

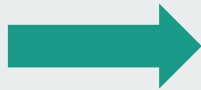


# Navigating the recent Linux upgrade

Workshop on Basic Computing Services in the Physics Department - subMIT



**CentOS**



**AlmaLinux**

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## Overview

1. What are CentOS and AlmaLinux?
2. Why change from CentOS to AlmaLinux?
3. What it means in practice
4. What programs will remain the same
5. What programs will change
6. Questions? Comments?



## What are CentOS and AlmaLinux?

Open source operating system (OS), both part of the Linux OS family



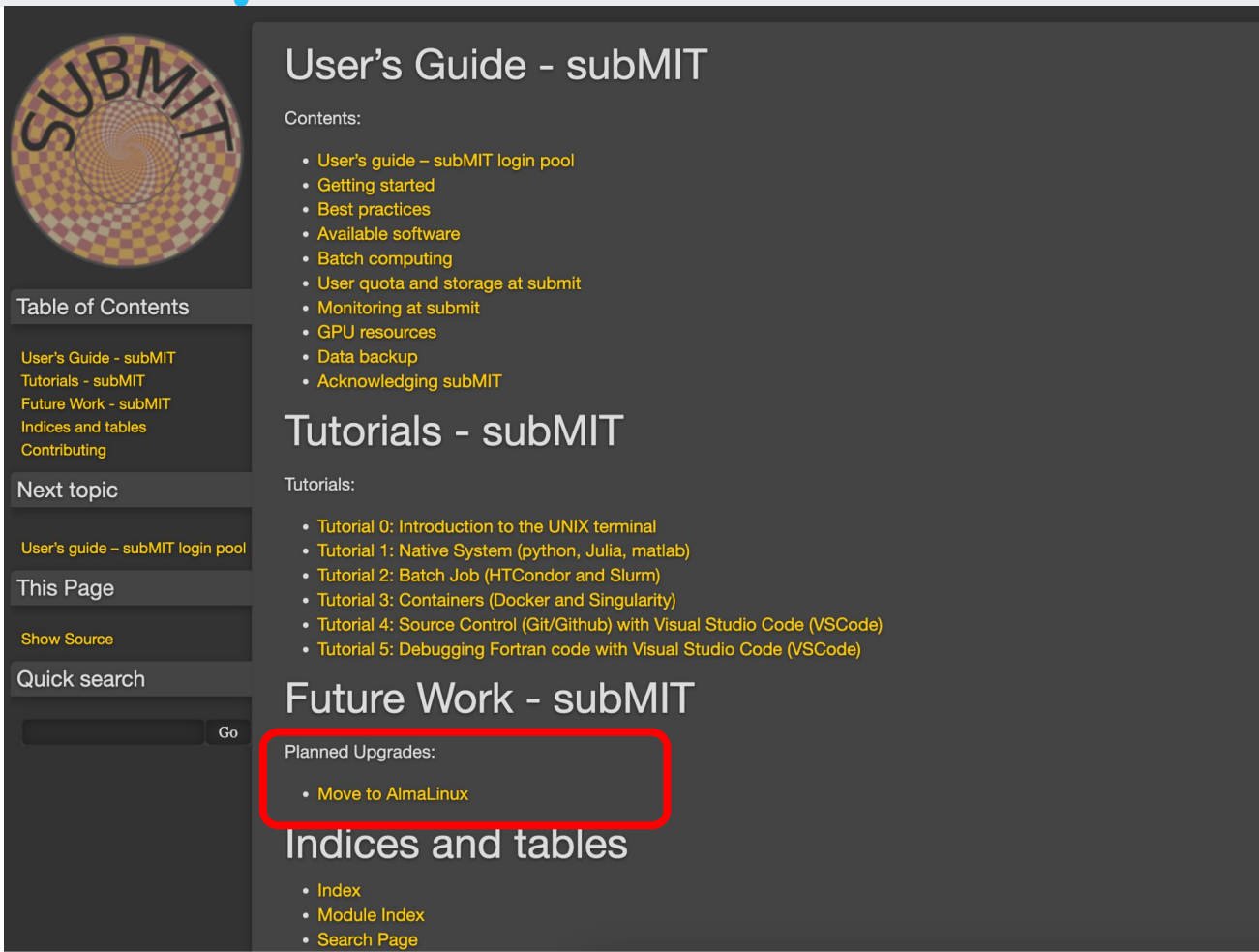
## Why change from CentOS to AlmaLinux?

