THE ROAD TO EPEL 9

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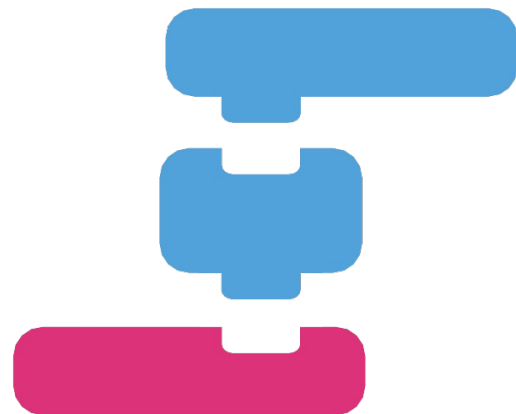🐦 @carlwgeorge
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WHAT IS EPEL?

Extra Packages for Enterprise Linux

EPEL is an initiative within the Fedora project to provide additional packages for CentOS and Red Hat Enterprise Linux (RHEL). The goal is to enhance these distros without disturbing or replacing stock packages.
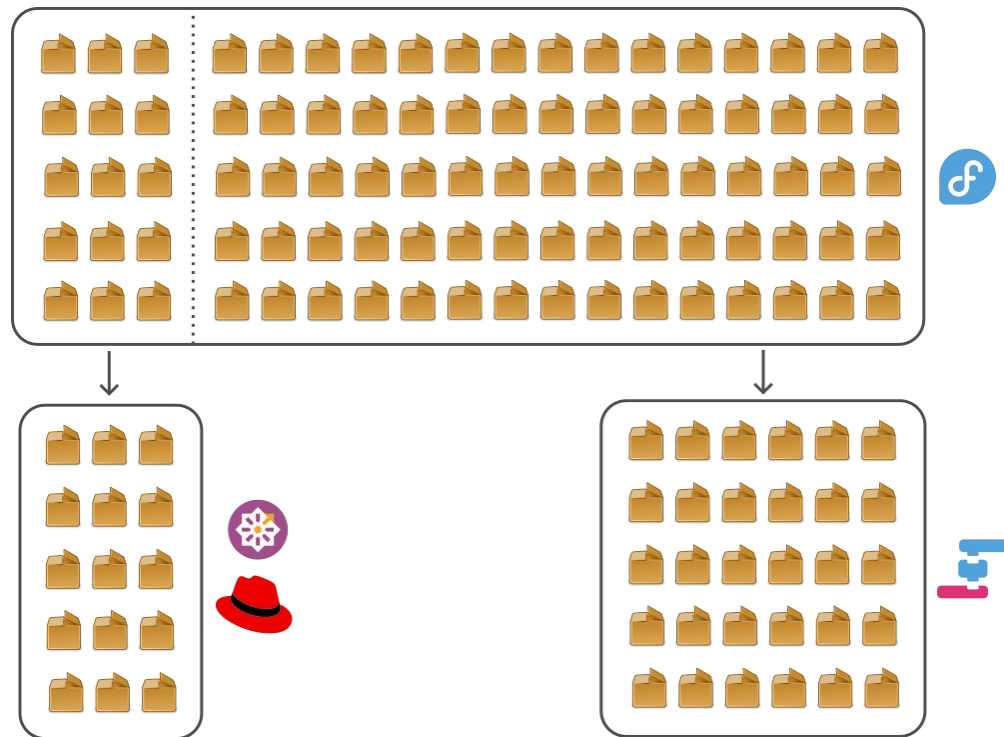
EPEL

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WHERE DO EPEL PACKAGES COME FROM?

Short answer, Fedora

CentOS and RHEL are created from a subset of Fedora packages. Fedora packages that are not in that subset are eligible to be included in EPEL.

CENTOS HAS MOVED UPSTREAM OF RHEL

A.K.A CentOS Stream

CentOS no longer aims to be identical to RHEL, but is still very similar. Rather than duplicating RHEL, CentOS is now where the next RHEL minor versions are built. RHEL maintainers are now responsible for their packages in CentOS, and CentOS can now accept contributions from the community.

