

Full operating-system tar backup of a Linux server

A simple bare-bones backup: one compressed tarball of the whole root filesystem, minus the folders that are virtual, temporary or backed up separately.

Exclude list

`/etc/backup.exclude` :

```
/proc/*
/sys/*
/dev/*
/run/*
/tmp/*
/var/tmp/*
/usr/tmp/*
/mnt/*
/media/*
/lost+found
/var/cache/*
/swapfile
```

Keep `/etc/fstab` in the backup; you will want it for a restore.

The backup

```
#!/bin/bash
set -euo pipefail
umask 077                # the archive contains /etc/shadow and keys
dst=/mnt/backup/${hostname -s}/system
mountpoint -q /mnt/backup
```

```
mkdir -p "$dst"
nice -n 19 tar --one-file-system -cpjf "$dst/$(date +%F).system.tar.bz2" \
  --exclude-from=/etc/backup.exclude -C / .
find "$dst" -type f -name '*.tar.bz2' -mtime +3 -delete
```

- Use `--one-file-system` to stay on the root filesystem. In modern GNU tar, `-l` means `--check-links`, **not** "one filesystem".
- `umask 077` matters. The archive holds password hashes, SSH host keys and database credential files, so it must not be readable by everyone on the NAS share.
- `zstd` (`tar -I zstd`) is much faster than `bzip2` if it is available.

Schedule

```
0 0 * * 0 root /usr/local/bin/backup_system.sh >/dev/null 2>&1
```

Restore

Boot a rescue system, mount the new root at `/mnt/sysimage`, then run `tar -xpf <archive> -C /mnt/sysimage`. Reinstall the boot loader, and fix `/etc/fstab` UUIDs if the disks changed.

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