

NanoBSD

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##: [43184](#)

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FreeBSD # FreeBSD#####

FreeBSD
Project ##### 1m1 # 1@1 #####
2013-11-13 # hrs.

##

NanoBSD ##### FreeBSD #####
Compact Flash #(#####)#

####

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1. NanoBSD

NanoBSD # Poul-Henning Kamp ##### FreeBSD #####
Compact Flash #(#####mass storage medium)#

“#####(computer appliances)” #####
#####(#####)

NanoBSD #####

- ### FreeBSD ### Ports # Packages — ##### NanoBSD ##### FreeBSD #
####
- ##### — # FreeBSD ##### NanoBSD #### ##### NanoBSD #####
- ##### — ##### [fsck\(8\)](#) ##

- ##### ———— ##### shell script ##### #####

2. #### NanoBSD

2.1. NanoBSD

NanoBSD ##

- ##### code#1 # code#2 #
- #####(mount)# /cfg ####

#####

/etc # /var #### md(4)(malloc)###

/cfg ### ##### /etc ##### ##### /
etc ##### /cfg #####

1. #### /etc/resolv.conf

```
# vi /etc/resolv.conf
[...-]
# mount /cfg
# cp /etc/resolv.conf /cfg
# umount /cfg
```



##

/cfg

/cfg ##### NanoBSD ##### (#####
#####)#

2.2. ## NanoBSD

NanoBSD ##### nanobsd.sh shell script ##### script ### /usr/src/tools/
tools/nanobsd ##### ## script ##### dd(1) #####

NanoBSD

```
# cd /usr/src/tools/tools/nanobsd ❶
# sh nanobsd.sh ❷
# cd /usr/obj/nanobsd.full ❸
# dd if=_disk.full of=/dev/da0 bs=64k ❹
```

- ❶ ## NanoBSD ## script #####
- ❷ #####
- ❸ #####
- ❹ ##### NanoBSD#

2.3. ##### NanoBSD

NanoBSD ##### NanoBSD

nanobsd.sh ##### myconf.nano

```
# sh nanobsd.sh -c myconf.nano
```

#####

- ####
- ####

2.3.1.

NanoBSD ##### buildworld # installworld ##### NanoBSD #
64 MB ##### FreeBSD# #####
kernel ##### userland

#####

- NANO_NAME --- #####(#####)#
- NANO_SRC --- ##### source tree ####
- NANO_KERNEL --- ##### kernel #####
- CONF_BUILD --- ## buildworld #####
- CONF_INSTALL --- ## installworld #####
- CONF_WORLD --- ## buildworld # installworld #####
- FlashDevice --- ##### FlashDevice.sub ##

2.3.2.

shell ##### NanoBSD#

```

cust_foo(){
  echo "bar=topless" > \
    ${NANO_WORLDDIR}/etc/foo
}
customize_cmd cust_foo

```

/etc ##### 5MB ### 30MB#

```

cust_etc_size(){
  cd ${NANO_WORLDDIR}/conf
  echo 30000 > default/etc/md_size
}
customize_cmd cust_etc_size

```

#####

- cust_comconsole — ## VGA ##### [getty\(8\)](#) (/dev/ttyv*)### serial port # COM1
console#
- cust_allow_ssh_root — ## [sshd\(8\)](#) ### root #####
- cust_install_files — # nanobsd/Files ##### script #

2.3.3.

NanoBSD

```

NANO_NAME=custom
NANO_SRC=/usr/src
NANO_KERNEL=MYKERNEL
NANO_IMAGES=2

```

```

CONF_BUILD='
NO_KLDLOAD=YES
NO_NETGRAPH=YES
NO_PAM=YES
'

```

```

CONF_INSTALL='
NO_ACPI=YES
NO_BLUETOOTH=YES
NO_CVS=YES
NO_FORTRAN=YES
NO_HTML=YES
NO_LPR=YES
NO_MAN=YES
NO_SENMAIL=YES
NO_SHAREDOCS=YES
NO_EXAMPLES=YES
NO_INSTALLLIB=YES
NO_CALENDAR=YES
NO_MISC=YES
NO_SHARE=YES
'

```

```

CONF_WORLD='
NO_BIND=YES
NO_MODULES=YES
NO_KERBEROS=YES
NO_GAMES=YES
NO_RESCUE=YES
NO_LOCALES=YES
NO_SYSCONS=YES
NO_INFO=YES
'

FlashDevice SanDisk 1G

cust_nobeastie()(
    touch ${NANO_WORLDDIR}/boot/loader.conf
    echo "beastie_disable=\"YES\"" >> ${NANO_WORLDDIR}/boot/loader.conf
)

customize_cmd cust_comconsole
customize_cmd cust_install_files
customize_cmd cust_allow_ssh_root
customize_cmd cust_nobeastie

```

2.4. ## NanoBSD

NanoBSD ## FreeBSD

1. ##### NanoBSD ####

2. ##### NanoBSD #####

NanoBSD ##### _disk.full #(#####)# ####
 _disk.image ###(#####)#

3. #####

4. #####

5. ##### (#####)#####
 #####

NanoBSD ##### /root ### update1 # update2 script # #####
 # script#####

NanoBSD

2.4.1. ## ftp(1)

#####

```
# ftp myhost
get _disk.image "| sh update1"
```

2.4.2. ## ssh(1)

#####

```
# ssh myhost cat _disk.image.gz | zcat | sh update1
```

2.4.3. ## nc(1)

ftp(1) ##### sshd(8)

1. ##### TCP listen##### client#

```
myhost# nc -l 2222 < _disk.image
```



##

port ##### NanoBSD client

2. ##### update1 ## script#

```
# nc myhost 2222 | sh update1
```

##

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