NetBSD Installation

Summary

These are the step by step instructions of installing a minimal NetBSD on a virtual machine. I'm using NetBSD as a mini server. So this installation has no graphical packages. I'm also using 32bit version. A bit slower but less demanding.

I'm publishing this for the future reference. Because i'm sure i'm going to forget how i've installed and configured this OS.

You can download NetBSD 9.2 CD image from this site:

https://www.netbsd.org/releases/formal-9/NetBSD-9.2.html

The VM has this configuration:

>> 1 core cpu
>> 1024mb ram
>> 8gb ide hdd
>> no soundcard

Instructions

1- Boot your vm from cd image and wait until you see this screen. Press enter and continue next screen.

```
NetBSD/i386 9.2

This menu-driven tool is designed to help you install NetBSD to a hard disk,
or upgrade an existing NetBSD system, with a minimum of work.
In the following menus type the reference letter (a, b, c, ...) to select an
item, or type CTRL+N/CTRL+P to select the next/previous item.
The arrow keys and Page-up/Page-down may also work.
Activate the current selection from the menu by typing the enter key.


            >a:  Installation messages in English
             b:  Installation auf Deutsch
             c:  Mensajes de instalacion en castellano
             d:  Messages d'installation en français
             e:  Komunikaty instalacyjne w jezyku polskim
```

2- Select your keyboard and press enter.

```
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              Keyboard type

              a:  unchanged
            >b:  US-English
              c:  UK-English
              d:  Belgian
              e:  Brazilian
              f:  Canadian French
              g:  Czech
              h:  Danish
              i:  Dutch
              j:  Estonian
              k:  Finnish
              <:  page up,  >:  page down
```

3- Select install to hard disk and continue.

```
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or upgrade an existing NetBSD system, with a minimum of work.
In the following menus type the reference letter (a, b, c, ...) to select an
item, or type CTRL+N/CTRL+P to select the next/previous item.
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Activate the current selection from the menu by typing the enter key.

Thank you for using NetBSD!

            NetBSD-9.2 Install System

           >a: Install NetBSD to hard disk
            b: Upgrade NetBSD on a hard disk
            c: Re-install sets or install additional sets
            d: Reboot the computer
            e: Utility menu
            f: Config menu
            x: Exit Install System
```

4- Select yes and continue.

```
You have chosen to install NetBSD on your hard disk.  This will change
information on your hard disk.  You should have made a full backup before
this procedure!  This procedure will do the following things:
            a) Partition your disk
            b) Create new BSD file systems
            c) Load and install distribution sets
            d) Some initial system configuration

(After you enter the partition information but before your disk is changed,
you will have the opportunity to quit this procedure.)

Shall we continue?

                    Yes or no?

                    a: No
                   >b: Yes
```

5- Select 8.0G disk.

On which disk do you want to install NetBSD?

```
Available disks

>a: wd0 (8.0G)
 b: Extended partitioning
 x: Exit
```

6- Select "Guid Partition Table"

```
The disk seems not to have been partitioned before. Please select
a partitioning scheme from the available options below.

>a: Guid Partition Table (GPT)
 b: Master Boot Record (MBR)
 x: Exit
```

7- Select correct and continue.

```
This disk matches the following BIOS disk:

BIOS # cylinders heads sectors total sectors   GB
------ --------- ----- ------- -------------- ----
  0x80       962   255      63       16777216   8

Note: since sysinst was able to uniquely match the disk you chose with a disk
known to the BIOS, the values displayed above are very likely correct, and
should not be changed (the values for cylinders, heads and sectors are
probably 1023, 255 and 63 - this is correct).
You should only change the geometry if you know the BIOS reports incorrect
values.

                    >a: This is the correct geometry
                     b: Set the geometry by hand
```

8- Select sizes of NetBSD partitions.

```
You can use a simple editor to set the sizes of the NetBSD partitions, or
apply the default partition sizes and contents.

You will then be given the opportunity to change any of the partition
details.

The NetBSD (or free) part of your disk (wd0) is 8192M.

A full installation requires at least 89M without X and at least 339M if the
X sets are included.

        What would you like to do?

        >a: Set sizes of NetBSD partitions
         b: Use default partition sizes
         c: Delete everything, use different partitions (not GPT)
         x: Cancel
```

