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Rear (Relax-and-Recover)

Dépendances :

```
mkisofs (or genisoimage)
mingetty (rear is depending on it in recovery mode)
syslinux (for i386 based systems)
nfs-utils (when using NFS to store the archives)
cifs-utils (when using SMB to store the archives)
```

Download : http://download.opensuse.org/repositories/Archiving:/Backup:/Rear/Debian_10/amd64/rear_2.6-0_amd64.deb

```
apt-get install mkisofs mingetty syslinux cifs-utils nfs-utils sshfs
dpkg -i rear_2.6-0_amd64.deb
```

- Fichier de conf basique :

```
root@stkoner-pmox2:~# cat /etc/rear/local.conf
# Default is to create Relax-and-Recover rescue media as ISO image
# set OUTPUT to change that
# set BACKUP to activate an automated (backup and) restore of your data
# Possible configuration values can be found in /usr/share/rear/conf/default.conf
#
# This file (local.conf) is intended for manual configuration. For configuration
# through packages and other automated means we recommend creating a new
# file named site.conf next to this file and to leave the local.conf as it is.
# Our packages will never ship with a site.conf.

OUPUT=ISO
BACKUP=NETFS
BACKUP_URL="sshfs://ben@nas/ZP_nas/stkoner-pmox2-rear"
NETFS_KEEP_OLD_BACKUP_COPY=3
BACKUP_PROG_EXCLUDE=( '/tmp/*' '/dev/shm/*' "$VAR_DIR/output/*" "/ZP_vDisks/*" "/ZP_nas/*" "/ZP_ext/*" )
USE_STATIC_NETWORKING=1
```

⇒ Si vous utiliser un adressage IP fixe, créer les fichiers ci-dessous :

- /etc/rear/mappings/ip_addresses

```
eth0 192.268.1.252/24
```

- /etc/rear/mappings/routes

```
default 192.168.1.254 eth0
```

⇒ Penser à copier la clé SSH vers la machine distante

⇒ Lancer la sauvegarde avec :

```
rear -v mkbackup
```

```
root@stkoner-pmox2:~# rear -v mkbackup
Relax-and-Recover 2.6 / 2020-06-17
Running rear mkbackup (PID 54505)
Using log file: /var/log/rear/rear-stkoner-pmox2.log
Running workflow mkbackup on the normal/original system
Using backup archive '/tmp/rear.BwoSapPOuUWGjNq/outputfs/stkoner-pmox2/backup.tar.gz'
Using autodetected kernel '/boot/vmlinuz-5.4.143-1-pve' as kernel in the recovery system
Creating disk layout
Overwriting existing disk layout file /var/lib/rear/layout/disklayout.conf
Using guessed bootloader 'GRUB' (found in first bytes on /dev/sda)
Verifying that the entries in /var/lib/rear/layout/disklayout.conf are correct ...
Creating recovery system root filesystem skeleton layout
Copying logfile /var/log/rear/rear-stkoner-pmox2.log into initramfs as '/tmp/rear-stkoner-pmox2-partial-2021-11-15T12:06:02+01:00.log'
Copying files and directories
Copying binaries and libraries
Copying all kernel modules in /lib/modules/5.4.143-1-pve (MODULES contains 'all_modules')
Copying all files in /lib*/firmware/
Symlink '/usr/share/misc/magic' -> '/usr/share/file/magic' refers to a non-existing directory on the recovery system.
It will not be copied by default. You can include '/usr/share/file/magic' via the 'COPY_AS_IS' configuration variable.
Testing that the recovery system in /tmp/rear.BwoSapPOuUWGjNq/rootfs contains a usable system
Creating recovery/rescue system initramfs/initrd initrd.cgz with gzip default compression
Created initrd.cgz with gzip default compression (266267302 bytes) in 40 seconds
Making ISO image
```

```
Wrote ISO image: /var/lib/rear/output/rear-stkoner-pmox2.iso (267M)
Copying resulting files to sshfs location
Saving /var/log/rear/rear-stkoner-pmox2.log as rear-stkoner-pmox2.log to sshfs location
Copying result files '/var/lib/rear/output/rear-stkoner-pmox2.iso /tmp/rear.BwoSapPOuUWGjNq/tmp/VERSION /tmp/rear.BwoSapPOuUWGjNq/tmp/README /tmp/rear.BwoSapPOuUWGjNq/tmp/rear-stkoner-pmox2.log' to /tmp/rear.BwoSapPOuUWGjNq/outputfs/stkoner-pmox2 at
sshfs location
Making backup (using backup method NETFS)
Creating tar archive '/tmp/rear.BwoSapPOuUWGjNq/outputfs/stkoner-pmox2/backup.tar.gz'
Archived 1873 MiB [avg 8127 KiB/sec] OK
WARNING: tar ended with return code 1 and below output:
  ---snip---
  tar: /var/lib/lxcfs: file changed as we read it
  tar: /var/agentx/master: socket ignored
  tar: pve: Warning: Cannot flistxattr: Operation not supported
  ----------
This means that files have been modified during the archiving
process. As a result the backup may not be completely consistent
or may not be a perfect copy of the system. Relax-and-Recover
will continue, however it is highly advisable to verify the
backup in order to be sure to safely recover this system.

Archived 1873 MiB in 237 seconds [avg 8093 KiB/sec]
Exiting rear mkbackup (PID 54505) and its descendant processes ...
Running exit tasks
root@stkoner-pmox2:~#
```

