Leveraging Multiple Environments Using Puppet and Git

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About Our Environment

- 230+ *nix nodes
- Solaris 9 and 10

- Solaris 10 Zones
- Ubuntu
- CentOS 5

Infrastructure as Code

Infrastructure that can be recreated through programatic and repeatable steps

What is Puppet?
Why Puppet?

- Configuration management
- Defines the state of a node
- Reproducible
- End Game == No Manual Intervention

What is Git?
Why Git?

- Distributed Version Control System
- Easy to Setup and Use
- Code Repository
- Grew With Us...

Terms

- repo
- master
- origin
- environment
- branch
- “cloud”

General Workflow

- Clone repo locally
- Fork branch
- Make changes
- Push
- Pull into Dev
- Verify
- Merge branch into master
- Pull into Dev again
- Verify
- Pull into Prod

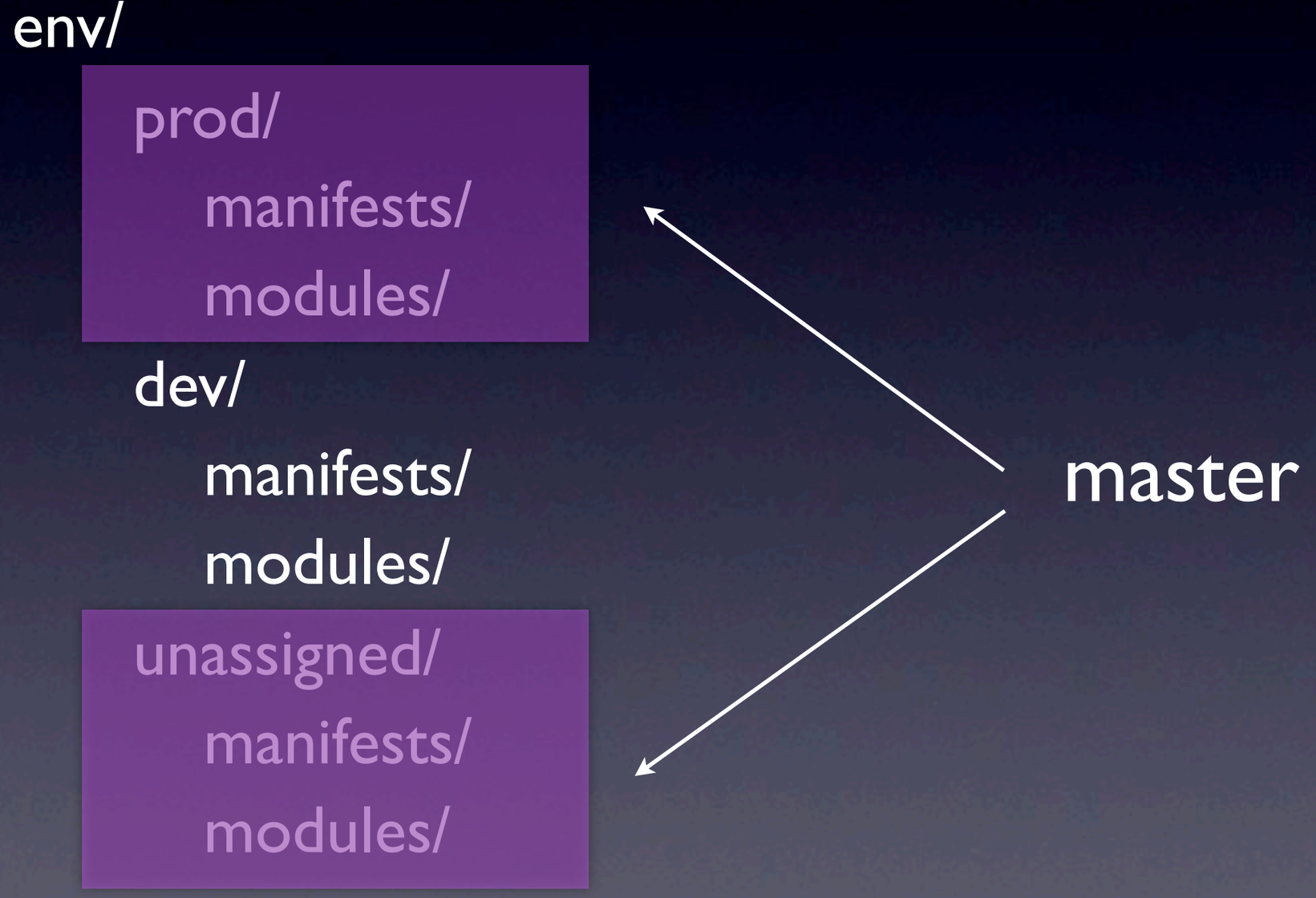
Why this Rocks

- Log of changes using git log
- Easy to roll back to previous state
  - (doesn't necessarily mean changes are rolled back)
- Easy to test things without impacting production systems
- Diff of changes

Filesystem Layout

```
env/
    prod/
        manifests/
        modules/
    dev/
        manifests/
        modules/
unassigned/
    manifests/
    modules/
```

Filesystem Layout



Filesystem Layout

env/

prod/

manifests/

modules/

dev/

manifests/

modules/

unassigned/

manifests/

modules/

dev_branch

Example of Log

1. git

```
commit 927be2d7fa650a3e6a8669c2a9dda348dbddea30
Author: Christopher Webber <cwebber@ucr.edu>
Date:   Fri Aug 5 11:28:40 2011 -0700

    Added the http service to listserv-prd-1

commit 0810666e28b217ceda3426d3163d7e7af7581955
Author: Christopher Webber <cwebber@ucr.edu>
Date:   Fri Aug 5 07:24:45 2011 -0700

    Because of the update to con2, checking port 22 instead of 222

commit b418c32e123df001b40cd2029bc4c32e10408961
Author: Christopher Webber <cwebber@ucr.edu>
Date:   Wed Aug 3 10:42:16 2011 -0700

    Adding the node def for webwork

commit 1051fced10ce37c8c4387f68c0bb7e5575f7d611
Author: Christopher Webber <cwebber@ucr.edu>
Date:   Wed Aug 3 08:56:11 2011 -0700

    Adding all the necessary items for jocab to start work on radius_dev_1

commit fb48b21fe13c2a8996fe22705aed71c7a2f1c6ea
Author: Christopher Webber <cwebber@ucr.edu>
Date:   Wed Aug 3 08:09:13 2011 -0700

    Adding a service def for httpd on listserv-tst-1

commit 881a764a5a07abb5f87faae62f3fb942ef902487
Author: Christopher Webber <cwebber@ucr.edu>
Date:   Tue Aug 2 14:27:47 2011 -0700

    Updating the bacula-dir config to ensure that the mysql instance is
    running
:
```

Next Steps

- Post-commit hooks
- Better approval process

Questions?

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