9- Press x to select go on and then press enter.

```
You can now change the sizes for the system partitions.  The default is to
allocate all the space to the root file system.  However, you may wish to
have separate /usr (additional system files), /var (log files etc) or /home
(users' home directories) file systems.

Free space will be added to the partition marked with a '+'.

        Size (MB)                              Filesystem
      ------------------------------- - ----------------------
   a: 2388 (7167)                        + /
   b: 1024                                 <swap>
   c: 25%                                  /tmp (tmpfs)
   d: 0                                    /usr
   e: 0                                    /var
      ------------------------------- - ----------------------
   g: Add a user defined partition
   h: Clone external partition(s)
   i: Change input units (sectors/cylinders/MB/GB)
 >x: Go on.   Free space 4779 MB.
```

10- Press x to select go on and then press enter.

```
We now have your GPT partitions for wd0 below.  This is your last chance to
change them.

Flags: (I)nstall, (N)ewfs, (B)ootable.  Total size: 8192M, free: 17K

        Start (MB)      End (MB)     Size (MB)  FS type Flag Filesystem
      ------------- ------------- ------------- -------- ---- ----------------
   a:            0          7166          7167    FFSv2 IN   /
   b:         7168          8190          1023    swap
      ------------- ------------- ------------- -------- ---- ----------------
   d: Change input units (sectors/cylinders/MB/GB)
   e: Clone external partition(s)
   f: Cancel
 >x: Partition sizes ok
```

11- Select yes and continue.

```
Ok, we are now ready to install NetBSD on your hard disk (wd0).  Nothing has
been written yet.  This is your last chance to quit this process before
anything gets changed.

Shall we continue?




                        Yes or no?

                         a: No
                        >b: Yes
```

12- Select BIOS console and continue.

```
Would you like to install the normal set of bootblocks or serial bootblocks?

Normal bootblocks use the BIOS console device as the console (usually the
monitor and keyboard).  Serial bootblocks use the first serial port as the
console.

Selected bootblock: BIOS console



                   Bootblocks selection

                  >a: Use BIOS console
                   b: Use serial port com0
                   c: Use serial port com1
                   d: Use serial port com2
                   e: Use serial port com3
                   f: Set serial baud rate
                   g: Use existing bootblocks
                   x: Continue
```

13- Select custom installation and continue.

```
The NetBSD distribution is broken into a collection of distribution sets.
There are some basic sets that are needed by all installations and there are
some other sets that are optional.  You may choose to install a core set
(Minimal installation), all of them (Full installation), or a custom group of
sets (Custom installation).



                    ┌────────────────────────────────────────┐
                    │  Select your distribution               │
                    │                                         │
                    │  a: Full installation                   │
                    │  b: Installation without X11            │
                    │  c: Minimal installation                │
                    │ >d: Custom installation                 │
                    │  x: Abandon installation                │
                    └────────────────────────────────────────┘
```

14- Set "Manual pages" to Yes. (Man pages are always better than google searches)

```
The following is the list of distribution sets that will be used.

    Distribution set           Selected
    ------------------------   --------
a:  Kernel (GENERIC)              Yes
b:  Kernel modules                Yes
c:  Base                          Yes
d:  Configuration files (/etc)    Yes
e:  Compiler tools                No
f:  Games                         No
>g: Manual pages                  Yes
h:  Miscellaneous                 No
i:  Recovery tools                No
j:  Test programs                 No
k:  Text processing tools         No
l:  X11 sets                      None
m:  Source and debug sets         None
x:  Install selected sets
```

15- Select "Install selected sets" and continue.

```
The following is the list of distribution sets that will be used.

    Distribution set           Selected
    ------------------------   --------
a : Kernel (GENERIC)               Yes
b : Kernel modules                 Yes
c : Base                           Yes
d : Configuration files (/etc)     Yes
e : Compiler tools                 No
f : Games                          No
g : Manual pages                   Yes
h : Miscellaneous                  No
i : Recovery tools                 No
j : Test programs                  No
k : Text processing tools          No
l : X11 sets                       None
m : Source and debug sets          None
>x: Install selected sets
```

16- Select CD-ROM and continue.

```
Your disk is now ready for installing the kernel and the distribution sets.
As noted in your INSTALL notes, you have several options.  For ftp or nfs,
you must be connected to a network with access to the proper machines.

Sets selected 5, processed 0, Next set kern-GENERIC.

        Install from

       >a : CD-ROM / DVD / install image media
        b : HTTP
        c : FTP
        d : NFS
        e : Floppy
        f : Unmounted fs
        g : Local directory
        h : Skip set
        i : Skip set group
        j : Abandon installation
```

17- Wait for extraction to end.

```
    Status: Running
   Command: progress -zf /i386/binary/sets/base.tgz tar --chroot -xpf -

61% !***********************          : 94144 KiB    45.76 MiB/s    00:01 ETA
```

