

## Technical Geeking Out :-D

Configuration of 2 solaris hosts serving as backup for each other

Configuration of iscsi san for allocating block storage (win/nix)

NAS sharing via smb/nfs shares

Home Setup

Iscsi san

Block storage / lun creations / parity & non parity raidsets

NAS shares

Storage io statistics

Connectivity of nix/win/mac systems

2 solaris hosts serving as backup for each other, in addition to one iscsi san allocating block storage (win/nix) and smb/nfs share 😊

```
root@vnx-solaris-storage:~# zpool status
```

```
pool: rpool
```

```
state: ONLINE
```

```
scan: none requested
```

```
config:
```

NAME	STATE	READ	WRITE	CKSUM
rpool	ONLINE	0	0	0
c1t0d0	ONLINE	0	0	0

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

```
pool: stor-pool
```

```
state: ONLINE
```

```
scan: none requested
```

```
config:
```

NAME	STATE	READ	WRITE	CKSUM
stor-pool	ONLINE	0	0	0
raidz1-0	ONLINE	0	0	0
c3t0d0	ONLINE	0	0	0
c3t1d0	ONLINE	0	0	0
c3t2d0	ONLINE	0	0	0
c3t3d0	ONLINE	0	0	0

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

```
root@vnx-solaris-storage:~# zfs list -rH stor-pool
stor-pool    592G  2.09T  68.8K  /stor-pool
stor-pool/iscsi-san  578G  2.09T  62.8K  /stor-pool/iscsi-san
stor-pool/iscsi-san/zvols  578G  2.09T  65.8K  /stor-pool/iscsi-san/zvols
stor-pool/iscsi-san/zvols/nix  413G  2.09T  59.8K  /stor-pool/iscsi-san/zvols/nix
stor-pool/iscsi-san/zvols/nix/v1  103G  2.19T  6.93G  -
stor-pool/iscsi-san/zvols/nix/v2  103G  2.18T  7.02G  -
stor-pool/iscsi-san/zvols/nix/v3  103G  2.18T  7.02G  -
stor-pool/iscsi-san/zvols/nix/v4  103G  2.19T  6.93G  -
stor-pool/iscsi-san/zvols/win  165G  2.09T  59.8K  /stor-pool/iscsi-san/zvols/win
stor-pool/iscsi-san/zvols/win/v1  20.6G  2.11T  4.94G  -
stor-pool/iscsi-san/zvols/win/v2  20.6G  2.11T  694M  -
stor-pool/iscsi-san/zvols/win/v3  20.6G  2.11T  4.94G  -
stor-pool/iscsi-san/zvols/win/v4  20.6G  2.11T  4.94G  -
stor-pool/iscsi-san/zvols/win/v5  20.6G  2.11T  4.45M  -
stor-pool/iscsi-san/zvols/win/v6  20.6G  2.11T  4.38M  -
stor-pool/iscsi-san/zvols/win/v7  20.6G  2.11T  4.53M  -
stor-pool/iscsi-san/zvols/win/v8  20.6G  2.11T  4.52M  -
stor-pool/shares  12.7G  2.09T  12.7G  /stor-pool/shares
stor-pool/vm-datastore  74.1K  2.09T  74.1K  /stor-pool/vm-datastore
```

```
root@vnx-solaris-storage:~# stmfadm list-hg -v
Host Group: nix-solaris
  Member: iqn.1986-03.com.sun:01:k-vnx-solaris
Host Group: win-w2k12r2
  Member: iqn.1991-05.com.microsoft:vnx-win-host
```

```
root@vnx-solaris-storage:~# stmfadm list-state
Operational Status: online
Config Status      : initialized
ALUA Status        : disabled
ALUA Node          : 0
```

```
root@vnx-solaris-storage:~# stmfadm list-target -v
Target: iqn.1986-03.com.sun:02:storpool-target
  Operational Status   : Online
  Provider Name        : iscsit
  Alias                : -
  Protocol              : iSCSI
  Sessions              : 2
    Initiator: iqn.1991-05.com.microsoft:vnx-win-host
      Alias: -
      Logged in since: Fri Jul 15 10:31:03 2016
    Initiator: iqn.1986-03.com.sun:01:k-vnx-solaris
      Alias: -
      Logged in since: Thu Jun 30 16:42:31 2016
```

```
root@vnx-solaris-storage:~# stmfadm list-tg -v
Target Group: storpool-tg
  Member: iqn.1986-03.com.sun:02:storpool-target
```

```
root@vnx-solaris-storage:~# itadm list-initiator
INITIATOR NAME                                CHAPUSER SECRET
iqn.1991-05.com.microsoft:vnx-win-host        chap      set
iqn.1986-03.com.sun:01:k-vnx-solaris           chap      set
```

```
root@vnx-solaris-storage:~# itadm list-target -v
TARGET NAME          STATE  SESSIONS
iqn.1986-03.com.sun:02:storpool-target  online  2
  alias:              -
  auth:                chap
  targetchapuser:      chap
  targetchapsecret:    set
  tpg-tags:            default
```

```
root@vnx-solaris-storage:~# iscsiadm list initiator-node
Initiator node name: iqn.1986-03.com.sun:01:e00000000000.5765b11a
Initiator node alias: vnx-solaris-storage
  Login Parameters (Default/Configured):
    Header Digest: NONE/-
    Data Digest: NONE/-
    Max Connections: 65535/-
  Authentication Type: NONE
  RADIUS Server: NONE
  RADIUS Access: disabled
  Tunable Parameters (Default/Configured):
    Session Login Response Time: 60/-
    Maximum Connection Retry Time: 180/-
    Login Retry Time Interval: 60/-
  Configured Sessions: 1
```

```
root@vnx-solaris-storage:~# cat /etc/dfs/sharetab
/var/smb/cvol c$ smb - Default Share
- IPC$ smb - Remote IPC
/stor-pool stor-pool nfs sec=sys,rw
/stor-pool stor-pool smb -
/stor-pool/iscsi-san stor-pool_iscsi-san nfs sec=sys,rw
/stor-pool/iscsi-san stor-pool_iscsi-san smb -
/stor-pool/iscsi-san/zvols stor-pool_iscsi-san_zvols nfs sec=sys,rw
/stor-pool/iscsi-san/zvols stor-pool_iscsi-san_zvols smb -
/stor-pool/iscsi-san/zvols/nix stor-pool_iscsi-san_zvols_nix nfs sec=sys,rw
/stor-pool/iscsi-san/zvols/nix stor-pool_iscsi-san_zvols_nix smb -
/stor-pool/iscsi-san/zvols/win stor-pool_iscsi-san_zvols_win nfs sec=sys,rw
/stor-pool/iscsi-san/zvols/win stor-pool_iscsi-san_zvols_win smb -
/stor-pool/shares stor-pool_shares nfs sec=sys,rw
/stor-pool/shares stor-pool_shares smb -
/stor-pool/vm-datastore stor-pool_vm-datastore nfs sec=sys,rw
/stor-pool/vm-datastore stor-pool_vm-datastore smb -
```

```
root@vnx-solaris-storage:~# stmfadm list-lu
LU Name: 600144F03E9782000000574FD81B0001
LU Name: 600144F03E9782000000574FD81F0002
LU Name: 600144F03E9782000000574FD8210003
LU Name: 600144F03E9782000000574FD8250004
LU Name: 600144F03E9782000000574FD82C0005
LU Name: 600144F03E9782000000574FD82F0006
LU Name: 600144F03E9782000000574FD8320007
LU Name: 600144F03E9782000000574FD8350008
LU Name: 600144F03E9782000000574FD8410009
LU Name: 600144F03E9782000000574FD843000A
LU Name: 600144F03E9782000000574FD847000B
LU Name: 600144F03E9782000000574FD849000C
```

root@vnx-solaris-storage:~# stmfadm list-lu -v

LU Name: 600144F03E9782000000574FD81B0001

Operational Status : Online  
Provider Name : sbd  
Alias : /dev/zvol/rdisk/stor-pool/iscsi-san/zvols/win/v1  
View Entry Count : 1  
Data File : /dev/zvol/rdisk/stor-pool/iscsi-san/zvols/win/v1  
Meta File : not set  
Size : 21474836480  
Block Size : 512  
Management URL : not set  
Vendor ID : SUN  
Product ID : COMSTAR  
Serial Num : not set  
Write Protect : Disabled  
Write Cache Mode Select: Enabled  
Writeback Cache : Enabled  
Access State : Active

