
Google ganeti

Ganeti

Ganeti Core Team - Google
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Introduction to Ganeti

A cluster virtualization manager.

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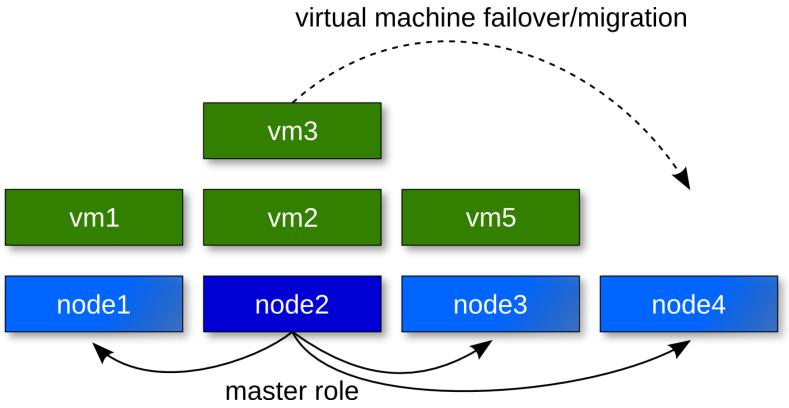
Latest version of these slides

Please find the latest version of these slides at:

https://code.google.com/p/ganeti/wiki/LISA2013

What can it do?

- Manage clusters of physical machines
- Deploy Xen/KVM/LXC virtual machines on them
  - Live migration
  - Resiliency to failure (data redundancy over DRBD)
  - Cluster balancing
  - Ease of repairs and hardware swaps

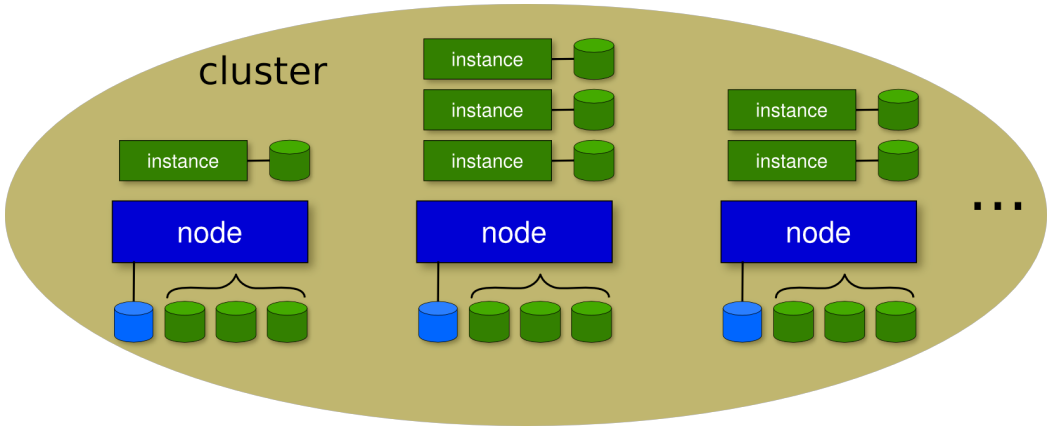


Ideas

- Interact with the cluster as an entity, instead of the individual machines.
- Making the virtualization entry level as low as possible
  - Easy to install/manage
  - No specialized hardware needed (eg. SANs)
  - Lightweight (no "expensive" dependencies)
- Scale to enterprise ecosystems
  - Manage simultaneously from 1 to ~200 host machines
  - Access to advanced features (DRBD, live migration)
- Be a good open source citizen
  - Design and code discussions are open
  - External contributions are welcome
  - Cooperate with other "big scale" Ganeti users

Terminology

- Instance: a virtualization guest
- Node: a virtualization host
- Nodegroup: a homogeneous set of nodes
- Cluster: a set of nodes, managed as a collective, partitioned by nodegroups
- Job: a ganeti operation



Technologies

- Linux and standard utils (iproute2, bridge-utils, ssh)
- socat
- KVM/Xen/LXC
- DRBD, LVM, or SAN, soon Ceph/Gluster
- Python (plus a few modules)
- Haskell

Controlling Ganeti

- Command line (*)
- Ganeti Web manager
  - Developed by osuosl.org and grnet.gr
- RAPI (Rest-full http interface) (*)
- On-cluster "luxi" interface (*)
  - luxi is currently json over unix socket
  - there is code for python and haskell

(*) Programmable interfaces

People running Ganeti

- Google (Corporate Computing Infrastructure)
- grnet.gr (Greek Research & Technology Network)
- osuosl.org (Oregon State University Open Source Lab)
- debian.org
- fsffrance.org (according to docs on their website and trac)
- ...

Thank You!

Questions?

- Some images borrowed / modified from Lance Albertson and Iustin Pop
- Some slides were borrowed / modified from Tom Limoncelli