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CernVM Online and Cloud Gateway: a uniform interface for CernVM contextualization and deployment

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In a virtualized environment, contextualization is the process of configuring a VM instance for the needs of various deployment use cases. Contextualization in CernVM can be done by passing a handwritten context to the "user data"field of cloud APIs, when running CernVM on the cloud, or by using CernVM web interface when running the VM locally. CernVM online is a publicly accessible web interface that unifies these two procedures. A user is able to define, store and share CernVM contexts using CernVM Online and then apply them either in a cloud by using CernVM Cloud Gateway, or on a local VM with the single-step pairing mechanism. CernVM Cloud Gateway is a distributed system that provides a single interface to use multiple and different clouds (by location or type, private or public). Cloud gateway has been so far integrated with OpenNebula, CloudStack and EC2 tools interfaces. A user, with access to a number of clouds, can run CernVM cloud agents that will communicate with these clouds using their interfaces, and then use one single interface to deploy and scale CernVM clusters. CernVM clusters are defined in CernVM Online and consist of a set of CernVM instances that are contextualized and can communicate with each other. In this contribution we present these new components, their status and some common use cases, as well as possible future work. We will also show how the combination of CernVM Online and Cloud Gateway turns out to be an effective way to federate clouds.

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