Computational Cluster

Basic Usage with Slurm

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What's Ansible?

Ansible allows us to run commands in a repeatable way across several machines

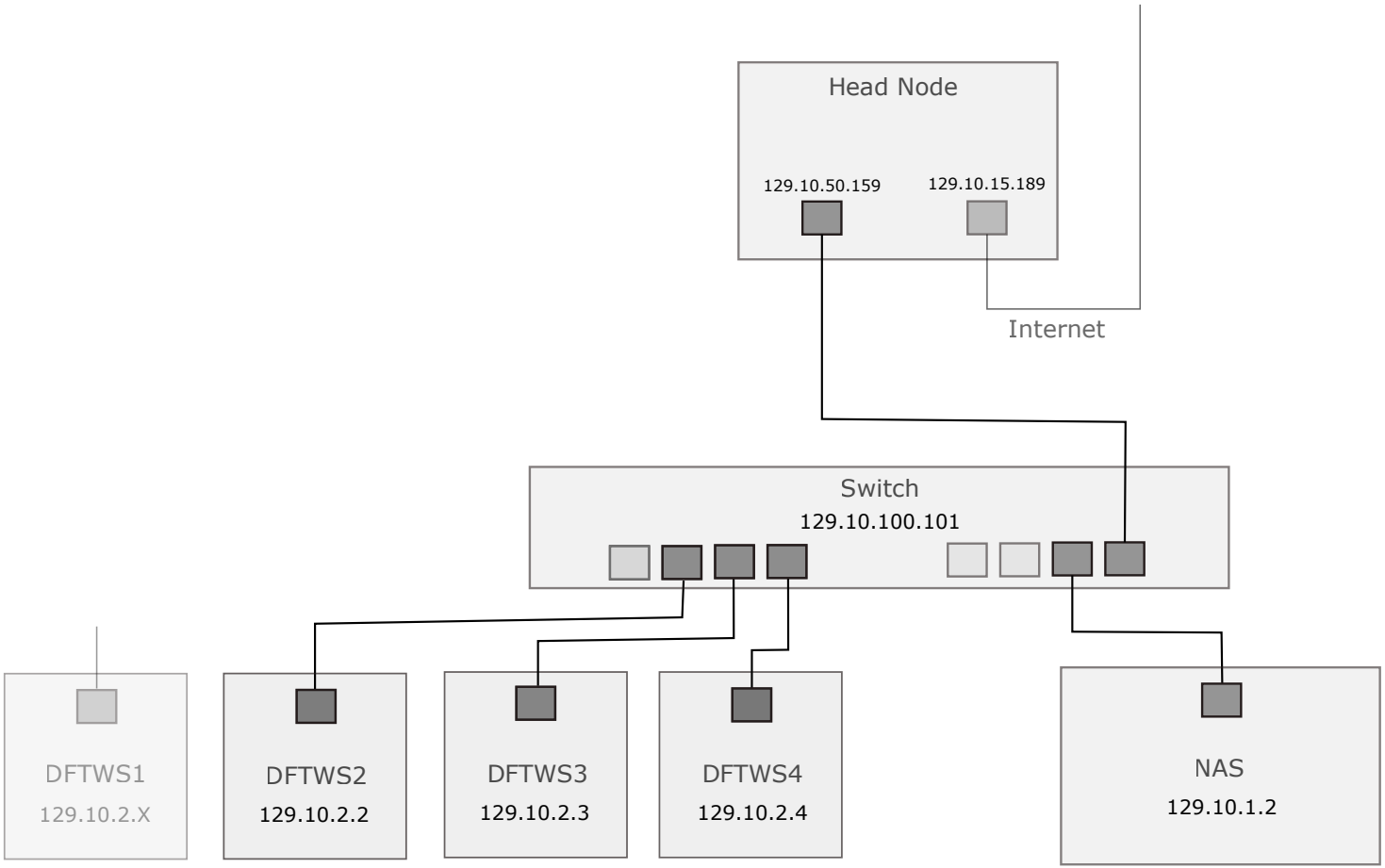
Defining Inventory/Ansible Hosts

Host and group names of devices to run ansible commands on are specificied in inventory files or globally via /etc/ansible/hosts

Installing packages Cluster-wide

We can use ansible to install packages across all devices at once

Architecture



What's a LAN?

A local access network is a local configuraiton of devices that are all connected independent of the internet

What's a subnet?

A subnet is assigned a subnet mask, with all IPs under it's mask on the subnet

What's a gateway?

A gateway gives a LAN access to the larger internet.

What's a DNS server?

A Domain Name Service (DNS) provides maps from IP to web addresses.
DNS server is often set dynamically by network admins, we need to specify ourselves for subnodes.
Put nameserver in file or install resolv

Mounting the NAS

automoaund NAS on startup with /etc/fstab file

What's a daemon?

Daemons run in the background and process requests to services that run continuously, waiting for input

Systemctl

The system daemon controls other daemons through systemd
Start and enable services via systemctl

What's Slurm?

Slurm allows us to schedule jobs across the cluster

Slurm Prerequisites

Munge, ntp, UIDs, slurm user + GIDs

Installing Slurm

download, configure, make, make install, create directories and change permissions, create and copy configuration, copy daemons, reload daemons, start and enable daemons

Using Slurm

sbatch, scontrol, sinfo, srun