## CentOS Stream 8 and ARM64 Linux Support

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on behalf of IT-CM-LCS

## Change of CentOS Linux 8 EoL

- On the 8th of December 2020, the CentOS Project announced it was shifting its focus from CentOS Linux (C8) to CentOS Stream (CS)
- During the same announcement, the end-of-life for C8 was reduced from being a 10 year supported distribution to being 2 years
- Support for C8 will end at 31.12.2021
- End of Life for CERN CentOS 7 (CC7) has not changed (30.06.2024)

#### What is CentOS Stream?

- CentOS Stream is a Linux distribution that will be used by RedHat as the upstream for each RHEL minor release
- There will not be any major 8.x point releases (minor releases)
- Supported for 5 years (End-of-life 31.05.2024)
- Migration from CentOS Linux 8 to CentOS Stream 8 is trivial







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#### CentOS Stream 8 at CERN

- CentOS Stream 8 is a supported operating system
  - CERN controlled test/prod system updates
    - https://linux.web.cern.ch/updates/cs8/
  - OpenStack and Docker images
  - Supported with IT-related configuration management infrastructure
  - locmap is available for hosts not managed by IT centralised configuration management

# Continuity after C8 EOL (31.12.2021)

- Recommended Linux operating systems for new installs:
  - CERN CentOS 7 (CC7)
  - CentOS Stream 8 (CS8)
- Existing CentOS Linux 8 (C8) hosts:
  - Upgrade path to CentOS Stream 8: https://linux.web.cern.ch/centos8/docs/migration

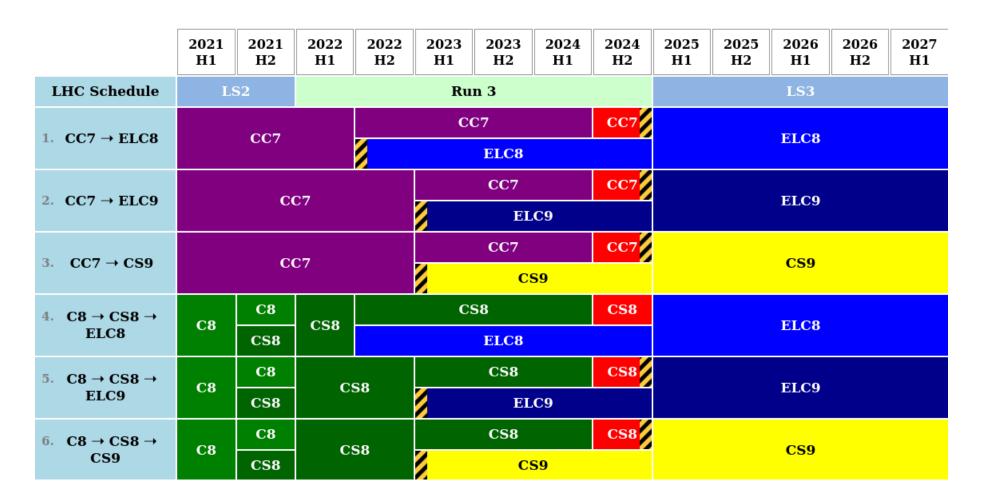
#### And after 2024?

- "Linux Future Committee": working group to assess the impact of current Linux usage at CERN
  - Meetings are invitation only, however all minutes/presentations/etc. are public at https://indico.cern.ch/category/13390/
- CERN is working with Fermilab and other facilities to decide on a path forward for the HEP community at large

#### Possible options

- CentOS Stream 9
  - Possible release this year
- RHEL: "no/low cost" Red Hat license
  - Currently being discussed
- New Enterprise Linux Clones (ELC):
  - AlmaLinux
  - RockyLinux

## Possible options



#### ARM64 for C8/CS8

- Initial (informal) request in 2019
- Work on C8 started late 2019
  - Designed with aarch64 in mind from the beginning
- Officially "blessed" late 2020
- Work on CS8 started early 2021, based on C8

## Agreement with Experiments

- CERN IT to provide basic ARM64 OS repositories, tools
  - Upstream CentOS mirrors for CC7, no CERN customizations
  - "Built in" for C8/CS8
- Experiments to collaborate with debugging/testing
  - Issues on CERN basic tools should be reproducible on x86\_64
- Access to Koji build system

#### What we provide

- x86\_64 and aarch64 as first-class citizens
- Daily snapshots
  - http://linuxsoft.cern.ch/cern/centos/s8-snapshots/
- Daily Testing release: that day's snapshot
  - http://linuxsoft.cern.ch/cern/centos/s8-testing/
- Weekly Production release: updated on Wednesday to the previous Wednesday's snapshot
  - http://linuxsoft.cern.ch/cern/centos/s8/
- Docker image
  - gitlab-registry.cern.ch/linuxsupport/cs8-base
- Basic CERN RPMs
  - CERN-CA-certs, cern-config-users, cern-get-keytab, cern-krb5-conf, etc.

#### What is missing

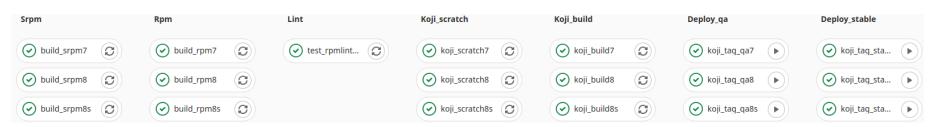
- OpenStack cloud images
  - We build them, but there are no ARM64 hypervisors to run them on!
- Full ARM64 testing as part of our daily pipelines
  - Nowhere to run the tests
- Large capacity for ARM64 Koji builds
  - Only a single physical Koji builder
- Gitlab Cl ARM64 runners
  - We have a custom one, but it can't be shared
- LXPLUS nodes, private build machines, etc.
  - Can't run ARM64 VMs, no ARM64 hardware either

## What we're working

- Koji building aarch64 by default for CS8 tags
  - Will reduce friction for possible ARM64 services like LXPLUS
- Awaiting delivery of ARM64 hardware!
  - 5 Ampere Altra Mt. Snow servers (Q80-30 CPU, 256GB RAM)
  - Cloud team will work on supporting ARM64 VMs

## Brief aside on Koji

- Koji is the CERN IT RPM build system
  - https://koji.cern.ch
- Uses Mock to create chroot environments to perform builds
- Open source, used by Fedora, CentOS, etc.
- Users get 3 "Koji tags" (-testing, -qa, -stable)
  - We create and host repositories from the contents of each tag
- Many use RPMCI to drive RPM builds from Gitlab CI



## Can you build with Koji?

Sure, just package your software as an RPM!

# Questions?