End of life of CentOS 7: June 30, 2024

Since August 2020, CentOS 7 has been in **maintenance mode support**, providing security updates and bug fixes but no new features. As a result, some newer hardware is not supported, and newer versions of key system software (glibc, gcc, etc.) are unavailable to users.

We are in the process of updating all the documentation accordingly!

Includes the information about running a CentOS7 singularity container on AlmaLinux9



The screenshot shows the subMIT User's Guide website. The main content area is dark grey with white text. On the left, there is a sidebar with a 'SUBMIT' logo and a 'Table of Contents' menu. The main content area has a 'User's Guide - subMIT' section with a list of contents, a 'Tutorials - subMIT' section with a list of tutorials, a 'Future Work - subMIT' section with a 'Planned Upgrades' list, and an 'Indices and tables' section with a list of links. A red box highlights the 'Move to AlmaLinux' link in the 'Planned Upgrades' list.

## User's Guide - subMIT

Contents:

- [User's guide – subMIT login pool](#)
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## Tutorials - subMIT

Tutorials:

- [Tutorial 0: Introduction to the UNIX terminal](#)
- [Tutorial 1: Native System \(python, Julia, matlab\)](#)
- [Tutorial 2: Batch Job \(HTCondor and Slurm\)](#)
- [Tutorial 3: Containers \(Docker and Singularity\)](#)
- [Tutorial 4: Source Control \(Git/Github\) with Visual Studio Code \(VSCode\)](#)
- [Tutorial 5: Debugging Fortran code with Visual Studio Code \(VSCode\)](#)

## Future Work - subMIT

Planned Upgrades:

- [Move to AlmaLinux](#)

## Indices and tables

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## What it means in practice

- You can interact with the system in the same way.
- The filesystem doesn't change. None of your files are affected.
- There will be a change in the underlying libraries, which may impact code execution and results. You should test and verify that your codes are producing the expected results.
- Nothing should change related to submitting jobs and loading softwares.



## What programs will remain the same (part 1)

- Gluster
- CVMFS
- Conda
- HTCondor
- Python, Julia, etc.
  - For compiled code, you may need to recompile

## What programs will remain the same (part 2)

### Slurm:

```
[(base) [mamoore@submit06 ~]$ sinfo
PARTITION          AVAIL  TIMELIMIT  NODES  STATE NODELIST
submit*            up 6-00:00:00    1  inval submit06
submit*            up 6-00:00:00    2   comp submit[52,58]
submit*            up 6-00:00:00   11   mix submit[00,04-05,50-51,53-57,59]
submit*            up 6-00:00:00    5  alloc submit[01-03,07-08]
submit-gpu         up 6-00:00:00    4   mix submit[20-23]
submit-gpu1080     up 6-00:00:00    4 down* submit[66-67,70-71]
submit-gpu1080     up 6-00:00:00    4   idle submit[60,62-64]
submit-gpu1080-alma9 up 6-00:00:00    1   idle submit73
submit-alma9       up 6-00:00:00    1   idle submit80
```

Once the upgrade is complete, `-alma9` will be removed from the partition name



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## What programs will remain the same (part 2)

Slurm:

```
salloc: salloc --partition=submit-alma9
```

```
script: #SBATCH --partition=submit-alma9
```

Jupyterhub (not yet, will be available at [www.submit06.mit.edu/jupyter](http://www.submit06.mit.edu/jupyter))

**Note:** system Python version changed from 3.6 to 3.9

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## What programs will change: Docker

We are changing for Podman, but you can treat Podman as if it was Docker!

```
alias docker=podman
```

You can run familiar commands, such as `pull`, `push`, `build`, `commit`, `tag`, etc. with Podman

You can run images created using Docker with Podman

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Podman version is currently 4.6.1

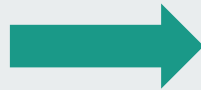


# Questions? Comments?

you can reach us at [submit-help@mit.edu](mailto:submit-help@mit.edu)



**CentOS**



**AlmaLinux**