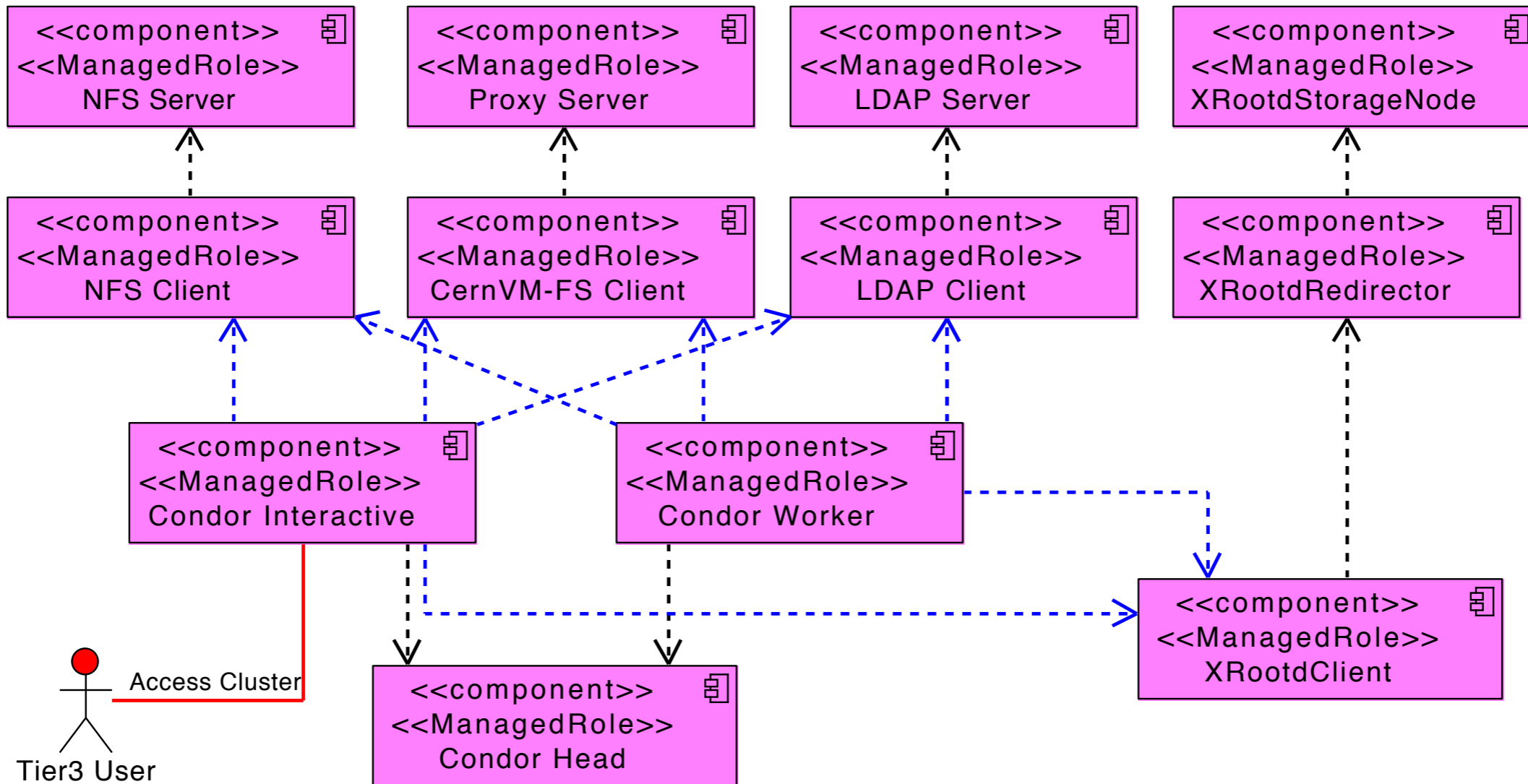
