Data drive encryption

Encryption on Debian 9

1. Install dm-crypt

```
apt-get install cryptsetup
```

2. If you encrypted data drives during initial system setup, your swap space will be encrypted as well. First remove the swap encryption.

```
sudo mkswap -f /dev/sda6
sudo swapon /dev/sda6
```

3. Add the swap space to /etc/fstab. If you have swap on multiple drives, where the remaining space is allocated to a software RAID, add the swap partitions with the same priority.

```
/dev/hda6   none    swap    sw,pri=1    0    0
```

4. Remove the fstab entry for mounting the encrypted volume
5. Add the following commands to rc.local executed as root

```
echo "volume password" | sudo cryptsetup luksOpen /dev/mapper/vg-lv
my_encrypted_volume
mount /dev/mapper/my_encrypted_volume /mount/point
```

6. To lock the container again, it needs to be unmounted first

```
sudo umount /media/my_device
sudo cryptsetup luksClose my_encrypted_volume
```

Encrypt volume

1. Find the Block Device Name of Your Partition

```
lsblk
```

2. Set Up LUKS Header

```
sudo cryptsetup luksFormat /dev/mapper/<vg name>-<lv name>
```

3. Create a Filesystem on the Partition. You have to map this physical device to a virtual device. What gets written to the virtual device will be encrypted before being stored on the physical device.

```
sudo cryptsetup luksOpen /dev/mapper/<vg name>-<lv name> mapper/<vg
name>-<lv name>_crypt
```

```
sudo mkfs.ext4 /dev/mapper/<vg name>-<lv name>_crypt
```

4. Mount Encrypted Partition

```
sudo mount /dev/mapper/<vg name>-<lv name>_crypt /mountpoint
```

5. If you need a directory tree to be copied from a backup location back to the newly encrypted drive, do it with rsync

```
rsync -av --progress --exclude '/home/user/VirtualBox VMs' /home/user
/mountpoint/
```

Links

- Mount encrypted volumes from command line?
- How to Encrypt Your Partitions on Linux with dm-crypt
- Where is rc.local in Debian 9 (Debian Stretch)
- dm-crypt/Encrypting an entire system
- LVM (Debian Wiki)
- dm-crypt/Swap encryption
- Setting up swap space
- How to wipe free disk space in Linux?
- Best order of RAID, LVM and LUKS

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