

Easing OS Upgrades

CloudFest Hackathon Results

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WHAT IDEAS WE HAVE?

- **Expand ELevate Support:** Extend the capabilities for in-place upgrades across enterprise Linux distributions, including critical updates from CentOS 6 to 7.
- **Deep Dive into User Space:** Analyze commonly used software and CMSs to pinpoint potential upgrade obstacles, ensuring smoother transitions.
- **Focus on Industry Drivers:** Identify key elements crucial to data consistency and other industry needs to facilitate necessary upgrades.

WHAT IS ELEVATE?

The ELevate project is an initiative to support migrations between major versions of RHEL-derivatives. The Leapp utility and a few patches to support migration from non-RHEL operating systems are used to perform the upgrade.

WHAT IS ALMALINUX?

An open-source, community-owned and governed, forever-free enterprise Linux distribution. We're focused on long-term stability, providing a robust, production-grade platform that is binary compatible with RHEL®. We are also one of the proud sponsors for this very event 😊. More about the projects: <https://wiki.almalinux.org/> | <https://wiki.almalinux.org/elevate/>.

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WHAT SUB-PROJECTS DID WE ATTACK?

PROJECT #1 -- description:

During the hackathon, we're diving deeper into making application upgrades as seamless as the OS upgrade process. **We tried different configurations of OS upgrade, from AlmaLinux 7 to AlmaLinux 8, with a running WordPress application.**

The exercise helped us identify limitations in the automatic upgrade process, leading to the discovery of **3 bugs**

LIST OF BUGS WE FOUND:

TEST CONFIG	RESULT	BUG REPORTS
PHP app on CentOS 7, upgrade to AlmaLinux 8	Found a bug! 🐞	https://github.com/AlmaLinux/leapp-repository/issues/102
PHP app on CentOS 7 & MariaDB 10.4, upgrade to AlmaLinux 8	Found a bug! 🐞	https://github.com/AlmaLinux/leapp-repository/issues/103
PHP app on CentOS 7 w. Remi repos enabled	Found a bug! 🐞	https://github.com/AlmaLinux/leapp-data/issues/45

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TECHNICAL DETAILS FOR THE BUGS FOUND

RELATES TO	DESCRIPTION	FIX
PHP	If your application config relies on prefork (the default for RHEL 7), a weak dependency for PHP-FPM needs to be added manually.	Needs to be added to Known Issues — happens only with unmodified httpd config file.
MariaDB	Upgrading to 10.4 leaves the system without server package	To be fixed soon 😊 Update: A Fix Candidate: https://github.com/AlmaLinux/leapp-data/pull/46
Remi's Repo	If a specific PHP version from Remi repo is installed, e.g., remi-php74, the upgrade ignores that fact and PHP is downgraded (to 7.2 in this case)	Not a bug, requires introducing support for modules in 3rd party repos in Elevate

NEXT PROJECT:

PROJECT #2 -- description

Another aspect of our big **project focuses on "Bringing RAID Devices Back," inspired by the concept of ecological computing and lowering entry barriers for individuals in emerging economies.** The relentless push for cutting-edge computing and services in the business world has led to a neglect of older, yet still viable, hardware. Our aim is to pause this race and consider those who prefer to save money by utilizing older hardware.

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RESULTS OF PROJECT #2

Driver name	AlmaLinux8 patch	AlmaLinux9 patch	AlmaLinux8 verified	AlmaLinux9 verified	Plan to include in HCS?	HW Vendor Specific testing
mptsas	✓	✓	⌚	⌚	✓	?
mpt3sas	✓	✓	✓	⌚	✓	✓
megaraid_sas	✓	✓	⌚	⌚	✓	?
aacraid	✓	✓	⌚	⌚	✓	?
hpsa	✓	✓	⌚	⌚	✓	?
qla2xxx	✓	✓	⌚	⌚	✓	?

RESULTS:

Our hackathon team has developed initial patches (targeting AlmaLinux 8 and AlmaLinux 9) that reintroduce support for storage controllers deprecated in RHEL8. We plan to include these patches in our next beta release, AlmaLinux 8.10 and 9.4, the team continues to work on adding them to AlmaLinux 9 during the hackathon. Future efforts will leverage patches from EL Repo and CentOSplus to continue bringing back support for more devices.

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REAL WORK RESULTS?

Commits: Bring back deprecated PCI ids | <https://git.almalinux.org/rpms/kernel/commit/5b387f92f658796cafc10f6dfbe06393892a9068>

Add aacraid, hpsa, qla2xxx patches | <https://git.almalinux.org/rpms/kernel/commit/575a44f3aa53c2d13e57d3c92d9dc7bb3bc7cf7>

PRs: <https://git.almalinux.org/rpms/kernel/pulls/1>

WHAT IS THE IMPACT?

We currently intend to include these patches in our next beta releases of AlmaLinux 8.10 and 9.4;

Make the Enterprise-Linux more available to individuals and groups/business in emerging market conditions.

IS THERE ANY FUTURE?

In addition to brainstorming ideas for long-term maintenance and testing, we will continue to build a list for broader testing scopes including integration with our [Hardware Certification Suite](#). This will help automate testing and monitor for any regressions. This will include using HW vendor specific commands if available in vendor built test suites.

DID WE ATTACK ALL IDEAS?

CentOS6 to CentOS7 upgrade – this sub-project was just scratched but we continue working on that -- so of course we shout out to



CONTRIBUTORS! (Please reach out via chat.almalinux.org if you are interested in helping!)

#CFHack2024