18- Press enter to start configuration.

```
The extraction of the selected sets for NetBSD-9.2 is complete.  The system
is now able to boot from the selected hard disk.  To complete the
installation, sysinst will give you the opportunity to configure some
essential things first.




                    >Hit enter to continue
```

19- First thing is to set "root" user password. Select Change root password.

```
Configure the additional items as needed.

a: Configure network                              configure
b: Timezone                                       UTC
c: Root shell                                     /bin/sh
>d: Change root password                          ***EMPTY***
e: Enable installation of binary packages         install
f: Fetch and unpack pkgsrc                        install
g: Enable sshd                                    NO
h: Enable ntpd                                    NO
i: Run ntpdate at boot                            NO
j: Enable mdnsd                                   NO
k: Enable xdm                                     NO
l: Enable cgd                                     YES
m: Enable lvm                                     NO
n: Enable raidframe                               YES
o: Add a user
x: Finished configuring
```

20- Select yes.

```
The root password of the newly installed system has not yet been initialized,
and is thus empty.  Do you want to set a root password for the system now?




                        Yes or no?

                       >a: Yes
                        b: No

```

21- Enter new root password.

```
    Status: Running
   Command: passwd -l root
─────────────────────────────────────────────
Changing local password for root.
New password:█
```

22- Set "Enable raidframe" to No. Because i'm not going to use any RAID
implementations. Look here for more info: NetBSD Raidframe

```
Configure the additional items as needed.

a: Configure network                              configure
b: Timezone                                       UTC
c: Root shell                                     /bin/sh
d: Change root password                           password set
e: Enable installation of binary packages         install
f: Fetch and unpack pkgsrc                        install
g: Enable sshd                                    NO
h: Enable ntpd                                    NO
i: Run ntpdate at boot                            NO
j: Enable mdnsd                                   NO
k: Enable xdm                                     NO
l: Enable cgd                                     YES
m: Enable lvm                                     NO
>n: Enable raidframe                              NO
o: Add a user
x: Finished configuring
```

