

# DNS Load Balancing in the CERN Cloud

## Highlights

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# DNS Load Balancing is Cost Effective

Allows flexible deployment of services on the cloud on top of automatically configured “cattle” VM nodes:

- Does not modify traffic patterns
- Does not require addition network gateways

Only for applications allowing:

- Switching time limited by DNS caching. On the order of minutes
- Not possible to guarantee that client always on same server (i.e. no affinity)

CERN LBD gets metric with status of member nodes with SNMP to decide which nodes are presented by the alias: (better than round-robin)

- Currently serving over 450 aliases
- Implemented on 2 Openstack VMs (master and slave)
- Concurrent implementation in Go further improving scalability

# Integrating DNS LB into service-oriented architectures: LBaaS

To empower users to manage their LB aliases:

- Ermis REST service to manage LB alias information
  - Powered by Django Tastypie
  - Uses SOAP interface from Network service to manipulate DNS subdomains
  - Authentication with Kerberos, SSL and Shibboleth
  - Authorization based on Foreman hostgroups (using Teigi Web service)
- Ermis is used by
  - Lbconf Puppet type and provider that generates LBD server configuration
  - Kermis CLI
  - Aiermis self-service GUI
    - Implemented using views on top of Ermis together with dynamic content in Javascript
    - Allows users to manage their LB alias definitions