

Old custom built storage server data migration to new storage server

//old storage pool

```
pool: zstor
state: ONLINE
scan: scrub in progress since Sun Nov 30 14:47:24 2025
  1 scanned out of 18.5T at 1/s, (scan is slow, no estimated time)
  0 repaired, 0.00% done
config:

      NAME            STATE   READ  WRITE CKSUM
      zstor           ONLINE    0     0     0
      raidz3-0        ONLINE    0     0     0
      c0t5000CCA222D22B8Ed0  ONLINE    0     0     0
      c0t50014EE0028EA60Ed0  ONLINE    0     0     0
      c0t5000CCA229C2152Ed0  ONLINE    0     0     0
      c0t5000CCA229DDFB3Cd0  ONLINE    0     0     0
      c0t5000CCA221E7E1DBd0  ONLINE    0     0     0
      c0t5000CCA22DCC0F0Bd0  ONLINE    0     0     0
      c0t5000CCA22DDA19EEd0  ONLINE    0     0     0
      c0t5000CCA22DC7F85Dd0  ONLINE    0     0     0
      c0t5000CCA22DD6DFD2d0  ONLINE    0     0     0
      c0t5000CCA22DEF0C3Ad0  ONLINE    0     0     0
      c0t5000CCA22DDA3EC3d0  ONLINE    0     0     0
      c0t5000CCA22DF65FF5d0  ONLINE    0     0     0
      c0t5000CCA22DD9DA72d0  ONLINE    0     0     0
      c0t5000CCA222D2930Fd0  ONLINE    0     0     0
      c0t50014EE25DB0C362d0  ONLINE    0     0     0
      c0t50014EE2085B9A64d0  ONLINE    0     0     0
      c0t5000CCA369F456E6d0  ONLINE    0     0     0
      c0t5000CCA221E77A36d0  ONLINE    0     0     0
spares
      c0t5000CCA22DD9ABA1d0  AVAIL

errors: No known data errors
root@sanjiyan-zstor:~#
```

zstor	16.4T	6.81T	1.08M	/zstor
zstor/archive-scans	744K	6.81T	744K	/zstor/archive-scans
zstor/isan	1.32M	6.81T	674K	/zstor/isan
zstor/iscsi-san	5.41T	6.81T	860K	/zstor/iscsi-san
zstor/iscsi-san/mac-vols	3.07T	6.81T	674K	/zstor/iscsi-san/mac-vols
zstor/iscsi-san/mac-vols/vol-000	188G	6.84T	73.4G	-
zstor/iscsi-san/mac-vols/vol-001	121G	6.86T	55.8G	-
zstor/iscsi-san/mac-vols/vol-002	121G	6.86T	55.8G	-
zstor/iscsi-san/mac-vols/vol-003	113G	6.86T	49.9G	-
zstor/iscsi-san/mac-vols/vol-004	113G	6.86T	49.9G	-
zstor/iscsi-san/mac-vols/vol-005	10.5G	6.82T	184M	-
zstor/iscsi-san/mac-vols/vol-006	10.3G	6.82T	209K	-
zstor/iscsi-san/mac-vols/vol-007	10.3G	6.82T	209K	-
zstor/iscsi-san/mac-vols/vol-008	10.3G	6.82T	209K	-
zstor/iscsi-san/mac-vols/vol-009	10.3G	6.82T	209K	-
zstor/iscsi-san/mac-vols/vol-010	672G	6.81T	672G	-
zstor/iscsi-san/mac-vols/vol-011	516G	7.06T	267G	-
zstor/iscsi-san/mac-vols/vol-012	516G	7.06T	267G	-
zstor/iscsi-san/mac-vols/vol-013	516G	7.06T	267G	-
zstor/iscsi-san/mac-vols/vol-test1	106G	6.92T	209K	-
zstor/iscsi-san/mac-vols/vol-test2	106G	6.92T	209K	-

