

Frequently Asked Questions

Question

\$ 0 9 ; > 2 0 O A 8 A B 5 < 0 Z F S

Answer

7 O B > [>BAN40](#) 8 G C B L 4 > 1 0 2 ; 5 = > . 2 ? 8 A 0 = > ? @ > A > ; O @ 8 A , = >
D @ O B > 6 5 C < 5 5 B 8 A ? > ; L 7 > 2 0 B L M B > B B 8 ? D A , 0 < = 5 > =
4 > A B 0 ; A O 2 V P S .

0 < 5 B 8 ; , G B > = 0 % 0 1 @ 5 < = > 3 > A B 0 B 5 9 ? @ > Z F S . 2 > B , @ 5 H 8 ;
= 0 ? 8 A 0 B L : @ 0 B : > 5 @ C : > 2 > 4 A B 2 > , : 0 : 6 5 M B > 9 Z F S
? > ; L 7 > 2 0 B L A O . : 0 G 5 A B 2 5 ! 1 C 4 C @ 0 A A < 0 B @ 8 2 0 B L Solaris , B . : Z F S
8 7 = 0 G 0 ; L = > @ 0 7 @ 0 1 0 B K 2 0 ; 0 A L 4 ; O ! > ; O @ K 4 0 8
? > 7 = 0 : > < 8 ; A O A Z F S O 8 < 5 = > B 0 < . > = 8 < 0 N , G B > < 0 ; > C
: > 3 > A B > 8 B O p e n Solaris = 0 4 5 A : B > ? 5 , 0 0 4 < 8 = 8 A B @ 0 B > @ K Solaris 8 B 0 :
4 > ; 6 = K M B > 7 = 0 B L . > < > 6 5 B : > < C 8 ? @ 8 3 > 4 8 B A O .

; O = 0 G 0 ; 0 , G B > 6 5 B 0 : > 5 Z F S 8 2 G 5 < 5 5 ? @ 5 8 < C I 5 A B 2 0 ? 5 @ 5 4
A C I 5 A B 2 C N I 8 < 8 D 0 9 ; > 2 K < 8 A 8 A B 5 < 0 < 8 .
@ 8 2 5 4 C ; 8 H L : @ 0 B : 8 9 A ? 8 A > : ? ; N A > 2 Z F S .

Z F S O 2 ; O 5 B A O 1 2 8 1 8 B = > 9 D 0 9 ; > 2 > 9 A 8 A B 5 < > 9 . 0 : A 8 < 0 ; L = K 9
@ 0 7 < 5 @ ? C ; 0 1 6 M : 7 0 1 0 9 B (1 8 < ; = " 5 @ 0 1 0 9 B) 0 : A 8 < 0 ; L = > 5
: > ; 8 G 5 A B 2 > D 0 9 ; > 2 2 > 4 = > < ? C ; 5 2 0 E 1 0 1 2 .
Z F S O 2 ; O 5 B A O s e l f - h e a l i n g A 8 A B 5 < > 9 . Z F S 8 A ? > ; L 7 C 5 B 2 5 6 - 1 8 B = K 9
: > = B @ > ; L = K 5 A C < < K 4 ; O ? @ > 2 5 @ : 8 4 0 = = K E .
> 7 2 > ; O 5 B 4 > 1 0 2 ; O B L ? C ; K 8 ; 8 6 5 = 0 @ 0 1 8 2 0 B L 5 < : > A B L
? C ; 0 1 5 7 > A B 0 = > 2 : 8 A 8 A B 5 < K 8 ; 8 6 5 ? @ 8 ; > 6 5 = 8 9
G 5 = L 3 8 1 : 0 O > @ 3 0 = 8 7 0 F 8 O R A I D ' > 2 .

