Info

Thinkpad T495s/16GB/256GB

ISO/Network

Download ISO https://archlinux.org/download/
write the ISO on a USB key
boot

Setup network

```
systemctl start iwd
iwctl
```

```
iwd]# device list
                                    Devices
--------------------------------------------------------------------------------
----
  Name                  Address               Powered     Adapter     Mode
--------------------------------------------------------------------------------
----
  wlan0                 0c:7a:15:79:77:41     on          phy0
station
iwd]# station wlan0 get-networks
                              Available networks
--------------------------------------------------------------------------------
----
      Network name                      Security            Signal
--------------------------------------------------------------------------------
----
      FuckUMeta                         psk                 ****
      XXXXXXXXXXXXXXXX                  psk                 ****
iwd]# station wlan0 connect FuckUMeta --passphrase **********************
iwd]# exit
```

```
ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group
default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
       valid_lft forever preferred_lft forever
2: enp3s0f0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc fq_codel
state DOWN group default qlen 1000
```

```
    link/ether XX:YY:ZZ:AA:BB:CC brd ff:ff:ff:ff:ff:ff
    altname enxf875a4853e1b
4: wlan0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue state UP
group default qlen 1000
    link/ether XX:YY:ZZ:AA:BB:CC brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.156/24 metric 600 brd 192.168.1.255 scope global dynamic
wlan0
       valid_lft 84979sec preferred_lft 84979sec
    inet6 fdbf:275d:b681:f346:e7a:15ff:fe79:7741/64 scope global dynamic
mngtmpaddr noprefixroute
       valid_lft 1741sec preferred_lft 1741sec
    inet6 fe80::e7a:15ff:fe79:7741/64 scope link proto kernel_ll
       valid_lft forever preferred_lft forever
```

Test + SSH

network OK ?

```
 ping -c3 archlinux.org
```

Install SSH

```
 pacman -Sy
pacman -S openssh
vim /etc/ssh/sshd_config
```

```
#PermitRootLogin prohibit-password
PermitRootLogin yes
```

```
passwd
systemctl start sshd
```

Now we can connect from the network

Disk partitions

List

```
# gdisk /dev/nvme0n1 -l
GPT fdisk (gdisk) version 1.0.10

The protective MBR's 0xEE partition is oversized! Auto-repairing.

Partition table scan:
  MBR: protective
```

```
  BSD: not present
  APM: not present
  GPT: present

Found valid GPT with protective MBR; using GPT.
Disk /dev/nvme0n1: 500118192 sectors, 238.5 GiB
Model: KXG6AZNV256G TOSHIBA
Sector size (logical/physical): 512/512 bytes
Disk identifier (GUID): A49CF274-51B4-4CBF-BE13-5195151DBF6E
Partition table holds up to 128 entries
Main partition table begins at sector 2 and ends at sector 33
First usable sector is 34, last usable sector is 500118158
Partitions will be aligned on 2048-sector boundaries
Total free space is 205869677 sectors (98.2 GiB)

Number  Start (sector)    End (sector)  Size       Code  Name
   1            2048          206847   100.0 MiB   EF00  EFI system
partition
   2          206848          239615   16.0 MiB    0C01  Microsoft reserved
...
   3          239616       250570751   119.4 GiB   0700  Basic data
partition
   4       250570752       292513791   20.0 GiB    0700  Basic data
partition
   5       498378752       500115455   848.0 MiB   2700
```

The goal is to make a 16GB swap partition and the btrfs root:

```
gdisk /dev/nvme0n1
```

SWAP

```
Command (? for help): n
Partition number (6-128, default 6):
First sector (34-500118158, default = 292513792) or {+-}size{KMGTP}:
Last sector (292513792-498378751, default = 498378751) or {+-}size{KMGTP}:
+16G
Current type is 8300 (Linux filesystem)
Hex code or GUID (L to show codes, Enter = 8300): 8200
Changed type of partition to 'Linux swap'
```

BTRFS root

```
Command (? for help): n
Partition number (7-128, default 7):
First sector (34-500118158, default = 326068224) or {+-}size{KMGTP}:
Last sector (326068224-498378751, default = 498378751) or {+-}size{KMGTP}:
Current type is 8300 (Linux filesystem)
```

```
Hex code or GUID (L to show codes, Enter = 8300):
Changed type of partition to 'Linux filesystem'
```