zstor/iscsi-san/nix-vols	1.56T	6.81T	636K	/zstor/iscsi-san/nix-vols
zstor/iscsi-san/nix-vols/vol-000	213G	6.99T	35.1G	-
zstor/iscsi-san/nix-vols/vol-001	213G	6.99T	34.8G	-
zstor/iscsi-san/nix-vols/vol-002	213G	6.99T	34.5G	-
zstor/iscsi-san/nix-vols/vol-003	213G	6.99T	34.6G	-
zstor/iscsi-san/nix-vols/vol-004	213G	6.99T	34.4G	-
zstor/iscsi-san/nix-vols/vol-005	106G	6.92T	209K	-
zstor/iscsi-san/nix-vols/vol-006	106G	6.92T	209K	-
zstor/iscsi-san/nix-vols/vol-007	106G	6.92T	209K	-
zstor/iscsi-san/nix-vols/vol-008	106G	6.92T	209K	-
zstor/iscsi-san/nix-vols/vol-009	106G	6.92T	209K	-
zstor/iscsi-san/win-vols	802G	6.81T	674K	/zstor/iscsi-san/win-vols
zstor/iscsi-san/win-vols/vol-000	151G	6.89T	77.0G	-
zstor/iscsi-san/win-vols/vol-001	151G	6.89T	75.7G	-
zstor/iscsi-san/win-vols/vol-002	149G	6.89T	75.3G	-
zstor/iscsi-san/win-vols/vol-003	150G	6.89T	75.6G	-
zstor/iscsi-san/win-vols/vol-004	149G	6.89T	74.7G	-
zstor/iscsi-san/win-vols/vol-005	10.3G	6.82T	2.44M	-
zstor/iscsi-san/win-vols/vol-006	10.3G	6.82T	368M	-
zstor/iscsi-san/win-vols/vol-007	10.3G	6.82T	1.12G	-
zstor/iscsi-san/win-vols/vol-008	10.3G	6.82T	2.20M	-
zstor/iscsi-san/win-vols/vol-009	10.4G	6.82T	993M	-
zstor/naspool	10.8T	6.81T	2.46T	/zstor/naspool
zstor/naspool/1	2.97T	6.81T	2.43T	/zstor/naspool/1
zstor/naspool/2	4.75T	6.81T	2.92T	/zstor/naspool/2
zstor/naspool/3	596G	6.81T	930K	/zstor/naspool/3

root@sanjiyan-zstor:~# █

// sent - migration in progress

root@sanjiyan-zstor:~# zpool iostat zstor 1							
pool	capacity		operations		bandwidth		
	alloc	free	read	write	read	write	
zstor	18.5T	14.0T	98	9	5.03M	45.1K	
zstor	18.5T	14.0T	256	0	1.08M	0	
zstor	18.5T	14.0T	230	0	970K	0	
zstor	18.5T	14.0T	249	0	997K	0	
zstor	18.5T	14.0T	238	126	954K	563K	
zstor	18.5T	14.0T	270	0	1.06M	0	
zstor	18.5T	14.0T	281	0	1.21M	0	
zstor	18.5T	14.0T	260	0	1.06M	0	
zstor	18.5T	14.0T	237	0	1.03M	0	

zstor	18.5T	14.0T	699	19	84.9M	83.8K
zstor	18.5T	14.0T	497	2	61.5M	12.0K
zstor	18.5T	14.0T	774	0	89.1M	0
zstor	18.5T	14.0T	661	0	69.2M	0
zstor	18.5T	14.0T	712	0	80.3M	0
zstor	18.5T	14.0T	787	0	94.8M	0
zstor	18.5T	14.0T	766	15	93.8M	63.9K
zstor	18.5T	14.0T	737	2	85.8M	12.0K
zstor	18.5T	14.0T	712	0	82.9M	0
zstor	18.5T	14.0T	825	0	96.0M	0
zstor	18.5T	14.0T	761	0	86.4M	0
zstor	18.5T	14.0T	773	0	94.2M	0