5 < = > 3 > B 5 @ < 8 = > ; > 3 8 8

checksum > = B @ > ; L = 0 O A C < < 0 . 2 5 6 - @ 0 7 @ O 4 = K 9 E 5 H - : > 4 4 0 = = K E
2 1 ; > : 5 D 0 9 ; > 2 > 9 A 8 A B 5 < K .
clone ; > = . \$ 0 9 ; > 2 0 O A 8 A B 5 < 0 , 8 A E > 4 = > 5 A > 4 5 @ 6 8 < > 5
: > B > @ > 9 8 4 5 = B 8 G = > A > 4 5 @ 6 8 < > < C A = 0 ? H > B 0 .
snapshot != 8 < > : . 1 @ 0 7 D 0 9 ; > 2 > 9 A 8 A B 5 < K 8 ; 8 B > < 0 2
> ? @ 5 4 5 ; 5 = = K 9 < > < 5 = B 2 @ 5 < 5 = 8 , 4 > A B C ? = K 9 B > ; L : > 4 ; O
G B 5 = 8 O .
dataset 0 1 > @ 4 0 = = K E . 1 1 5 5 = 0 7 2 0 = 8 5 A ; 5 4 C N I 8 E
> 1 J 5 : B > 2 Z F S : ; > = > 2 , D 0 9 ; > 2 K E A 8 A B 5 < , A = 8 < : > 2 8 ; 8 B > < > 2 .
0 6 4 K 9 = 0 1 > @ 4 0 = = K E 8 4 5 = B 8 D 8 F 8 @ C 5 B A O ? > C = 8 : 0 ; L = > < C

```
8<5=8 2 ? @>AB @0=AB25 8<5=ZFS. 01>@K 40==KE
>? @545;ONBAO A ?><>ILN A;54CNI53> D> @<0B0: ?C;/?CBL[
@A=8<>:]
pool C; . >38G5A:0O 3@C??0 CAB @>9AB2, >?8AK20NI0O
@07<5I5=85 8 D878G5A:85 E0@0:B5@8AB8:8 4>ABC?=>3>
? @>AB @0=AB20 4;O E @0=5=8O 40==KE. 7 ?C;0 15@5BAO
? @>AB @0=AB2> 4;O =01> @>2 40==KE.
volume "><. 01>@ 40==KE, 8A?>;L7C5<K9 4;O
M<C;8 @>20=8O D878G5A:>3> CAB @>9AB20. 0? @8<5 @, <>6=>
A>740BL B><ZFS 2 :0G5AB25 CAB @>9AB20 ?>4:0G:8.
```

```
!>1AB25==> @C:>24AB2>
```

```
Solaris @01>B0 AZFS 845B 2 >A=>2=>< G5 @572 :><0=4K. -B>zpool 8zfs.
```

```
zpool @01>B0 A ?C;0<8. E A>740=85, 87<5=5=85, C40;5=85 8
B.4.
```

```
zfs @01>B0 A A0<>9 D09;>2>9 A8AB5<>9.
```

```
B0; , 87 G53> 65 <>6=> A>740BL ?C;? 0 87 G53> C3>4=>. B
D09;>2 ?>4 4 @C3>9 DA, 4> 48A:>2 2 48A:>2><<0AA825.
```

```
@8<5 @K A>740=8O ?C;0 MyPool
```

```
# !>740=85 ?C;0 87 D09;>2/zfs1/disk01 8/zfs1/disk02 A>740==KE
:><0=4>9 mkfile
zpool create MyPool /zfs1/disk01 /zfs1/disk02
```

```
# !>740=85 ?C;0 8A?>;L7CO >1KG=K9 A;09A
zpool create MyPool c1t0d0s0
```

```
# !>740=85 ?C;0 c 75 @ :0;8 @>20=85< 8 8A?>;L7>20=85< spare
48A:>2.
zpool create MyPool mirror c1t0d0 c2t0d0 mirror c1t0d1 c2t0d1
zpool create MyPool mirror c1t0d0 c2t0d0 spare c3t0d0
```

```
! ?8A>: 20H8E ?C;>2 8 8E AB0BCA <>6=> ?>A<>B @5BL A
?><>ILN :><0=40
```

```
# zpool list
NAME SIZE USED AVAIL CAP HEALTH ALTROOT
MyPool 191M 94K 191M 0% ONLINE -
```

```
zpool status -v
```

pool: MyPool
state: ONLINE
scrub: none requested
config:

NAME STATE READ WRITE CKSUM
MyPool ONLINE 0 0 0
/disk1 ONLINE 0 0 0
/disk2 ONLINE 0 0 0

! B 0 B C A K <> 3 C B 1 K B L A ; 5 4 C N I 8 5

DEGRADED 48 = 8 ; 8 = 5 A : > ; L : > C A B @ > 9 A B 2 0 2 5 @ E = 5 3 >
C @ > 2 = O = 0 E > 4 O B A O 2 = 5 @ 0 1 > G 5 < A > A B > O = 8 8 , B . : . 1 K ; 8
> B : ; N G 5 = K . > 4 0 ; L = 5 9 H 5 5 D C = : F 8 > = 8 @ > 2 0 = 8 5
2 > 7 < > 6 = > .