Plusieurs fichiers sont créés :

```
root@stkoner-pmox2:~# ssh nas ls -ltr /ZP_nas/stkoner-pmox2-rear/stkoner-pmox2/
total 2198723
-rw------- 1 ben ben  279052288 Nov 15 12:07 rear-stkoner-pmox2.iso
-rw------- 1 ben ben        277 Nov 15 12:07 VERSION
-rw------- 1 ben ben        202 Nov 15 12:07 README
-rw------- 1 ben ben      98085 Nov 15 12:07 rear-stkoner-pmox2.log
-rw------- 1 ben ben 1964661358 Nov 15 12:11 backup.tar.gz
-rw------- 1 ben ben    6004179 Nov 15 12:11 backup.log
```

- **rear-stkoner-pmox2.iso** : ISO bootable pour la recovery
- **backup.tar.gz** : contient la sauvegarde OS

Backup réseau

Sauvegarder dans un fichier :

```
dd if=/dev/hda bs=1k conv=sync,noerror | gzip -c | ssh user@hostname "gzip -d | dd of=/backup/system.img bs=1k"
dd if=/dev/md0 |gpg -e -r 'cleGPG' - | ncftpput -c -u login -p password hostname system/boot.img.gpg
```

Restaurer à partir d'un fichier :

```
dd if=/backup/system.img bs=1k | gzip -c | ssh user@hostname "gzip -d | dd of=/dev/hda bs=1k"
ncftpget -u login -p password hostname system/boot.img.gpg | gpg -d 'cleGPG' - | dd of=/dev/md0
```

Dupliquer un OS :

```
dd if=/dev/hda bs=1k conv=sync,noerror | gzip -c | ssh user@hostname "gzip -d | dd of=/dev/hda bs=1k"
```

Avec find, cpio and co

```
find /boot -mount -depth |cpio -ova -H crc |gzip | ssh root@server9000982 'cat>/mnt/backup_3696/boot_3696.gz'
find /boot -mount -depth |cpio -ova -H crc |gzip | ssh -q root@host "gunzip |cpio -idvum --absolute-filenames"
find /boot -mount -depth |cpio -ova -H crc |gzip | ssh -q root@host "gunzip |cd /tmp ; cpio -idvum"
```