// new storage pool for receiving storage migration

```
r630-suse:/home/onemantech # zpool status
  pool: zstor
    state: ONLINE
  config:

              NAME                                     STATE    READ WRITE CKSUM
  zstor                    raidz3-0
                           raidz3-0
                               wwn-0x58ce38ee2033a941  ONLINE     0      0      0
                               wwn-0x58ce38ee2033a011  ONLINE     0      0      0
                               wwn-0x58ce38ee20333a11  ONLINE     0      0      0
                               wwn-0x58ce38ee20320b05  ONLINE     0      0      0
                               wwn-0x58ce38ee2032b4a5  ONLINE     0      0      0
                               wwn-0x58ce38ee2032b12d  ONLINE     0      0      0
                               wwn-0x58ce38ee2033a015  ONLINE     0      0      0
                               wwn-0x58ce38ee20333a0d  ONLINE     0      0      0

errors: No known data errors
r630-suse:/home/onemantech #
r630-suse:/home/onemantech #
r630-suse:/home/onemantech #
r630-suse:/home/onemantech #
r630-suse:/home/onemantech # zfs list
NAME   USED   AVAIL   REFER  MOUNTPOINT
zstor  793G  15.0T   793G  /zstor
r630-suse:/home/onemantech #
```

// received – migration in progress

pool	capacity		operations		bandwidth	
	alloc	free	read	write	read	write
zstor	1.38T	26.6T	0	0	0	0
zstor	1.38T	26.6T	0	3.87K	0	716M
zstor	1.38T	26.6T	0	0	0	0
zstor	1.38T	26.6T	0	0	0	0
zstor	1.38T	26.6T	0	0	0	0
zstor	1.38T	26.6T	0	0	0	0
zstor	1.38T	26.6T	0	2.60K	0	456M
zstor	1.38T	26.6T	0	0	0	0
zstor	1.38T	26.6T	0	0	0	0
zstor	1.38T	26.6T	0	0	0	0
zstor	1.38T	26.6T	0	0	0	0
zstor	1.38T	26.6T	0	2.72K	0	482M
zstor	1.38T	26.6T	0	0	0	0
zstor	1.38T	26.6T	0	0	0	0
zstor	1.38T	26.6T	0	0	0	0
zstor	1.38T	26.6T	0	1.57K	0	324M
zstor	1.38T	26.6T	0	1.72K	0	276M
zstor	1.38T	26.6T	0	0	0	0
zstor	1.38T	26.6T	0	0	0	0
zstor	1.38T	26.6T	0	0	0	0
zstor	1.38T	26.6T	0	0	0	0
zstor	1.38T	26.6T	0	2.76K	0	493M
zstor	1.38T	26.6T	0	0	0	0
zstor	1.38T	26.6T	0	0	0	0
zstor	1.38T	26.6T	0	0	0	0
zstor	1.38T	26.6T	0	0	0	0
zstor	1.38T	26.6T	0	4.16K	0	782M
zstor	1.38T	26.6T	0	0	0	0

// new storage server network configuration with nic bonding / lacp configurations

```
10: bond0: <BROADCAST,MULTICAST,MASTER,UP,LOWER_UP> mtu 1500 qdisc noqueue state UP group default qlen 1000
    link/ether 24:6e:... brd ff:ff:ff:ff:ff:ff
      inet 172.1... scope global bond0
        valid_lft forever preferred_lft forever
      inet6 fe80::24:6e.../64 scope link proto kernel ll
        valid_lft forever preferred_lft forever
11: bond0.10@bond0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue state UP group default qlen 1000
    link/ether 24:6... brd ff:ff:ff:ff:ff:ff
      inet 172.1... scope global bond0.10
        valid_lft forever preferred_lft forever
      inet6 fe80::24:6.../64 scope link proto kernel ll
        valid_lft forever preferred_lft forever
12: bond0.12@bond0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue state UP group default qlen 1000
    link/ether 24:6... brd ff:ff:ff:ff:ff:ff
      inet 172.16... scope global bond0.12
        valid_lft forever preferred_lft forever
      inet6 fe80::266e:.../64 scope link proto kernel ll
        valid_lft forever preferred_lft forever
r630-suse:/home/oneman tech #
```

```
Bonding Mode: IEEE 802.3ad Dynamic link aggregation
Transmit Hash Policy: layer2+3 (2)
MII Status: up
MII Polling Interval (ms): 100
Up Delay (ms): 0
Down Delay (ms): 0
Peer Notification Delay (ms): 0

802.3ad info
LACP active: on
LACP rate: slow
Min links: 0
Aggregator selection policy (ad_select): stable
System priority: 65535
System MAC address: 24:6e:20:bf:cc:58
Active Aggregator Info:
  Aggregator ID: 1
  Number of ports: 2
  Actor Key: 9
  Partner Key: 3614
  Partner Mac Address: 30:b5:e2:25:cc:3b
```

```
Slave Interface: em3
MII Status: up
Speed: 1000 Mbps
Duplex: full
Link Failure Count: 0
Permanent HW addr: 24:c0:c0:b6:00:58
Slave queue ID: 0
Aggregator ID: 1
Actor Churn State: none
Partner Churn State: none
Actor Churned Count: 0
Partner Churned Count: 0
details actor lacp pdu:
    system priority: 65535
```