FAULTED 48 = 8 ; 8 = 5 A : > ; L : > C A B @ > 9 A B 2 0 2 5 @ E = 5 3 > C @ > 2 = O
= 0 E > 4 O B A O 2 A > A B > O = 8 8 FAULT. 0 ; L = 5 9 H 5 5
D C = : F 8 > = 8 @ > 2 0 = 8 5 = 5 2 > 7 < > 6 = > .

OFFLINE C ; 1 K ; > B : ; N G 5 = : > < 0 = 4 > 9 «zpool offline».
ONLINE C ; = 0 E > 4 8 B A O 2 A > A B > O = 8 8 ONLINE 8 = > @ < 0 ; L = >
D C = : F 8 > = 8 @ C 5 B.
REMOVED # A B @ > 9 A B 2 > (C ;) 1 K ; > D 8 7 8 G 5 A : 8 C 4 0 ; 5 = > ? @ 8
@ 0 1 > B 0 N I 5 9 A 8 A B 5 < 5.
UNAVAIL # A B @ > 9 A B 2 > (C ;) = 5 4 > A B C ? = > .

7 < 5 = 5 = 8 5 ? C ; 0 MyPool

> 1 0 2 ; 5 = 8 5 8 C 4 0 ; 5 = 8 5 M ; 5 < 5 = B > 2 (4 8 A : > 2) 8 7 ? C ; 0 , = 5
8 A ? > ; L 7 C N I 5 3 > 7 5 @ : 0 ; 8 @ > 2 0 = 8 5 > A C I 5 A B 2 ; O 5 B A O A
? > < > I L N : > < 0 = 4:
zpool add MyPool /zfs1/disk3
zpool remove MyPool /disk3

> 1 0 2 ; 5 = 8 5 8 C 4 0 ; 5 = 8 5 M ; 5 < 5 = B > 2 (4 8 A : > 2) 8 7 ? C ; 0 , c
7 5 @ : 0 ; 8 @ > 2 0 = 8 5 v > A C I 5 A B 2 ; O 5 B A O A ? > < > I L N : > < 0 = 4:
zpool attach MyPool /disk1 /disk3
zpool detach MyPool /disk1 /disk3

2 > 4 M ; 5 < 5 = B 0 2 A > A B > O = 8 5 offline A = 5 2 > 7 < > 6 = > A B L N
G B 5 = 8 O / 7 0 ? 8 A 8 4 > 2 2 > 4 0 2 A > A B > O = 8 5 online (8 A ? > ; L 7 C O : ; N G - t
< > 6 = > 2 2 5 A B 8 M ; 5 < 5 = B 2 A > A B > O = 8 5 offline B > ; L : > 4 > @ 5 1 C B 0)
zpool offline MyPool /disk1

```
0: MB> >B>1 @ 0 7 8 B A O = 0 C ; 5 2 F 5 ; > <:
zpool status -v
pool: myzfs
state: DEGRADED
status: One or more devices has been taken offline by the administrator.
Sufficient replicas exist for the pool to continue functioning
in a degraded state.
action: Online the device using 'zpool online' or replace the device
with 'zpool replace'.
scrub: resilver completed with 0 errors on Tue Sep 11 13:39:25 2007
config:
```

```
NAME STATE READ WRITE CKSUM
myzfs DEGRADED 0 0 0
mirror DEGRADED 0 0 0
/disk1 OFFLINE 0 0 0
/disk2 ONLINE 0 0 0
```

```
# > 1 @ 0 B => online
zpool online MyPool /disk1
```

```
# 0 < 5 = 0 > 4 => 3 > M ; 5 < 5 = B 0 ? C ; 0 = 0 4 @ C 3 > 9
zpool replace MyPool /disk1 /disk3
```

```
! > 7 4 0 = 8 5 8 @ 0 1 > B 0 A D 0 9 ; > 2 > 9 A 8 A B 5 < > 9
```

```
# ! > 7 4 0 5 < D 0 9 ; > 2 C N A 8 A B 5 < C
zfs create MyPool/systemname
```

```
> ? F 8 5 9 - > < K < > 6 5 < 2 K 1 @ 0 B L B > G : C < > = B 8 @ > 2 0 = 8 O ,
> B ; 8 G = C N > B /MyPool/systemname
```

```
# 5 7 5 @ 2 8 @ C 5 < < 5 A B > ? > 4 A 2 > N D 0 9 ; > 2 C N A 8 A B 5 < C
zfs set reservation=20m MyPool/systemname
```

```
# # A B 0 = 0 2 ; 8 2 0 5 < : 2 > B C 4 ; O 2 0 H 5 9 D 0 9 ; > 2 > 9 A 8 A B 5 < K ,
: > B > @ C N 2 K = 5 A < > 6 5 B 5 ? @ 5 2 K A 8 B L
zfs set quota=20m MyPool/systemname
```

```
# : ; N G 0 5 < : > < ? @ 5 A A 8 N .
zfs set compression=on MyPool/systemname
```

```
# 0 A H 0 @ 8 2 0 5 < = 0 H C D 0 9 ; > 2 C N A 8 A B 5 < C .
zfs set sharenfs=on MyPool/systemname 2 NFS
zfs set sharesmb=on MyPool/systemname 2 SMB
```

