We implemented a privacy solution, in order to let VDD users the possibility to have an encrypted volume at their disposal on any VMs they log in. The encrypted volume (a LVM logical one) is mounted on server filesystem and shared via Samba on any VMs.

Installation

We use a dmcrypt-LUKS solution. We need also samba server to be installed for the following share activation.

root@serv1:~# apt-get install dmsetup root@serv1:~# modprobe aes root@serv1:~# modprobe crypt root@serv1:~# apt-get install cryptsetup root@serv1:~# apt-get install samba

Encrypted Logical Volume Creation

We create the LV with lvcreate, check its status with badblocks, encrypt it with cryptsetup

As an example we use the following features: interested user: user1 (be sure this user does exist on system) LV name & tag: user1_enc LV size: 1 Gb existing VG name: serv1

root@serv1:~# lvcreate -n user1_enc -L 1G --addtag user1_enc serv1 root@serv1:~# badblocks -c 10240 -s -w -t random -v /dev/serv1/user1_enc root@serv1:~# cryptsetup --verbose -c aes-cbc-essiv:sha256 --verify-passphrase luksFormat /dev/serv1/user1_enc

File system Creation on Encrypted Volume

As an example we create an ext3 filesystem

root@serv1:~# cryptsetup luksOpen /dev/serv1/user1_enc user1_enc root@serv1:~# mke2fs -j /dev/mapper/user1_enc root@serv1:~# cryptsetup luksClose user1_enc

Mounting the encrypted volume through pam-mount feature

As an example we mount the encrypted device for user1 on his folder /home/user1/share (be sure it does exists and has user1 as owner). We need libpam-mount to be installed.

root@serv1:~# apt-get install libpam-mount root@serv1:~# mount.crypt /dev/serv1/user1_enc /home/user1/share root@serv1:~# chown -R user1.user1 /home/user1/share

Activating the share

We use the samba 3 "usershare" feature in order to let the final user the possibility to activate his own share. The share is accessed providing user and password. First we need to add the user to sambashare group and create a corresponding samba user with smbpasswd.

root@serv1:~# adduser user1 sambashare root@serv1:~# smbpasswd -a user1 New SMB password: Retype new SMB password: Added user user1. root@serv1:~# su user1 user1@serv1:~$ net usershare add user1_share /home/user1/share "user1 share" user1:F

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