# SUMMARY N2: RE: Veritas Volume Manager and Solaris 8 disk space problem

***Source:*** http://unix.derkeiler.com/Mailing−Lists/SunManagers/2006−08/msg00262.html

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- *Date*: Thu, 24 Aug 2006 11:39:19 +0200

Hi again,

All the previous posts are included below.

Special thanks to Darren Dunham for the quick and clear answers.
Sorry if i missed thanks to someone in this and preivous posts.

CONCLUSIONS:

1) you can not have more than 1Tb filesystem while you stuck on UFS

2) VxFS can support more than 1Tb filesystems for disk layaout versions 5 and higher. To determine your VxFS version:

$ pkginfo −l VRTSvxfs

examlpe of output:

PKGINST: VRTSvxfs
NAME: VERITAS File System
CATEGORY: system,utilities
ARCH: sparc
VERSION: 3.4,REV=GA03
BASEDIR: /
VENDOR: VERITAS Software
DESC: Commercial File System
PSTAMP: VERITAS−3.4FS−2003−01−29PID=110435−08
INSTDATE: Mar 17 2004 13:54
HOTLINE: (800) 342−0652
EMAIL: support@xxxxxxxxxxx
STATUS: completely installed
FILES: 192 installed pathnames
24 shared pathnames
5 linked files
38 directories
54 executables
5 setuid/setgid executables
16556 blocks used (approx)

after a looooooooooong search through documuoentation (and thanks to indications from Darren Dunham), i could find out that my version of VxFS (3.4) supports disk layaouts versions 1,2, and 4, using version 4 as default. Disk layout version 4 won't support filesistem sizes bigger than 1Tb. Later versions (5 and 6) will do, but newer versions of VxFS are needed. Here you are an excerpt from a document sent to me by Darren Dunham (original link: http://support.veritas.com/docs/248416):

VERITAS File System disk layout version 6 supports the creation of file systems up to 256 terabytes.

VERITAS File System disk layout version 5 supports the creation of file systems up to 32 terabytes.

VERITAS File System disk layout version 4 supports the creation of file systems up to one terabyte.

3) Then, if you have a device like the 3510, with several disks wich can give you more than 1Tb all together, you need to split them in logical disks of smaller sizes and mount them as different filesystems unless you have (or you can migrate to) a VxFS version with the newer disk layout versions or improved filesystems like ZFS (instead of UFS).

This is important to take into account prior the adquisition of such storage devices.

My 3510 gives me now two smaller filesystems (800 Gb and 500 Gb) which i mount in different folders, not the ideal situation as i have to deal with soft links up and down, but sitll trying to improve the situation (i'm studynig the posibility to migrate to Solaris 10).

Many thaks to you all,
Pere blay

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Hi,

This is the first approach to the problem... (original post at the end).

Thanks for the very quick answers of Keven Sparling, Bobby Smith, Johan Hartzenberg, Darren Dunham, Jane Lecher, Andrey Borzenkov (and sorry if i did not spell the names properly :P)

Following their suggestions, here you are a few more info about the partitioning (which i hope will also be usefull as a fisrt 'handout' of these kind of commands for newbies like me):

This is the partition table ('format' output):
−−−−−−−−−−−−−−−−−−−−−−−
Current partition table (default):
Total disk cylinders available: 28142 + 2 (reserved cylinders)

Part Tag Flag Cylinders Size Blocks
0 root wm 0 − 0 1.99GB (1/0/0) 4173440
1 swap wu 1 − 1 1.99GB (1/0/0) 4173440
2 backup wu 0 − 354 708.02GB (355/49/64998) 1484831488
3 unassigned wm 0 0 (0/0/0) 0
4 unassigned wm 0 0 (0/0/0) 0
5 unassigned wm 0 0 (0/0/0) 0
6 usr wm 2 − 354 704.04GB (353/49/64998) 1476484608
7 unassigned wm 0 0 (0/0/0) 0
−−−−−−−−−−−−−−−−−−

