

GRUB Bootloader Reinstallation from a Live Environment

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Overview

Use this procedure to reinstall GRUB on a Linux system that is unable to boot. The process uses a live boot environment, mounts the target system, enters a chroot environment, and reinstalls GRUB on the target disk.

Prerequisites

- Boot the server using a Linux live environment (example: R1Soft BMR boot CD).
- Log in as the root user:

```
sudo -i
```

Procedure

1. Create a Mount Point

```
mkdir /r1soft
```

2. Mount the Target Filesystem

Standard Root Partition

```
mount /dev/sda1 /r1soft
```

LVM Root Partition if applicable

First, scan for volume groups and activate them with:

```
vgscan  
vgchange -ay
```

Next, mount the logical volume with:

```
mount /dev/vgname/lvname /r1soft
```

Separate Boot Partition if applicable

```
mount /dev/sda2 /r1soft  
mount /dev/sda1 /r1soft/boot
```

3. Prepare the Chroot Environment

```
mount --bind /proc /r1soft/proc  
mount --bind /sys /r1soft/sys  
mount --bind /dev/pts /r1soft/dev/pts  
mount --bind /dev /r1soft/dev  
mount --bind /run /r1soft/run
```

4. Enter the Chroot Environment

```
chroot /r1soft
```

5. Back Up Existing GRUB Directory

Debian-Based Systems

```
mv /boot/grub /boot/grub_bak
```

AlmaLinux/RHEL-Based Systems

```
mv /boot/grub2 /boot/grub2_bak
```

6. Reinstall GRUB

Debian-Based Systems

```
grub-install /dev/sda
```

AlmaLinux/RHEL-Based Systems

```
grub2-install /dev/sda
```

Replace /dev/sda with the appropriate boot disk if different.

7. Regenerate GRUB Configuration

Debian-Based Systems

```
update-grub
```

AlmaLinux/RHEL-Based Systems

```
grub2-mkconfig > /boot/grub/grub.cfg
```

8. Reboot and Validate

1. Exit the chroot environment.
2. Reboot the server.
3. Remove the live media.
4. Confirm the operating system boots successfully.