!= 8 < 0 5 < A = 0 ? H > B

zfs snapshot MyPool/systemname@hostname

" 0 : : 0 : A = 0 ? H > B MB > ? @ > A B > A = 8 < > : A 8 A B 5 < K 2 4 0 == K 9

< > < 5 = B, B > 8 => 3 4 0 A B > 8 B A > 7 4 0 2 0 B L : ; > = 0.

zfs clone MyPool/systemname@hostnameeyPool/systemname2

4 0 ; 0 5 < D 0 9 ; > 2 C N A 8 A B 5 < C. A ; 8 A C I 5 A B 2 C N B D 0 9 ; > 2 K 5

A 8 A B 5 < K - = 0 A ; 5 4 = 8 : 8, = 0 4 > 8 A ? > ; L 7 > 2 0 B L : ; N G - f

zfs destroy MyPool/systemname

0 : 2 8 4 8 B 5, = 8 G 5 3 > A ; > 6 => 3 > A ZFS = 0 = 0 G 0 ; L => < M B 0 ? 5 = 5 B.

G 5 = L 8 > G 5 = L 3 8 1 : 0 O H B C : 0.

zfs snapshot storage/home@08-30-08

0 < 5 B L B 5, G B > A = 8 < > : (snapshot) 7 0 E 2 0 B 8 B @ 5 0 ; L = C N D 0 9 ; > 2 C N

A 8 A B 5 < C, 0 = 5 4 > < 0 H = 8 9 : 0 B 0 ; > 3 8 ; 8 D 0 9 ;. ! 8 < 2 > ; @ > B 4 5 ; 0 5 B

8 < 0 D 0 9 ; > 2 > 9 A 8 A B 5 < K 8 ; 8 8 < 0 B > < 0 > B 8 < 5 = 8 A = 8 < : 0. > 3 4 0

2 > 7 = 8 : = 5 B = 5 > 1 E > 4 8 < > A B L 2 > A A B 0 = > 2 8 B L

? > ; L 7 > 2 0 B 5 ; L A : 8 5 4 > < 0 H = 8 5 : 0 B 0 ; > 3 8, 2 K ? > ; = 8 B 5

A ; 5 4 C N I C N : > < 0 = 4 C:

zfs rollback storage/home@08-30-08

' B > 1 K ? > ; C G 8 B L A ? 8 A > : 8 < 5 N I 8 E A O 2 = 0 ; 8 G 8 8 A = 8 < : > 2,

2 K ? > ; = 8 B 5 : > < 0 = 4 C I s 2 : 0 B 0 ; > 3 5 .zfs/snapshot. 0 ? @ 8 < 5 @, G B > 1 K

C 2 8 4 5 B L A 4 5 ; 0 == K 9 @ 0 = 5 5 A = 8 < > ;, 2 K ? > ; = 8 B 5 A ; 5 4 C N I C N

: > < 0 = 4 C:

ls /storage/home/.zfs/snapshot

!= 0 ? H > B K, : ; > = K 8 @ 5 ? ; 8 : 8 2 ZFS on Linux

5 @ 5 2 > 4: ; 5 : A 5 9 \$ 5 4 > @ G C :

> H 0 3 > 2 > 5 @ C : > 2 > 4 A B 2 > ? > @ 0 1 > B 5 A > A = 0 ? H > B 0 < 8,

: ; > = 0 < 8 8 @ 5 ? ; 8 : 0 < 8 ZFS A 0 < K < 8 < > I = K < 8 5 Q D C = : F 8 O < 8.

