

# Next Linux version at CERN

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# Agenda

- (A little bit of) history.
- CentOS and Red Hat 'merger'.
- Plans for next Linux version at CERN.
- Questions.



It all started with Red Hat 6, then 7.X, then Red Hat Linux (free) got discontinued and CERN had to find a solution:

- In early 2004 we made our 'CERN E. Linux' v. 3 - based on RHEL 3.
- In April 2004 we joined Scientific Linux collaboration, and started deploying modified Scientific Linux 3 - 'Scientific Linux CERN 3' (SLC3).
- In 2005 - SLC4, followed by SLC5 in 2008 and SLC6 in 2011.

Note: SLC build process is independent of SL one.

Over the years we have reduced number of changes made to the upstream Red Hat distribution:

- SLC3/4 - custom kernel patches, in kernel add-on modules, changes to system packages.
- SLC5/6 - no more custom kernels, add-on modules as separate packages, few changes to system packages (at present only package changed comparing to upstream: nss - adds CERN CA certificates).

Does CERN still need its own custom Linux distribution ?

Announced in January 2014, with the goal to:

“provide a common platform for open source community project needs”.

- CentOS Linux remaining a RHEL rebuild.
- Open and community oriented process.
- Opportunity to minimize further our divergence from upstream Linux distribution(s).
- Opportunity to contribute to a project with much broader scope than our custom Linux version.

Does CERN still need its own custom Linux distribution ?

- **Status quo**
  - build RHEL, SL binaries and assemble: local
- **Hybrid**
  - RHEL binaries from CentOS, build SL binaries and assemble: local
- **CentOS Variant**
  - RHEL, SL binaries and assembly at CentOS
- **Adopt CentOS**
  - RHEL binaries and assembly at CentOS
  - Add-on repositories for site specific packages: local

- We prefer the last one: Adopt CentOS
  - no need for CERN 'own' operating system.
  - no need for 'point/minor-releases' at CERN (and no resources to support these).
  - our site specific customizations can be shipped within add-on repositories.
  - some Grid sites are already using CentOS.
  - as with Quattor to Puppet migration - a move towards a mainstream product.

This is for version 7 **only**: we are not going to change our current SLC5 release, for SLC6 we may want to re-evaluate in the future.

- Why not a CentOS variant for CERN ?
  - it seems making a single variant for everybody is not possible (there is SL, SLF, SLC, SLD .. and probably some more ..).
  - if we are going to customize - via add-ons - the distribution anyway: why customize the CentOS variant and not the CentOS Core ?
  - all our customizations are CERN environment specific - would probably not be included in a variant.
  - looking beyond HEP as part of future initiatives, CentOS Core much more widespread than SL(C).
  - willing to participate in other CentOS SIGs (Openstack/Virtualization/...) - these will build on top of CentOS Core.

Scientific Linux CERN was customized for our environment and made available without support for others:

- only few sites use SLC. Most use SL, some CentOS or RHEL.
  - we will make our add-on repos available same way SLC is available today.
- compatibility with upstream Red Hat Enterprise Linux is maintained.
- Grid is based on RHEL-compatible systems and already supported existing diversity without compatibility problems

We believe there should be no influence on HEP Community.

# QUESTIONS ?

<http://cern.ch/linux>

Thank you !