23- Set "Enable cgd" to No. Because im not going to encrypt any disks. Look here for more info: NetBSD cgd

```
Configure the additional items as needed.

a: Configure network                               configure
b: Timezone                                        UTC
c: Root shell                                      /bin/sh
d: Change root password                            password set
e: Enable installation of binary packages          install
f: Fetch and unpack pkgsrc                         install
g: Enable sshd                                     NO
h: Enable ntpd                                     NO
i: Run ntpdate at boot                             NO
j: Enable mdnsd                                    NO
k: Enable xdm                                      NO
>l: Enable cgd                                     NO
m: Enable lvm                                      NO
n: Enable raidframe                                NO
o: Add a user
x: Finished configuring
```
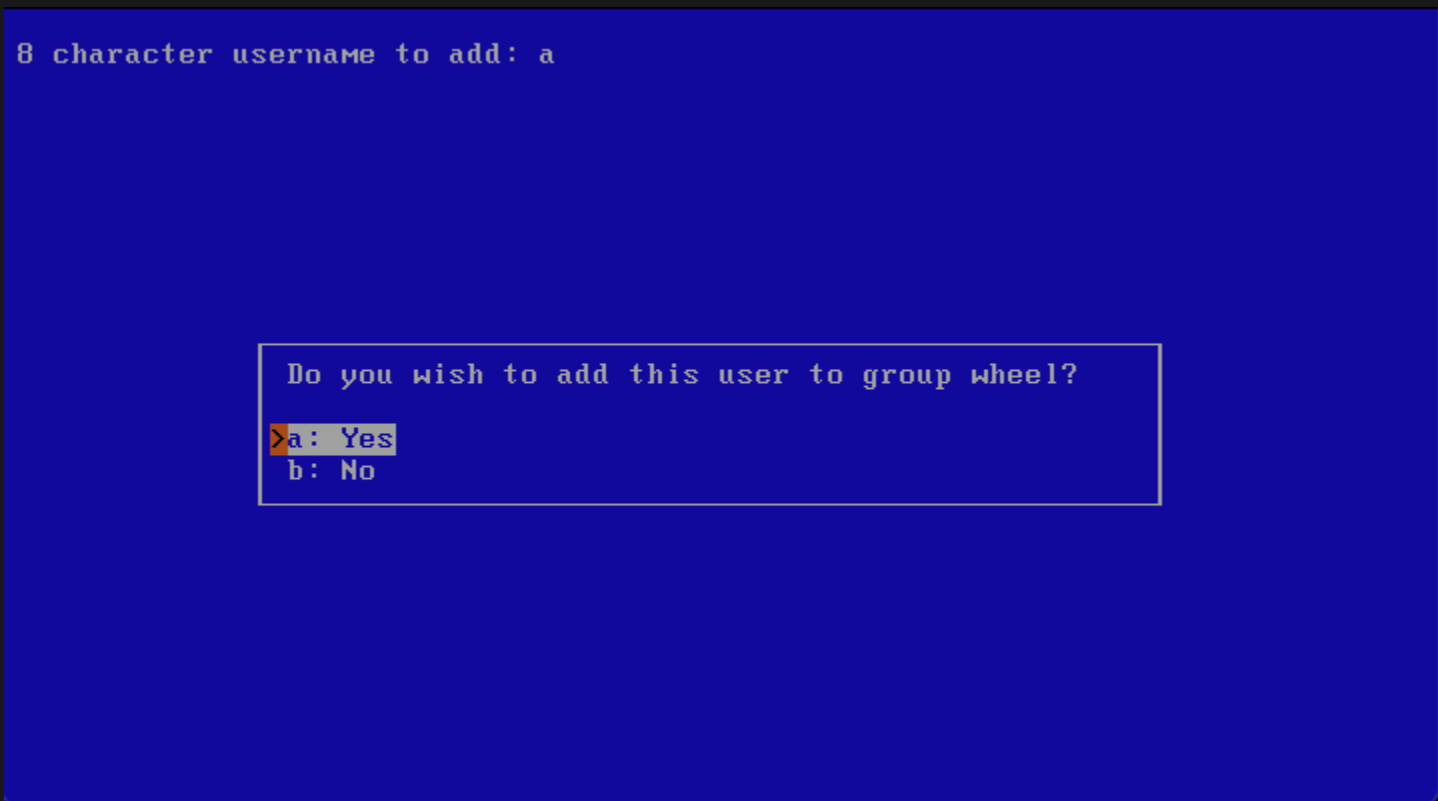
24- Select "Add a user" and press enter.

```
Configure the additional items as needed.

a: Configure network                               configure
b: Timezone                                        UTC
c: Root shell                                      /bin/sh
d: Change root password                            password set
e: Enable installation of binary packages          install
f: Fetch and unpack pkgsrc                         install
g: Enable sshd                                     NO
h: Enable ntpd                                     NO
i: Run ntpdate at boot                             NO
j: Enable mdnsd                                    NO
k: Enable xdm                                      NO
l: Enable cgd                                      NO
m: Enable lvm                                      NO
n: Enable raidframe                                NO
>o: Add a user
x: Finished configuring
```
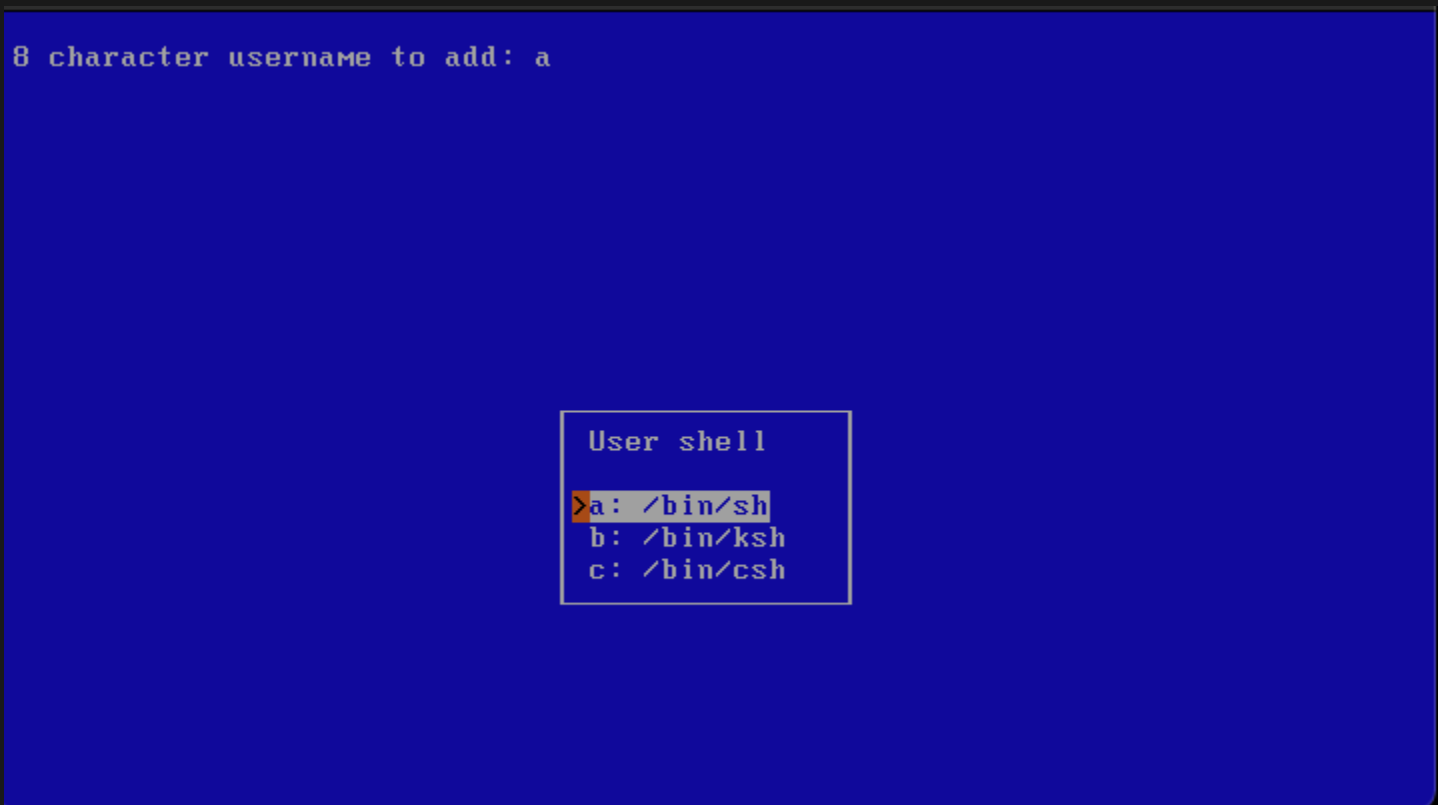
25- Enter username and add this user to wheel group. (Wheel group means privileged users)

```
8 character username to add: a




            Do you wish to add this user to group wheel?

            >a: Yes
             b: No


