Restore Encrypted Debian install.

- ## Install required packages

```
#
# update package database
apt update
# install packages
apt install partclone pigz gdisk rar unrar
#
```

- ## Prepare target location

```
#
# create dir for mount point
mkdir -p /backup
# mount backup partition
mount /dev/sda1 /backup/
# prepare target dir
cd /backup
# unpack encrypted rar archive (optional)
rar x BACKUP.rar
#
# go to directory with backup files
cd BACKUP
#
```

- ## Restore partition table with dd util

```
# restore
DISK="/dev/sdb"
dd if=part_table.bin of=${DISK} bs=512 status=progress && sync
# fix partition table with sgdisk
sgdisk -e ${DISK}
# verification with gdisk and 'v' option
gdisk ${DISK}
#
```

- ## Restore luks header

```
#
CRYPT="/dev/sdb3"
cryptsetup luksHeaderRestore "${CRYPT}" --header-backup-file luks_header.bin
# open encrypted luks partition
cryptsetup open "${CRYPT}" xyz-unlocked
#
```

- **Recreate physical volume (pv)**

```
#
PV_UUID=$(cat pv_UUID.txt)
pvcreate --uuid "${PV_UUID}" --norestorefile /dev/mapper/xyz-unlocked
#
```

- **Restore volume group configuration**

```
# restore
vgcfgrestore -f vg_backup.txt vg
# activiate logical volume for vg volume group
vgchange -a y vg
#
```

- **Restore partition with partclone**

```
#
# root partition
pigz -d -c root.img.gz | partclone.ext4 -z 10485760 --source - -r -o
/dev/mapper/vg-root
# boot partition
pigz -d -c boot.img.gz | partclone.ext2 -z 10485760 --source - -r -o /dev/sdb2
# efi partition
pigz -d -c efi.img.gz | partclone.vfat -z 10485760 --source - -r -o  /dev/sdb1
# home partition
pigz -d -c home.img.gz | partclone.ext4 -z 10485760 --source - -r -o
/dev/mapper/vg-home
#
#
```

- **Recreate swap parition**

```
#
SWAP_UUID=$(cat swap_UUID.txt)
```

```
mkswap -L SWAP -U "${SWAP_UUID}" /dev/mapper/vg-swap
#
```

- **Reinstall grub**

```
# prepare chroot
mkdir -p /target
mount /dev/mapper/vg-root /target
mount /dev/sda2 /target/boot
mount /dev/sda1 /target/boot/efi
mount /dev/mapper/vg-home /target/home
mount --bind /dev /target/dev
mount --bind /dev/pts /target/dev/pts
mount --bind /proc /target/proc
mount --bind /sys /target/sys
mount --bind /run /target/run
mount --bind /sys/firmware/efi/efivars /target/sys/firmware/efi/efivars
# perform chroot
chroot /target /bin/bash -l
# commands in chroot
export PS1="|chroot| ${PS1}"
cd
grub-install --target=x86_64-efi --efi-directory=/boot/efi
update-initramfs -ck all;update-grub2
# exit chroot
exit
umount /target/sys/firmware/efi/efivars
umount /target/run
umount /target/sys
umount /target/proc
umount /target/dev/pts
umount /target/dev
umount /target/home
umount /target/boot/efi
umount /target/boot
umount /target
rm -fr /target
#
```

- **Finish things**

```
#
# sync
```

```
sync
# destroy decrypted backup files (optional)
shred -v --iterations=3 --zero --remove=wipesync *
cd ..
rm -fr BACKUP
#
# umount backup partition
cd
umount /backup
# deactivate volume group
vgchange -a n vg
# lock encryped luks partition
cryptsetup close xyz-unlocked
#
#
```