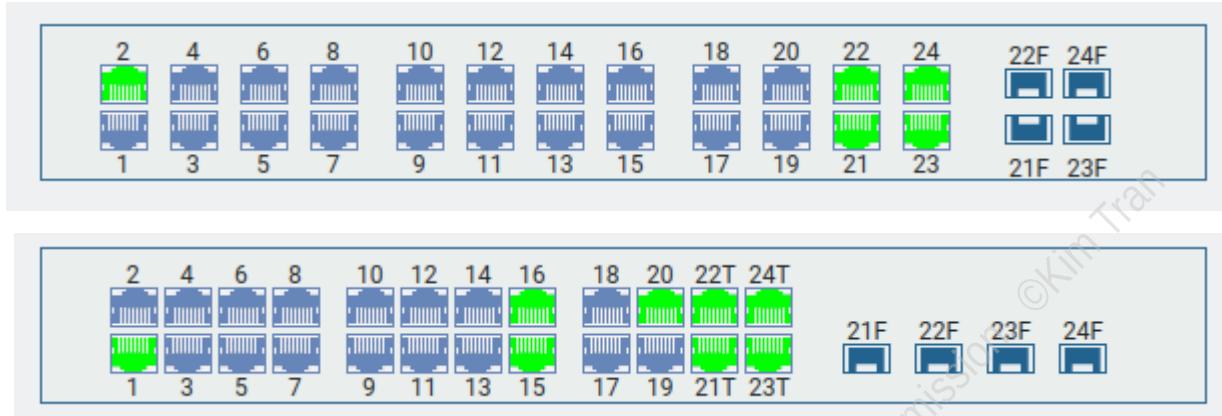
```
Slave Interface: em4
MII Status: up
Speed: 1000 Mbps
Duplex: full
Link Failure Count: 0
Permanent HW addr: 24.c0:c0:b7:50:59
Slave queue ID: 0
Aggregator ID: 1
Actor Churn State: none
Partner Churn State: none
Actor Churned Count: 0
Partner Churned Count: 0
details actor lacp pdu:
    system priority: 65535
```

// switch network configurations for the lacp/bonding in addition to the switch ISL trunking

```
#  
interface gigabitEthernet 1/0/15  
    switchport mode general  
    switchport general allowed vlan 11 untagged  
    switchport general allowed vlan 10,12 tagged  
    switchport pvid 11  
    channel-group 2 mode active  
#  
interface gigabitEthernet 1/0/16  
    switchport mode general  
    switchport general allowed vlan 11 untagged  
    switchport general allowed vlan 10,12 tagged  
    switchport pvid 11  
    channel-group 2 mode active
```

```
#  
interface gigabitEthernet 1/0/21  
    switchport mode trunk  
    switchport trunk allowed vlan 10-12  
    switchport pvid 11  
    channel-group 1 mode active  
#  
interface gigabitEthernet 1/0/22  
    switchport mode trunk  
    switchport trunk allowed vlan 10-12  
    switchport pvid 11  
    channel-group 1 mode active  
#  
interface gigabitEthernet 1/0/23  
    switchport mode trunk  
    switchport trunk allowed vlan 10-12  
    switchport pvid 11  
    channel-group 1 mode active  
#  
interface gigabitEthernet 1/0/24  
    switchport mode trunk  
    switchport trunk allowed vlan 10-12  
    switchport pvid 11  
    channel-group 1 mode active
```