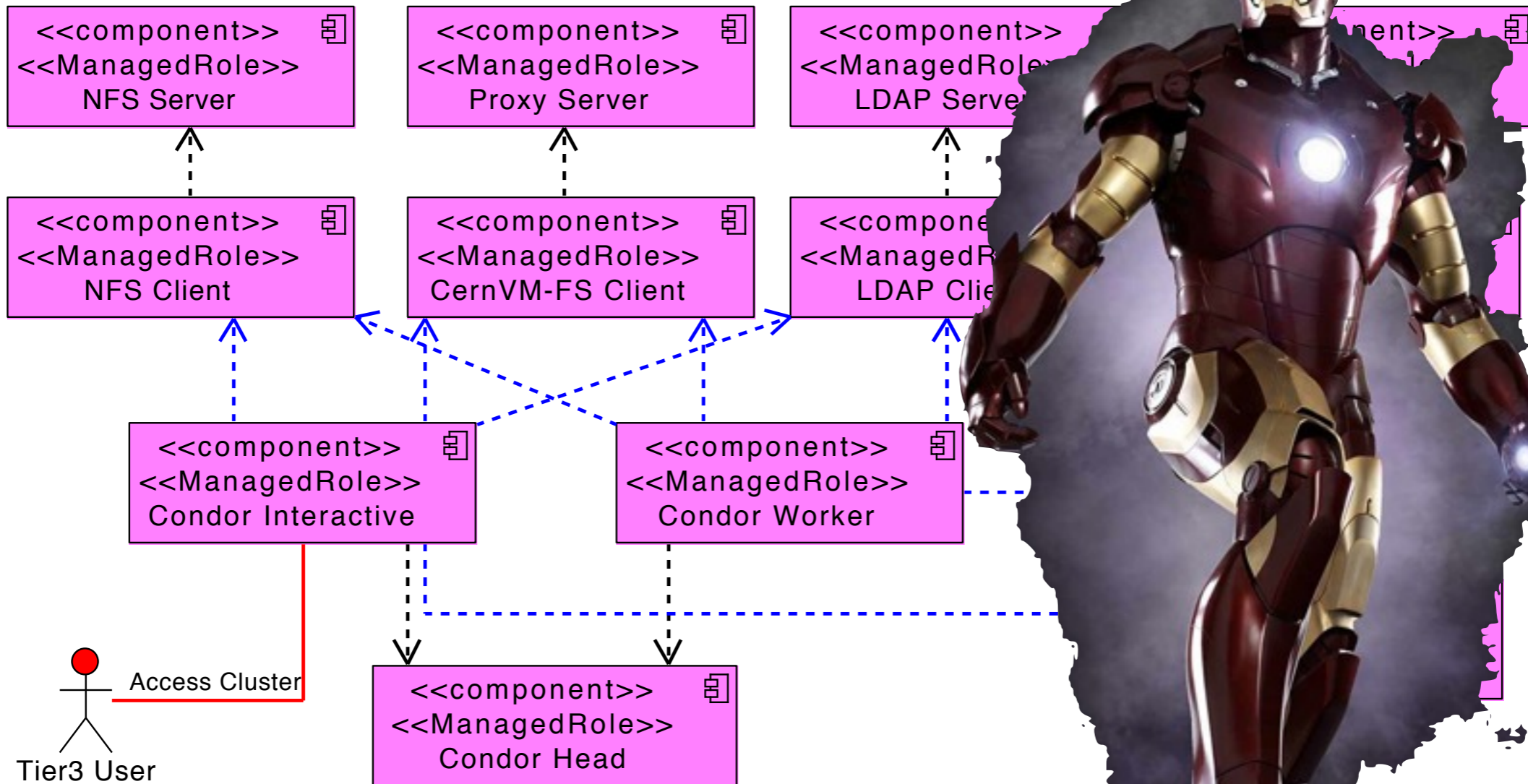


