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Fully automated: Updates on the Continuous Integration for supported Linux distributions at CERN

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Historically the release processes for supported CERN Linux distributions involved tedious manual procedures that were often prone to human error. In addition, and as a knock-on effect from the turmoil created in 2020 with the CentOS Linux 8 end-of-life announcement; the CERN Linux team have now been required to support an increasing number of Linux distributions.
To cope with this additional workload (currently 8 Linux distributions: CC7, CS8, CS9, RHEL7, RHEL8, RHEL9, ALMA8, ALMA9), our team have been forced to adopt full scale automation, testing and continuous integration; all whilst significantly reducing the need for human interventions.
Automation can now be found in every part of our process: cloud and Docker image building, base-line testing, CERN specific testing and full-stack functional testing. For this we use a combination of GitLab CI capabilities, Koji, OpenStack Nova, OpenStack Ironic central services, nomad and a healthy dose of Python and Bash. Test suites now cover unmanaged, managed (puppet), virtual and physical machines; which allows us to certify that our next image release continues to meet the needs of the organization.

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