

NetBSD Minimal 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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```

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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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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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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 (Ammesiac) (constty)

login: █
```

Congratulations,

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