

# First Steps

with

# Relax-and-Recover (abbreviated ReaR)

Understand how ReaR works by running it yourself

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# What this workshop is about

To get some initial basic understanding  
how Relax-and-Recover works  
you will use it yourself  
on two virtual machines  
on your laptop.

# Topics

Preconditions

Install Relax-and-Recover

Configure Relax-and-Recover

Run “rear mkbackup”

Run “rear recover”

# Preconditions

An NFS server runs on the laptop

It exports a directory in "rw" mode

(in the following text "/nfs" is used as name for that directory)

Two simple virtual machines run on the laptop

x86/x86\_64 with BIOS (no UEFI)

Hardware virtualization (no paravirtualization)

A single virtual 20GB harddisk (IDE disk)

A usual virtual CDROM drive (IDE CDROM)

A single usual virtual network interface card

(no special driver/firmware)

# Preconditions (cont.)

## The first virtual machine

A small and simple Linux system is running

Installed in a single ext3/ext4 filesystem

Using GRUB/GRUB2 as bootloader

It can access the NFS server that runs on the laptop

```
mount -v -t nfs [-o nfsvers=3,noexec,nolock] 192.168.100.1:/nfs /mnt
```

## The second virtual machine

Identical “hardware” as the first virtual machine

BIOS, same kind of 20GB harddisk, CDROM, same NIC

“Empty” (without an operating system)

# Install Relax-and-Recover

Install from GitHub

```
git clone https://github.com/rear/rear.git ; cd rear
```

Copy an existing directory

```
mkdir rear ; scp -r root@192.168.100.1:/rear/* rear ; cd rear
```

(recursive scp copies symlinks as regular duplicated files)

Get a RPM package

From the openSUSE Build Service

```
http://download.opensuse.org/repositories/Archiving:/Backup:/Rear/
```

From a Linux distribution

E.g. Fedora: **yum install rear**



# Install Relax-and-Recover (cont. 1)

Needed other software to run ReaR (excerpts)

SUSE

```
zypper install lsb-release
```

Fedora

```
yum install genisoimage
```

(at least on Fedora 25 server)

Ubuntu

```
sudo apt-get install nfs-common
```

```
sudo apt-get install syslinux-common
```

```
sudo apt-get install isolinux
```

# Install Relax-and-Recover (cont. 2)

Other prerequisites to run ReaR (excerpts)

SUSE

```
echo "OS_VENDOR=SUSE_LINUX" > etc/rear/os.conf
```

```
echo "OS_VERSION=12" >> etc/rear/os.conf
```

Fedora

Disable SELinux

- 1.) Set "SELINUX=disabled" in /etc/sysconfig/selinux or /etc/selinux/config
- 2.) Reboot
- 3.) Confirm that the getenforce command shows "Disabled"

Have sufficient space in TMPDIR

```
export TMPDIR=/var/tmp
```



# Configure Relax-and-Recover

Start with an appropriate example config file

```
cp usr/share/rear/conf/examples/SLE11-ext3-example.conf  
etc/rear/local.conf
```

Adapt etc/rear/local.conf as needed

Mandatory

```
BACKUP_URL=nfs://192.168.100.1/nfs
```

Optional

Access the ReaR recovery system from remote via ssh

```
SSH_ROOT_PASSWORD="rear"
```

Let the ReaR recovery system run dhclient for network setup

```
USE_DHCLIENT="yes"
```

# Configure Relax-and-Recover (cont.)

## Specific adaptations in etc/rear/local.conf

Fedora

```
export TMPDIR=/var/tmp
```

Ubuntu

Work around that there is no eth0 in the ReaR recovery system

```
lsmmod | tail -n +2 | cut -d ' ' -f 1 | tac | tr -s '[:space:]' ' '
```

```
MODULES_LOAD=( pata_acpi floppy mii 8139cp psmouse 8139too autofs4  
parport lp ppdev parport_pc sunrpc i2c_piix4 mac_hid 8250_fintek  
soundcore snd snd_timer snd_seq_device snd_seq virtio_rng serio_raw  
snd_rawmidi input_leds snd_seq_midi_event snd_seq_midi snd_pcm  
snd_hwdep snd_hda_core snd_hda_codec snd_hda_intel  
snd_hda_codec_generic isofs )
```

Work around that udevd does not work in the ReaR recovery system

```
PRE_RECOVERY_SCRIPT="mknod /dev/sda b 8 0 ; mknod /dev/sda1 b 8 1 ;  
mknod /dev/sda2 b 8 2"
```



# Run “rear mkbakup”

## 1.) **usr/sbin/rear -d -D mkbakup**

Running that in the Linux system on the first virtual machine results on the NFS server a /nfs/HOSTNAME directory that contains in particular

The ReaR recovery system as a bootable ISO image

**rear-HOSTNAME.iso**

A backup of the files of the Linux system on the first virtual machine

**backup.tar.gz**

## 2.) Shut down the first virtual machine

Simulate a disaster happened on the first virtual machine

# Run “rear recover”

1.) Boot the second virtual machine

Boot via CDRROM from the rear-HOSTNAME.iso

2.) On the ReaR recovery system log in as root  
(no password)

3.) **rear -d -D recover**

On the second virtual machine

a system gets installed from scratch

as it had been before on the first virtual machine

4.) Reboot the second virtual machine

Boot from harddisk to run the re-created system

As a general public accessible entry point  
visit the openSUSE Wiki page

## **SDB:Disaster Recovery**

[http://en.opensuse.org/SDB:Disaster\\_Recovery](http://en.opensuse.org/SDB:Disaster_Recovery)

Thank you.





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