

Linux @ DESY

Yves Kemp, Andreas Haupt, DESY

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Needs and requirements

- WLCG/HEP
 - “something from the RHEL ecosystem”
 - Version 9 is OK ... though CMS officially on 8
 - Coordination: WLCG, experiments
- Photon Science
 - Data is on GPFS. Needs a supported Distro
 - RHEL or Ubuntu (and SLES)
 - Control Systems (dedicated group)
 - Debian with Puppet management so far
 - will try Ubuntu with Puppet management
 - Coordination: DESY, with large on-site facilities
- Astro-particle physics
 - Much more diverse software ecosystem
 - partially more modern development workflows
 - Coordination: DESY, with hosted experiments
- Accelerator
 - Compute on HPC, with GPFS filesystem
 - RHEL or Ubuntu
 - Control Systems (dedicated group)
 - Ubuntu with FAI management so far
 - will try Ubuntu with Puppet Management
 - Coordination: DESY

Lessons learned from the past years _ 1

- Stable *and* inexpensive operation for more than 3-5 years might not be possible anymore
- Full RHEL compatibility only guaranteed with RHEL
- Invest (even more) in automated installations, deployment, configuration, management

Findings from the past RHEL+clones years

- Rocky + Alma both provide patches shortly after being published in RHEL
 - In many cases Alma needs a few days more than Rocky
- Some CVEs **only** fixed in Alma in a timely manner!
 - CVE-2024-1086: trivial local root exploit with enabled network namespaces
 - CVE-2022-40982, CVE-2023-20569: Microcode updates for Intel Downfall & AMD Zenbleed vulnerabilities

How we see our four distributions?

RedHat Enterprise Linux (RHEL)

- Evolution of license cost in 5y not clear
- Use, if your software requires RHEL
- Use, if you can migrate away from RHEL should license costs increase, or they do not play a role

Alma Linux

- Though we perceive the Alma Linux team as solid, it is unclear how AL versions evolve after 5y (will experience with AL8 soon)
- Use, if you do not need 100% RHEL compatibility
- Use, if you can migrate away from an AL version on short notice

Ubuntu:

- Freely available for 5y – we will follow whether Canonical will change this
- An important pillar, for server and desktop machines

Debian

- Lifecycle effective ~5y
- Support of modern hardware sometimes slow.
- Only limited use

What we tell, and what we do

What we tell:

- Servers: Use Ubuntu LTS
 - if your software is available in equal or better quality than for RHEL/Alma
- Desktops: Use Ubuntu LTS

What we deploy:

- Threefold: RHEL, Ubuntu and Alma
 - HH-Clusters (Grid, NAF, Maxwell HPC)
 - User facing & dCache : RHEL-9
 - Backend: Ubuntu
 - HH normal servers: more and more Ubuntu
 - ZN-Clusters: Alma Linux 9

Lessons learned from the past years _ 2

- Do not forget about applications:
- More and more open source applications go licenses & fees