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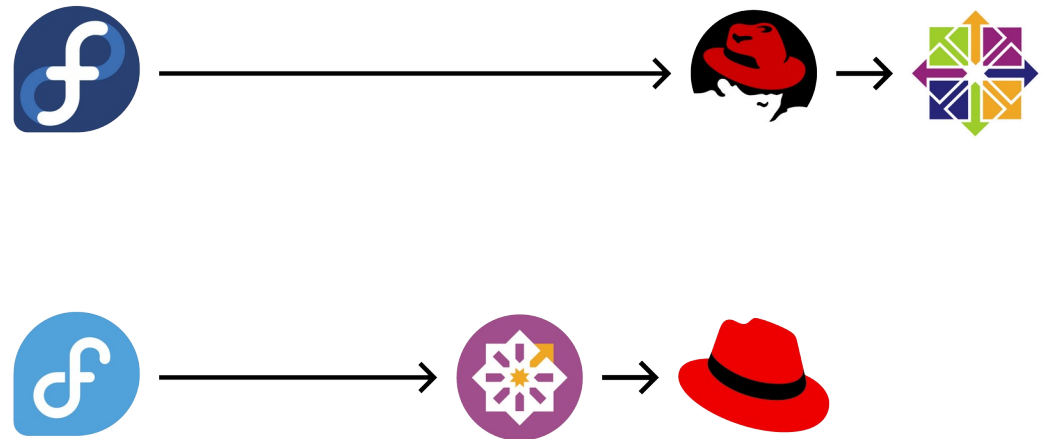
RHEL MINOR VERSION LIBRARY CHANGES

Happens in CentOS first

RHEL sometimes includes library soname changes in new minor versions. These now show up in CentOS three to six months before RHEL.

RHEL 8.6   RHEL 8.7   RHEL 8.8

CentOS 8

RHEL 9.0   RHEL 9.1   RHEL 9.2

CentOS 9

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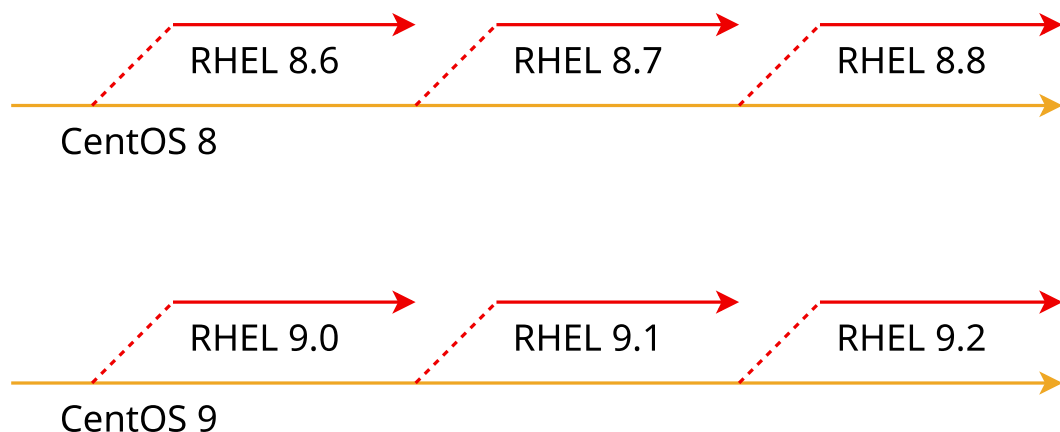
EPEL NEXT

Building EPEL against CentOS

EPEL packages are built against RHEL, but EPEL Next packages are built against CentOS. It is not a complete duplication of EPEL, just an alternate build target and repo for the packages that needed it.

proposal: EPEL 8 Next

Carl George

Tuesday, 8 September 2020

Howdy folks,

A large part of my day job is working on CentOS Stream. Naturally I would like it to be successful and have wide adoption. I know that EPEL will play a big role in this success. EPEL is extremely popular. Many users consider RHEL and CentOS unusable without it.

The problem we are facing is that EPEL 8 cannot be 100% compatible with RHEL/CentOS 8 and CentOS 8 Stream at the same time. It is not uncommon for RHEL to ship library soname changes in minor releases. In the RHEL 8 cycle, those changes are showing up in CentOS 8 Stream first. EPEL 8 builds against the latest RHEL 8 release. This can result in EPEL 8 packages that are uninstallable on CentOS 8 Stream due to the library differences. One prominent example we have already seen is llvm-libs, which has increased its library soname in every RHEL 8 minor release so far. Another increase is planned for RHEL 8.3, which has already been released in CentOS 8 Stream. There are likely other incompatibilities that haven't been noticed yet. I expect this problem to grow worse as RHEL development continues and more packages are added to EPEL 8. This situation is hurting the adoption of CentOS Stream.

