First Steps
with
Relax-and-Recover (abbreviated **ReaR**)

Understand how ReaR works by running it yourself

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SUSE
We adapt. You succeed.

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,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 prerequirements 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 adaptions 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 mkbackup”

1.) **usr/sbin/rear -d -D mkbackup**

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 CDROM 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

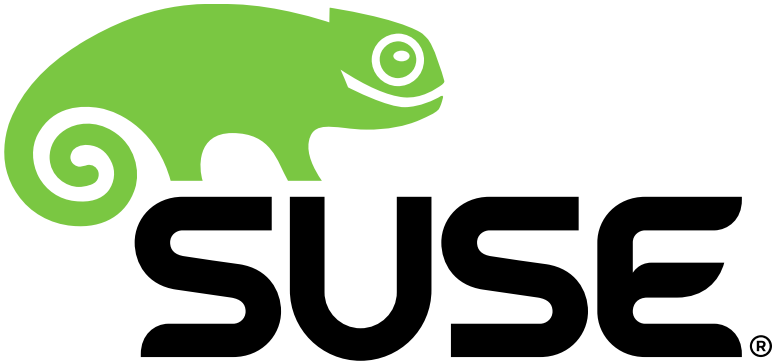
Boot from harddisk to run the re-created system

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

SDB:Disaster Recovery

http://en.opensuse.org/SDB:Disaster_Recovery

Thank you.



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