

First Steps

with

Relax-and-Recover (abbreviated ReaR)

Understand how ReaR works by running it yourself

Johannes Meixner

<jsmeix@suse.com>



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 mkbbackup”

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

```
lsmod | 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

Thank you.





Corporate Headquarters
Maxfeldstrasse 5
90409 Nuremberg
Germany

+49 911 740 53 0 (Worldwide)
www.suse.com

Join us on:
www.opensuse.org

Unpublished Work of SUSE LLC. All Rights Reserved.

This work is an unpublished work and contains confidential, proprietary and trade secret information of SUSE LLC. Access to this work is restricted to SUSE employees who have a need to know to perform tasks within the scope of their assignments. No part of this work may be practiced, performed, copied, distributed, revised, modified, translated, abridged, condensed, expanded, collected, or adapted without the prior written consent of SUSE. Any use or exploitation of this work without authorization could subject the perpetrator to criminal and civil liability.

General Disclaimer

This document is not to be construed as a promise by any participating company to develop, deliver, or market a product. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. SUSE makes no representations or warranties with respect to the contents of this document, and specifically disclaims any express or implied warranties of merchantability or fitness for any particular purpose. The development, release, and timing of features or functionality described for SUSE products remains at the sole discretion of SUSE. Further, SUSE reserves the right to revise this document and to make changes to its content, at any time, without obligation to notify any person or entity of such revisions or changes. All SUSE marks referenced in this presentation are trademarks or registered trademarks of Novell, Inc. in the United States and other countries. All third-party trademarks are the property of their respective owners.