! > 4 5 @ 6 0 = 8 5

!= 0 ? H > B K ZFS: > 1 7 > @

!= 0 ? H > B < > < 5 = B 0 ; L = 0 O : > ? 8 O D 0 9 ; > 2 > 9 A 8 A B 5 < K 8 ; 8

B><0, =5 B @ 51 C N I 0 O 4>?>;=8 B 5;L=>3> <5 A B 0 2 ? C;5 ZFS.
8 A:>2>5 ? @>A B @ 0=A B 2> B @ 51 C 5 B A O B>;L:> 4;O 7 0 ? 8 A 8
8 7<5=Q==KE 1;>:>2: 7 0 ? 8 A K 2 0 N B A O B>;L:> @ 0 7;8 G 8 O
<5 6 4 C B 5:C I 8< =0 1> @>< 4 0==KE 8 ? @ 5 4 K 4 C I 5 9 5 3>
2 5 @ A 8 5 9.

" 8 ? 8 G = K 9 ? @ 8 < 5 @ 8 A ? >; L 7 > 2 0 = 8 O A = 0 ? H > B 0 1 K A B @ > 5
? >; C G 5 = 8 5 @ 5 7 5 @ 2 = > 9 : > ? 8 8 D 0 9; > 2 > 9 A 8 A B 5 < K ? 5 @ 5 4
2 K ? >; = 5 = 8 5 < @ 8 A : > 2 0 == KE 4 5 9 A B 2 8 9 2 @ > 4 5 C A B 0 = > 2 : 8
= > 2 > 3 > A > D B 0 8; 8 > 1 = > 2; 5 = 8 O A 8 A B 5 < K.
! > 7 4 0 = 8 5 8 C 4 0; 5 = 8 5 A = 0 ? H > B > 2

!=8<: 8 B ><> 2 = 0 ? @ O < C N = 5 4 > A B C ? = K, => 8 E <> 6 =>
;>=8 @ > 2 0 B L, 1 M : 0 ? 8 B L 8 2 > A A B 0 = 0 2; 8 2 0 B L. ; O A > 7 4 0 = 8 O 8
C 4 0; 5 = 8 O A = 0 ? H > B > 2 8 A ? >; L 7 C N B A O : > < 0 = 4 K zfs snapshot 8 zfs destroy

! > 7 4 0 Q < ? C; A 8 < 5 = 5 < datapool:

```
# zpool create datapool mirror /dev/sdb /dev/sdc
# zpool list
NAME      SIZE ALLOC FREE EXPANDSZ FRAG  CAP DEDUP HEALTH ALTROOT
datapool 1.98G  65K 1.98G   -   0%   0% 1.00x ONLINE  -
```

< 5 O ? C; A 8 < 5 = 5 < datapool, = 0 4 > A > 7 4 0 B L D 0 9; > 2 C N A 8 A B 5 < C ZFS
4; O <> 4 5; 8 @ > 2 0 = 8 O D C = : F 8 9 A = 0 ? H > B 0:

```
# zfs create datapool/docs -o mountpoint=/docs
# zfs list -r datapool
NAME      USED AVAIL REFER MOUNTPOINT
datapool  93.5K 1.92G  19K /datapool
datapool/docs 19K 1.92G  19K /docs
```

; O A > 7 4 0 = 8 O A = 0 ? H > B 0 8 A ? >; L 7 C 5 B A O : > < 0 = 4 0 zfs snapshot A
C : 0 7 0 = 8 5 < 8 < 5 = 8 ? C; 0 8 8 < 5 = 8 A = 0 ? H > B 0. < O A = 0 ? H > B 0
4 >; 6 => 2 K 3; O 4 5 B L B 0 ::

filesystem@snapname

8; 8

volume@snapname

" > 5 A B L:

```
# zfs snapshot datapool/docs@version1
# zfs list -t snapshot
NAME      USED AVAIL REFER MOUNTPOINT
```

datapool/docs@version1 0 - 19.5K -

" 5 ? 5 @ L A = 0 ? H > B datapool/docs A > 7 4 0 =.

