

Introduction to Ganeti



A cluster virtualization manager.

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- Google, Ganeti

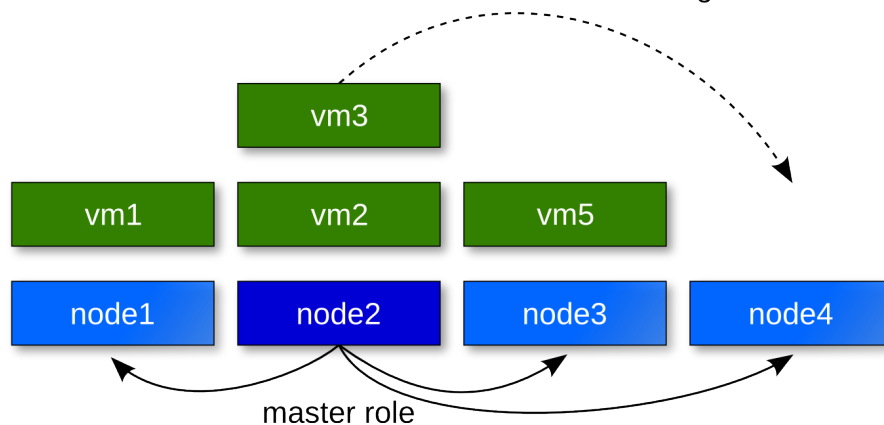
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What can it do?

- 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
- Virtual machine failover/migration



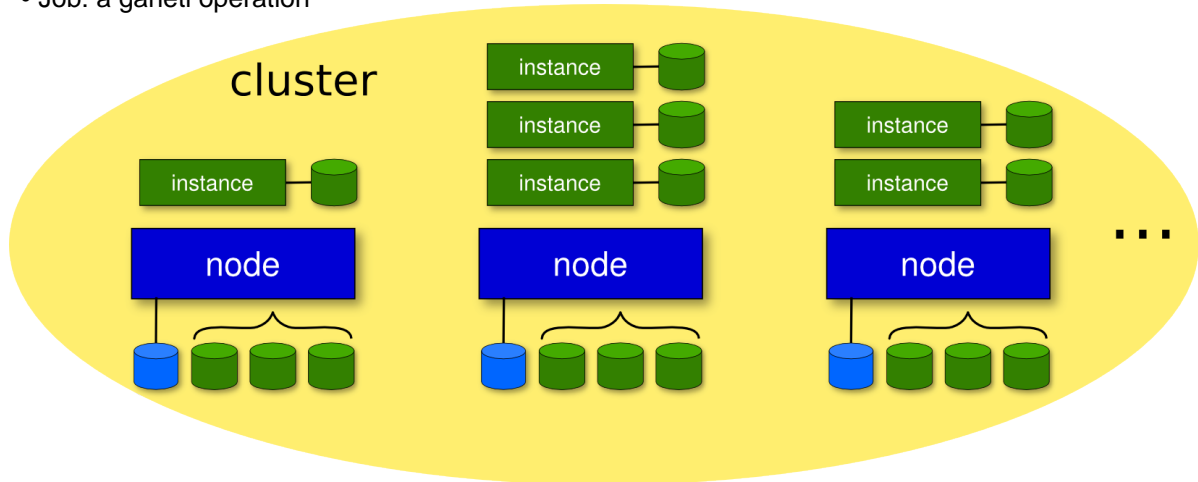
Ideas

- 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: an omogeneous set of nodes
- Cluster: a set of nodes, managed as a collective
- Job: a ganeti operation



Technologies

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



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)
- fsffrance.org (according to docs on their website and trac)
- ...

Conclusion

Questions?

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