LU Name: 600144F03E9782000000574FD81F0002

Operational Status : Online  
Provider Name : sbd  
Alias : /dev/zvol/rdisk/stor-pool/iscsi-san/zvols/win/v2  
View Entry Count : 1  
Data File : /dev/zvol/rdisk/stor-pool/iscsi-san/zvols/win/v2  
Meta File : not set  
Size : 21474836480  
Block Size : 512  
Management URL : not set  
Vendor ID : SUN  
Product ID : COMSTAR  
Serial Num : not set  
Write Protect : Disabled  
Write Cache Mode Select: Enabled  
Writeback Cache : Enabled  
Access State : Active

LU Name: 600144F03E9782000000574FD8210003

Operational Status : Online  
Provider Name : sbd  
Alias : /dev/zvol/rdisk/stor-pool/iscsi-san/zvols/win/v3  
View Entry Count : 1  
Data File : /dev/zvol/rdisk/stor-pool/iscsi-san/zvols/win/v3  
Meta File : not set  
Size : 21474836480  
Block Size : 512  
Management URL : not set  
Vendor ID : SUN  
Product ID : COMSTAR  
Serial Num : not set  
Write Protect : Disabled  
Write Cache Mode Select: Enabled  
Writeback Cache : Enabled  
Access State : Active

LU Name: 600144F03E9782000000574FD8250004

Operational Status : Online  
Provider Name : sbd  
Alias : /dev/zvol/rdisk/stor-pool/iscsi-san/zvols/win/v4  
View Entry Count : 1  
Data File : /dev/zvol/rdisk/stor-pool/iscsi-san/zvols/win/v4  
Meta File : not set  
Size : 21474836480  
Block Size : 512  
Management URL : not set  
Vendor ID : SUN  
Product ID : COMSTAR  
Serial Num : not set  
Write Protect : Disabled  
Write Cache Mode Select: Enabled  
Writeback Cache : Enabled  
Access State : Active



LU Name: 600144F03E9782000000574FD82C0005

Operational Status : Online  
Provider Name : sbd  
Alias : /dev/zvol/rdisk/stor-pool/iscsi-san/zvols/win/v5  
View Entry Count : 0  
Data File : /dev/zvol/rdisk/stor-pool/iscsi-san/zvols/win/v5  
Meta File : not set  
Size : 21474836480  
Block Size : 512  
Management URL : not set  
Vendor ID : SUN  
Product ID : COMSTAR  
Serial Num : not set  
Write Protect : Disabled  
Write Cache Mode Select: Enabled  
Writeback Cache : Enabled  
Access State : Active

LU Name: 600144F03E9782000000574FD82F0006

Operational Status : Online  
Provider Name : sbd  
Alias : /dev/zvol/rdisk/stor-pool/iscsi-san/zvols/win/v6  
View Entry Count : 0  
Data File : /dev/zvol/rdisk/stor-pool/iscsi-san/zvols/win/v6  
Meta File : not set  
Size : 21474836480  
Block Size : 512  
Management URL : not set  
Vendor ID : SUN  
Product ID : COMSTAR  
Serial Num : not set  
Write Protect : Disabled  
Write Cache Mode Select: Enabled  
Writeback Cache : Enabled  
Access State : Active

LU Name: 600144F03E9782000000574FD8320007

Operational Status : Online  
Provider Name : sbd  
Alias : /dev/zvol/rdisk/stor-pool/iscsi-san/zvols/win/v7  
View Entry Count : 0  
Data File : /dev/zvol/rdisk/stor-pool/iscsi-san/zvols/win/v7  
Meta File : not set  
Size : 21474836480  
Block Size : 512  
Management URL : not set  
Vendor ID : SUN  
Product ID : COMSTAR  
Serial Num : not set  
Write Protect : Disabled  
Write Cache Mode Select: Enabled  
Writeback Cache : Enabled  
Access State : Active

LU Name: 600144F03E9782000000574FD8350008

Operational Status : Online  
Provider Name : sbd  
Alias : /dev/zvol/rdisk/stor-pool/iscsi-san/zvols/win/v8  
View Entry Count : 0  
Data File : /dev/zvol/rdisk/stor-pool/iscsi-san/zvols/win/v8  
Meta File : not set  
Size : 21474836480  
Block Size : 512  
Management URL : not set  
Vendor ID : SUN  
Product ID : COMSTAR  
Serial Num : not set  
Write Protect : Disabled  
Write Cache Mode Select: Enabled  
Writeback Cache : Enabled  
Access State : Active

LU Name: 600144F03E9782000000574FD8410009

Operational Status : Online  
Provider Name : sbd  
Alias : /dev/zvol/rdisk/stor-pool/iscsi-san/zvols/nix/v1  
View Entry Count : 1  
Data File : /dev/zvol/rdisk/stor-pool/iscsi-san/zvols/nix/v1  
Meta File : not set  
Size : 107374182400  
Block Size : 512  
Management URL : not set  
Vendor ID : SUN  
Product ID : COMSTAR  
Serial Num : not set  
Write Protect : Disabled  
Write Cache Mode Select: Enabled  
Writeback Cache : Enabled  
Access State : Active

LU Name: 600144F03E9782000000574FD843000A

Operational Status : Online  
Provider Name : sbd  
Alias : /dev/zvol/rdisk/stor-pool/iscsi-san/zvols/nix/v2  
View Entry Count : 1  
Data File : /dev/zvol/rdisk/stor-pool/iscsi-san/zvols/nix/v2  
Meta File : not set  
Size : 107374182400  
Block Size : 512  
Management URL : not set  
Vendor ID : SUN  
Product ID : COMSTAR  
Serial Num : not set  
Write Protect : Disabled  
Write Cache Mode Select: Enabled  
Writeback Cache : Enabled  
Access State : Active

LU Name: 600144F03E9782000000574FD847000B

Operational Status : Online  
Provider Name : sbd  
Alias : /dev/zvol/rdisk/stor-pool/iscsi-san/zvols/nix/v3  
View Entry Count : 1  
Data File : /dev/zvol/rdisk/stor-pool/iscsi-san/zvols/nix/v3  
Meta File : not set  
Size : 107374182400  
Block Size : 512  
Management URL : not set  
Vendor ID : SUN  
Product ID : COMSTAR  
Serial Num : not set  
Write Protect : Disabled  
Write Cache Mode Select: Enabled  
Writeback Cache : Enabled  
Access State : Active

LU Name: 600144F03E9782000000574FD849000C

Operational Status : Online  
Provider Name : sbd  
Alias : /dev/zvol/rdisk/stor-pool/iscsi-san/zvols/nix/v4  
View Entry Count : 1  
Data File : /dev/zvol/rdisk/stor-pool/iscsi-san/zvols/nix/v4  
Meta File : not set  
Size : 107374182400  
Block Size : 512  
Management URL : not set  
Vendor ID : SUN  
Product ID : COMSTAR  
Serial Num : not set  
Write Protect : Disabled  
Write Cache Mode Select: Enabled  
Writeback Cache : Enabled  
Access State : Active

```
root@vnx-solaris-storage:~# sbdadm list-lu
```

```
Found 12 LU(s)
```