Backup simple

```
dd if=/dev/sda of=/var/mksysb/$DATE/mbr.`hostname`.`date +%d%m%Y`.sda bs=512 count=1
dd if=/dev/sdb of=/var/mksysb/$DATE/mbr.`hostname`.`date +%d%m%Y`.sdb bs=512 count=1
dd if=/dev/md0 of=/var/mksysb/$DATE/mbr.`hostname`.`date +%d%m%Y`.md0 bs=512 count=1

find /boot -print |cpio -ovc |gzip -c > boot.`hostname`.`date +%d%m%Y`.cpio.gz
find / -xdev -print |cpio -ovc |gzip -c > root.`hostname`.`date +%d%m%Y`.cpio.gz
find /usr -print |cpio -ovc |gzip -c > usr.`hostname`.`date +%d%m%Y`.cpio.gz
```

```
find /var -xdev -print |grep -v "/var/cache/apt" |cpio -ovc |gzip -c > var.`hostname`.`date +%d%m%Y`.cpio.gz
```

⇒ pour restaurer le MBR.

Backup / Restore system rapide

⇒ sans LVM

dest : machine accueillant le backup
source : machine à backuper

```
dd if=/dev/sda1 bs=4k conv=sync,noerror,notrunc | gzip -c | ssh root@dest"dd of=/mnt/boot.img.gz bs=4k"
dd if=/dev/sda2 bs=4k conv=sync,noerror,notrunc | gzip -c | ssh root@dest "dd of=/mnt/root.img.gz bs=4k"
```

- Boot sur live CD + recréer les partitions avec fdisk puis à partir de dest :

```
dd if=/mnt/root.img.gz conv=sync,noerror,notrunc bs=4k | ssh root@source"gzip -d | dd of=/dev/sda2 bs=4k"
dd if=/mnt/boot.img.gz conv=sync,noerror,notrunc bs=4k | ssh root@source "gzip -d | dd of=/dev/sda1 bs=4k"
```

Encore un script de sauvegarde

```
#!/bin/bash

set -ux

NFS=X.X.X.X:/var/rhel6/mksysb/
LOCAL_PATH=/tmp/backup.$$
LOG=/var/log/mksysb.log
DEVICE=$1
FS="usr opt var boot"
DATE="date '+%d%m%Y %H:%M:%S'"
HOSTNAME=`hostname |awk '{print tolower($0)}' |awk -F "." '{print $1}'`


# montage du nfs
echo "`eval $DATE` : Montage du NFS distant ..."
mkdir -p ${LOCAL_PATH}
mount $NFS/$HOSTNAME ${LOCAL_PATH}

# backup de la table de partition
echo "`eval $DATE` : Backup de la table de partition ..."
sfdisk -d /dev/$DEVICE > ${LOCAL_PATH}/ptable.$HOSTNAME

# backup du MBR
echo "`eval $DATE` : Backup du MBR ..."
dd if=/dev/$DEVICE of=${LOCAL_PATH}/mbr.$HOSTNAME bs=512 count=1

# backup du VG
for i in `vgs|grep -v VSize|awk '{print $1}'`
do
echo "`eval $DATE` : Backup du $i ..."
vgcfgbackup -d -v $i --file ${LOCAL_PATH}/$i.$HOSTNAME
chmod 644 ${LOCAL_PATH}/$i.$HOSTNAME
done

# Copie de fichiers utiles
echo "`eval $DATE` : Backup de fichiers systeme ..."
fdisk -l > $LOCAL_PATH/fdisk.$HOSTNAME
cat /etc/fstab > $LOCAL_PATH/fstab.$HOSTNAME
> $LOCAL_PATH/pvdisplay.$HOSTNAME
for i in `pvs|grep -v PSize|awk '{print $1}'`
do
pvdisplay >> $LOCAL_PATH/pvdisplay.$HOSTNAME
done

# backup des FS
echo "`eval $DATE` : Backup des FS ..."
for i in $FS
do
FSREN=`echo $i|sed "s%/%_%g"`
```

```
find /$i -xdev -print |grep -v mksysb |cpio -ovc |gzip -c > ${LOCAL_PATH}/$FSREN.$HOSTNAME.cpio.gz
done

find / -xdev -print | egrep -v "/var|/usr|/opt|/boot|moteurs|oracle" |cpio -ovc |gzip -c > ${LOCAL_PATH}/root.$HOSTNAME.cpio.gz
find /dev -print |cpio -ovc |gzip -c > ${LOCAL_PATH}/dev.$HOSTNAME.cpio.gz

echo "`eval $DATE` : Demontage du NFS distant ..."
sleep 1
umount ${LOCAL_PATH}
rmdir ${LOCAL_PATH}
```

