

Relax and Recover

Relax and Recover (ReaR)

The Ultimate Disaster Recovery Framework

<http://rear.sourceforge.net>

by
Gratien D'haese

What is Relax and Recover

- Relax and Recover (abbreviated rear) is a highly [modular disaster recovery](#) framework for GNU/Linux based systems
- Focused on disaster recovery
- No panic approach – tool takes care of every recovery aspect
 - Repartition hard-drives
 - Restore the Operating System + data
 - Make the system bootable

Goal of ReaR

- The goal of rear is to restore your Operating System to the state when the last “rear mkbackup” was run
- Fast recovery
- Support for PXE, NetFS, RAID and LVM
- Bootable medium (CD/DVD, LAN, tape)
- Optional purposes are
 - cloning new systems
 - limited rescue environment

A bit of history

- Spin-off of 2 existing projects:
 - OpenVPN Gateway Builder (OGB) of [Schlomo Schapiro \(Germany\)](#)
 - Make CD-ROM Recovery (mkCDrec) of [Gratien D'haese \(Belgium\)](#)
- Disaster Recovery (DR) projects under GPL
 - 2000: Mondo Rescue
 - 2000: Make CD-ROM Recovery (mkCDrec)
 - 2000: Bacula (contains a minimal DR)
 - 2006: Relax and Recover

Relax and Recover (ReaR)

- Project is licensed under GPLv2
- No external dependencies
- Limitations:
 - GNU/Linux kernel > 2.6
 - “root” privileges required to run rear
- Everything is scripted using bash language
 - Each task has its own (small) script
- User friendly – minimal output, uses log file

LSB rules of ReaR

- Follows the Linux Standard Base rules
- Configuration files are under `/etc/rear/`
- The scripts are stored under `/usr/share/rear/`
- One main script **`/usr/sbin/rear`**
- rear is build around concepts:
 - mkrescue
 - mkbakup
 - mkbakuponly
 - recover
 - dump

Architecture of ReaR

rear dump:

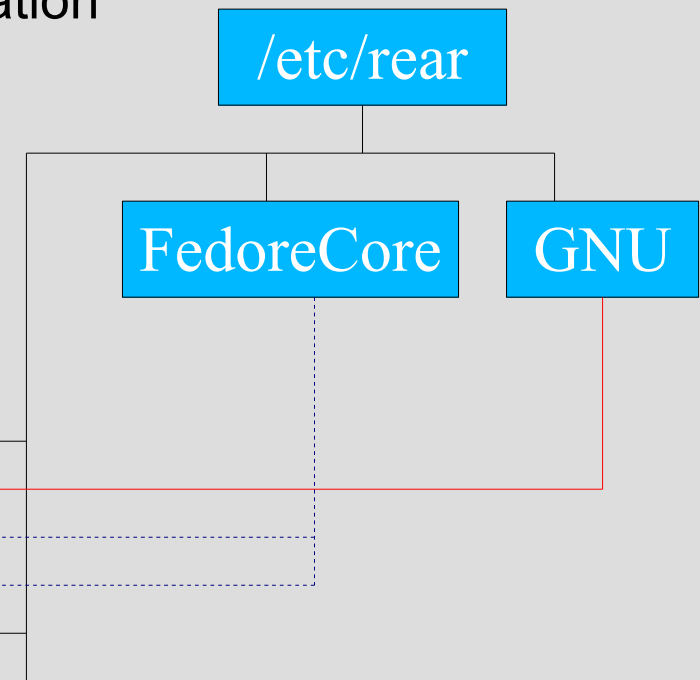
Dumping out configuration and system information

System definition:

```
ARCH = Linux-i386
OS = GNU/Linux
OS_VENDOR = FedoraCore
OS_VENDOR_ARCH = FedoraCore/i386
OS_VENDOR_VERSION = FedoraCore/6
```

Configuration tree:

```
Linux-i386.conf : OK
GNU/Linux.conf : OK
FedoraCore.conf : missing/empty
FedoraCore/i386.conf : missing/empty
FedoraCore/6.conf : missing/empty
site.conf : OK
local.conf : OK
```



Architecture of ReaR (cont'd)

- Shell scripts are stored under `/usr/share/rear`
- Scripts are kept together according workflows
 - `mkrescue` (only make rescue image)
 - `mkbackup` (including make rescue image)
 - `mkbackuponly` (excluding make rescue image)
 - `recover` (the actual recovery part)
 - `/etc/rear/recovery` is being build dynamically

Workflow backup (or rescue)

- **mkbackup** – mkrescue
 - Preparation (building the root file system layout)
 - Analyse (disaster recovery environment creation)
 - Creation of /etc/rear/recovery structure
 - Analyse (building the rescue system)
 - Build (copy all executables that are needed)
 - Pack (kernel and initial ramdisk)
 - **Backup (optional)**
 - Output (copy to destination, PXE, ISO,...)
 - Cleanup

Workflow recovery

- The same configuration files are read during the recovery workflow
- Recovery Process:
 - Verify (integrity and sanity check)
 - Recreate (file system layout)
 - Restore (the backups including Operating System)
 - Finalize (install boot loader, dump recovery log into /tmp of the recovered system)

Integration with external backup software

- Use Relax and Recover for the rescue environment, and
- Use an external (commercial) backup software to cover the backup/restore part
- Integration is already done for
 - Tivoli Storage Manager
 - Qnetix Galaxy
- Other backup programs may follow (dp, nsr)
 - Looking for sponsors

Where Business meets Open Source Projects

- Business model is based on “sponsoring”
 - All code is Open Source (GPLv2)
 - Commercial companies such as
 - Pro Business Berlin
 - IT3 Consultantsare paid to write code for doing integrations, testing and so on
- Developers are hopefully attracted to donate their modules
- Live demo? See <http://rear.sf.net/demo.php>