GUID	DATA SIZE	SOURCE
600144f03e9782000000574fd81b0001	21474836480	/dev/zvol/rdisk/stor-pool/iscsi-san/zvols/win/v1
600144f03e9782000000574fd81f0002	21474836480	/dev/zvol/rdisk/stor-pool/iscsi-san/zvols/win/v2
600144f03e9782000000574fd8210003	21474836480	/dev/zvol/rdisk/stor-pool/iscsi-san/zvols/win/v3
600144f03e9782000000574fd8250004	21474836480	/dev/zvol/rdisk/stor-pool/iscsi-san/zvols/win/v4
600144f03e9782000000574fd82c0005	21474836480	/dev/zvol/rdisk/stor-pool/iscsi-san/zvols/win/v5
600144f03e9782000000574fd82f0006	21474836480	/dev/zvol/rdisk/stor-pool/iscsi-san/zvols/win/v6
600144f03e9782000000574fd8320007	21474836480	/dev/zvol/rdisk/stor-pool/iscsi-san/zvols/win/v7
600144f03e9782000000574fd8350008	21474836480	/dev/zvol/rdisk/stor-pool/iscsi-san/zvols/win/v8
600144f03e9782000000574fd8410009	107374182400	/dev/zvol/rdisk/stor-pool/iscsi-san/zvols/nix/v1
600144f03e9782000000574fd843000a	107374182400	/dev/zvol/rdisk/stor-pool/iscsi-san/zvols/nix/v2
600144f03e9782000000574fd847000b	107374182400	/dev/zvol/rdisk/stor-pool/iscsi-san/zvols/nix/v3
600144f03e9782000000574fd849000c	107374182400	/dev/zvol/rdisk/stor-pool/iscsi-san/zvols/nix/v4

```
root@vnx-solaris-storage:~# ls /mnt/  
r610-shares-backup
```

```
root@vnx-solaris-storage:~# ls /mnt/r610-shares-backup/  
solaris-test-file-for-mounts.txt  test2          test4  
test1          test3          test5
```

root@k-vnx-solaris-mobile-cart:~# zpool status  
pool: r610p-146gb  
state: ONLINE  
scan: none requested  
config:

NAME	STATE	READ	WRITE	CKSUM
r610p-146gb	ONLINE	0	0	0
raidz1-0	ONLINE	0	0	0
c2t2d0	ONLINE	0	0	0
c2t3d0	ONLINE	0	0	0
c2t4d0	ONLINE	0	0	0
c2t5d0	ONLINE	0	0	0

errors: No known data errors

pool: rpool  
state: ONLINE  
scan: none requested  
config:

NAME	STATE	READ	WRITE	CKSUM
rpool	ONLINE	0	0	0
c2t0d0	ONLINE	0	0	0

errors: No known data errors

pool: storpool-zvol  
state: ONLINE  
scan: none requested  
config:

NAME	STATE	READ	WRITE	CKSUM
storpool-zvol	ONLINE	0	0	0
mirror-0	ONLINE	0	0	0
c0t600144F03E9782000000574FD843000Ad0	ONLINE	0	0	0
c0t600144F03E9782000000574FD847000Bd0	ONLINE	0	0	0
mirror-1	ONLINE	0	0	0
c0t600144F03E9782000000574FD849000Cd0	ONLINE	0	0	0
c0t600144F03E9782000000574FD8410009d0	ONLINE	0	0	0

errors: No known data errors

```
root@k-vnx-solaris-mobile-cart:~# zfs list -rH r610p-146gb
r610p-146gb 214K 401G 62.8K /r610p-146gb
r610p-146gb/storpool-shares-backup 70.3K 400G 70.3K /r610p-146gb/storpool-shares-backup
```

```
root@k-vnx-solaris-mobile-cart:~# ls /r610p-146gb/storpool-shares-backup/
solaris-test-file-for-mounts.txt test2 test4
test1 test3 test5
```

```
root@k-vnx-solaris-mobile-cart:~# zfs list -rH storpool-zvol
storpool-zvol 12.8G 183G 12.7G /storpool-zvol
```

```
root@k-vnx-solaris-mobile-cart:~# ls /mnt/
stor-pool vm-datastore
```

```
root@k-vnx-solaris-mobile-cart:~# ls -ls /mnt/stor-pool/
```

```
total 26591631
```

```
858 -rwxrwxrwx 1 nobody staff 427680 Aug 22 2013 bootmgr
 4 -rwxrwxrwx 1 nobody staff 1 Jun 18 2013 BOOTNXT
632181 -rw-r--r-- 1 nobody nobody 330301440 Jun 22 13:31 debian-8.2.0-i386-netinst.iso
7750575 -rw-r--r-- 1 nobody nobody 3994091520 Jun 22 13:34 debian-8.4.0-amd64-DVD-1.iso
9113654 -rw-r--r-- 1 nobody nobody 4674091008 Jun 22 13:39 debian-8.4.0-amd64-DVD-2.iso
9094305 -rw-r--r-- 1 nobody nobody 4663099392 Jun 22 13:43 debian-8.4.0-amd64-DVD-3.iso
 5 -rwxrwxrwx 1 nobody staff 479 Jul 14 11:00 drive-scans.txt
11 -rwxrwxrwx 1 nobody staff 8371 Jun 30 20:04 jf-d1689-post-ica.txt
11 -rwxrwxrwx 1 nobody staff 8866 Jun 30 21:46 jf-d1689-post-nas.txt
 5 -rwxrwxrwx 1 nobody staff 459 Apr 14 02:33 post-nas-install-commands.txt
 4 -rwxrwxrwx 1 root root 0 Jun 20 16:00 solaris-storage-text-file-for-mounts.txt
 7 drwxr-xr-x 2 nobody nobody 7 Jun 20 22:25 test-folder
 4 -rwxrwxrwx 1 nobody staff 5242880000 Jul 15 09:54 test1
 7 drwxrwxrwx+ 2 nobody staff 6 Jun 21 23:27 testing-windows
```

```
root@k-vnx-solaris-mobile-cart:~# ls -ls /mnt/vm-datastore/
```

```
total 3
```

```
3 drwxr-xr-x 5 vnxadmin staff 5 Jun 30 15:09 vms
```

```
root@k-vnx-solaris-mobile-cart:~# ls -ls /mnt/vm-datastore/vms/
```

```
total 9
```

```
3 drwxr-xr-x 3 vnxadmin staff 6 Jun 30 14:06 debian-v8x64
3 drwxr-xr-x 2 vnxadmin staff 5 Jun 30 14:01 test
3 drwxr-xr-x 3 vnxadmin staff 5 Jul 11 16:07 test2
```



root@k-vnx-solaris-mobile-cart:~# iscsiadm list target -v

Target: iqn.1986-03.com.sun:02:storpool-target

Alias: -

TPGT: 1

ISID: 4000002a0000

Connections: 1

CID: 0

IP address (Local): 172.16.100.3:36702

IP address (Peer): 172.16.100.4:3260

Transport Type: socket

Discovery Method: SendTargets

Login Parameters (Negotiated):

Data Sequence In Order: yes

Data PDU In Order: yes

Default Time To Retain: 20

Default Time To Wait: 2

Error Recovery Level: 0

First Burst Length: 65536

Immediate Data: yes

Initial Ready To Transfer (R2T): yes

Max Burst Length: 262144

Max Outstanding R2T: 1

Max Receive Data Segment Length: 32768

Max Connections: 32

Header Digest: NONE

Data Digest: NONE

root@k-vnx-solaris-mobile-cart:~# iscsiadm list initiator-node

Initiator node name: iqn.1986-03.com.sun:01:k-vnx-solaris

Initiator node alias: k-vnx-solaris-mobile-cart

Login Parameters (Default/Configured):

