Boot Discussion

Red Hat Developer Conference
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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