Google ganeti

Ganeti

Ganeti Core Team - Google
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Building a Cluster

How to configure your Ganeti cluster

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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

Overview

- Each node
    - Configure the OS & disks
    - Configure networking
    - Load software
- The cluster
    - Initialize the cluster
    - Add the nodes.
    - Test
- Profit!

Preparing the nodes

- Install the nodes with a minimal install of the host OS (eg. Debian)
- Setup storage:
    - LVM/DRBD: Leave enough space for a big LVM volume group for Ganeti
    - File/sharedfile: Create / mount directory on each node.
- Set up the hostname as an FQDN
    - (modify `/etc/hostname` and `/etc/hosts`)
- Install Xen or KVM
- (DRBD only:) Install DRBD utils
    - (pass `usermode_helper=/bin/true` and `minor_count=NUMBER` to the module)

Configuring the replication network

- Choose between a physical interface or a dedicated vlan:

```
auto eth1
iface eth1 inet static
address 192.168.4.1
netmask 255.255.255.0
```

- or -

```
auto eth0.4
iface eth0.4 inet static
address 192.168.4.1
netmask 255.255.255.0
```

Configuring the instance bridges

- Example with dedicated vlan:

```
auto br905
iface br905 inet manual
bridge_ports eth0.905
bridge_stp off
bridge_fd 0
```

Configuring LVM

If you're not using the system's volume group initialize a VG for instances.

For example:

```
$ pvcreate /dev/sdb1
$ pvcreate /dev/sdc1
$ vgcreate xenvg /dev/sdb1 /dev/sdc1
```

Installing Ganeti

- Use packages!
    - These exist for Debian, Ubuntu, Centos+RHEL, Suse.
    - If you need customized ones create them, and put them in a local repository.

- Install ganeti
- Install the instance OS definition
    - `ganeti-instance-debootstrap`, or
    - `ganeti-instance-image`

Initializing your cluster

The node needs to be set up following our installation guide:

```
gnt-cluster init [-s ip] ... \
--enabled-hypervisors=kvm cluster
```

- Set the correct `master-netdev`
- Set the correct nic parameters
- Remember the replication network

Ganeti master

node1   ... more nodes

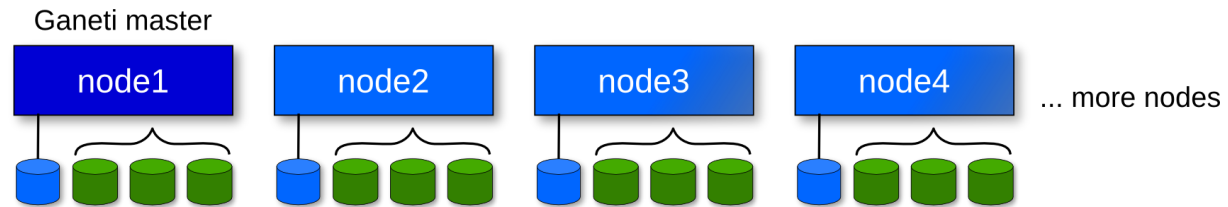Ganeti LVM volume
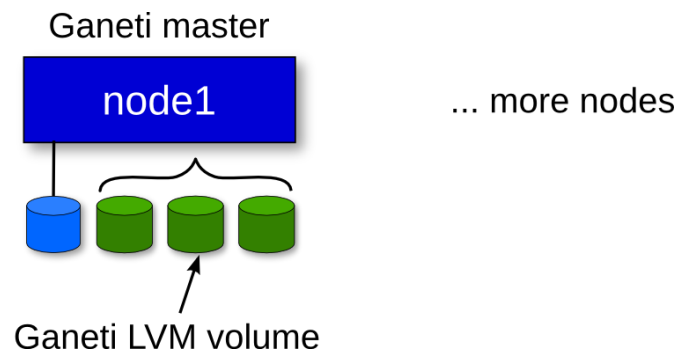
Check your cluster

`gnt-cluster verify`

Try to fix any problems it reports. This will save you time for later.

- Change wrong parameters with `gnt-node modify` or `gnt-cluster modify`

Adding nodes

```
gnt-node add [-s ip] node2
gnt-node add [-s ip] node3
```

Ganeti master

| node1 | node2 | node3 | node4 | ... more nodes |

Enabling the ganeti cronjobs

Make sure you have a `ganeti.cron` file:

```
# Restart failed instances (every 5 minutes)
*/5 * * * * root /usr/sbin/ganeti-watcher

# Clean job archive (at 01:45 AM)
45 1 * * * root /usr/sbin/ganeti-cleaner
```
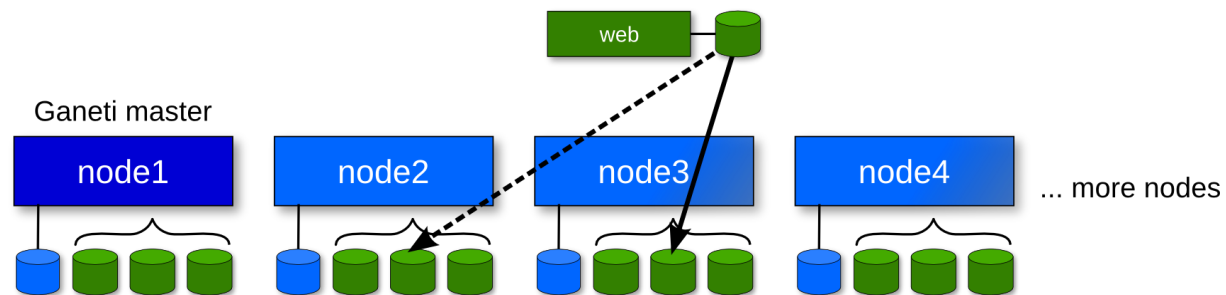
Testing your cluster

You can run `burnin` to check the cluster:

```
/usr/lib/ganeti/tools/burnin -o debootstrap+squeeze -p \
  --reboot-types=hard,full --disk-size 1G \
  instance-{1,2,3}.example.com
```

- `instance{1,2,3}.example.com` must exist in hosts or DNS
- `debootstrap+squeeze` must be valid in `gnt-os list`
- Use as many instances as nodes

Adding instances

```
# install instance-{debootstrap, image}
gnt-os list
gnt-instance add -t drbd \
  {-n node3:node2 | -I hail } \
  -o debootstrap+default web
ping web
ssh web # easy with OS hooks
```

Thank You!

Questions?

Survey at https://www.usenix.org/lisa13/training/survey