
	saveset created under CHVX is accessible on VAX		N/A	N/A	N/A	N/A
	saveset created on VAX is accessible under CHVX		N/A	N/A	N/A	N/A
	image backup disk->tape	backup/image/log/noassist/ignore=label dua1: mua0:[000000]test.bck/rewind	Ok	Ok	Ok	---
	image backup tape->disk (restore)	backup/image/log/noassist/ignore=label mua0:[000000]test.bck/rewind dua1:	Ok	Ok	Ok	---
Misc	standalone backup tape creation	@sys\$update:stabackit	Ok	Ok	Ok	---
	booting from standalone backup tape		Ok	Ok	Ok	---
	booting from MDM tape		Ok	Ok	Ok	---
me backup operation	booting from ULTRIX distribution tape		Ok	Ok	Ok	---
	multivolume backup (set MUA size[0]=409600)	backup/log/noassist/ignore=label dua0:[000000...]*.txt mua0:[000000]test.bck/rewind	Ok	Ok	Ok	---
	multivolume restore (set MUA size[0]=409600)	backup/log/noassist/ignore=label mua0:[000000]test.bck/rewind dua0:[tst...]	Ok	Ok	Ok	---