Ganeti settings

Network Startup Resource Center
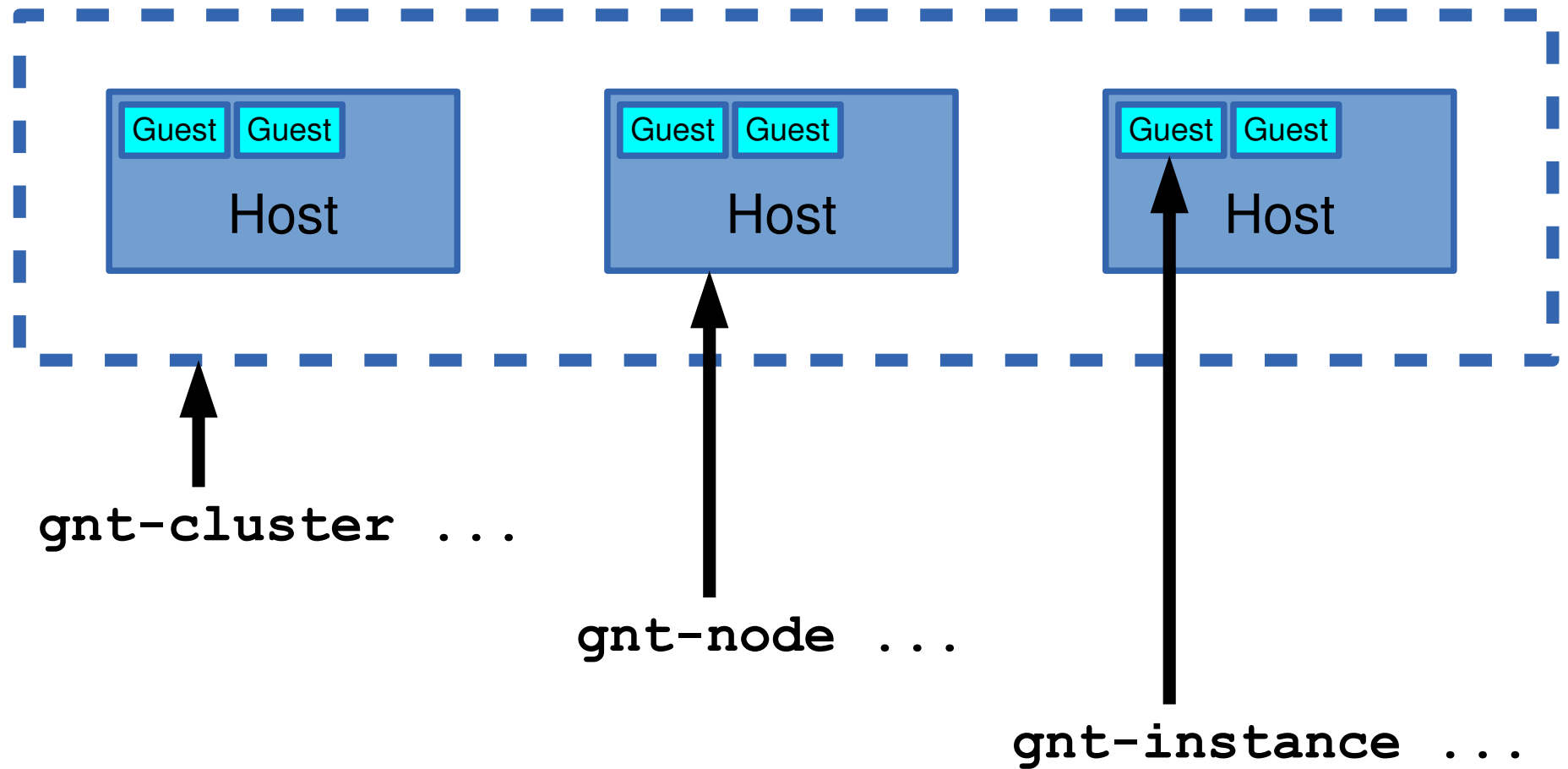
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Terminology

- *instance* = guest virtual machine

- *node* = host physical server

- *cluster* = the collection of all nodes

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Main commands

Examples

- `gnt-instance add …`

  - create a virtual machine

- `gnt-instance remove …`

  - delete a virtual machine

- `gnt-instance start …`

- `gnt-instance shutdown …`

  - you can guess :-)

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Hypervisor settings (-H)

- Can come from three places:

