

WLCG Containers Baseline

WLCG Containers Working Group

Version 1.0

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For “sites”, read “sites that support WLCG”.

For “experiments”, read “LHC experiments”.

Several experiments are now using Singularity to provide pilot/payload isolation and to run the payloads against the operating system of their choice, rather than that provided by the host site. This document provides a set of requirements and recommendations for sites and experiments.

Runtime and unprivileged user namespaces

R1. Experiments will support unprivileged Singularity installation in CVMFS.

R2. Sites must provide one of the mechanisms below (R3 or R5) to allow experiments to be able to run Singularity on their site.

R3. Sites are recommended to enable unprivileged user namespaces on worker nodes that support it (\geq EL7.6) to allow the unprivileged use of Singularity by the experiments.

R4. Sites that do enable unprivileged user namespaces don't need to install a local version of Singularity to support WLCG experiments, provided CVMFS is available.

R5. Sites that do not wish to or cannot enable unprivileged user namespaces on their worker nodes must install a local version of Singularity on those nodes that either enables the underlay and/or overlayfs support.

R6. Experiments will use preferentially the CVMFS executable if user namespaces are enabled and will fall back on the local executable if not.

Container Distribution

D1. Experiments are encouraged, where possible, to distribute their unpacked images via CVMFS using the **unpacked.cern.ch** or **singularity.opensciencegrid.org** CVMFS repos and associated services to ensure efficient access and de-duplication.

D2. Sites are recommended to provide CVMFS access to these repos on their worker nodes.