// lacp – bonding configurations for ports 21-24 ISL, and the lacp bond for new storage server ports 15,16



// redesigned home lab network for vlans and better traffic segmentation implementation

VLAN	Name	Status	Ports
1	Default VLAN	active	Gi1/0/1, Gi1/0/15, Gi1/0/16, Gi1/0/20 Gi1/0/21, Gi1/0/22, Gi1/0/23, Gi1/0/24
10	device-mgmt	active	Gi1/0/1, Gi1/0/15, Gi1/0/16, Gi1/0/20 Gi1/0/21, Gi1/0/22, Gi1/0/23, Gi1/0/24
11	general-data	active	Gi1/0/1, Gi1/0/2, Gi1/0/3, Gi1/0/4 Gi1/0/5, Gi1/0/6, Gi1/0/7, Gi1/0/8 Gi1/0/9, Gi1/0/10, Gi1/0/11, Gi1/0/12 Gi1/0/13, Gi1/0/14, Gi1/0/15, Gi1/0/16 Gi1/0/17, Gi1/0/18, Gi1/0/19, Gi1/0/20 Gi1/0/21, Gi1/0/22, Gi1/0/23, Gi1/0/24
12	port-channel-isl	active	Gi1/0/1, Gi1/0/15, Gi1/0/16, Gi1/0/20 Gi1/0/21, Gi1/0/22, Gi1/0/23, Gi1/0/24

// port channel – lacp configurations

```
TL-SGC3424-V2-SW1#show etherchannel
    Channel-group listing:
    -----
    Group: 1
    -----
    Group state = L2
    Ports: 4 MaxPorts = 16
    Protocol: LACP

    Group: 2
    -----
    Group state = L2
    Ports: 2 MaxPorts = 16
    Protocol: LACP
```

```
Group: 1
-----
Group state = L2
Ports: 4 MaxPorts = 16
Protocol: LACP
    Ports in the group:
    -----
Flags: S - Device is sending Slow LACPDUs  F - Device is sending fast LACPDUs.
      A - Device is in active mode.          P - Device is in passive mode.

Local information:
    Port      Flags     State        LACP port      Admin      Oper      Port
    Port      Flags     State        Priority       Key        Key       State
Gi1/0/21   SA        Up         32768        0x1        0xfb3    0x3d
Gi1/0/22   SA        Up         32768        0x1        0xfb3    0x3d
Gi1/0/23   SA        Up         32768        0x1        0xfb3    0x3d
Gi1/0/24   SA        Up         32768        0x1        0xfb3    0x3d

Group: 2
-----
Group state = L2
Ports: 2 MaxPorts = 16
Protocol: LACP
    Ports in the group:
    -----
Flags: S - Device is sending Slow LACPDUs  F - Device is sending fast LACPDUs.
      A - Device is in active mode.          P - Device is in passive mode.

Local information:
    Port      Flags     State        LACP port      Admin      Oper      Port
    Port      Flags     State        Priority       Key        Key       State
Gi1/0/15   SA        Up         32768        0x2        0xe1e    0x3d
Gi1/0/16   SA        Up         32768        0x2        0xe1e    0x3d
```