; O C 4 0 ; 5 = 8 O A = 0 ? H > B 0 8 A ? > ; L 7 C 5 B A O : > < 0 = 4 0 zfs destroy:

```
# zfs destroy datapool/docs@version1
```

```
# zfs list -t snapshot
```

no datasets available

B : 0 B A = 0 ? H > B 0

; O < > 4 5 ; 8 @ > 2 0 = 8 O ? @ > F 5 A A 0 = C 6 = > A > 7 4 0 B L B 5 A B > 2 K 9

D 0 9 ; 2 : 0 B 0 ; > 3 5 /docs:

```
# echo "version 1" > /docs/data.txt
```

```
# cat /docs/data.txt
```

version 1

0 B 5 <:

```
# zfs snapshot datapool/docs@version1
```

```
# zfs list -t snapshot
```

NAME	USED	AVAIL	REFER	MOUNTPOINT
------	------	-------	-------	------------

datapool/docs@version1	9K	- 19.5K	-	
------------------------	----	---------	---	--

" 5 ? 5 @ L 8 7 < 5 = 8 < A > 4 5 @ 6 8 < > 5 D 0 9 ; 0 data.txt:

```
# echo "version 2" > /docs/data.txt
```

```
# cat /docs/data.txt
```

version 2

B 5 ? 5 @ L < > 6 = > 2 5 @ = C B L D 0 9 ; > 2 C N A 8 A B 5 < C 2 B >

A > A B > O = 8 5, 2 : > B > @ > < > = 0 1 K ; 0 2 < > < 5 = B A > 7 4 0 = 8 O

? @ 5 4 K 4 C I 5 9 : > ? 8 8:

```
# zfs list -t snapshot
```

NAME	USED	AVAIL	REFER	MOUNTPOINT
------	------	-------	-------	------------

datapool/docs@version1	9.50K	- 19.5K	-	
------------------------	-------	---------	---	--

```
# zfs rollback datapool/docs@version1
```

```
# cat /docs/data.txt
```

version 1

7 2 K 2 > 4 0 ? > A ; 5 4 = 5 9 : > < 0 = 4 K < > 6 = > 2 8 4 5 B L, G B >

A > 4 5 @ 6 8 < > 5 D 0 9 ; 0 data.txt A B 0 ; > ? @ 5 6 = 8 < (B > 5 A B L

A > > B 2 5 B A B 2 C 5 B 2 5 @ A 8 8 1).

; O ? 5 @ 5 8 < 5 = > 2 0 = 8 O A = 0 ? H > B 0 < > 6 = > 8 A ? > ; L 7 > 2 0 B L
: > < 0 = 4 C zfs rename:

```
# zfs rename datapool/docs@version1 datapool/docs@version2
# zfs list -t snapshot
NAME                USED AVAIL REFER MOUNTPOINT
datapool/docs@version2 9.50K   - 19.5K   -
```

@ 8 < 5 G 0 = 8 5 : = 0 1 > @ 4 0 = = K E = 5 ; L 7 O C 4 0 ; 8 B L , 5 A ; 8
A C I 5 A B 2 C N B 5 3 > A = 0 ? H > B K . > M B > < > 6 = > A 4 5 ; 0 B L ,
8 A ? > ; L 7 C O > ? F 8 N - r . " > 5 A B L B 0 : = 5 ? > ; C G 8 B A O :

```
# zfs destroy datapool/docs
cannot destroy 'datapool/docs': filesystem has children
use '-r' to destroy the following datasets:
datapool/docs@version2
```

? > ; C G 8 B A O B 0 ::

```
# zfs destroy -r datapool/docs
# zfs list -t snapshot
no datasets available
```

; > = K ZFS: > 1 7 > @

; > = M B > B > < 8 ; 8 D 0 9 ; > 2 0 O A 8 A B 5 < 0 , 4 > A B C ? = K 5 4 ; O
7 0 ? 8 A 8 , A > 4 5 @ 6 8 < > 5 : > B > @ K E A > 2 ? 0 4 0 5 B A = 0 1 > @ > <
4 0 = = K E , 8 7 : > B > @ K E > = 8 1 K ; 8 A > 7 4 0 = K .
! > 7 4 0 = 8 5 8 C 4 0 ; 5 = 8 5 : ; > = > 2

; > = < > 6 = > A > 7 4 0 B L B > ; L : > 8 7 A = 0 ? H > B 0 , 8 A = 0 ? H > B
= 5 ; L 7 O C 4 0 ; 8 B L , ? > : 0 = 5 C 4 0 ; Q = 5 3 > : ; > = . ; O A > 7 4 0 = 8 O
: ; > = 0 8 A ? > ; L 7 C 5 B A O : > < 0 = 4 0 zfs clone.