Puppet in Tier3

Yushu Yao
Oct 12, 2010

Incomplete list of Tier3 Roles





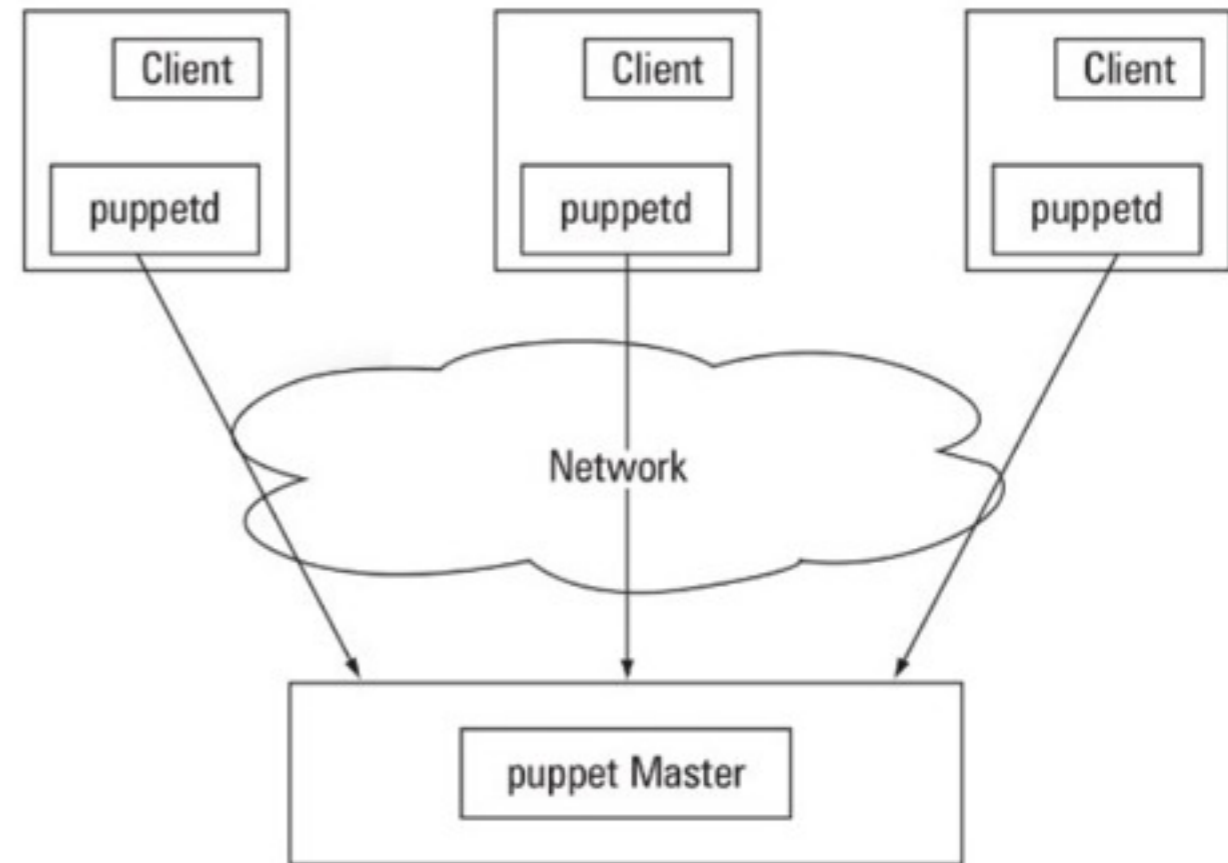
Tier3 Manager

Needs Automation

- Configuration Management System comes to help
- Puppet is one of the best

Why Puppet

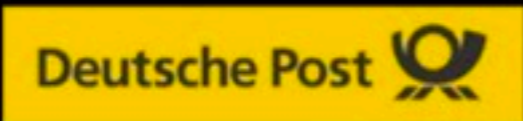
- Client/Server Model
- Define what you want a machine to look like in a scripting language (ruby-like)
- Resource Abstraction Layer



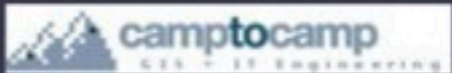
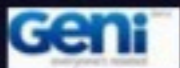
	Programming	Sysadmin
Low-level, non-portable	Asm	Commands/Files
Abstract, Portable	C	Resources

