

Devops case study: Open Source Bridge



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Client background

Open Source Bridge is a local, volunteer-run open source conference. Hundreds of great no-fluff talks by sysadmins, programmers and hackers that love open source:

<http://opensourcebridge.org/>

PS: Volunteers and sponsors for 2011 wanted!



Goals

Provide Open Source Bridge with:

- Open source-based stack for their services
- Vendor-independent platform
- Reliable infrastructure from unreliable parts
- Surprise-less changes
- Automated setup for repeatable builds, easy migrations and development
- Automated management for maintenance
- Monitoring and alerting for availability
- Backups for disaster recovery

Architecture overview

- On-site:
 - OS (Linux: Ubuntu Server LTS)
 - Blog/CMS (PHP: WordPress)
 - Wikis (PHP: MediaWiki & Dokuwiki)
 - Conference suite (Ruby: OpenConferenceWare)
 - Complimentary ticket issuer (Ruby: CompTicketeer)
 - Issue tracker (Ruby: Redmine)
 - Collaborative editor (Java: Etherpad)
 - Databases (C: MySQL, PostgreSQL, SQLite)
 - Media sharing (C: rtorrent)
- Off-site:
 - Monitoring and alerting (C: monit)
 - Backups (Python: rdiff-backup)
 - Development virtual machines (C: VirtualBox)

Provisioning

- Manual allocation
- Post-allocation bootstrap (`bootstrap.sh`)
- Automation recipes

Development

- Keep as much as possible under version control (`git`)
- Use virtual machines with hierarchical snapshots for developing (`VirtualBox`)
- Share files between dev. workstation and dev. VMs (`devprepper.sh` with `sshfs`)

Automation

- `automateit` configuration manager
- Uses many idioms familiar to anyone that's written a UNIX shell script, predictable and extensible (Disclaimer: I wrote it)
- Sets up and manages servers
- Documents the configuration of servers as code
- Recipes available online at:
http://github.com/igal/osbp_automateit/

Automation /recipes

- all.rb : top-level invocation
- base_ntpd.rb : install package & service
- base_shmem.rb : edit file, cond. exec
- base_ruby_enterprise_from_package :
architecture tag
- base_passenger.rb : OMFG
- my_penwrap.rb : role tag
- my_redmine.rb : custom objects

Automation /lib

- `cronedit.rb` : Edit crontab
- `pgrep.rb` : Is a certain process running?
- `apache_manager.rb` : Manage Apache2
- `mysql_manager.rb` : Manage MySQL
- `postgresql_manager.rb` : Manage PostgreSQL

Application deployment

- `git` shared sources
- Capistrano for Rails apps
- `rake` with `rsync` for others

Backups and migrations

- `rdiff-backup` : Differential backup
- Manual failover to another server
- `recipes/my_penwrap.rb` : Proxy HTTP requests to current production server

Q: How to deploy and restore everything? :(

Monitoring (monit)

- Internal:
 - load average
 - memory usage
 - disk usage
- External
 - HTTP GET
 - ICMP

Questions & Answers

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