! > 7 4 0 = 8 5 D 0 9 ; > 2 > 9 A 8 A B 5 < K:

```
# zfs create datapool/docs -o mountpoint=/docs
# zfs list -r datapool
NAME                USED AVAIL REFER MOUNTPOINT
datapool            93.5K 1.92G   19K /datapool
datapool/docs       19K 1.92G   19K /docs
```

! > 7 4 0 = 8 5 5 Q : > = B 5 = B 0:

```
# mkdir /docs/folder{1..5}
# ls /docs/
folder1 folder2 folder3 folder4 folder5
```


! > 7 4 0 = 8 5 A = 0 ? H > B 0:

zfs snapshot datapool/docs@today

zfs list -t snapshot

NAME	USED	AVAIL	REFER	MOUNTPOINT
datapool/docs@today	0	-	19K	-

! > 7 4 0 = 8 5 ; ; > = 0 A = 0 ? H > B 0 datapool/docs@today:

zfs clone datapool/docs@today datapool/pict

zfs list

NAME	USED	AVAIL	REFER	MOUNTPOINT
datapool	166K	1.92G	19K	/datapool
datapool/docs	19K	1.92G	19K	/docs
datapool/pict	1K	1.92G	19K	/datapool/pict

@ > F 5 A A ; ; > = 8 @ > 2 0 = 8 O 7 0 : > = G 5 =, A = 0 ? H > B datapool/docs@today 1 K ;

; ; > = 8 @ > 2 0 = 2 datapool/pict. @ > 2 5 @ : 0 ? > : 0 7 K 2 0 5 B, G B >

A > 4 5 @ 6 8 < > 5 8 E > 4 8 = 0 : > 2 >:

ls /datapool/pict

folder1 folder2 folder3 folder4 folder5

> A ; 5 ; ; > = 8 @ > 2 0 = 8 O A = 0 ? H > B 0 5 3 > = 5 ; L 7 O C 4 0 ; 8 B L, ? > : 0

= 5 C 4 0 ; Q = ; ; > =:

zfs destroy datapool/docs@today

cannot destroy 'datapool/docs@today': snapshot has dependent clones

use '-R' to destroy the following datasets:

datapool/pict

4 0 ; 5 = 8 5 ; ; > = 0:

zfs destroy datapool/pict

" 5 ? 5 @ L, = 0 : > = 5 F, < > 6 = > C 4 0 ; 8 B L A = 0 ? H > B:

zfs destroy datapool/docs@today

zfs list -t snapshot

no datasets available

5 ? ; 8 : 8 ZFS: > 1 7 > @

5 ? ; 8 : 0 F 8 O ZFS > A = > 2 0 = 0 = 0 A = 0 ? H > B 0 E, : > B > @ K 5 < > 6 = >

A > 7 4 0 2 0 B L 2 ; N 1 > 5 2 @ 5 < O 8 2 ; N 1 > < : > ; 8 G 5 A B 2 5.

> A B > O = > A > 7 4 0 2 0 O, ? 5 @ 5 < 5 I 0 O 8 2 > A A B 0 = 0 2 ; 8 2 0 O

A = 0 ? H > B K, < > 6 = > > 1 5 A ? 5 G 8 B L A 8 = E @ > = 8 7 0 F 8 N < 5 6 4 C

```
>4=>9 8;8=5A:>;L:8<8<0H8=0<8.ZFS ? @ 54>AB02;O5B
2AB @>5==CN DC=:F8N A5 @ 80;870F88, :>B> @ 0O <>65B
>B? @ 02;OBL ?>B>:>2>5 ? @ 54AB02;5=85 40==KE =0
AB0=40 @ B=K9 2K2>4.
>=D83C @ 8 @>20=85 @ 5?;8:
```

```
MB>< @ 0745;5 O E>GC ?>:070BL 20<, :0: @ 5?;8F8 @>20BL
=01> @ 40==KE 87 datapool 2 backuppool. > <>6=> =5 B>;L:>
E @ 0=8BL 40==K5 >4=>3> ? C;0 2 4 @ C3>< ;>:0;L=>< ? C;5,
=> 8 >B? @ 02;OBL ?> A5B8 2 4 @ C3CN A8AB5<C. ;O @ 5?;8:0F88
40==KE 8A?>;L7CNBAO :><0=4K zfs send 8 zfs receive.
```

```
!>740=85 =>2>3> ? C;0 A 8<5=5< backuppool:
```

```
# zpool create backuppool mirror sde sdf
```

```
# zpool list
```