To solve this problem, I am proposing that we create a new repository called EPEL 8 Next.

- built against CentOS 8 Stream
- opt-in for packagers (must request epel8-next dist-git branch)
- opt-in for users (part of epel-release but disabled by default)
- used *with* epel8, not *instead of*

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EPEL AVAILABILITY AFFECTS DISTRO UPGRADES

Why isn't foo in EPEL X yet?

EL users often depend on packages from EPEL, and won't start deploying the next major EL version until those packages are available in the corresponding EPEL repo.

EL6 ⟶ EL7

EL7 ⟶ EL8

EL8 ⟶ EL9

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EPEL STAFFING

Community Platform Engineering

Lack of EPEL packages was identified as a common blocker for RHEL customers to upgrade to new major versions. The need was great enough to justify additional headcount for the CPE group.

CPE to staff EPEL work

SEPTEMBER 2, 2021 / LEIGH GRIFFIN / COMMENTS OFF

We are pleased to announce that Red Hat is establishing a small team directly responsible for participating in EPEL activities. Their job isn't to displace the EPEL community, but rather to support it full-time. We expect many beneficial effects, among those better EPEL readiness for a RHEL major release. The EPEL team will be part of the wider Community Platform Engineering group, or CPE for short.

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EPEL 9 PLANNING

The original plan

- Launch EPEL 9 Next first, by itself, built against CentOS 9

- After RHEL 9 launch, do a mass rebuild of EPEL 9 Next packages against RHEL 9 to populate EPEL 9

- Launch EPEL 9 quickly after RHEL 9

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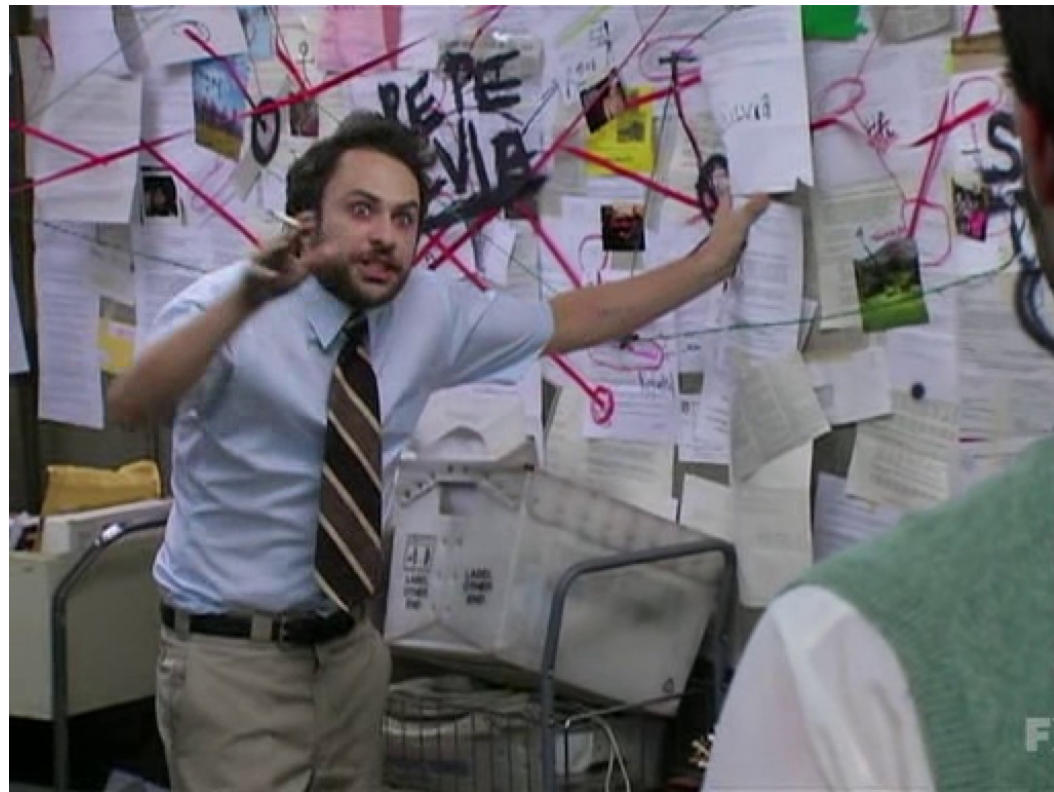
EPEL 9 PLANNING

