

Isar with Dracut

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What is Dracut

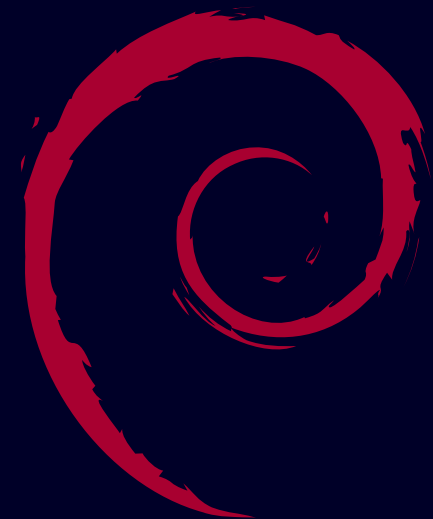
- Dracut is a modular initramfs build system
- Bash script based
- Can use systemd

Dracut repo: <https://github.com/dracut-ng/dracut-ng>

Dracut man page: <https://man7.org/linux/man-pages/man8/dracut.8.html>

Why adding Dracut to Debian/Isar

- **initramfs-tools** has almost no developers
- **Ubuntu** wants to switch



Since Debian Trixie,
dracut-install is already a
dependency of initramfs-tools

Patchset to introduce dracut as an initramfs generator is in isar master

<https://groups.google.com/g/isar-users/c/99SpqxhmHP0/m/59POpmKICAAJ>

Using dracut as initramfs generator is simple:

```
IMAGE_PREINSTALL += "dracut"
```

Running Dracut in Debian Trixie

```
[ 3.178864] Run /init as init process
[ 3.449947] systemd[1]: Successfully made /usr/ read-only.
[ 3.460368] systemd[1]: systemd 257.8-1~deb13u2 running in system mode (+PAM +AUDIT +SELINUX +APP
ETUP_PLUGINS +LIBFDISK +PCRE2 +PWQUALITY +P11KIT +QRENCODE +TPM2 +BZIP2 +LZ4 +XZ +ZLIB +ZSTD +BPF_FR
[ 3.461890] systemd[1]: Detected virtualization qemu.
[ 3.462294] systemd[1]: Detected architecture arm64.
[ 3.462537] systemd[1]: Running in initrd.
Booting initrd of dracut.
[ 3.473197] systemd[1]: No hostname configured, using default hostname.
[ 3.475795] systemd[1]: Hostname set to <localhost>.
[ 3.483155] systemd[1]: Initializing machine ID from random generator.
[ 4.094013] systemd[1]: bpf-restrict-fs: BPF LSM hook not enabled in the kernel, BPF LSM not supp
[ 5.242799] systemd[1]: Queued start job for default target initrd.target.
[ 5.294178] systemd[1]: Started systemd-ask-password-console.path - Dispatch Password Requests to
[ OK ] Started systemd-ask-password-conso...requests to Console Directory Watch.
[ 5.300426] systemd[1]: Reached target initrd-root-device.target - Initrd Root Device.
[ OK ] Reached target initrd-root-device.target - Initrd Root Device.
[ 5.302451] systemd[1]: Reached target initrd-usr-fs.target - Initrd /usr File System.
[ OK ] Reached target initrd-usr-fs.target - Initrd /usr File System.
[ 5.304368] systemd[1]: Reached target path.target - Path Units.
```

How does Dracut work

Building an initramfs:

- Read configuration
- Execute module scripts
- Copy binaries (executable and kernel modules) and configuration from root file system to initramfs folder

Dracut Configuration for Custom Initramfs

meta/classes-recipe/initrd-dracut.bbclass:

DRACUT_CONFIG_PATH = ""

DRACUT_EXTRA_MODULES ??= ""

DRACUT_EXTRA_DRIVERS ??= ""

Config man page: <https://man7.org/linux/man-pages/man5/dracut.conf.5.html>

<https://github.com/dracut-ng/dracut-ng/tree/main/modules.d>

Quirin's example:

```
# generic

hostonly="no"

#dracut_rescue_image="yes"

# VMs can't update microcode anyway
early_microcode="no"

# modules: basics

dracutmodules+=" dracut-systemd
shutdown "

drivers+=" dm_crypt "

filesystems+=" vfat ext4 xfs overlay
"

install_optional_items+="
/etc/verity.d/swupdate-sign.crt "
```

Dracut Module

Each module is stored in:

```
"/usr/lib/dracut/modules.d/${DRACUT_MODULE_
NO}${DRACUT_MODULE_NAME}/"
```

And contains at minimum a 'module-setup.sh'

Structure of 'module-setup.sh':

```
#!/bin/bash

check() {
}

depends() {
}

installkernel() {
}

cmdline() {
}

install() {
}
```

dracut-module.bbclass

Fills the 'module-setup.sh' with the help of the variables:

DRACUT_REQUIRED_BINARIES

DRACUT_MODULE_DEPENDENCIES

DRACUT_*_CONTENT_FILE_NAME

```
meta-isar/recipes-initramfs/dracut-  
example-nginx/dracut-example-  
nginx_0.1.bb:
```

```
inherit dracut-module
```

```
DRACUT_INSTALL_CONTENT_FILE_NAME =  
"install.sh"
```

```
DRACUT_REQUIRED_BINARIES =  
"nginx"
```

```
DRACUT_MODULE_DEPENDENCIES =  
"systemd-network-management"
```

Contact

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