

Boot Discussion

Red Hat Developer Conference
Brno

Harald Hoyer <harald@redhat.com>

Split Initramfs Images

Problems:

- long time to build initramfs in rpm %post
- no new image created for new fixes in tools
- no new image created, if configuration changes

Images

Kernel

- generic `/var/lib/initramfs/initramfs-kernel-$version.img`
 - built at kernel compilation
 - built on dracut update
- Host-only `/var/lib/initramfs/initramfs-kernel-host-$version.img`
 - built after booting the generic image or at kernel installation
 - built on dracut update

Images

Tools `/var/lib/initramfs/initramfs-tools-$date.img`

- triggered by new packages
- compare to list of files installed in generic image
- built on dracut update

Images

Configuration `/var/lib/initramfs-conf-$date.img`

- triggered by changed configuration
- built on dracut update

Initramfs Generation

- keep track of installed files
- add shasum/timestamp/version file in image for error.log

Boot Failure

no root found / kernel failure

grub2 can set next default image

START:

- set default boot entry to next fallback
- boot image
- boot successful?
 - yes -> real root has to reset default boot entry
 - no -> goto START

Result

kernel-new-default

-> kernel-last-booted

-> kernel-last-booted-generic

dracut part:

- create error.log in /boot
- reboot

Boot Check

- set grub default entry to booted image
- Is booted image the last generated?
 - Yes
 - is image host-only?
 - Yes
 - Nop
 - No
 - generate host-only image and add boot entry
 - set host-only image default
 - fallback to generic one
 - No
 - error handling
 - display user dialog, file but with error.log, if available
 - set default boot entry to current image