Issues with this plan

- Confusing for packagers

- Confusing for users

- Difficult to document

- Complexity and added work of mass rebuild

- EPEL 9 not available at RHEL 9 launch

[visible confusion]

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EPEL 9 PLANNING

Revised plan

- Initially setup EPEL 9 to build against CentOS 9

- After the RHEL 9 launch, switch EPEL 9 to build against RHEL 9

- EPEL 9 Next available to continue building against CentOS 9 when needed
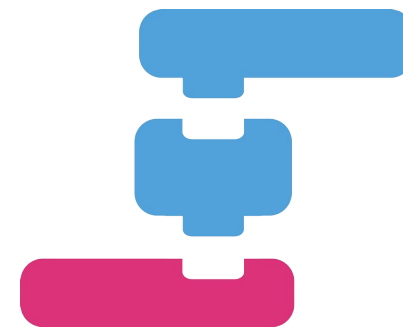
EPEL 9 PLANNING

Benefits of the new plan

- Simple for packagers

- Simple for users

- No mass rebuild

- EPEL 9 available before RHEL 9 instead of after

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EPEL 9 LAUNCH

Six months before RHEL 9

This was the first time EPEL has launched months ahead of the corresponding RHEL release.

Fedora COMMUNITY BLOG

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EPEL 9 is now available

DECEMBER 3, 2021 / CARLWGEORGE / 11 COMMENTS
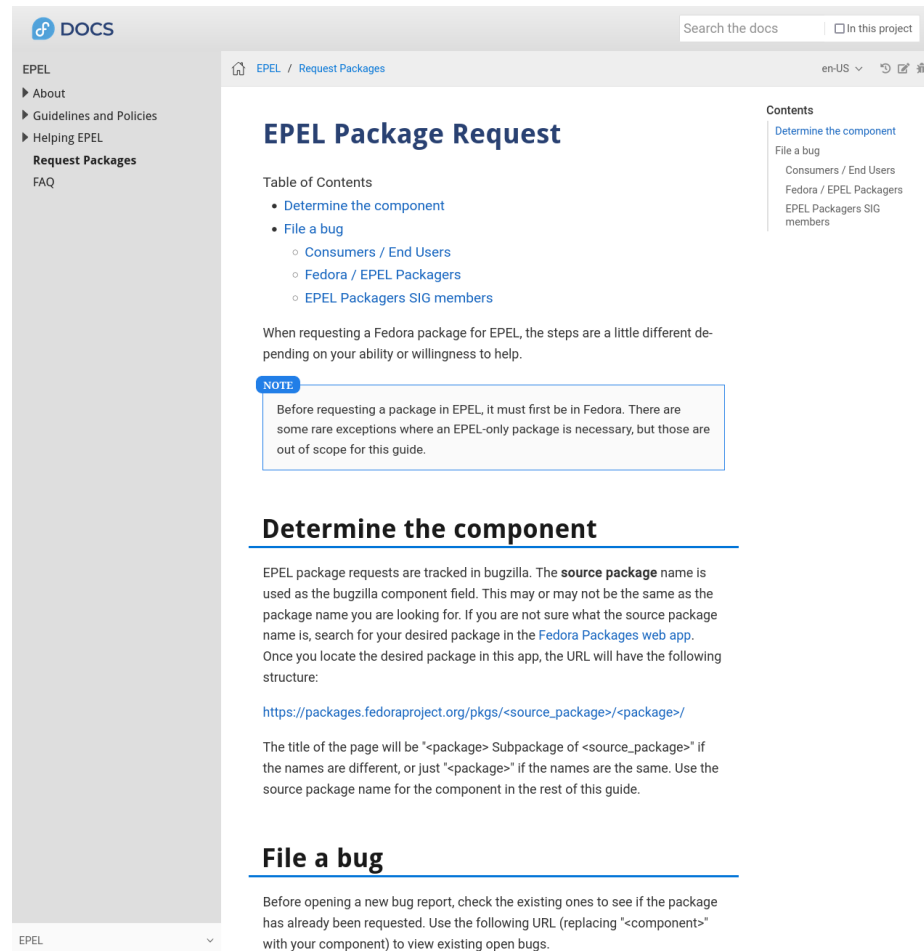
On behalf of the EPEL Steering Committee, I'm pleased to announce the availability of EPEL 9. This is the culmination of five months of work between the EPEL Steering Committee, the Fedora Infrastructure and Release Engineering team, and other contributors. Package maintainers can now request dist-git branches, trigger Koji builds, and submit Bodhi updates for EPEL 9 packages.