- `gnt-cluster {init/modify}` …

  - cluster-wide defaults

- `gnt-instance {add/modify}` …

  - per-instance persistent settings

  - if set to "default" then cluster defaults used

- `gnt-instance start` …

  - temporary overrides just until VM shuts down

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Settings depend on hypervisor type

- Cluster defaults per hypervisor

    - gnt-cluster modify -H **kvm:boot_order=network**

- An instance has its hypervisor fixed at creation time so you don't specify it on the settings

    - gnt-instance modify -H **boot_order=disk** foo

    - gnt-instance start -H **boot_order=cdrom** foo

- For a full list of settings see "man gnt-instance"

http://docs.ganeti.org/ganeti/2.11/man/gnt-instance.html

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Showing the settings

- `gnt-instance info <name> | less`

- Scan down for "Hypervisor parameters"

- You can see which values are default and the value inherited from cluster defaults

Selected hypervisor settings (-H)

- boot_order={disk/cdrom/floppy/network}

  - which device to boot from

- cdrom_image_path=/path/to/cd.iso

- cdrom2_image_path=/path/to/cd2.iso

- nic_type={paravirtual/e1000/rtl8139/...}

  - what type of NIC(s) to emulate

- disk_type={paravirtual/ide/scsi/...}

  - what type of disk(s) to emulate

- vnc_bind_address=0.0.0.0

  - allow graphical console connections

Combining settings

```
gnt-instance start -H boot_order=cdrom,\
cdrom_image_path=/var/iso/CentOS.iso,\
vnc_bind_address=0.0.0.0 myinstance
```

Kernel settings

- To boot from a kernel in the HOST (Linux guests only): choose correct 64/32-bit kernel!
  - `kernel_path=/vmlinuz`
  - `initrd_path=/initrd.img`
  - `kernel_args=ro`
  - `[root_path=/dev/xxx]`

- To boot from the GUEST's disk (or CD-ROM)
  - Set `kernel_path` to empty string
  - Requires an MBR and boot loader in the guest

Backend settings (-B)

- Common to all hypervisors

    - maxmem=SIZE

    - minmem=SIZE

    - vcpus=N

- Instance will always get the minimum amount of memory, and may get more if spare available

- Units are MB unless specified

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Balloon memory

- gnt-instance modify -m SIZE foo
  - Add and remove memory on running VM!
  - Supported by some guest OSes
- Value must be between minmem and maxmem
- Not persistent
- On next boot, ganeti will allocate as much memory as it can within the minmem/maxmem constraints
  - In failure scenarios, when VMs are pushed onto a node, other VMs may be shrunk down to minmem

Network settings (-N/--net)

- Cluster or instance
  - mode={bridged/routed/openvswitch}
  - link=<bridge name>

- Instance only
  - mac={xx:xx:xx:xx:xx:xx/generate}
  - name=foo [NIC label]
  - network=<gnt-network name>
  - ip=x.x.x.x
    - Optional: address ganeti *expects* this instance to use

Managing network settings

- **Instance creation**

  - gnt-cluster {init/modify} -N link=br-svc

  - gnt-instance add [--net=0] foo

    - uses cluster defaults for mode and link

  - gnt-instance add --net=0:link=br-svc foo

- **Instance modification**

  - gnt-instance modify --net 0:modify,link=br-svc foo

  - gnt-instance modify --net [1:]add[,link=br-svc] foo

  - gnt-instance modify --net 1:remove

Managing disks

- Separate settings per "disk template" (type), set at cluster and node-group level only

  - gnt-cluster {init/modify} -D drbd:resync-rate=80

- Instance can have multiple disks

  - gnt-instance add -t drbd --disk 0:size=4G
    --disk 1:size=20G foo

  - gnt-instance add -t drbd -s 4G foo

    - Shorthand when only single disk required

  - gnt-instance modify --disk add:size=20G foo

  - gnt-instance modify --disk 1:remove foo

Further reading

- http://docs.ganeti.org/

- Helpfully organised by version number

- HTML documentation

  - Especially the Administrator's Guide

  - http://docs.ganeti.org/ganeti/2.11/html/admin.html

- Man pages

  - Especially gnt-instance, gnt-cluster

  - http://docs.ganeti.org/ganeti/2.11/man/

Summary

- Hypervisor (-H) and backend (-B) settings have cluster-wide defaults

- Instances can override them individually

  - Persistent per-instance settings

  - or set temporarily at startup

- NICs and disks can be added and removed

- NICs can have their settings changed

- "man gnt-instance" for more info