NAME	SIZE	ALLOC	FREE	EXPANDSZ	FRAG	CAP	DEDUP	HEALTH	ALTROOT
backuppool	1.98G	50K	1.98G	-	0%	0%	1.00x	ONLINE	-
datapool	1.98G	568K	1.98G	-	0%	0%	1.00x	ONLINE	-

```
@>25 @ :0 AB0BCA0 ? C;>2:
```

```
# zpool status
```

```
pool: datapool
```

```
state: ONLINE
```

```
scan: none requested
```

```
config:
```

NAME	STATE	READ	WRITE	CKSUM
datapool	ONLINE	0	0	0
mirror-0	ONLINE	0	0	0
sdb	ONLINE	0	0	0
sdс	ONLINE	0	0	0

```
errors: No known data errors
```

```
pool: backuppool
```

```
state: ONLINE
```

```
scan: none requested
```

```
config:
```

NAME	STATE	READ	WRITE	CKSUM
backuppool	ONLINE	0	0	0
mirror-0	ONLINE	0	0	0
sde	ONLINE	0	0	0
sdf	ONLINE	0	0	0

errors: No known data errors

! > 7 4 0 = 8 5 = 0 1 > @ 0 4 0 == K E 4 ; O @ 5 ? ; 8 : 0 F 8 8 :

zfs snapshot datapool/docs@today

zfs list -t snapshot

NAME	USED	AVAIL	REFER	MOUNTPOINT
------	------	-------	-------	------------

datapool/docs@today	0	-	19K	-
---------------------	---	---	-----	---

ls /docs/

folder1 folder2 folder3 folder4 folder5

0 A B 0 ; > 2 @ 5 < O @ 5 ? ; 8 : 0 F 8 8 :

zfs send datapool/docs@today | zfs receive backuppool/backup

zfs list

NAME	USED	AVAIL	REFER	MOUNTPOINT
------	------	-------	-------	------------

backuppool	83K	1.92G	19K	/backuppool
------------	-----	-------	-----	-------------

backuppool/backup	19K	1.92G	19K	/backuppool/backup
-------------------	-----	-------	-----	--------------------

datapool	527K	1.92G	19K	/datapool
----------	------	-------	-----	-----------

datapool/docs	19K	1.92G	19K	/docs
---------------	-----	-------	-----	-------

@ > 2 5 @ : 0 @ 5 7 C ; L B 0 B 0 :

ls /backuppool/backup

folder1 folder2 folder3 folder4 folder5

0 1 > @ 4 0 == K E datapool/docs@today C A ? 5 H = > @ 5 ? ; 8 F 8 @ > 2 0 = 2

backuppool/backup.

5 ? ; 8 F 8 @ > 2 0 = 8 5 = 0 1 > @ 0 4 0 == K E = 0 4 @ C 3 C N < 0 H 8 = C

2 K ? > ; = O 5 B A O B 0 ::

zfs send datapool/docs@today | ssh otherserver zfs rcv backuppool/backup

> B > 2 > .

0 : ; N G 5 = 8 5

! = 0 ? H > B K , : B > = K 8 @ 5 ? ; 8 C 8 A 0 < K 5 < > I = K 5 D C = : F 8 8 ZFS.

! = 0 ? H > B K 8 A ? > ; L 7 C N B A O 4 ; O ? 5 @ 8 > 4 8 G 5 A : > 3 > A > 7 4 0 = 8 O

: > ? 8 9 D 0 9 ; > 2 K E A 8 A B 5 < , : ; > = K 4 ; O A > 7 4 0 = 8 O

4 C 1 ; 8 @ C N I 8 E = 0 1 > @ > 2 4 0 == K E , @ 5 ? ; 8 : 8 4 ; O ? 5 @ 5 = > A 0

= 0 1 > @ 0 4 0 == K E 8 7 > 4 = > 3 > ? C ; 0 4 0 == K E 2 4 @ C 3 > 9 = 0 B > 9 6 5

< 0 H 8 = 5 , 8 ; 8 4 ; O ? 5 @ 5 = > A 0 < 5 6 4 C < 0 H 8 = 0 < 8 .

Vampyr`s House!

<https://www.415.spb.ru/ins/faq/faq.php?0.cat.76>

! B @ 0 = 8 F 0 12/12

Info Monday 17 July 2017 - 04:27:52 by vampyr

Vampyr`s House!