Instructions to enable the EPEL repository are available in our documentation. If there is a Fedora package you would like to see added to EPEL 9, please let the relevant package maintainer know with a package request.

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IS EPEL 9 "READY"?

If you don't think so, file bugs

It is up to the individual package maintainers to build their packages in EPEL 9, just like in previous EPEL repos. There is no specific content set for EPEL. Many packagers won't build their packages for a new EPEL release until someone requests it.

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RHEL 9 LAUNCH

With EPEL 9 significantly populated

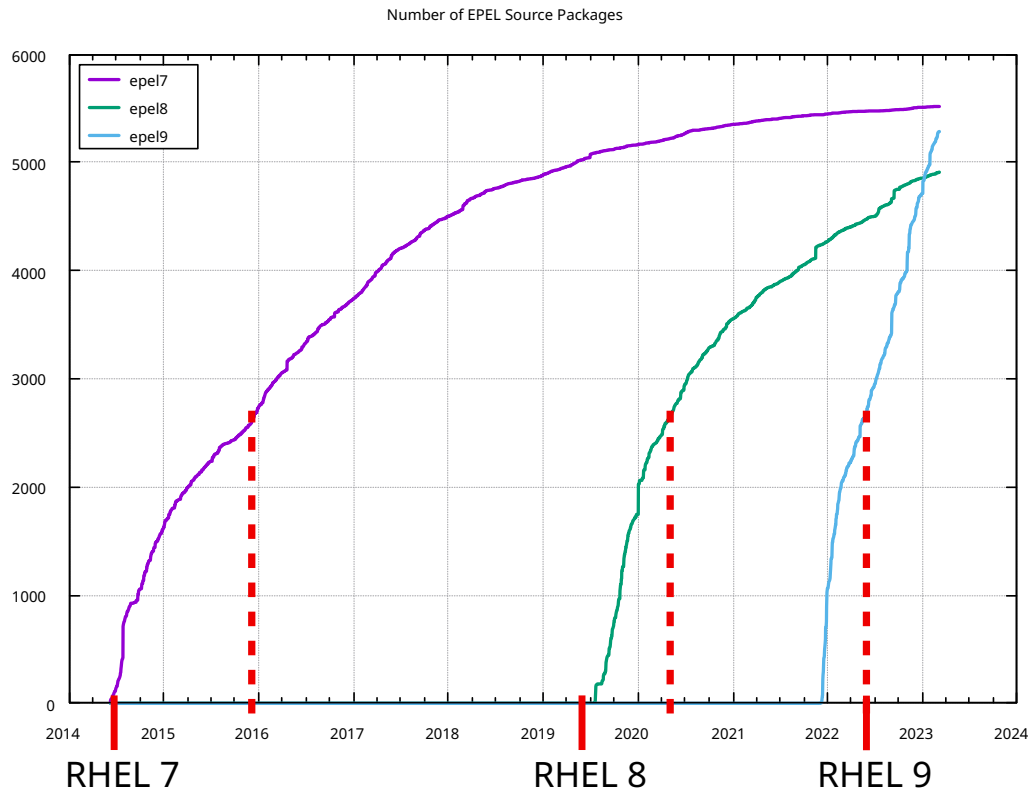The early EPEL 9 launch allowed RHEL 9 to launch with many community packages available to use on day 1.