Puppet Script = Resources defined in Code

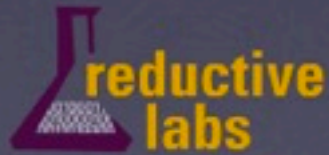
```
class ssh {  
  package { ssh: ensure => installed }  
  file { sshd_config:  
    name => "/etc/ssh/sshd_config",  
    owner => root,  
    group => root,  
    source => "puppet://server/apps/ssh/sshd_config",  
    after => Package[ssh]  
  }  
  service { sshd:  
    ensure => running,  
    subscribe => [Package[ssh], File[sshd_config]]  
  }  
}
```

“...at Google we're currently using Puppet to manage close to 6,000 Macs, and it's likely our deployment will expand dramatically beyond that...”



Puppet



Benefits using Puppet

- Good about scripts is versioning control and ease of sharing (and inspecting)
- Puppet will make sure the target looks like what you want it to be.
- Manage All Linux/Unix based systems
- For Tier3:
 - For new sites, greatly reduce first time deployment effort
 - For existing sites, make upgrading and maintaining much easier.
 - Disaster recovery

Module based

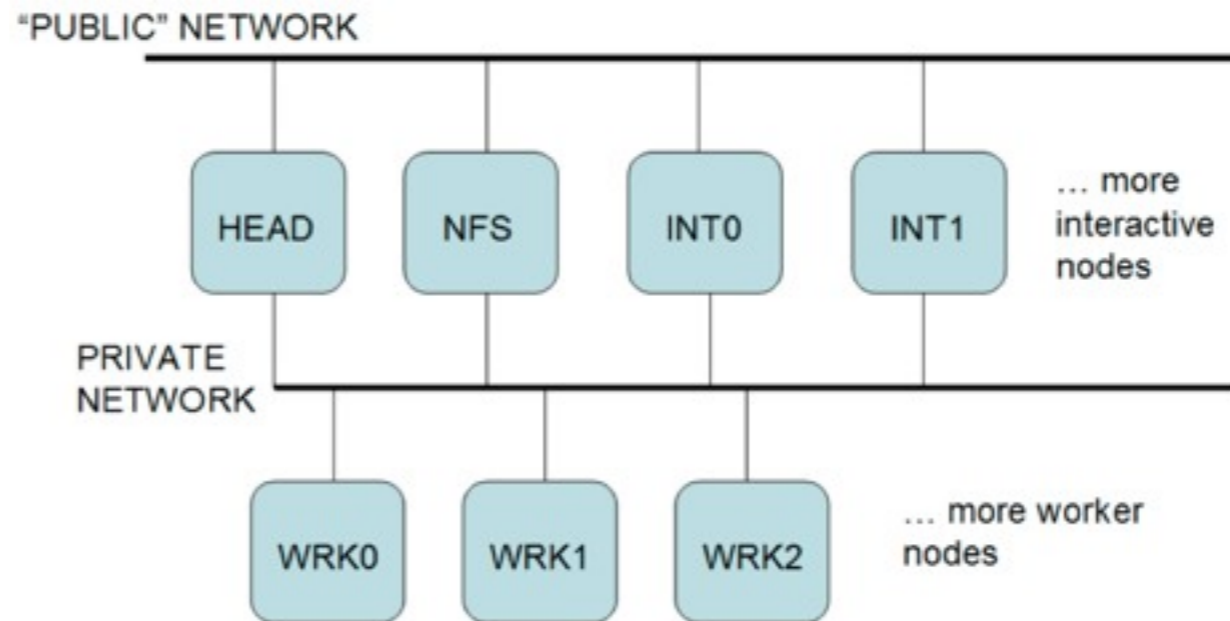
- Highly Reusable
- Can choose to use part or all of it.
- Currently Implemented Tier3 Modules:
 - dnsmasq, nfs, proxy, cvmfs, ldap client/server, time server/client, condor head/interactive/worker
- Working On:
 - XRootd - Need an RPM, GridFTP

