ARCH LINUX EFI & LEGACY ENCRYPT LUKS LVM2

Create the partitions you need:

```
Partition X = 10 MiB MBR partition # Hex code EF02
Partition Y = 250 MiB EFI partition # Hex code EF00
Partition Z = Choose a reasonable size for your encrypted root, or just size it to the last
sector of your drive. # Hex code 8300.
```

Review your partitions with 'p'.

Write your gdisk changes with 'w'.

Reboot, if necessary, so the kernel reads your new partition structure.

Create filesystems for /boot/efi and /boot

```
> mkfs.fat -F 32 /dev/sdX2
> mkfs.ext4 /dev/sdX3
```

Encrypt and open your system partition

```
> cryptsetup -c aes-xts-plain64 -h sha512 -s 512 --use-random luksFormat /dev/sdX3

> cryptsetup luksOpen /dev/sdX3 ArchLUKS
```

Create encrypted LVM partitions

```
> pvcreate /dev/mapper/ArchLUKS
> vgcreate Arch /dev/mapper/ArchLUKS
> lvcreate -L +<SIZEOFYOUR/ >G Arch -n home #8G min
> lvcreate -l +100%FREE Arch -n root
```

Create filesystems on your encrypted partitions

```
> mkfs.ext4 /dev/mapper/Arch-home
> mkfs.ext4 /dev/mapper/Arch-root
```

Mount the new system

```
> mount /dev/mapper/Arch-root /mnt
> mkdir /mnt/{boot,home}
> mount /dev/mapper/Arch-home /mnt/home
> mount /dev/sdX2 /mnt/boot
```

Install your Arch system

```
> pacstrap /mnt base base-devel
```

Create and review FSTAB

```
> genfstab -U /mnt >> /mnt/etc/fstab
# The -U option pulls in all the correct UUIDs for your mounted filesystems.

> cat /mnt/etc/fstab
# Check your fstab carefully, and modify it, if required.
```

Enter the new system

```
> arch-chroot /mnt /bin/bash
```

Set the system clock

```
> ln -sf /usr/share/zoneinfo/UTC /etc/localtime

> hwclock --systohc --utc
```

Assign your hostname

```
> echo MyHostName > /etc/hostname
```

Set or update your locale

```
# If English is your native language, you need to edit exactly two lines to correctly configure
your locale language settings:

a. In /etc/locale.gen **uncomment only**:
en_GB.UTF-8 UTF-8

b. In /etc/locale.conf, you should **only** have this line:
LANG=en_GB.UTF-8
```

Now run:

```
> locale-gen
```

Set your root password

```
> passwd
```

```
# Create a User, assign appropriate Group membership, and set a User password. 'Wheel' is
just one important Group.

> useradd -m -G wheel -s /bin/bash MyUserName
> passwd MyUserName
```

Change the keymap into azerty french

```
> vim /etc/vconsole.conf
      KEYMAP=fr
```

Configure mkinitcpio with the correct HOOKS required for your initrd image

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

Use this HOOKS statement:

```
HOOKS="base udev block keyboard keymap encrypt lvm2 filesystems fsck"
```

Generate your initrd image

```
> mkinitcpio -p linux
```

#Setup Grub for MBR/BIOS booting mode :

First install the packages needed for the grub & uefi support:

```
> pacman -S grub efibootmgr
```

```
> grub-install --target=i386-pc --boot-directory /boot /dev/sdX
```

Install and configure Grub-EFI

```
> grub-install --target=x86_64-efi --efi-directory /boot --boot-directory /boot -removable
```

Edit /etc/default/grub so it includes a statement like this:

```
Example: GRUB_CMDLINE_LINUX="cryptdevice=UUID=54bf-.....46446:ArchLUKS"
```

- In vim To have UUDI simply, do:

  ```
  :r !blkid | grep -i /dev/sdX3
  ```

Generate Your Final Grub Configuration:

```
> grub-mkconfig -o /boot/grub/grub.cfg
```

Install useful package

> pacman -S ifplugd iw wpa_supplicant dialog xf86-video-ati xf86-video-intel xf86-video-nouveau xf86-video-vesa xf86-input-libinput acpi polkit xorg-server xorg

Install your DE / WM

> pacman -S bspwm xfce4 i3 mate …

Exit Your New Arch System

```
^D
```

Unmount all partitions

```
> umount -R /mnt
```