Rocks on Solaris™
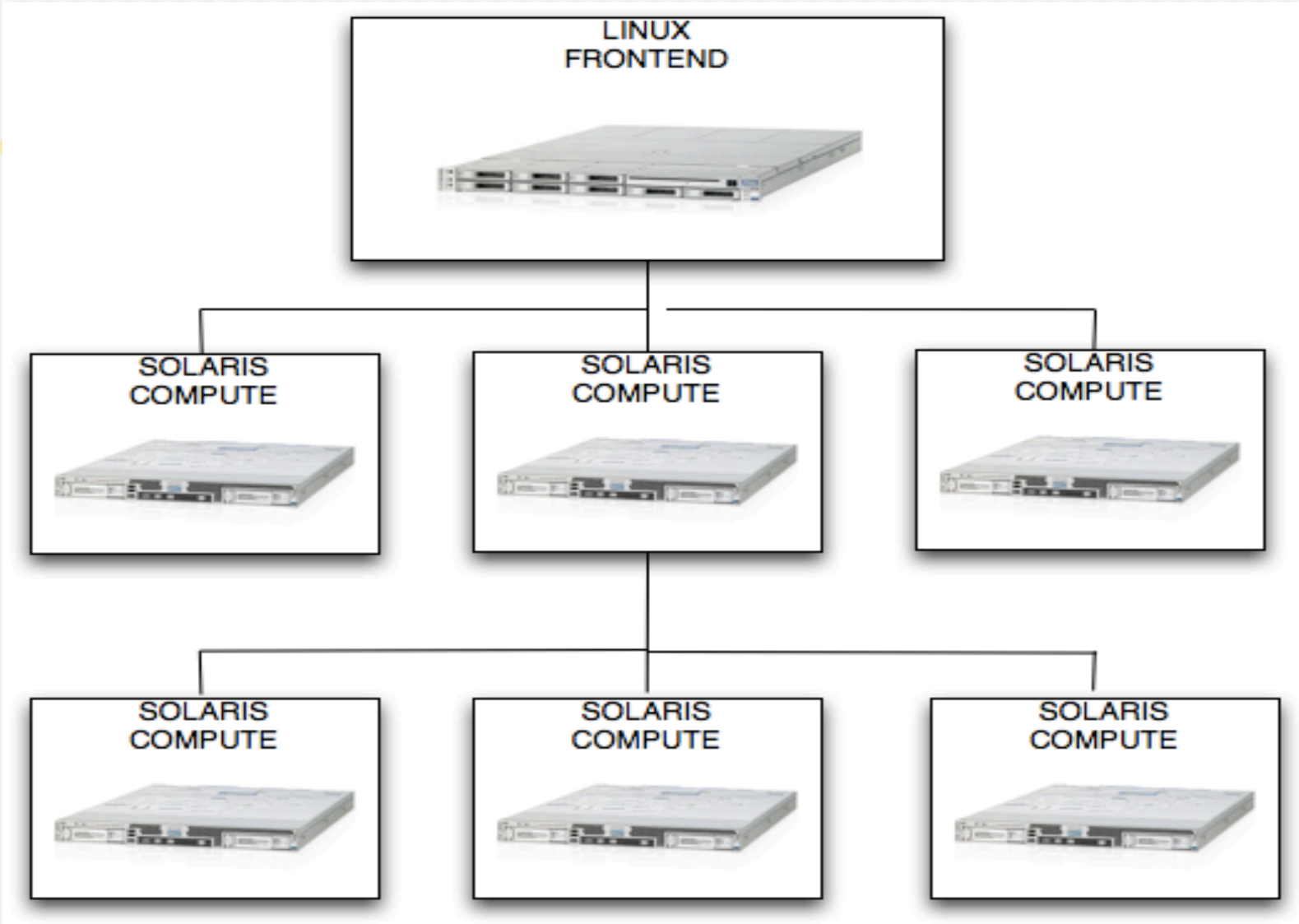
Automated Deployment of Solaris using Rocks