Header Digest: NONE/-

Data Digest: NONE/-

Max Connections: 65535/-

Authentication Type: CHAP

CHAP Name: chap

RADIUS Server: NONE

RADIUS Access: disabled

Tunable Parameters (Default/Configured):

Session Login Response Time: 60/-

Maximum Connection Retry Time: 180/-

Login Retry Time Interval: 60/-

Configured Sessions: 1

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Home Setup  
(always working progress)

Setup of iscsi san

Creating block/luns  
(parity, non-parity)

Assigning luns to windows/mac host

Creating Shares

Storage stats

personally crimped cables

```

root@      solaris11      /zstor2tb# stmfadm list-hg
Host Group: mac-group
Host Group: win-group
root@      solaris11      :/zstor2tb# stmfadm list-hg -v
Host Group: mac-group
Member: iqn.2003-12.com.small-tree:expensive-rotten-fruit
Host Group: win-group
Member: iqn.1991-05.com.microsoft:

```

```

root@      debian:/# vi /etc/fstab
root@      debian:/# mount -a
root@      debian:/# ls /mnt/zstor
data-vol1  data-vol2  data-vol3  data-vol4  data-vol-temp

```

```

LU Name: 600144F012F0A000000055396F84001B
Operational Status      : Online
Provider Name           : sbd
Alias                   : mac-v000-no-chap-auth
View Entry Count        : 1
Data File               : /dev/zvol/rdisk/zstor2tb/iscsi-san/mac-vols/vol-000
Meta File               : not set
Size                   : 107374182400
Block Size              : 4096
Management URL          : not set
Vendor ID               : SUN
Product ID              : COMSTAR
Serial Num              : not set
Write Protect           : Disabled
Write Cache Mode Select: Enabled
Writeback Cache         : Enabled
Access State            : Active

```

```
root@ solaris11: :/zstor2tb# sbdadm list-lu
```

```
Found 20 LU(s)
```

GUID	DATA SIZE	SOURCE
600144f012f08a00000005533024a0001	10737418240	/dev/zvol/rdisk/zstor2tb/iscsi-san/mac-vols/vol-005
600144f012f08a0000000553302610002	10737418240	/dev/zvol/rdisk/zstor2tb/iscsi-san/mac-vols/vol-006
600144f012f08a0000000553302740003	10737418240	/dev/zvol/rdisk/zstor2tb/iscsi-san/mac-vols/vol-007
600144f012f08a0000000553302830004	10737418240	/dev/zvol/rdisk/zstor2tb/iscsi-san/mac-vols/vol-008
600144f012f08a00000005533028f0005	10737418240	/dev/zvol/rdisk/zstor2tb/iscsi-san/mac-vols/vol-009
600144f012f08a000000055331a880006	10737418240	/dev/zvol/rdisk/zstor2tb/iscsi-san/win-vols/vol-005
600144f012f08a000000055331afe0007	10737418240	/dev/zvol/rdisk/zstor2tb/iscsi-san/win-vols/vol-006
600144f012f08a000000055331b1e0008	10737418240	/dev/zvol/rdisk/zstor2tb/iscsi-san/win-vols/vol-007
600144f012f08a000000055331b3f0009	10737418240	/dev/zvol/rdisk/zstor2tb/iscsi-san/win-vols/vol-008
600144f012f08a000000055331b74000a	10737418240	/dev/zvol/rdisk/zstor2tb/iscsi-san/win-vols/vol-009
600144f012f08a0000000553371be0011	107374182400	/dev/zvol/rdisk/zstor2tb/iscsi-san/mac-vols/vol-001
600144f012f08a0000000553371cd0012	107374182400	/dev/zvol/rdisk/zstor2tb/iscsi-san/mac-vols/vol-002
600144f012f08a0000000553371d90013	107374182400	/dev/zvol/rdisk/zstor2tb/iscsi-san/mac-vols/vol-003
600144f012f08a0000000553371e50014	107374182400	/dev/zvol/rdisk/zstor2tb/iscsi-san/mac-vols/vol-004
600144f012f08a00000005533ca8a0015	107374182400	/dev/zvol/rdisk/zstor2tb/iscsi-san/win-vols/vol-000
600144f012f08a00000005533ca980016	107374182400	/dev/zvol/rdisk/zstor2tb/iscsi-san/win-vols/vol-001
600144f012f08a00000005533caa20017	107374182400	/dev/zvol/rdisk/zstor2tb/iscsi-san/win-vols/vol-002
600144f012f08a00000005533caae0018	107374182400	/dev/zvol/rdisk/zstor2tb/iscsi-san/win-vols/vol-003
600144f012f08a00000005533cab90019	107374182400	/dev/zvol/rdisk/zstor2tb/iscsi-san/win-vols/vol-004
600144f012f08a000000055396f84001b	107374182400	/dev/zvol/rdisk/zstor2tb/iscsi-san/mac-vols/vol-000

```
root@ -solaris11: :/zstor2tb# stmfadm list-lu
```

```
LU Name: 600144F012F08A00000005533024A0001
LU Name: 600144F012F08A0000000553302610002
LU Name: 600144F012F08A0000000553302740003
LU Name: 600144F012F08A0000000553302830004
LU Name: 600144F012F08A00000005533028F0005
LU Name: 600144F012F08A000000055331A880006
LU Name: 600144F012F08A000000055331AFE0007
LU Name: 600144F012F08A000000055331B1E0008
LU Name: 600144F012F08A000000055331B3F0009
LU Name: 600144F012F08A000000055331B74000A
LU Name: 600144F012F08A0000000553371BE0011
LU Name: 600144F012F08A0000000553371CD0012
LU Name: 600144F012F08A0000000553371D90013
LU Name: 600144F012F08A0000000553371E50014
LU Name: 600144F012F08A00000005533CA8A0015
LU Name: 600144F012F08A00000005533CA980016
LU Name: 600144F012F08A00000005533CAA20017
LU Name: 600144F012F08A00000005533CAAE0018
LU Name: 600144F012F08A00000005533CAB90019
LU Name: 600144F012F08A000000055396F84001B
```



```

root@          solaris11      :/zstor2tb# zfs list zstor2tb
NAME          USED    AVAIL  REFER  MOUNTPOINT
zstor2tb      3.85T  5.01T   104K   /zstor2tb
root@          solaris11      :/zstor2tb# zfs list zstor320gb
NAME          USED    AVAIL  REFER  MOUNTPOINT
zstor320gb    728G   1.00T   140K   /zstor320gb

```

```

pool: zstor2tb
state: ONLINE
  scan: none requested
config:

```

NAME	STATE	READ	WRITE	CKSUM
zstor2tb	ONLINE	0	0	0
raidz3-0	ONLINE	0	0	0
c0t5000CCA221E7E1DBd0	ONLINE	0	0	0
c0t5000CCA221E77A36d0	ONLINE	0	0	0
c0t5000CCA222D2930Fd0	ONLINE	0	0	0
c0t5000CCA229C2152Ed0	ONLINE	0	0	0
c0t5000CCA229DDFB3Cd0	ONLINE	0	0	0
c0t5000CCA369F456E6d0	ONLINE	0	0	0
c0t50014EE25DB0C362d0	ONLINE	0	0	0
c0t50014EE2085B9A64d0	ONLINE	0	0	0
spares				
c0t5000CCA222D22B8Ed0	UNAVAIL			
c0t5000CCA222D6248Dd0	UNAVAIL			

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

```

pool: zstor320gb
state: ONLINE
  scan: resilvered 726G in 1h28m with 0 errors on Sun Apr  5 23:36:32 2015
config:

```

NAME	STATE	READ	WRITE	CKSUM
zstor320gb	ONLINE	0	0	0
raidz2-0	ONLINE	0	0	0
c9t5001E678B0589FE1d0	ONLINE	0	0	0
c9t5001E678B0589FE2d0	ONLINE	0	0	0
c9t5001E678B0589FE3d0	ONLINE	0	0	0
c0t50014EE0AB52FCF5d0	ONLINE	0	0	0
c0t50014EE156F34C8Bd0	ONLINE	0	0	0
c0t50014EE1029F6FA5d0	ONLINE	0	0	0
c0t50014EE1591D38AFd0	ONLINE	0	0	0
c0t50014EE2B15A5E1Cd0	ONLINE	0	0	0

```

spares
  c0t50014EE25C049A06d0  UNAVAIL
  c0t50014EE1591F92C7d0  UNAVAIL

```

zstor2tb/pool-fs-backup	1.43T	5.01T	122K
zstor2tb/pool-fs-backup/data-vol-temp	512G	5.01T	512G
zstor2tb/pool-fs-backup/data-vol1	249G	5.01T	249G
zstor2tb/pool-fs-backup/data-vol2	99.4K	5.01T	99.4K
zstor2tb/pool-fs-backup/data-vol3	705G	5.01T	705G
zstor2tb/pool-fs-backup/data-vol4	99.4K	5.01T	99.4K
zstor320gb	728G	1.00T	140K
zstor320gb/data-vol-temp	104K	1.00T	104K
zstor320gb/data-vol1	104K	1.00T	104K
zstor320gb/data-vol2	104K	1.00T	104K
zstor320gb/data-vol3	722G	1.00T	722G
zstor320gb/data-vol4	104K	1.00T	104K

zstor2tb	1.85T	5.01T	104K
zstor2tb/iscsi-san	2.41T	5.01T	114K
zstor2tb/iscsi-san/mac-vols	552G	5.01T	94.4K
zstor2tb/iscsi-san/mac-vols/vol-000	100G	5.08T	34.1G
zstor2tb/iscsi-san/mac-vols/vol-001	100G	5.09T	22.6G
zstor2tb/iscsi-san/mac-vols/vol-002	100G	5.09T	22.6G
zstor2tb/iscsi-san/mac-vols/vol-003	100G	5.11T	134M
zstor2tb/iscsi-san/mac-vols/vol-004	100G	5.11T	134M
zstor2tb/iscsi-san/mac-vols/vol-005	10.3G	5.02T	44.0M
zstor2tb/iscsi-san/mac-vols/vol-006	10.3G	5.02T	39.8K
zstor2tb/iscsi-san/mac-vols/vol-007	10.3G	5.02T	39.8K
zstor2tb/iscsi-san/mac-vols/vol-008	10.3G	5.02T	39.8K
zstor2tb/iscsi-san/mac-vols/vol-009	10.3G	5.02T	39.8K
zstor2tb/iscsi-san/nix-vols	103G	5.01T	94.4K
zstor2tb/iscsi-san/nix-vols/vol-001	103G	5.11T	39.8K
zstor2tb/iscsi-san/test-vols	1.23T	5.01T	94.4K
zstor2tb/iscsi-san/test-vols/vol-001	103G	5.11T	39.8K
zstor2tb/iscsi-san/test-vols/vol-002	1.03T	6.04T	39.8K
zstor2tb/iscsi-san/test-vols/vol-003	1.03G	5.01T	39.8K
zstor2tb/iscsi-san/test-vols/vol-004	103G	5.11T	39.8K
zstor2tb/iscsi-san/win-vols	552G	5.01T	94.4K
zstor2tb/iscsi-san/win-vols/vol-000	100G	5.11T	41.3M
zstor2tb/iscsi-san/win-vols/vol-001	100G	5.11T	43.7M
zstor2tb/iscsi-san/win-vols/vol-002	100G	5.11T	51.0M
zstor2tb/iscsi-san/win-vols/vol-003	100G	5.11T	43.0M
zstor2tb/iscsi-san/win-vols/vol-004	100G	5.11T	52.0M
zstor2tb/iscsi-san/win-vols/vol-005	10.3G	5.02T	614K
zstor2tb/iscsi-san/win-vols/vol-006	10.3G	5.02T	605K
zstor2tb/iscsi-san/win-vols/vol-007	10.3G	5.02T	723K
zstor2tb/iscsi-san/win-vols/vol-008	10.3G	5.02T	538K
zstor2tb/iscsi-san/win-vols/vol-009	10.3G	5.02T	12.0M



```
root@      solaris11      :/zstor2tb# stmfadm list-state
Operational Status: online
Config Status      : initialized
ALUA Status        : disabled
ALUA Node          : 0
```

```
root@      solaris11      :/zstor2tb# stmfadm list-target
Target: iqn.1986-03.com.sun:02:target-chap-authentication
Target: iqn.1986-03.com.sun:01:target-no-chap-authentication
root@      solaris11      :/zstor2tb# stmfadm list-target -v
Target: iqn.1986-03.com.sun:02:target-chap-authentication
  Operational Status      : Online
  Provider Name          : iscsit
  Alias                  : -
  Protocol                : iSCSI
  Sessions                : 2
    Initiator: iqn.1991-05.com.microsoft: [REDACTED]
      Alias: -
      Logged in since: Thu Apr 23 23:40:41 2015
    Initiator: iqn.2003-12.com.small-tree:expensive-rotten-fruit
      Alias: -
      Logged in since: Thu Apr 23 22:51:18 2015
Target: iqn.1986-03.com.sun:01:target-no-chap-authentication
  Operational Status      : Online
  Provider Name          : iscsit
  Alias                  : -
  Protocol                : iSCSI
  Sessions                : 2
    Initiator: iqn.1991-05.com.microsoft: [REDACTED]
      Alias: -
      Logged in since: Thu Apr 23 23:40:39 2015
    Initiator: iqn.2003-12.com.small-tree:expensive-rotten-fruit
      Alias: -
      Logged in since: Thu Apr 23 22:18:45 2015
```

```
root@      solaris11      :/zstor2tb# stmfadm list-tg
Target Group: test-tg
Target Group: test-tg1
root@      solaris11      :/zstor2tb# stmfadm list-tg -v
Target Group: test-tg
  Member: iqn.1986-03.com.sun:01:target-no-chap-authentication
Target Group: test-tg1
  Member: iqn.1986-03.com.sun:02:target-chap-authentication
```



