Chapter 1. Using the FreeNAS SVN sources

This is the easiest way for studding/modify FreeNAS. It also assumes the user has an understanding of FreeBSD, including adding ports, packages and using the vi text editor.  
1. Installation of the FreeBSD development environment.  
1.1 Install FreeBSD.  
On your dedicated PC (or under a VMware/Qemu) install and setup FreeBSD (your choice of versions, this was done using the 7.3 Release). Need less than 12 gigs total hard drive space if setting up a dedicated disk slice for only building FreeNAS.  
  
When installing FreeBSD create two partitions’, a swap (3.5 gigs is a good swap size) and a / partition. Avoid using the A (auto) command to partition the slice (you may get some warnings later about mail security; since this is a dedicated FreeNAS build environment you can ignore them.)  
  
Select only the developers set and the kernel developers set both without X when doing the install. Note: Later in the setup any source files installed will be deleted and new ones downloaded.  
  
Setup networking services. Required to download source files & ports. Hint: If you use the same machine for both a build environment and as your FreeNAS server use a different machine IP-address (assuming you are not using DNS) than you use for your FreeNAS box. That way if you latter SSH into either environment you won’t get warnings about a fingerprint change.  
  
Reboot to complete system install.  
Now you can Login as root.  
  
1.2 Install required packages:  
Install the following tools (ports) by using pkg\_add -r portname (example pkg\_add -r bash)   
- pkg\_add -r subversion  
- pkg\_add -r bash  
- pkg\_add -r cdrtools  
- pkg\_add -r portupgrade  
- pkg\_add -r php5  
- pkg\_add -r perl  
- pkg\_add -r ruby  
- pkg\_add -r m4  
- pkg\_add -r bison  
- pkg\_add -r xproto  
- pkg\_add -r cvsup-without-gui

!!! Note for compiling under FreeBSD 7.3 & 7.4 64-BITS!!!

To compile the vbox-ose-additions it is necessary to install the 32-bit libraries first.

Enter this now:

cd /usr/src; make build32 install32; ldconfig -v -m -R /usr/lib32

1.3 Make bash the default shell  
Bash is used by the make.sh script and is the preferred shell. This will use the vi editor, so get a command reference handy if need be.  
  
Enter chsh root  
Edit the shell line to read Shell: /usr/local/bin/bash  
Write and quite (:wq)  
  
Edit .profile in /root by adding or changing the following:  
PS1="\[\e[32;1m\]\w> \[\e[0m\]"  
  
Reboot.  
Login as root.  
2. Update FreeBSD  
Now, update your installed copy of FreeBSD with the latest patches and delete uncontrolled source files (for proper kernel build), remember this is a FreeBSD Build Only Environment  
2.1 Delete old source files  
Delete the /usr/src directory contents  
rm -rf /usr/src  
mkdir /usr/src  
  
2.2. Security update   
Begin with installing the latest security patch;  
freebsd-update fetch install  
  
2.3. Port update  
Install the latest ports source.  
  
The first time, use this command to update:  
portsnap fetch extract  
Subsequent port updates, use this command:  
portsnap fetch update

Now reboot

1. (Perhaps not needed at all)  
   cd /usr/src  
   make update  
     
   2.  
   cd /usr/ports/ports-mgmt/portupgrade  
   make deinstall  
   make install clean  
     
   3.  
   portupgrade -af  
     
   I think you should do this, if you upgrade from one release to another.

look at 24.2.3 Major and Minor Upgrades

<http://www.freebsd.org/doc/en_US.ISO8859-1/books/handbook/updating-upgrading-freebsdupdate.html>

Now reboot and login as root not necessary but recommend.

3. Download the FreeNAS source code from SVN.  
Create FreeNAS directory and get the source files

3.1 Make the source file location for FreeNAS and port/distfiles

mkdir /usr/ports/distfiles  
mkdir /usr/local/freenas  
cd /usr/local/freenas  
  
3.2 Run subversion (must be in FreeNAS directory, may take a while).   
Enter the following to get the source:

cd /usr/local/freenas

svn co https://freenas.svn.sourceforge.net/svnroot/freenas/branches/0.7 svn

4. Build (as root user)  
As root, run the generating script after downloading the latest FreeNAS binary file set and compile an ISO/IMG file:  
  
Go to the directory with the script created by svn and run it  
cd /usr/local/freenas/svn/build  
./make.sh  
Note: the ./ in front of the file says use only the current directory, do not use files found in the path  
  
The following BUILD ENVIROMENT menu should come up and the selections self-explanatory:  
  
1 - Update the sources to CURRENT.  
2 - Compile FreeNAS from scratch.  
10 - Create 'Embedded' (IMG) file (rawrite to CF/USB/DD).  
11 - Create 'LiveCD' (ISO) file.  
12 - Create 'LiveCD' (ISO) file without 'Embedded' file.  
13 - Create 'Full' (TGZ) update file.  
\* - Exit  
  
Select Menu item 2 Build system from scratch  
The following BUILD menu should come up and the selections self explanatory.  
  
1 - Update the source tree and ports collections.  
2 - Create file system structure.  
3 – Build/Install the kernel.  
4 - Build World.  
5 - Build Ports.  
6 - Build Boot loader.  
7 - Add necessary libraries.  
8 - Modify file permissions.  
\* - Exit.  
  
Select each menu item in order. (hint when it gives you a choice of multiple choices do one at a time so any errors can be corrected before proceeding)  
Notes:  
· READ the README files in the various svn/build directories  
· Kernel patches should be applied only once. Multiple times will fail, see README  
· Building ports can be the most troubling as source locations change, revisions numbers change, etc. So once you get all the ports built, you may want to save them. They are in /usr/ports/distfiles. Just remember to keep those up-to-date.  
  
When done quit which takes you back to the main menu. Select your final product  
  
10 - Create 'Embedded' (IMG) file (raw write to CF/USB/DD).  
11 - Create 'LiveCD' (ISO) file.  
12 - Create 'LiveCD' (ISO) file without 'Embedded' file.  
13 - Create 'Full' (TGZ) update file.

5. Making the translation template.

FreeNAS makes use of translation.pot files to display the WebGUI in a other language than English only.

Run below to update the template:

cd /usr/local/freenas/svn/build

./freenas-create-pot.sh

(Now you are able to update the translaton.pot with a program like Poedit ). Google for it.

Good luck, now you can do it yourself

Regards,

The FreeNAS Development Team

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