- 5,764 packages

- 2,678 source packages

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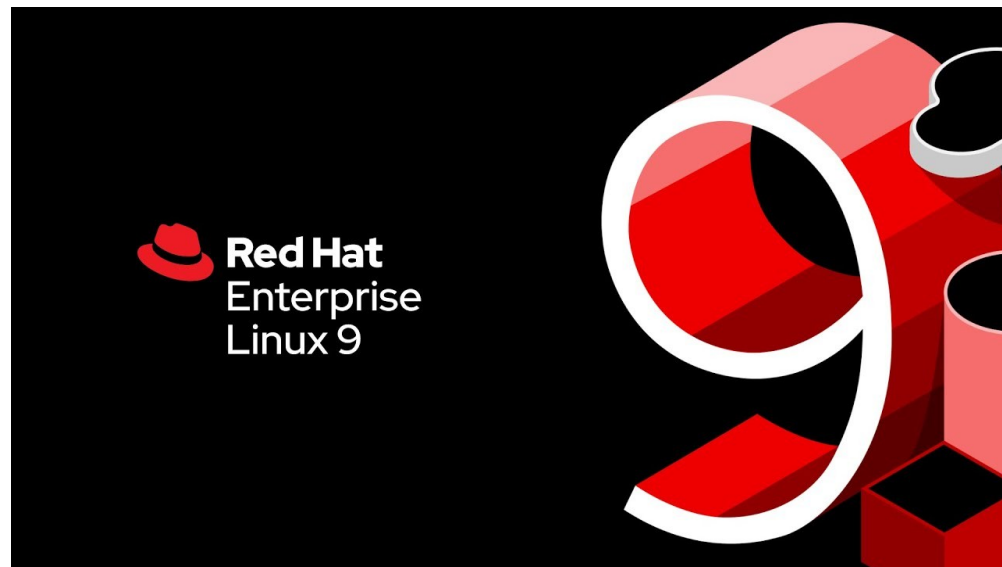
HOW IS EPEL 9 DOING NOW?

Growing faster than ever

- 14,372 packages

- 5,240 source packages

Number of EPEL Source Packages

Legend: epel7, epel8, epel9

RHEL 7   RHEL 8   RHEL 9

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BONUS TALK: THE ROAD TO EPEL 10

WHAT ABOUT EPEL 10?

Minor version branches

The EPEL + EPEL Next model solves real problems, but is not intuitive for maintainers. Our plan is to revamp the branching structure to better support CentOS and specific RHEL minor versions.

tinyurl.com/epel10proposal

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EPEL 9 BRANCH STRUCTURE

branch	built against	dist tag	repo path
epel9	CentOS 9	.el9	epel/9

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EPEL 9 BRANCH STRUCTURE

branch	built against	dist tag	repo path
epel9-next	CentOS 9	.el9.next	epel/next/9
epel9	RHEL 9.x	.el9	epel/9

EPEL 9 BRANCH STRUCTURE

branch	built against	dist tag	repo path
~~epel9-next~~	CentOS 9	.el9.next	archive/epel/next/9
epel9	RHEL 9.x	.el9	epel/9

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FEDORA BRANCH STRUCTURE

branch	built against	dist tag	repo path
rawhide	Rawhide	.fc38	fedora/linux/development/rawhide
f37	Fedora 37	.fc37	fedora/linux/releases/37
f36	Fedora 36	.fc36	fedora/linux/releases/36
~~f35~~	Fedora 35	.fc35	archive/fedora/linux/releases/35

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FEDORA BRANCH STRUCTURE

branch	built against	dist tag	repo path
rawhide	Rawhide	.fc39	fedora/linux/development/rawhide
f38	Fedora 38	.fc38	fedora/linux/releases/38
f37	Fedora 37	.fc37	fedora/linux/releases/37
~~f36~~	Fedora 36	.fc36	archive/fedora/linux/releases/36

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EPEL 10 BRANCH STRUCTURE

branch	built against	dist tag	repo path
epel10	CentOS 10	.el10_0	epel/10.0

EPEL 10 BRANCH STRUCTURE

branch	built against	dist tag	repo path
epel10	CentOS 10	.el10_1	epel/10.1
epel10.0	RHEL 10.0	.el10_0	epel/10.0

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EPEL 10 BRANCH STRUCTURE

branch	built against	dist tag	repo path
epel10	CentOS 10	.el10_2	epel/10.2
epel10.1	RHEL 10.1	.el10_1	epel/10.1
~~epel10.0~~	RHEL 10.0	.el10_0	archive/epel/10.0

EPEL 10 BRANCH STRUCTURE

branch	built against	dist tag	repo path
epel10	CentOS 10	.el10_3	epel/10.3
epel10.2	RHEL 10.2	.el10_2	epel/10.2
~~epel10.1~~	RHEL 10.1	.el10_1	archive/epel/10.1

Q & A

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THAT'S ALL FOLKS!

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