Ganeti Instance Creation

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How do you install an OS normally?

- Use a CD image (ISO) and manual install
    - works for everything, including Windows
- Use a CD image with config file
    - e.g. RedHat Kickstart, Ubuntu Preseed
- Clone an existing disk and make post-install adjustments, e.g. change hostname and IP
- Fetch OS packages and unpack them
    - debootstrap for .deb packages

Ganeti OS creation scripts

- OS installation is designed to be *scripted* for hands-off, automated creation of VMs

- This is done via a set of pluggable scripts in an OS definition

- Probably the hardest part of Ganeti to get to grips with at first (but also very powerful)

- Note: you *must* install at least one instance OS definition!

Available instance OS definitions

- ganeti-instance-image
  - vanilla, unpacks prepared dump or tar images

- ganeti-instance-debootstrap
  - install Debian/Ubuntu from .deb packages downloaded over the net

- snf-image
  - part of the synnefo cloud solution

- modify or write your own

What about install from ISO (CD)?

- Just select any one of the instance definitions and pass the flag "--no-install"

  – This is a hack!

  – Better: use instance-image with CDINSTALL=yes

  – Future ganeti will allow you not to specify OS

- Set the hypervisor parameters to attach ISO(s) as virtual CD-ROM drive(s)

- Attach virtual console and install as normal

Summary of installation options

- instance-image, install manually from ISO

  - may be possible to use kickstart?

- instance-image, unpack filesystem dump or tarball that you prepared earlier

- instance-debootstrap (Debian/Ubuntu only)

- prepare an image using some other tool (e.g. virt-install) and write it to instance disk

Limitations of each approach

- *Install from ISO?* Have to learn to attach VGA console. Have to do manual install each time.

- *Install from filesystem dump?* Have to prepare the dump. Have to script post-install tweaks.

- *Install using debootstrap?* Have to manually install grub in the guest; or have to boot from kernel on the host filesystem.

- *Import whole disk image?* Instance disk must be right size. Still have do to post-install tweaks

Suggestion

- Start with install from ISO
  - You need to learn how to attach VGA console anyway, for fixing problems
  - You need this for installing Windows guests
- Move to the others as your experience grows

Consoles in ganeti

- Ganeti supports two types of instance console
  - VNC (emulated VGA) console
  - Serial console
- Serial console will only work if the guest is configured to allow logins on serial port
- Therefore VNC console is the most useful

Console security

- VNC console is bound to 127.0.0.1 (localhost) by default for security reasons

- To get access over network bind it to 0.0.0.0
  - gnt-instance … -H vnc_bind_address=0.0.0.0 …
  - or you could use ssh and port-forwarding

- You need a VNC client (e.g. TigerVNC)

- You need to know which TCP port to connect to
  - gnt-instance list -o +network_port

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Console security

- To improve security you can set a console password (globally or per-instance)

  - gnt-cluster modify -H kvm:vnc_password_file=/etc/ganeti/vnc-cluster-password

- You might want to keep your ganeti node management IPs on a private network

  - note that the customer *instances* can connect to a public network

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Separate service/mgmt nets

192.0.2.0/24
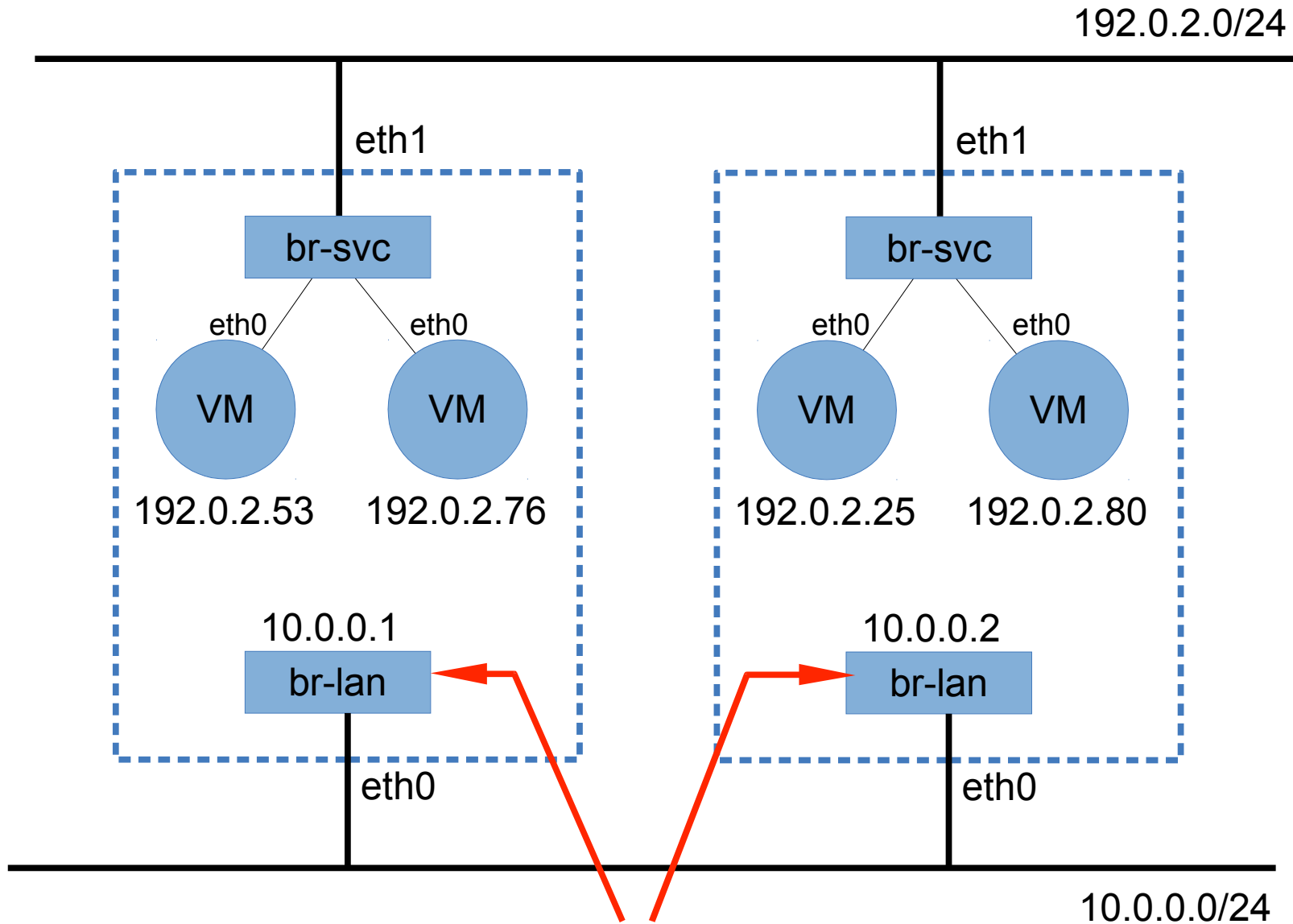
VNC console connects here
(different TCP port for each VM)

10.0.0.0/24

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Reminder: -H options for ISO install

boot_order=cdrom

cdrom_image_path=/path/to/foo.iso

vnc_bind_address=0.0.0.0

If you pass these to <u>gnt-instance start</u> *then they are only effective until the instance shuts down. This is probably what you want.*

Note for Windows guests

- Attach a second CD-ROM with the RedHat Windows Virtio drivers (free)
  - cdrom2_image_path=...
  - cdrom_disk_type=ide
- Install Windows with virtio disk, network and balloon memory drivers
- Makes Windows work *much* better in the virtual environment

Exercise

Install a Ganeti instance using ISO image