

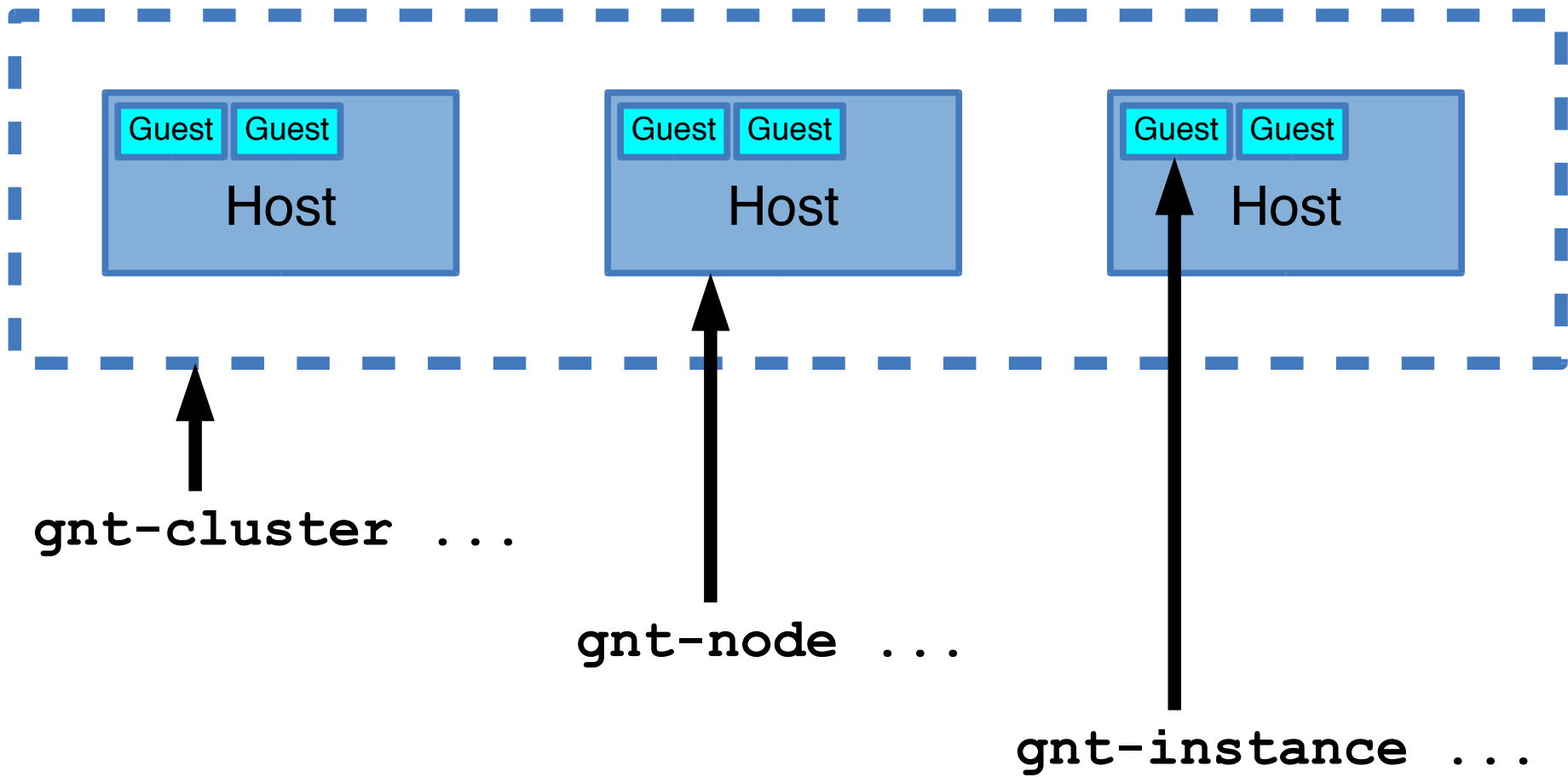
Ganeti settings

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Terminology

- *instance* = guest virtual machine
- *node* = host physical server
- *cluster* = the collection of all nodes

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 :-)

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

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>

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={ioemu/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

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=20G --disk 1:size=4G foo`
 - `gnt-instance add -t drbd -s 20G foo`
 - Shorthand when only single disk required
 - `gnt-instance modify --disk add:size=4G 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