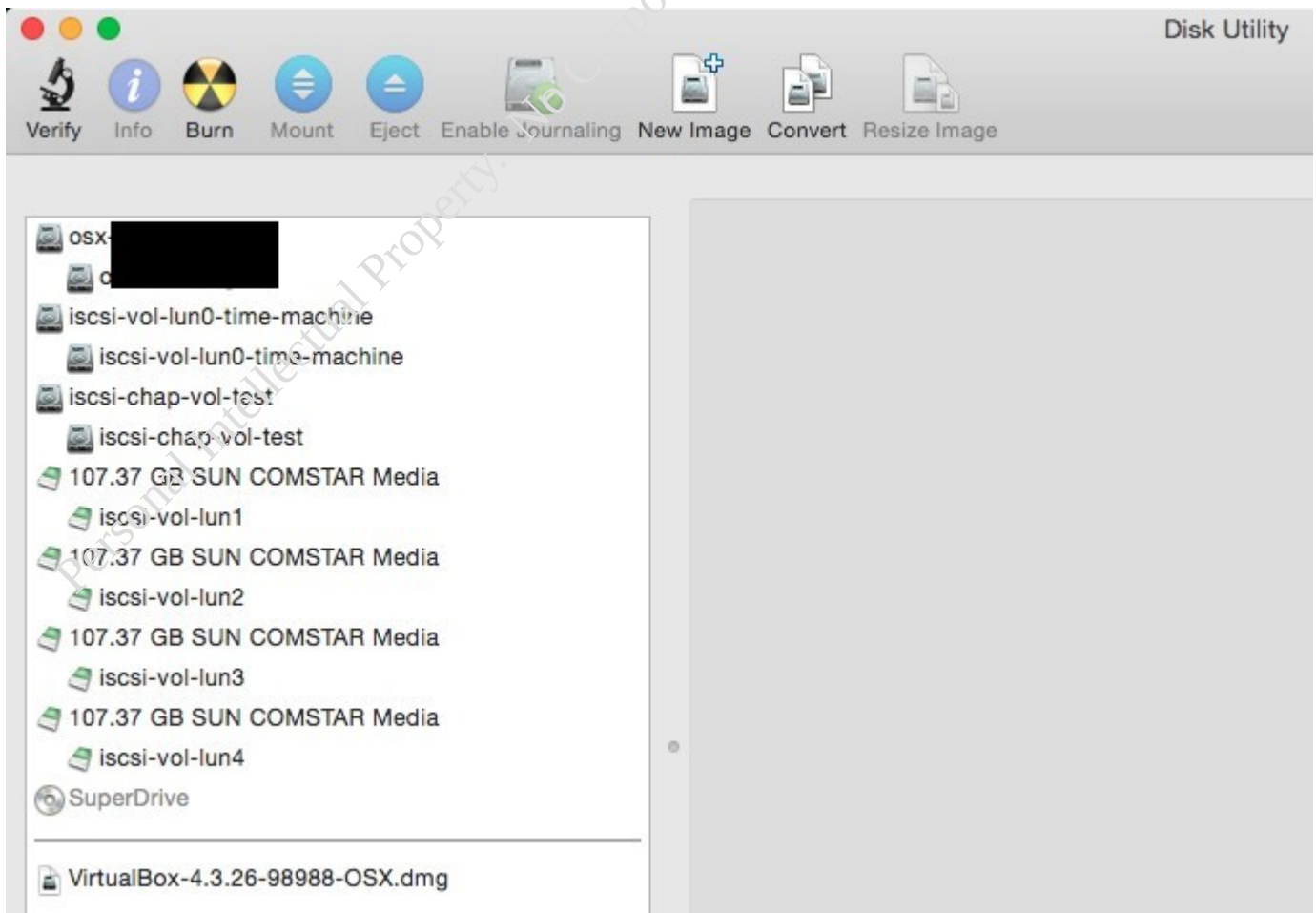
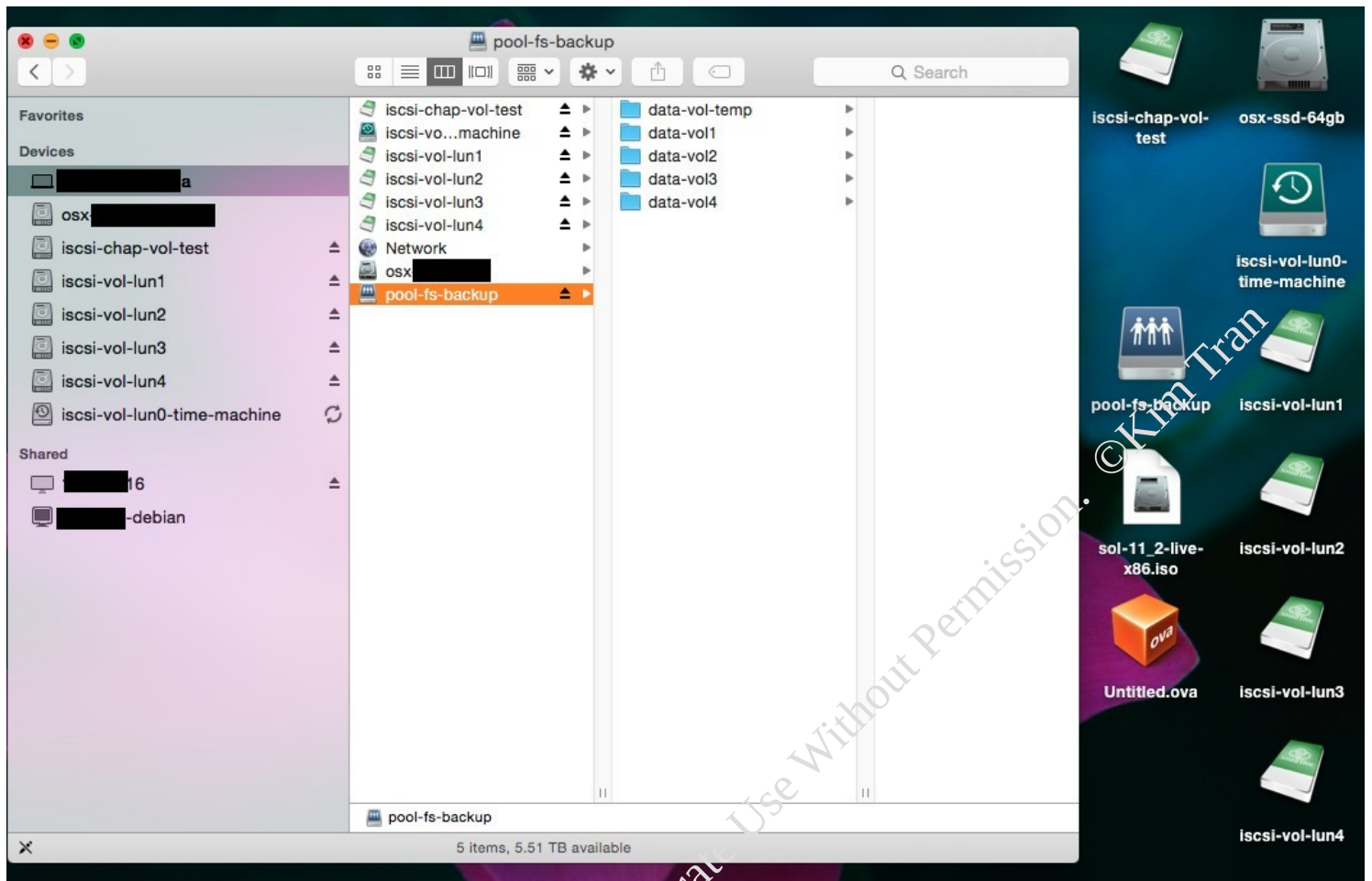
```

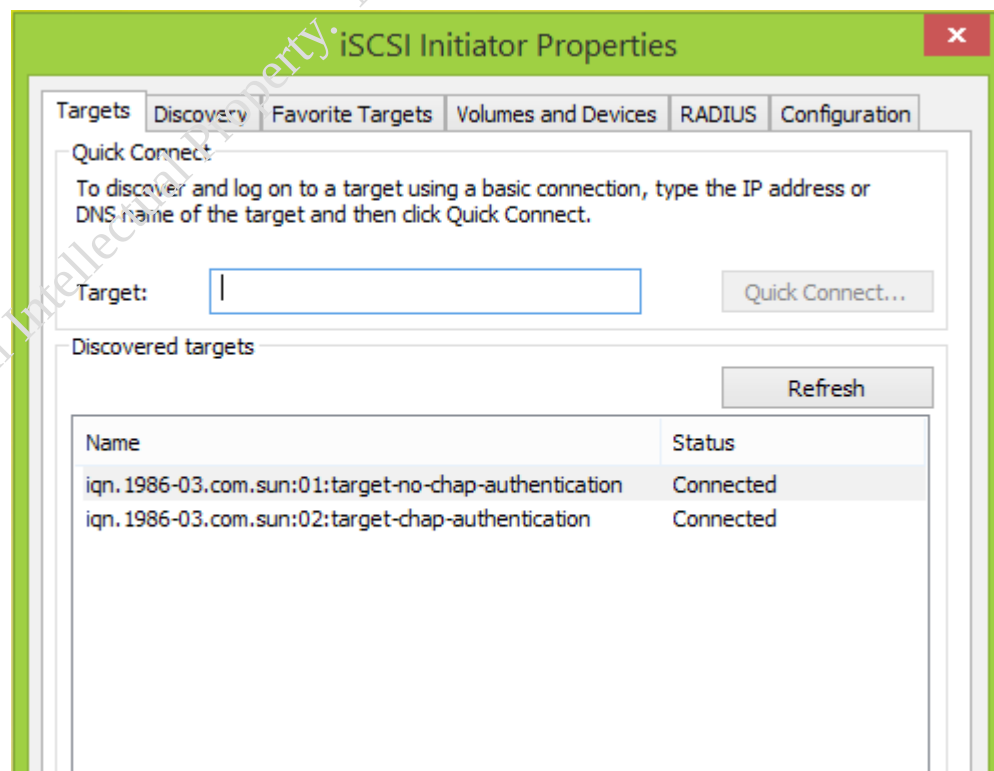
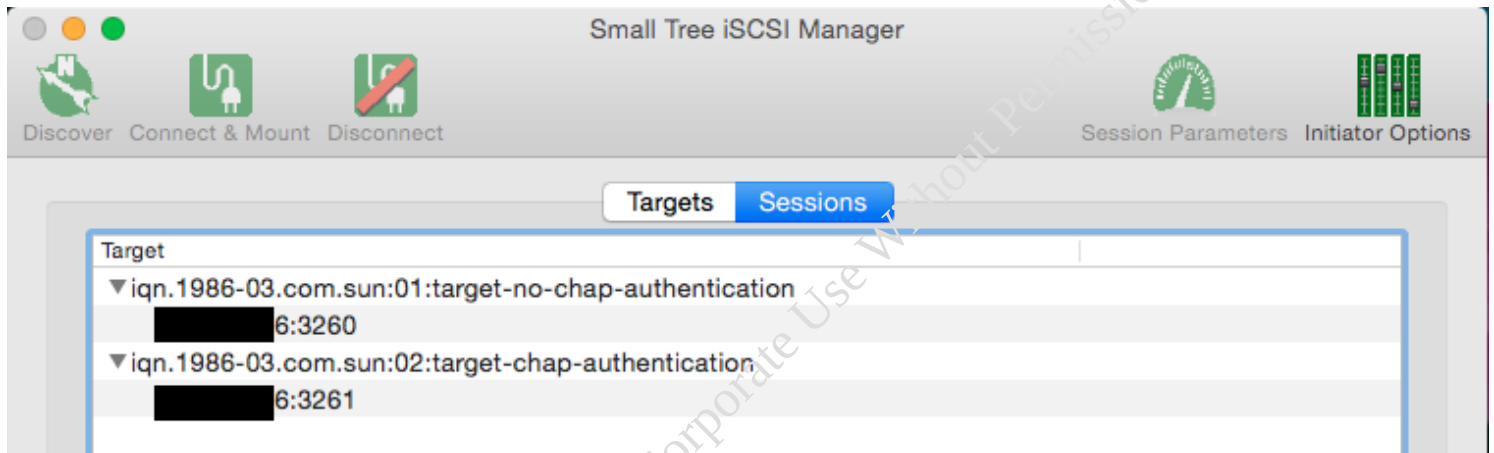
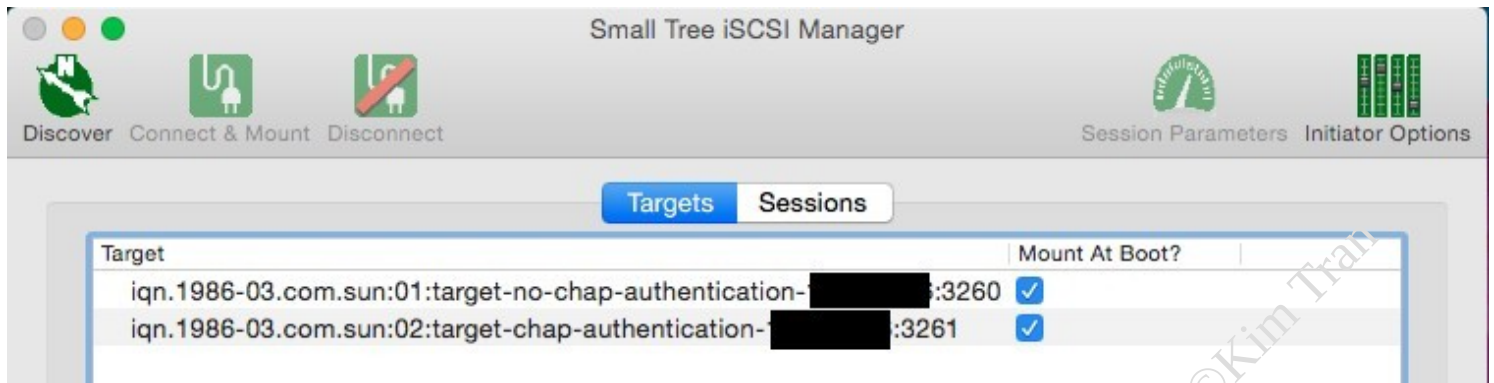
root@      -solaris11      :/zstor2tb# itadm list-target
TARGET NAME                                     STATE      SESSIONS
iqn.1986-03.com.sun:02:target-chap-authentication  online     1
iqn.1986-03.com.sun:01:target-no-chap-authentication online     1
root@      -solaris11      :/zstor2tb# itadm list-target -v
TARGET NAME                                     STATE      SESSIONS
iqn.1986-03.com.sun:02:target-chap-authentication  online     1
  alias:                                         -
  auth:                                         chap
  targetchapuser:                             test-chap-user
  targetchapsecret:                           set
  tpg-tags:                                    test-tpg1 = 2
iqn.1986-03.com.sun:01:target-no-chap-authentication online     1
  alias:                                       testing-with-no-chap-authentication
  auth:                                       none
  targetchapuser:                             -
  targetchapsecret:                           unset
  tpg-tags:                                    default