What we should do in Tier3's

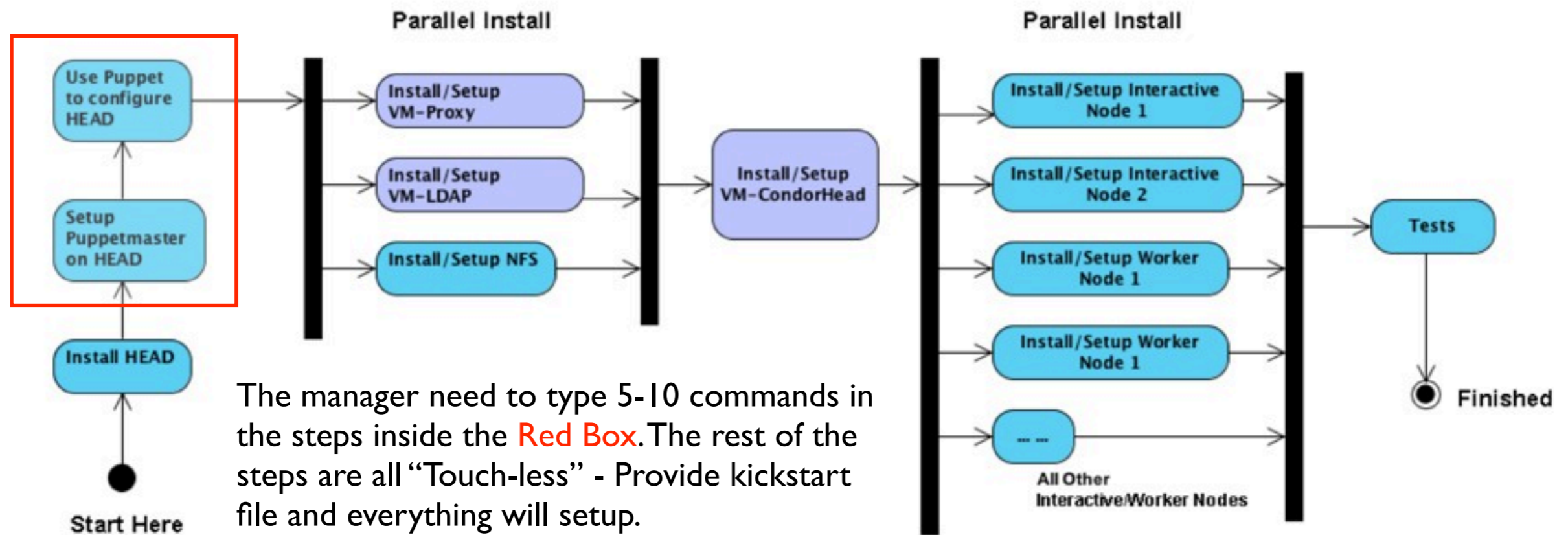
- What you need to have == What we provide you:
 - kickstart file templates
 - Puppet Repository (ATLAS wide)
 - `svn co somewhere/to/repo/1.0.0-STABLE`
 - Instructions to be finalized
 - Already have a tier3 setup? You can migrate

Deployment On Fresh Sites

1. Connect Network as Doug Suggested



2. Install Software



The manager need to type 5-10 commands in the steps inside the **Red Box**. The rest of the steps are all "Touch-less" - Provide kickstart file and everything will setup.

Migrating Existing Sites

- Install a Puppet Server
- Checkout the latest definitions
- Decide which nodes to migrate:
 - least critical -> most critical
 - e.g. part of the workers -> all workers -> Schedulers -> other services

Starting Point

- Twiki Page:
 - <https://twiki.cern.ch/twiki/bin/view/Atlas/VMPuppetAssistedTier3Install>
- ATLAS Tier3 Module Repository:
 - <http://code.google.com/p/atlastier3cfg/>

Next Steps

- Finalize instructions
- Backend to pacman -- include xroot & other OSG stuff
- Backend to Conary, include CernVM

Related Works

- CloudCRV - Deploy a tier3 cluster onto the cloud, with the help of the same set of puppet modules.
- Using Puppet to define and deploy trusted virtual machines to computing sites.
- ***Please pay attentions for the two Posters about them.***

Looking for Early Adopters