Encore un script de restore

```
#!/bin/bash

#set -x

[[ $# -ne 1 ]] && echo "Indiquer la machine en parametre"  && exit

vgchange -an

####### Variable a modifier pour rajouter des FS specifiques a restaurer #######
FS=""

BASE_FS="usr opt var"
LOCAL_PATH=/tmp/restore/$1
VG=`grep -w "/" ${LOCAL_PATH}/fstab.$1 |awk '{print $1}'|awk -F "/" '{print $4}'|awk -F "-" '{print $1}'`
UUID=`grep -A7 $VG ${LOCAL_PATH}/pvdisplay.$1|awk '/UUID/ {print $NF}'`
FAKEROOT=/tmp/fakeroot
DEVICE=`grep -w table ${LOCAL_PATH}/ptable.$1|awk -F "/dev/" '{print $NF}'`
BOOTDEVICE=${DEVICE}1

mkdir -p $FAKEROOT

# Restore de la table de partition
sfdisk --force /dev/$DEVICE < ${LOCAL_PATH}/ptable.$1

# Restore du VG

echo y | pvcreate -ff --norestorefile --uuid $UUID /dev/${DEVICE}2
vgcfgrestore --file ${LOCAL_PATH}/$VG.$1 $VG
vgchange -ay $VG

# Creation des FS et du device de swap

awk -v vg=$V -v fakeroot=$FAKEROOT '
       /vg/ {print "mkfs."$3" "$1}' ${LOCAL_PATH}/fstab.$1 |grep -v swap |sh

size=`grep -A 10 swap ${LOCAL_PATH}/$VG.$1|awk '/extent_count/ {print $3}'`
lvcreate -l $size -n lv_swap $VG
mkswap -f /dev/$VG/lv_swap

# Montage et restore de la racine
ROOT=`grep -w "/" ${LOCAL_PATH}/fstab.$1 |awk '{print $1}'`
BOOT=`grep -w "/boot" ${LOCAL_PATH}/fstab.$1 |awk '{print $1}'`
mount $ROOT $FAKEROOT

cd $FAKEROOT
gzip -dc ${LOCAL_PATH}/root.$1.cpio.gz |cpio -iv --no-absolute-filenames
gzip -dc ${LOCAL_PATH}/dev.$1.cpio.gz |cpio -iv --no-absolute-filenames

FSTYPE=`awk '/boot/ {print $3}' ${LOCAL_PATH}/fstab.$1`
mkfs.${FSTYPE} /dev/$BOOTDEVICE
mkdir -p $FAKEROOT/boot
mount /dev/$BOOTDEVICE $FAKEROOT/boot

gzip -dc ${LOCAL_PATH}/boot.$1.cpio.gz |cpio -iv --no-absolute-filenames

# Montage des autres FS
for i in $FS ${BASE_FS}
do
mkdir -p $FAKEROOT/$i
done
```

```
awk -v vg=$V -v fakeroot=$FAKEROOT '
        /vg/ {print "mount "$1" "fakeroot$2}' ${LOCAL_PATH}/fstab.$1 |grep -v swap |sh


cd $FAKEROOT
for i in $FS ${BASE_FS}
do
gzip -dc ${LOCAL_PATH}/$i.$1.cpio.gz |cpio -iv --no-absolute-filenames
done

# Reinstallation de grub
echo "chroot $FAKEROOT /bin/sh -c \"mount /proc ; mount /sys ; grub-install /dev/$DEVICE\"" | sh

# Mise a jour fstab
sed -i "/UUID/d" $FAKEROOT/etc/fstab
echo "/dev/$BOOTDEVICE  /boot   $FSTYPE    defaults        1 2" >> $FAKEROOT/etc/fstab

echo;echo "### Restauration terminee ###"
```

From:
https://unix.ndlp.info/ - **Where there is a shell, there is a way**

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