Ganeti Instance Creation

Network Startup Resource Center

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
- Fetch OS packages and unpack them
  - debootstrap for .deb packages
- Clone an existing disk and make post-install adjustments, e.g. change hostname and IP

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-os-noop
  - empty script, does nothing
- ganeti-instance-debootstrap
  - install Debian/Ubuntu from .deb packages downloaded over the net
- ganeti-instance-image
  - unpacks prepared dump or tar images
- snf-image
  - image cloning part of the synnefo cloud solution
- modify or write your own

How to install from ISO (CD)?

- Use ganeti-os-noop
- Set the hypervisor parameters to attach ISO(s) as virtual CD-ROM drive(s)
- Attach virtual console and install as normal

Limitations of each approach

- *Install from ISO?* Have to learn to attach VGA console. Have to do manual install each time
- *Install using debootstrap?* Currently have to manually install grub in the guest; or have to boot from kernel on the host filesystem
- *Install from filesystem dump?* Have to prepare the dump. Have to script post-install tweaks
- *Clone disk image?* May need to resize partitions and filesystems to desired size
  - snf-image does this for you

Suggestion

- Start with install from ISO
  - You need to learn how to attach VGA console anyway, for fixing problems
  - You need this for first install of 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

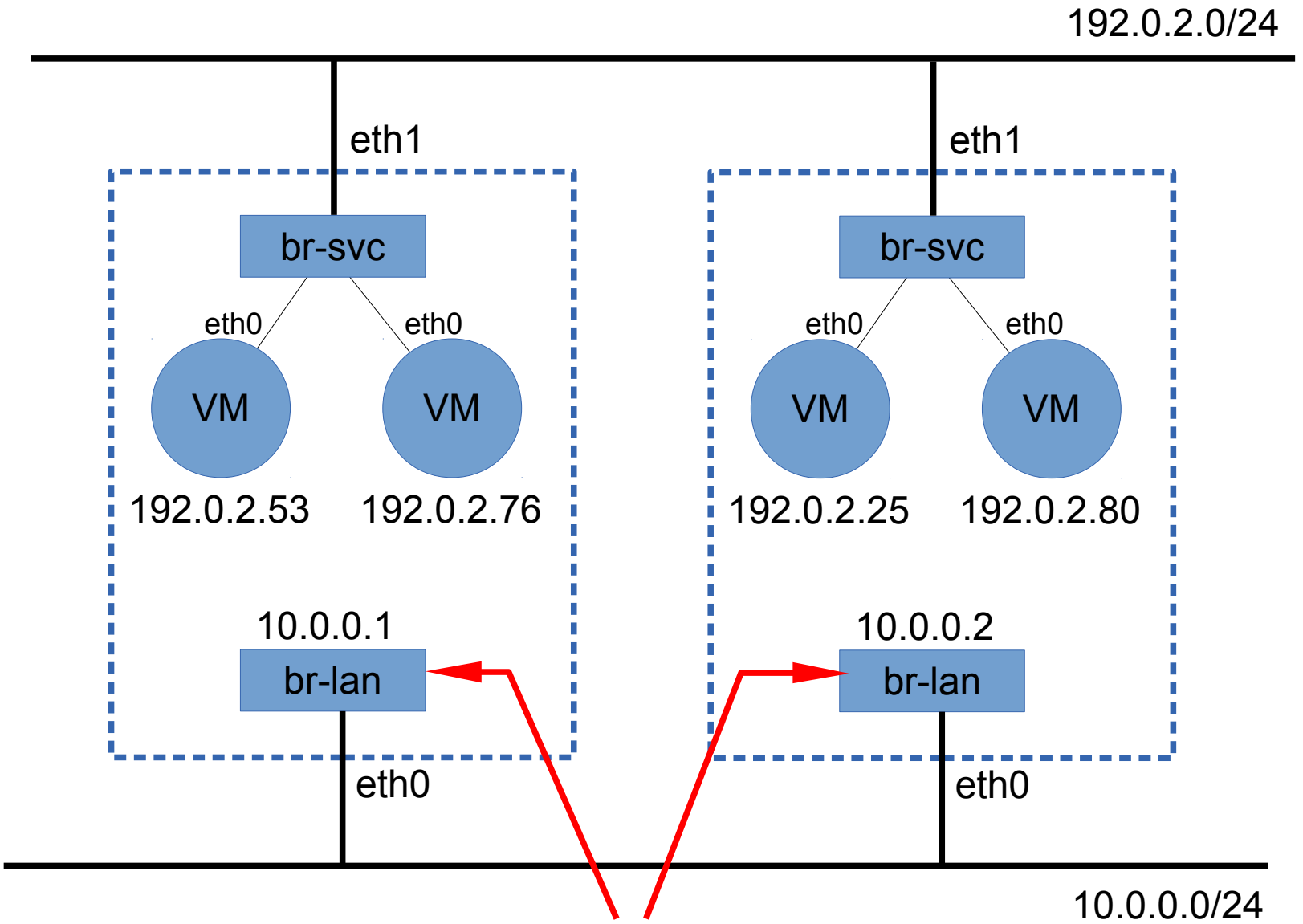
Console security

- VNC console is disabled by default for security
- To get access over network, bind it to 0.0.0.0
  - **gnt-instance … -H vnc_bind_address=0.0.0.0 …**
  - other option: can bind to 127.0.0.1 (localhost), but then it's only accessible with tricks like ssh port forwarding
- You need a VNC client (e.g. TigerVNC)
- You need to know which TCP port to connect to
  - gnt-instance list -o name,pnode,network_port
  - gnt-instance list -o +network_port

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 stil connect to a public network

Separate service/mgmt nets



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

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 gnt-instance start *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