```

zstor2tb	1.20T	13.3T	66	1.16K	89.5K	70.0M
zstor2tb	1.20T	13.3T	49	1.16K	66.5K	56.5M
zstor2tb	1.20T	13.3T	72	84	98.0K	72.1M
zstor2tb	1.20T	13.3T	61	270	87.9K	95.0M
zstor2tb	1.20T	13.3T	5	2.38K	7.89K	308M
zstor2tb	1.20T	13.3T	1	2.54K	3.00K	326M
zstor2tb	1.20T	13.3T	4	2.53K	5.01K	327M
zstor2tb	1.20T	13.3T	38	1.51K	53.5K	234M
zstor2tb	1.20T	13.3T	61	74	87.0K	74.0M
zstor2tb	1.20T	13.3T	43	1.18K	56.5K	48.4M
zstor2tb	1.20T	13.3T	68	78	91.0K	78.0M
zstor2tb	1.20T	13.3T	68	87	91.5K	76.1M
zstor2tb	1.20T	13.3T	69	87	95.0K	76.0M
zstor2tb	1.20T	13.3T	60	72	84.0K	72.0M
zstor2tb	1.20T	13.3T	39	1.20K	54.0K	50.4M
zstor2tb	1.20T	13.3T	72	75	96.5K	75.0M
zstor2tb	1.20T	13.3T	70	90	98.0K	76.6M
zstor2tb	1.20T	13.3T	70	87	97.0K	73.2M

zstor2tb	1.23T	13.3T	0	201	0	25.2M
zstor2tb	1.23T	13.3T	23	1.66K	33.0K	233M
zstor2tb	1.23T	13.3T	70	82	98.5K	63.5M
zstor2tb	1.23T	13.3T	52	704	74.0K	116M
zstor2tb	1.23T	13.3T	64	897	90.0K	61.5M
zstor2tb	1.23T	13.3T	0	171	0	21.5M
zstor2tb	1.23T	13.3T	24	27	32.5K	19.4M
zstor2tb	1.23T	13.3T	56	556	77.5K	41.6M
zstor2tb	1.23T	13.3T	0	206	0	24.0M