Current Status
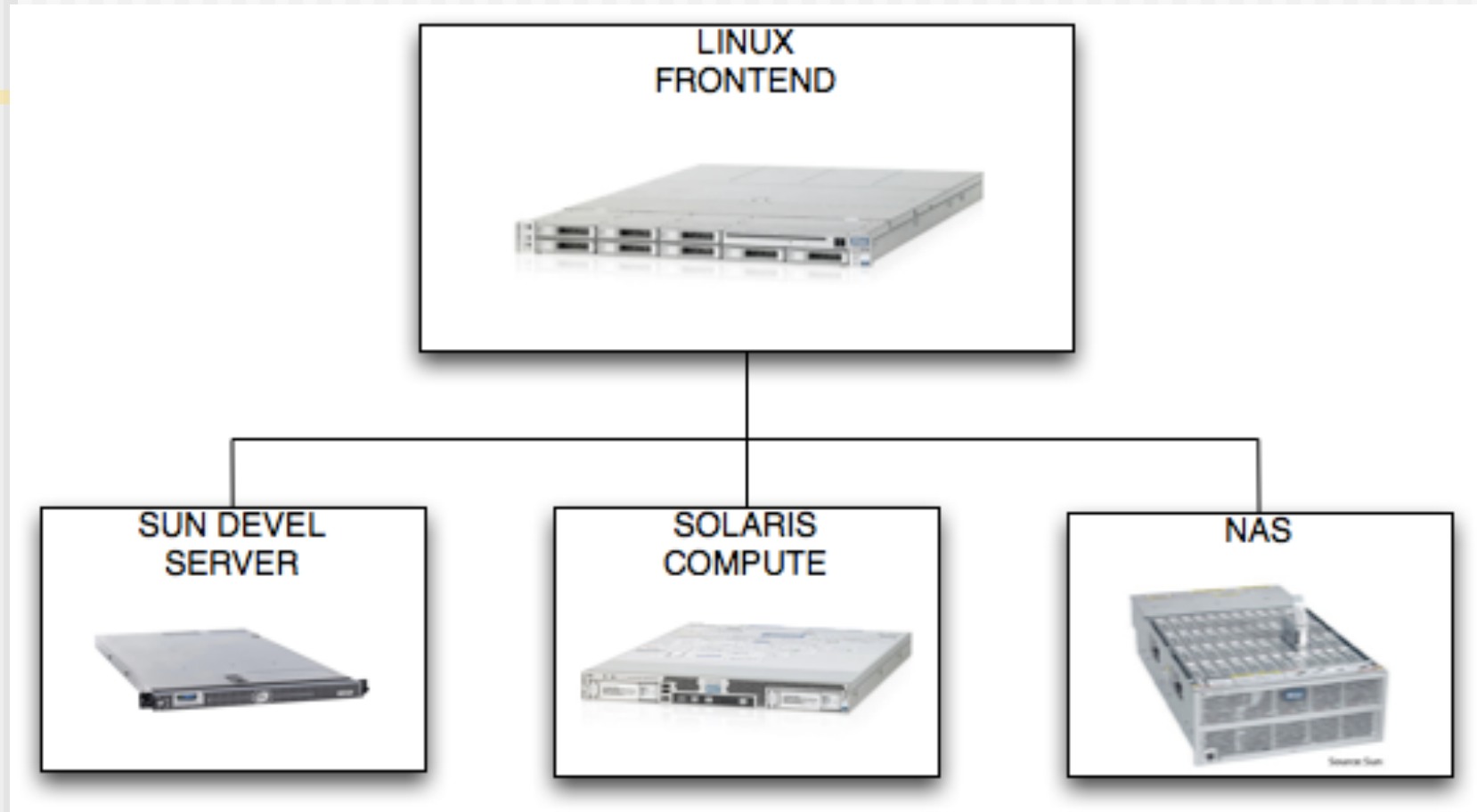
Solaris Backend Nodes
