Using OpenIndiana as a storage server

With large amounts of disk being available to the average consumer, it's becoming more and more common to build a pool for your home office and serve shared resources to your LAN. This is usually one of the more difficult situations to share files because there are usually many versions of many different operating systems. We'll explore several options below with some hints for clarification on how to make them work.

- NFS
- OS X Clients (NFS)
- OS X Clients (AFP)
- CIFS / SMB

One thing to keep in mind if sharing a zfs file system over NFS and SMB at the same time is to create your file system with mixed case-sensitivity and nbmand "non-blocking mandatory locking" as in the example below:

```
$ zfs create -o casesensitivity=mixed -o nbmand=on yourpool/share
```

NFS

It's very simple to export an NFS share using zfs tools. The command below will allow any host to mount a nfs share.

```
$ zfs set sharenfs=rw yourpool/yourshare
```

To restrict the share to a single host execute something like the following:

```
$ zfs set sharenfs=rw=@192.168.5.1 yourpool/yourshare
```

Or to restrict the share to a subnet execute the following:

```
$ zfs set sharenfs=rw=@192.168.5.0/24 yourpool/yourshare
```

To restrict a NFS share to multiple subnets use a colon followed by an at-sign:

```
$ zfs set sharenfs=rw=@192.168.5.0/24:@192.168.9.0/24 yourpool/yourshare
```

Check your work or see the current status with:

```
$ zfs get sharenfs yourpool/yourshare
```

Suppose you are migrating a lot of data to OpenIndiana from a GNU/Linux machine. Specifying the version number is necessary if the Linux machines NFS server is v3; the OpenIndiana NFS client defaults to NFSv4.

If you run into problems, check:

```
MAX_CLIENT_VERISON in the file, /etc/default/nfs
```

This is the correct way to mount a standard Linux NFSv3 share on OpenIndiana:

```
$ mount -F nfs -o vers=3,ro linuxhost:/share/stuff /mnt/temp
```

OS X Clients (NFS)

In order to make OS X clients work properly you'll need to force the client to default to v3 of NFS. As reported in the man page:

> *For NFS versions that use a separate mount protocol, mount_nfs implements the mount proto-col as described in RFC 1094, Appendix A and NFS: Network File System Version 3 Protocol Specification, RFC 1813, Appendix I.*
>
> *...*

> *The current NFSv4 functionality is "alpha quality" software. Some basic functionality is not yet implemented. Use at your own risk. Currently, the only way to enable NFSv4 is to specify the mount option:*
>
> *-o vers=4.0alpha*

You can test mounts using the following. These will not be persistent across reboots but will allow you to test the usability of your NFS shares. You'll need to force NFSv3 using the vers=3 option even though the man page says it defaults to that. Things do not work properly when the version is not explicitly set.

```
$ sudo mount_nfs -o sync -o vers=3 storeageserver:/yourpool/yourshare localmount/
```

OS X Clients (AFP)

By using the "netatalk" package, you can provide Apple Filesharing Protocol shares to OS X clients, with good support for Time Machine backups.

See this page for more information about Netatalk on OpenIndiana.

CIFS / SMB

To share a zfs file system named "bob" via smb/cifs execute a command like the following below. Note that the share name is arbitrary and can be completely different than the name of the file system itself, as seen in the example below.

```
$ zfs set sharesmb=name=myshare yourpool/shares/bob
```

You can set some text description (Windows Explorer shows this text) for the share using this:

```
$ zfs set "sharesmb=name=myshare,description=My ZFS share" yourpool/shares/bob
```

To just turn on cifs sharing for a zfs file system without specifying a share name execute a command like the following. Note that the auto-generated names created using this method are usually not user-friendly.

```
$ zfs set sharesmb=on yourpool/shares/bob
```

Check your work or check current status with:

```
$ zfs get sharesmb yourpool/shares/bob
```

You may need to enable "pam_smb_passwd" to make regular OpenIndiana users have smb passwords. To do so, add the following line to the end of the file "/etc/pam.conf":

```
other password required pam_smb_passwd.so.1 nowarn
```

And then change the user's password with the "passwd" command. After this, their smb password will also be set so they can connect via smb with the same username and password.

If you want to use AD to manage your users then take a look at the following http://docs.oracle.com/cd/E19963-01/html/821-1449/manageidmutm.html#enableidmusupporttask
It allows you to enable IDMU so you can easily keep UIDs and SIDs in sync.