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DNS Load Balancing in the CERN Cloud

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Load Balancing is one of the technologies enabling deployment of large scale applications on cloud resources. At CERN we have developed a DNS Load Balancer as a cost-effective way to do it for applications accepting DNS timing dynamics and not requiring memory. We serve 378 load balanced aliases with two small VMs acting as master and slave. These aliases are based on 'delegated' DNS zones the we manage with DYN-DNS based on a load metric collected with SNMP from the alias members.

In the last years we have done several improvements to the software, for instance support for IPV6 AAAA records, parallelization of the SNMP requests, as well as reimplementing the client in python allowing for multiple aliases with differentiated state on the same machine, support for Roger state and other new features.

The configuration of the Load Balancer is built with a Puppet type that gets the alias members dynamically from PuppetDB and consumes the alias definitions from a REST service.

We have produced a self-service GUI for the management of the LB aliases based on the REST service above implementing a form of Load Balancing as a Service (LBaaS). Both the GUI and REST API have authorisation based in hostgroups. All this is implemented with Open Software without much CERN specific code.

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Primary Keyword (Mandatory)

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Primary author: REGUERO, Ignacio (CERN)

Co-author: LOBATO PARDAVILA, Lorena (Universidad de Oviedo (ES))

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