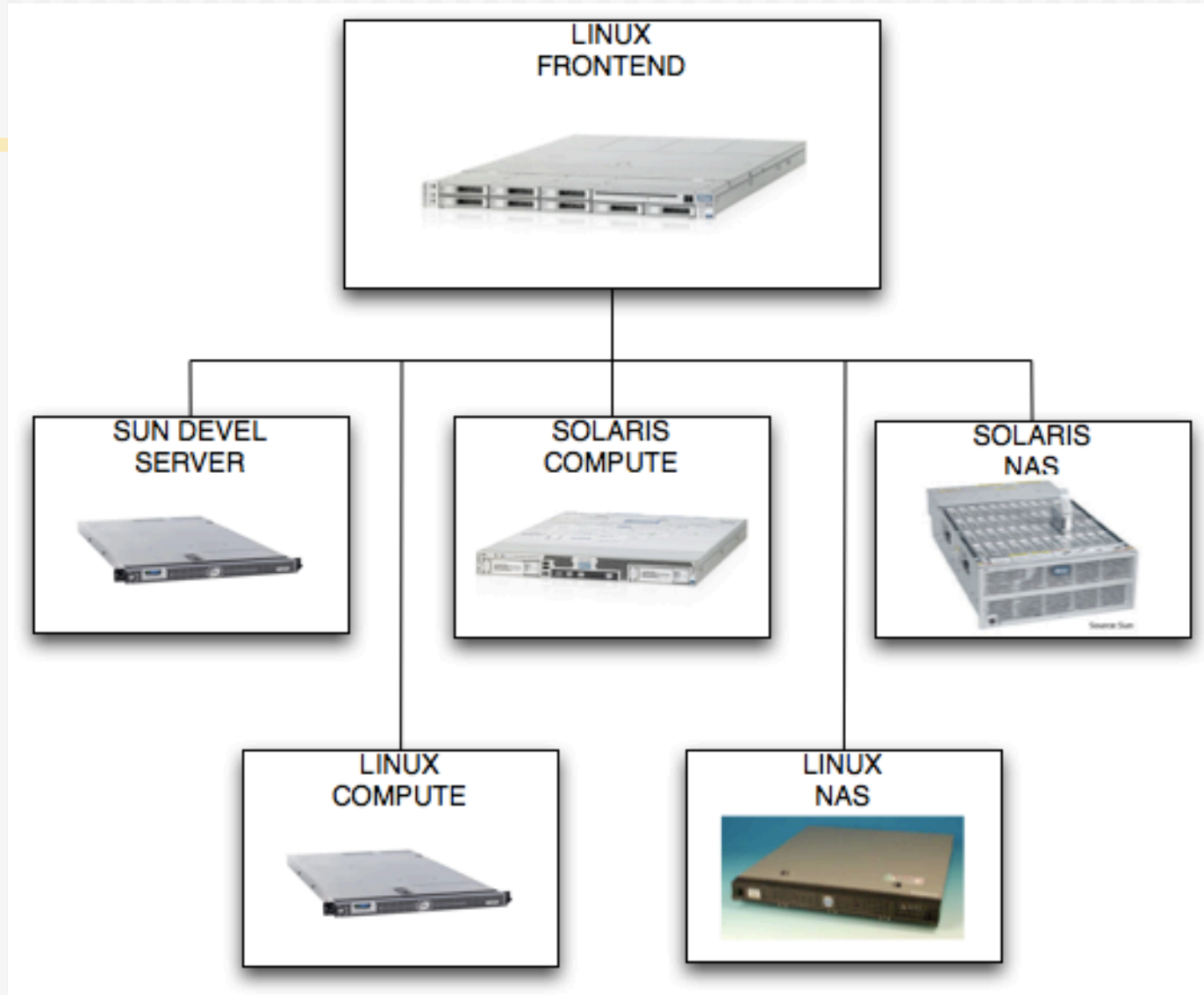
Multiple Solaris Appliance types