And this is the output of prvtoc:
−−−−−−−−−−−−−−−−−−

prtvtoc /dev/rdsk/c4t44d0s2

* /dev/rdsk/c4t44d0s2 partition map
*
* Dimensions:
* 512 bytes/sector
* 65210 sectors/track
* 64 tracks/cylinder
* 4173440 sectors/cylinder
* 28144 cylinders
* 28142 accessible cylinders
*
* Flags:
* 1: unmountable
* 10: read−only
*
* Unallocated space:
* First Sector Last
* Sector Count Sector
* 4173440 4173440 8346879
*
* First Sector Last
* Partition Tag Flags Sector Count Sector Mount Directory
2 5 01 0 1484831488 1484831487
3 15 01 0 4173440 4173439
4 14 01 8346880 1476484608 1484831487
−−−−−−−−−−−−−−−−

The number of blocks in c4t44d0s2
(1476484608) is consistent with the 704 Gb size.
It's clear that Solaris 8 is seeing 704 Gb and it's not a VXvm issue.

I googled before posting, but i must apologize becouse after googling a while
again i could find out that the filesystem size limit in Solaris 8 seems to
be 1TB, as some of you pointed to me (someone pointed out that it's 800 Gb).

Just for completion, this is the output of 'vxprnit −ht':
−−−−−−−−−−−−−−
dg ArchiveT3 default default 108000 1031730160.1848.milkyway

dm Archive1 c7t1d0s2 sliced 16383 565706752 −
dm Archive2 c6t1d0s2 sliced 16383 565706752 −
dm Archive3 c4t44d0s2 sliced 524288 1476484608 −

v archive − ENABLED ACTIVE 1131413504 SELECT archive−01
fsg
en
pl archive−01 archive ENABLED ACTIVE 1131413504 STRIPE 2/256 RW
sd Archive1−01 archive−01 Archive1 0 565706752 0/0 c7t1d0
ENA
sd Archive2−01 archive−01 Archive2 0 565706752 1/0 c6t1d0
ENA

v archive2 − ENABLED ACTIVE 1472200704 SELECT −
fsgen
pl archive2−01 archive2 ENABLED ACTIVE 1473224320 CONCAT − RW
sd Archive3−01 archive2−01 Archive3 0 1473224320 0 c4t44d0
ENA
−−−−−−−−−−−−−−

The new file system is 'archive2', lying in the logical disk Archive3
(c4t44d0s2) created from 6 disk drives within the SE 3510.

POSSIBLE SOLUTION:
It seems that the smarter action to take is to split the disk space in the
SE 3510 in two or more LUNS of smaller size and later on create a big volume
by adding these all LUNS together under VXvm.

I'll report on the solution once i finish the setup and show if it worked :)
(then, a SUMMARY N2 will follow ;) )

Thanks you all!!
Cheers,
Pere

ORIGINAL POST
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Hi,

This is my system (output from 'uname'):

SunOS milkyway 5.8 Generic_117350−38 sun4u sparc SUNW,Sun−Fire−880

I have Veritas Volume Manager 3.2 to manage my filesystems. We have added a Sun StorEdge 3510 very recently with 6x300Gb disks in a RAID_5 configuration.

From them, then, only 5 become available as available storage space and an

effective space of around 250Gb per disk is achieved. In total, thus, i should have close to 1.2Tb of storage space available.

I was told that Solaris 8 has a limit on 1.5 Tb for the size of a file system. Then i was thinking that i'm still in the safe side.

When i import, encapsulate, and so on, the new SE 3510 disk into Veritas Volume Manager, it reports that the available storage space is only 704Gb. Where did the other 500Gb go? (private region created by Veritas takes only 256 Mb of space). Is there some incompatibility with the combination V880+Veritas 3.2+SE 3510 with a file sistem as big as 1.2 Tb? Any hints/test which can help?

Thanks a lot,
Pere

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