Save

```
Command (? for help): w

Final checks complete. About to write GPT data. THIS WILL OVERWRITE EXISTING
PARTITIONS!!

Do you want to proceed? (Y/N): Y
OK; writing new GUID partition table (GPT) to /dev/nvme0n1.
The operation has completed successfully.
```

Mount/Format

SWAP

```
mkswap        /dev/nvme0n1p6
swapon        /dev/nvme0n1p6
```

BTRFS

```
pacman -Sy btrfs-progs
mkfs.btrfs -L ArchRoot /dev/nvme0n1p7
mount /dev/nvme0n1p7 /mnt
btrfs subvolume create /mnt/@
btrfs subvolume create /mnt/@home
umount /mnt
```

Mount /boot /home /

```
mount -o noatime,compress=zstd,space_cache,subvol=@ /dev/nvme0n1p7 /mnt
mkdir -p /mnt/{home,boot}
mkdir /mnt/boot/efi
mount -o noatime,compress=zstd,space_cache,subvol=@home /dev/nvme0n1p7
/mnt/home
mount        /dev/nvme0n1p1  /mnt/boot/efi
```

Pacstrap

```
pacstrap /mnt base base-devel linux linux-firmware amd-ucode btrfs-progs vim
```

```
dhcpcd networkmanager efibootmgr dosfstools sudo git tlp htop zsh
```

FSTAB

```
genfstab -U /mnt >> /mnt/etc/fstab
```

Archlinux Machine setup

```
mount --types proc   /proc   /mnt/proc
mount --rbind /sys   /mnt/sys
mount --rbind /dev   /mnt/dev
arch-chroot /mnt /bin/bash
echo "Mjölnir" >/etc/hostname
echo LANG=en_US.UTF-8 > /etc/locale.conf
vim /etc/locale.gen
```

uncomment

```
en_US.UTF-8
```

Generate locales

```
locale-gen
```

fonts/keymap

```
echo KEYMAP=us-acentos > /etc/vconsole.conf
echo FONT=lat9w-16 >> /etc/vconsole.conf
```

TimeZone

```
ln -sf /usr/share/zoneinfo/Europe/Zurich /etc/localtime
```

/etc/hosts

```
vim /etc/hosts
```

```
#<ip-address>   <hostname.domain.org>    <hostname>
127.0.0.1    <YOUR-HOSTNAME>.localdomain    <YOUR-HOSTNAME>
```

Initramfs

```
 vim /etc/mkinitcpio.conf
```

```
HOOKS=(base udev autodetect microcode modconf kms keyboard keymap
consolefont block resume btrfs filesystems fsck)
```

mkinitcpio -P

```
```

Systemdboot

```
bootctl --esp-path=/boot/efi install
```

Entries

default:

```
cat > /boot/efi/loader/loader.conf <<EOF
default arch
timeout 5
EOF
```

Archlinux:

```
cat > /boot/efi/loader/entries/arch.conf <<EOF
title   Arch Linux
linux   /vmlinuz-linux
initrd  /amd-ucode.img
initrd  /initramfs-linux.img
options root=UUID=43a3c9d5-0253-4f24-af47-7c11f3f39753 rw
rootflags=subvol=@,compress=zstd
EOF
```

Note: 43a3c9d5-0253-4f24-af47-7c11f3f39753 = UUID from `blkid /dev/nvme0n1p7` Windows shit:

```
cat > /boot/efi/loader/entries/windows.conf <<EOF
title   Windows
efi     /EFI/Microsoft/Boot/bootmgfw.efi
EOF
```

Final step

candles

```
exit
umount -l /mnt/{dev,sys,proc}
umount /mnt/boot/efi
umount /mnt/{home,}
reboot
```

Notes:

- remount btrfs partition:

```
mount -t btrfs \
  -o subvol=@,noatime,compress=zstd,space_cache=v2 \
  /dev/nvme0n1p7 /mnt
```

- Wifi shit

```
cat > /tmp/wpa.conf <<EOF
network={
    ssid="MyNet"
    psk="PASTE-YOUR-64-CHAR-KEY-HERE"
    key_mgmt=WPA-PSK
}
EOF
```

```
wpa_supplicant -B -i wlan0 -c /tmp/wpa.conf
dhcpcd wlan0
```

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Last update: **2025/06/23 15:50**