Heterogeneous clusters

Roll Support

- Base

- HPC

- Ganglia

- SGE

- Bio

- Java

- Nagios (in the works)

- Thumper Config

Why Rocks on Solaris?

- ◆ We've always wanted to do another OS for some time.

- ◆ Leads to more robust internal code.

- ◆ Better abstractions to support other OS in the future.

Why Solaris?

- ZFS

- Sun Fire storage servers

- DTrace

- Sun Studio Compilers Suite

- Sun HPC Cluster Tools

- ZFS

The Nuts and Bolts of it

Single Graph Infrastructure

◆ Same graph structure for both Solaris and Linux

◆ Differences are handled using edge conditionals

```
<edge os="sunos" to="HEAD">
  <from>sol_first_post</from>
</edge>
```

Single Node XML infrastructure

- ◆ The same XML files to generate JumpStart and KickStart configuration
- ◆ Differences are handled using
  - ➲ OS conditionals

```
<package os="sunos">ROCKSfoundation-python</package>
<post os="linux>
  # linux specific code
</post>
```

  - ➲ Sometimes separate node XML files with the prefix sol_

Single XML Node Infrastructure

- ◆ Extend- and replace- support for node XML files

- ◆ Programmatic Partitioning supported

- ◆ All the rolls mentioned before have their XML files ported

Rocks on Solaris Features

Rocks on Solaris features

- ◆ ZFS root file system support
- ◆ NFS Based installation
- ◆ Full PXE support
  - ➲ Pxelinux chainloading pxegrub to boot installation kernel and ramdisk

Rocks on Solaris Features

◆ Headless Installs using Xvfb

◆ Rocks Solaris distribution

```
# rocks create soldist
```

◆ ssh and VNC support for remote monitoring

◆ It's like cross-kickstarting but for different OS rather than different archs.

How easy is it?

◆ Install a Rocks frontend with "solaris" roll

◆ Download iso images of the sunos rolls from the Rocks repository

◆ Add rolls using

> # rocks add roll *.iso

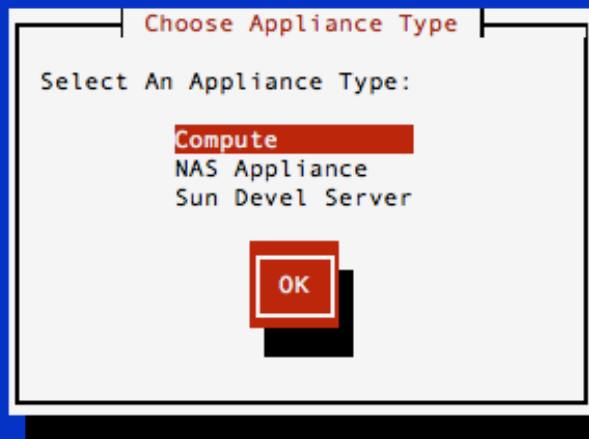◆ Create the rocks solaris distro

> # rocks create soldist

◆ insert-ethers support

```
# insert-ethers --os=sunos
```

VNC: compute-0-0.local:0

Solaris Install JumpStart

Window   Edit   Options   Help

```
WARNING: Selected package is already selected (SUNWservicetagu)
        - Selecting package (SUNWsftransport)
        - Selecting package (SUNWsneep)
        - Selecting package (SUNWsthwreg)
WARNING: Selected package is already selected (SUNWstosreg)
        - Selecting package (ipmitool)
        - Selecting package (SUNWTcl)
        - Selecting package (SFWexpct)
        - Selecting locale (en_US.ISO8859-1)
        - Selecting all disks
        - Configuring boot device
        - Creating "maxfree" Solaris fdisk partition (c1d0)
        - Using existing Solaris fdisk partition (c1d0)
        - Configuring ignore (c1d0s3)
        - Ignoring slice (c1d0s3)
        - Configuring / (c1d0s0)
        - Automatically configuring disks for Solaris operating system

Verifying disk configuration

Verifying space allocation
        - Total software size:  1159.41 Mbytes

Preparing system for Solaris install

Configuring disk (c1d0)
        - Creating Fdisk partition table
        - Creating Solaris disk label (VTOC)
        - Processing the alternate sector slice
        - Creating pool rocks
        - Creating swap zvol for pool rocks
        - Creating dump zvol for pool rocks

Creating and checking file systems
        - Creating rocks/ROOT/s10x_u6wos_07b dataset

Beginning Solaris software installation

Starting software installation
        ROCKSrocks-sge.................done.  1159.39 Mbytes remaining.
```