Computer Management (Local)

- System Tools
  - Task Scheduler
  - Event Viewer
  - Shared Folders
  - Performance
  - Device Manager
- Storage
  - Disk Management
  - Services and Application

Volume	Layout	Type	File System	Status	Capacity	Free Space	% Free
	Simple	Basic		Healthy (EFI System Partition)	100 MB	100 MB	100 %
	Simple	Basic		Healthy (Recovery Partition)	8.00 GB	8.00 GB	100 %
10g-disks (E:)	Simple	Basic	NTFS	Healthy (Primary Partition)	44.87 GB	44.78 GB	100 %
100g-disks (D:)	Simple	Basic	NTFS	Healthy (Primary Partition)	328.87 GB	328.74 GB	100 %
OS (C:)	Simple	Basic	NTFS	Healthy (Boot, Page File, Crash Dump, Wim Boot, Primary Partition)	20.90 GB	5.13 GB	25 %

**Disk 0**  
 Basic  
 29.00 GB  
 Online

100 MB  
 Healthy (EFI System)

**OS (C:)**  
 20.90 GB NTFS  
 Healthy (Boot, Page File, Crash Dump, Wim Bo

8.00 GB  
 Healthy (Recovery Partition)

**Disk 11**  
 Basic  
 328.88 GB  
 Online

**100g-disks (D:)**  
 328.87 GB NTFS  
 Healthy (Primary Partition)

**Disk 12**  
 Basic  
 44.88 GB  
 Online

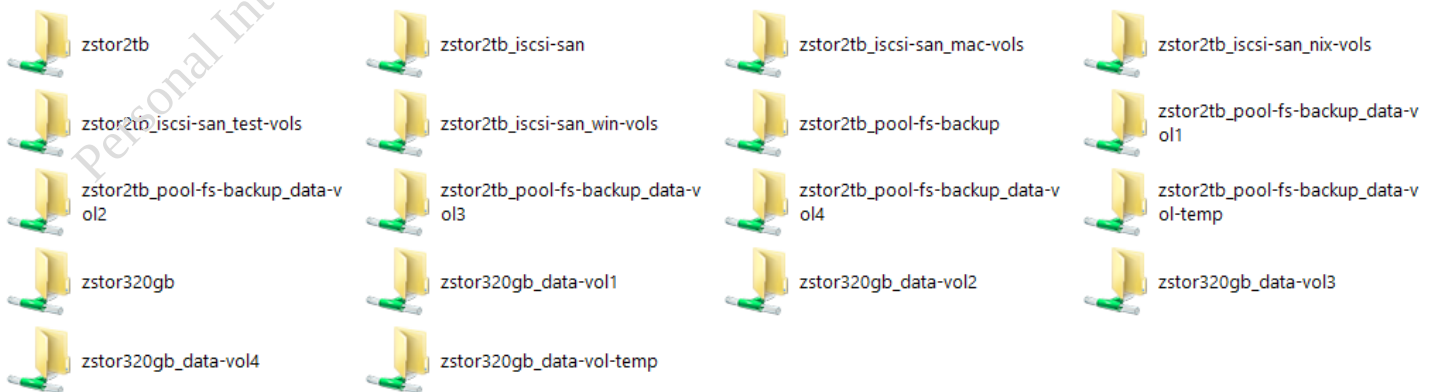
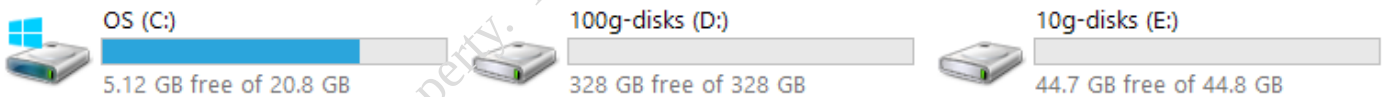
**10g-disks (E:)**  
 44.87 GB NTFS  
 Healthy (Primary Partition)

Unallocated Primary partition

## This PC

### Folders (6)

### Devices and drives (3)



100g-disks

OK


Using 4.75 GB of 496 GB pool capacity

Create a storage space

Add drives

Rename pool

Storage spaces



100g-disks (D:)

Parity

329 GB

Using 3.00 GB pool capacity

OK

View files

Change

Delete

Physical drives

10g-disks

OK


Using 2.00 GB of 46.2 GB pool capacity

Create a storage space

Add drives

Rename pool

Storage spaces



10g-disks (E:)

Simple (no resiliency)

45.0 GB

Using 768 MB pool capacity

OK

View files

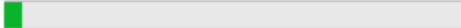
Change

Delete

Physical drives


## 10g-disks

OK 

  
Using 2.00 GB of 46.2 GB pool capacity

Create a storage space  
Add drives  
Rename pool



### Storage spaces

 10g-disks (E:)  
Simple (no resiliency)  
45.0 GB  
Using 768 MB pool capacity



 OK

[View files](#)  
[Change](#)  
[Delete](#)



### Physical drives

 SUN COMSTAR SCSI Disk ...  OK  
Attached via iSCSI  
2.70 % used  
Providing 9.25 GB pool capacity



[Rename](#)  
[Remove](#)

 SUN COMSTAR SCSI Disk ...  OK  
Attached via iSCSI  
5.40 % used  
Providing 9.25 GB pool capacity



[Rename](#)

 SUN COMSTAR SCSI Disk ...  OK  
Attached via iSCSI  
2.70 % used  
Providing 9.25 GB pool capacity

[Rename](#)  
[Remove](#)

 SUN COMSTAR SCSI Disk ...  OK  
Attached via iSCSI  
8.10 % used  
Providing 9.25 GB pool capacity

[Rename](#)

 SUN COMSTAR SCSI Disk ...  OK  
Attached via iSCSI  
2.70 % used  
Providing 9.25 GB pool capacity

[Rename](#)  
[Remove](#)

## 100g-disks



OK



Using 4.75 GB of 496 GB pool capacity



Create a storage space  
Add drives  
Rename pool

## Storage spaces



 100g-disks (D:)  OK  
Parity  
329 GB  
Using 3.00 GB pool capacity

[View files](#)  
[Change](#)  
[Delete](#)



## Physical drives

 SUN COMSTAR SCSI Disk ...  OK  
Attached via iSCSI  
0.75 % used  
Providing 99.2 GB pool capacity



[Rename](#)

 SUN COMSTAR SCSI Disk ...  OK  
Attached via iSCSI  
1.00 % used  
Providing 99.2 GB pool capacity



[Rename](#)

 SUN COMSTAR SCSI Disk ...  OK  
Attached via iSCSI  
1.00 % used  
Providing 99.2 GB pool capacity

[Rename](#)

 SUN COMSTAR SCSI Disk ...  OK  
Attached via iSCSI  
1.00 % used  
Providing 99.2 GB pool capacity

[Rename](#)

 SUN COMSTAR SCSI Disk ...  OK  
Attached via iSCSI  
1.00 % used  
Providing 99.2 GB pool capacity

[Rename](#)

