HAST - CARP - ZFS - iSCSI
Instant Open Source redundant SAN/NAS

On MASTER	On SLAVE
Configure HAST	

```
# cat >/etc/hast.conf
resource mirror {
    on hostA {
          local /dev/ad0s2
          remote tcp4://10.10.1.1
    }
    on hostB {
          local /dev/ad0s2
          remote tcp4://10.10.1.2
    }
}
^D
```

On MASTER	On SLAVE
hostA# hastctl create mirror hostA# service hastd onestart hostA# hastctl role **primary** mirror	hostB# hastctl create mirror hostB# service hastd onestart hostB# hastctl role **secondary** mirror
Create ZFS pool on top of HAST	
hostA# zpool create zfs /dev/hast/mirror	
Create volume for virtual machine (iSCSI exported later)	
hostA# zfs create -V10G zfs/winxp-iscsi	
Configure CARP	
hostA# ifconfig carp0 10.10.1.3 … advskew **0**	hostB# ifconfig carp0 10.10.1.3 … advskew **100**
Configure devd to trigger failover on CARP state change	

```
# cat >>/etc/devd.conf
notify 30 {
match "system" "IFNET";
match "subsystem" "carp0";
match "type" "LINK_UP";
action "/usr/local/sbin/carp-hast-switch master";
};
notify 30 {
match "system" "IFNET";
```

```
match "subsystem" "carp0";
match "type" "LINK_DOWN";
action "/usr/local/sbin/carp-hast-switch slave";
};
^D
```

NOTE: the carp-hast-switch script is not included here, see original post

```
# service devd restart
```

Configure iSCSI-target, SAMBA, NFS exports

```
# cat >>/usr/local/etc/iscsi/targets

extent0             /dev/zvol/zfs/winxp-iscsi
target0             rw    extent0              10.10.1.0/24
```

```
# service iscsi_target onestart
```

```
# zfs create zfs/samba
```

```
# cat >>/usr/local/etc/smb.conf
[share]
    comment = HAST share
    browsable = yes
    writable = yes
    path = /zfs/samba
```

```
# service samba onestart
```

```
# cat >>/etc/exports
/zfs/samba -maproot=0:0 -network 10.10.1.0 -mask
255.255.255.0
```

```
# service rpcbind onestart && service mountd onestart &&
service nfsd onestart
```

7. On another host, create VM in VirtualBox (VBox 4 syntax)

NOTE: Since the GUI tools don't allow to create an iSCSI disk, create a plain machine with a small IDE disk, remove created disk from IDE 0, then add iSCSI disk via CLI:

```
# VBoxManage storageattach NAME --storagectl 'IDE Controller'
--port 0 --device 0 --type hdd --medium iscsi --server
10.10.1.3 --target iqn.1994-04.org.netbsd.iscsi-
target:target0
```

Start your VM, start Samba, NFS, etc... and test failover!