```

26- Select bin/sh and continue.

```
8 character username to add: a






                            User shell

                            >a: /bin/sh
                             b: /bin/ksh
                             c: /bin/csh

```

27- Set your user password.

```
     Status: Running
    Command: passwd -l a

Changing local password for a.
New password:█
```

28- Select finished configuration and hit enter.

```
Configure the additional items as needed.

a: Configure network                          configure
b: Timezone                                   UTC
c: Root shell                                 /bin/sh
d: Change root password                       password set
e: Enable installation of binary packages     install
f: Fetch and unpack pkgsrc                     install
g: Enable sshd                                NO
h: Enable ntpd                                NO
i: Run ntpdate at boot                        NO
j: Enable mdnsd                               NO
k: Enable xdm                                 NO
l: Enable cgd                                 NO
m: Enable lvm                                 NO
n: Enable raidframe                           NO
o: Add a user
>x: Finished configuring
```

29- Installation is completed. Hit enter.

The installation of NetBSD-9.2 is now complete. The system should boot from
hard disk. Follow the instructions in the INSTALL document about final
configuration of your system. We also recommend reading the afterboot(8)
manpage; it contains a list of things to be checked after the first complete
boot.

At a minimum, you should edit /etc/rc.conf to match your needs. See
/etc/defaults/rc.conf for the default values.

>Hit enter to continue

30- Select reboot the computer and hit enter.

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Thank you for using NetBSD!

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>d: Reboot the computer
e: Utility menu
f: Config menu
x: Exit Install System

31- After boot, you should be able to see this login screen.

```
Clearing temporary files.
Creating a.out runtime link editor directory cache.
Checking quotas: done.
swapctl: setting dump device to /dev/dk1
Starting virecover.
Checking for core dump...
savecore: no core dump
Starting local daemons:.
Updating motd.
Starting powerd.
/usr/sbin/postconf: warning: valid_hostname: empty hostname
/usr/sbin/postconf: fatal: unable to use my own hostname
Starting postfix.
Jan  5 19:24:32  postfix[338]: fatal: unable to use my own hostname
/etc/rc.d/postfix exited with code 1
Starting inetd.
Starting cron.
The following components reported failures:
    /etc/rc.d/postfix
See /var/run/rc.log for more information.
Wed Jan  5 19:24:33 UTC 2022

NetBSD/i386 (Amnesiac) (constty)

login: █
```

Congratulations,

You've successfully installed a minimal NetBSD 32bit operating system.