Solaris Install JumpStart

Window Edit Options   Help

```
Starting software installation
        ROCKSrocks-sge..................done.  1159.39 Mbytes remaining.
        SFWcurl.........................done.  1154.94 Mbytes remaining.
        SFWltool........................done.  1152.58 Mbytes remaining.
        ROCKSrocks-java.................done.  1152.58 Mbytes remaining.
        ROCKSphpsysinfo.................done.  1151.63 Mbytes remaining.
        SUNWj6rt........................done.  1064.71 Mbytes remaining.
        ROCKSganglia-pylib..............done.  1064.60 Mbytes remaining.
        ROCKSfoundation-graphviz........done.  1051.42 Mbytes remaining.
        ROCKSrocks-pylib................done.  1051.07 Mbytes remaining.
        ROCKSfoundation-rcs.............done.  1049.97 Mbytes remaining.
        ROCKSfoundation-python..........done.  1018.07 Mbytes remaining.
        SUNWpsn.........................done.  1018.04 Mbytes remaining.
        ROCKSfoundation-libxml2.........done.  1007.12 Mbytes remaining.
        SFWsudo.........................done.  1006.82 Mbytes remaining.
        SFWexpct........................done.  1005.54 Mbytes remaining.
        ROCKSfoundation-python-extras...done.   985.06 Mbytes remaining.
        SUNWjavadb-client...............done.   984.59 Mbytes remaining.
        ROCKSphp........................done.   964.01 Mbytes remaining.
        SFWshar.........................done.   963.77 Mbytes remaining.
        ROCKSpcre.......................done.   961.89 Mbytes remaining.
        SUNWj6rtx.......................done.   940.45 Mbytes remaining.
        SUNWj6dev.......................done.   871.18 Mbytes remaining.
        ROCKSfoundation-perl-tk.........done.   863.37 Mbytes remaining.
        ROCKSiozone.....................done.   862.43 Mbytes remaining.
        SUNWj6cfg.......................done.   862.43 Mbytes remaining.
        ROCKSganglia-receptor...........done.   862.36 Mbytes remaining.
        ROCKSge.........................done.   683.78 Mbytes remaining.
        ROCKStentakel...................done.   683.53 Mbytes remaining.
        ROCKSfoundation-python-xml......done.   680.72 Mbytes remaining.
        ROCKSrocks-411..................done.   680.64 Mbytes remaining.
        ROCKSganglia-monitor-core.......done.   679.47 Mbytes remaining.
        SUNWexplu.......................done.   679.46 Mbytes remaining.
        ROCKSmpi-tests..................done.   679.43 Mbytes remaining.
        ipmitool........................done.   678.48 Mbytes remaining.
        ROCKSiperf......................done.   678.33 Mbytes remaining.
        SUNWhd..........................done.   677.57 Mbytes remaining.
        SUNWlwact.......................done.   677.12 Mbytes remaining.
        ROCKSnsca.......................done.   677.03 Mbytes remaining.
        ROCKSstream.....................done.   676.95 Mbytes remaining.
```

Pre-emptive answers

◆ Only x86/x64 support. No SPARC support

◆ Support for Solaris 10 update 6 or later only

◆ No support for HTTP Based installs. Meaning no bit-torrent support.

◆ No Solaris frontends (at least not in the near future).

Questions?