Linux Distribution Discussion

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Important Topic Requiring User Feedback

- Linux distribution upgrade
  - Current CentOS 7 distribution reaches EOL for maintenance updates in June 2024
  - Decision by Red Hat in Dec. 2020 to reorganize CentOS project and releases has created uncertainty and delay for upgrade paths and disrupted logical transition from CentOS 7->8
  - Decision on next distribution to be carefully considered
    - Ease of transition
    - Support lifetime
    - Functionality
  - Consider direction being taken at other universities and labs
    - CERN:
      - Alma Linux 8/9 for interactive machines and batch system
        - Recommendation for existing CentOS 7 systems to upgrade directly to Alma Linux 9
      - Site license for RHEL for some critical infrastructure (e.g. CMS high level trigger)
    - CMS Collaboration: Alma Linux 8/9 as base environment for production singularity images and software environment/builds
    - FNAL: Alma Linux
    - Possible effort by ORCD to standardize on Rocky Linux at MIT
  - Discussion to be held in coordination with Users Group and broader community
  - Ease transition for users through well-supported and documented use of containers

Some (Redhat-based) options

- RHEL
  - 5 years full support + 5 years of maintenance support
  - Point releases every ~6 months during full support period
  - Commercial license required
  - RHEL 8 full support until mid-2024, Maintenance support until mid-2029
  - RHEL 9 full support until mid-2027, maintenance support until mid-2032
- Alma Linux
  - (third party) RHEL clone with binary compatibility and matching point release cycle (basically recreating what CentOS used to be)
  - Support cycle matching RHEL
- Rocky Linux
  - Another third party RHEL clone similar to Alma Linux (and binary-compatible with Alma and RHEL)
- CentOS Stream
  - Maintained by Redhat
  - "Rolling" Release staying slightly "ahead" of RHEL
  - Supported only during "full support" period of corresponding RHEL release (5 years)
  - CS Stream 8 supported until May 2024
  - CS Stream 9 supported until May 2027
- CentOS
  - First party free clone of RHEL
  - Support being phased out
  - CentOS 7 full support ended Aug 2020, Maintenance support ends Jun. 2024
  - CentOS 8 support ended (abruptly) in Dec 2021
- Fedora
  - "Bleeding edge"
  - 6 month full support + 6 month maintenance support
  - Practically requires "continuous" upgrades
- Strong motivation to consider non-redhat alternatives?

Possible Timeline

- Tentative decision in the next few months
- Test installation with a small number of nodes, with possible segregated user access
- Full migration in late summer/early fall

Software and User Support Implications

- Newer Red-hat based distributions have similar software available in repositories as CentOS 7, but (much) newer versions
- During transition period, users will be provided with a centrally maintained singularity image to access a CentOS 7 environment similar to the existing system (and with similar software installed)
  - Access with one command, e.g. "submit-cc7" and/or easy set-up with JupyterHub
- Batch jobs can also be run using the singularity environment
- Software which is not available or easily installed from the native OS repositories can continue to be accessed through Conda and/or Docker/Singularity containers
- User data and existing Conda environments and Singularity images will continue to function, Docker containers might require some straightforward migration due to Red Hat Docker -> Podman transition in newer distributions
  - These use cases will be carefully tested in the lead-up to the migration

Discussion