// pfsense firewall-router configs for implementation

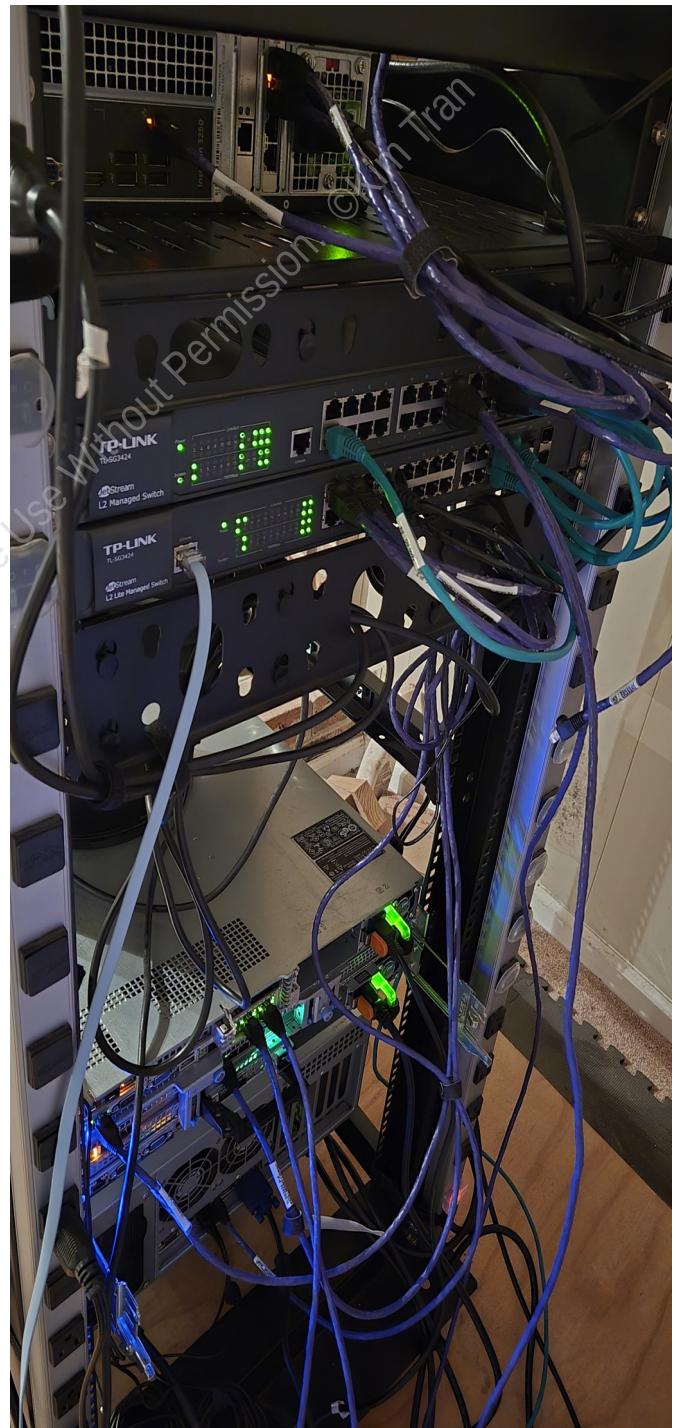
Interface	Network port
WAN	re0 (f4: [REDACTED])
LAN	em0 (00:11:22:33:44:55)
vlan10_device_management	VLAN 10 on em0 - lan (device-management)
vlan12_io_traffic	VLAN 12 on em0 - lan (io_traffic)

Interface Assignments	Interface Groups	Wireless	VLANs	QinQs	PPPs	GREs
VLAN Interfaces						
Interface	VLAN tag		Priority		Description	
em0 (lan)	10				device-management	
em0 (lan)	12				io_traffic	

// general – broad firewall rules to test functionality before secured traffic rules, still in progress

Firewall / Rules / VLAN10_DEVICE_MANAGEMENT						
Floating	WAN	LAN	VLAN10_DEVICE_MANAGEMENT	VLAN12_IO_TRAFFIC		
Rules (Drag to Change Order)						
States	Protocol	Source		Port	Destination	Port
<input type="checkbox"/>	0 /19 KiB	IPv4 *	VLAN10_DEVICE_MANAGEMENT net	*	*	*
<input type="checkbox"/>	0 /0 B	IPv4 *	VLAN10_DEVICE_MANAGEMENT net	*	*	*

// cable dressing – management still in progress :-)



// she's a beauty isn't she :-)

