## **ZFS: Create a new zfs filesystem**

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## **ZFS: Create a new zfs filesystem**

# Tested on RHEL 6 & 7 # Select the zpool where F.S. will be created zpool list NAME SIZE ALLOC FREE CAP DEDUP HEALTH ALTROOT c pool 9.94G 120K 9.94G 0% 1.00x ONLINE m\_pool 9.94G 100K 9.94G 0% 1.00x ONLINE -ZPOOL=c pool zpool status \$ZPOOL pool: c\_pool state: ONLINE scan: none requested config: NAME READ WRITE CKSUM STATE 0 0 c\_pool ONLINE 0 sdb ONLINE 0 0 ONLINE sdc 0 0 0 errors: No known data errors

# Create the new zfs ZFSFS=zfs01 MNTPT=zfs01 # Without "/" # During F.S. creation options can be specified. Mount point for the newly created F.S. # is optional. If not specified, F.S. will be mounted under <zpool\_mount\_point>/<newfs\_name> # (on the other hand, if specified at the moment of creation, mountpoint won't be automatically # removed when destroying the zfs) zfs create -o mountpoint=/\$MNTPT -o sharenfs=on -o compression=on \$ZPOOL/\$ZFSFS # Check zfs list NAME USED AVAIL REFER MOUNTPOINT c pool 153K 19.6G 30K /c\_pool c\_pool/zfs01 30K 19.6G 30K /zfs01 <----100K 9.78G m pool 30K /m pool df -h -F zfs Filesystem Size Used Avail Use% Mounted on 9.8G 0 9.8G 0% /m\_pool m\_pool 20G 128K 20G 1% /c\_pool c\_pool 20G 128K 20G 1% /zfs01 <---c\_pool/zfs01 # If no quota (F.S. size) is assigned to new filesystem it will be able to use all

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# the space available on the pool, what may be a little bit dangerous
if pool is
# being shared by several filesystems.
#
# Example:
#
# We have a filesystem named <filesystem01> that has been created on
<pool_c> with no
# quota restrictions:
#
# root@server:/root#> zfs list
#
    NAME
                             USED AVAIL REFER MOUNTPOINT
#
    pool_c
                          141K 3.91G
                                         32K /pool_c
#
    pool_c/filesystem01 31K 3.91G
                                         31K /pool_c/filesystem01
#
#
# We fill the F.S. a little bit:
#
# root@server:/pool_c/filesystem01#> mkfile 2048m
/pool_c/filesystem01/file01
#
# root@server:/pool_c/filesystem01#> zfs list
#
    NAME
                             USED AVAIL REFER MOUNTPOINT
#
    pool c
                         2.00G 1.91G 32K /pool c
    pool_c/filesystem01 2.00G 1.91G 2.00G /pool_c/filesystem01
#
#
# We create a new filesystem without quota on the pool
#
# root@server:/pool_c/filesystem01#> zfs create pool_c/filesystem02
#
# root@server:/pool_c/filesystem01#> zfs list
                             USED AVAIL REFER MOUNTPOINT
#
    NAME
#
    pool_c
                         2.00G 1.91G 32K /pool_c
    pool_c/filesystem01 2.00G 1.91G 2.00G /pool_c/filesystem01
#
#
    pool_c/filesystem02 31K
                                1.91G
                                      31K /pool_c/filesystem02
#
#
# If we continue to fill up the first F.S.
```

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#
# root@server:/pool_c/filesystem01#> mkfile 1024m
/pool_c/filesystem01/file02
#
#
# The available space for all F.S. belonging to the pool will be
reduced
#
# root@server:/pool_c/filesystem01#> zfs list
#
     NAME
                                  USED AVAIL REFER MOUNTPOINT
#
     pool_c
                             2.98G
                                      948M 33K /pool_c
#
     pool_c/filesystem01
                             2.98G
                                     948M
                                            2.98G /pool_c/filesystem01
#
     pool_c/filesystem02 31K
                                     948M
                                               31K /pool_c/filesystem02
#
# *** We can use the 'quota' property to set a limit on the amount of disk space a
file
# system can use. In addition, we can use the 'reservation' property to guarantee
that a
# specified amount of disk space is available to a file system. Both properties
apply to
# the dataset on which they are set and all descendents of that dataset.
# The 'refquota' and 'refreservation' properties are used to manage file system
space
# without accounting for disk space consumed by descendents, such as snapshots and
clones.
# Setting the 'refquota' or 'refreservation' property higher than the 'quota' or
# 'reservation' property has no effect. If you set the 'quota' or 'refquota'
property,
# operations that try to exceed either value fail. It is possible to a exceed a
'quota'
# that is greater than the 'refquota'. For example, if some snapshot blocks are
modified,
# you might actually exceed the 'quota' before you exceed the 'refquota'.
# Let's add a quota to our filesystem
zfs set quota=1g $ZPOOL/$ZFSFS
```

NAME	USED	AVAIL	REFER	MOUNTPOINT
c_pool	153K	19.6G	30K	/c_pool
c_pool/zfs01	30K	1024M	30K	/zfs01 <
m_pool	100K	9.78G	30K	/m_pool

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