AUTONOMOUS APPLICATION DEPLOYMENT WITH PKGSRC
WHO IS THIS JACK-WAGON?
A BIT ABOUT ME:

‘MURICAN

- overweight
- a little bit bigoted
- I own guns
- I probably don’t speak your language
Did I mention that I’m ‘Murican?
LITTLE BIT BIGOTED

- GNU/Linux
- GNUbs
- Systems that do not include netstat, traceroute, a sane default command shell for /bin/sh
- Systems that turn $#!+ on just because you installed it
- Version control systems that allow history to be rewritten
- ORMs
LITTLE BIT BIGOTED (CONTINUED)

- PHP
- MySQL
- Oracle
- Chef
- Puppet
- Ansible
- Screen
- GLibC
DON'T SCARE PEOPLE

I OWN GUNS
I PROBABLY DON’T SPEAK YOUR LANGUAGE

- Spanish
- Esperanto
- Italian
- German
- Romanian
- Frisian
- Polish
- Czech
- Mandarin
I PROBABLY DON'T SPEAK YOUR LANGUAGE

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- shell
- AWK
- Python
- Lua
- Racket
- Ruby
- JavaScript
- Go
- Rust
HUGE NERD

- Plone
- Web2py
- RVM
- SaltStack
- Ansible
- Capistrano
- RepozeBFG
- Fabric
- Fossil
- SQLite
- PyJS
- Wempy
- Linux Mint
- MidnightBSD
APPLICATION DEPLOYMENT
SYSTEM VIRTUALIZATION
ORCHESTRATION
CONFIGURATION MANAGEMENT
CONTAINERIZATION
AUTOMATION
APPLICATION DEPLOYMENT
SYSTEM VIRTUALIZATION
ORCHESTRATION
CONFIGURATION MANAGEMENT
CONTAINERIZATION
AUTOMATION
LOVE/HATE STORY
COMMON STORY

DEVELOPER HAS IDEA

- Developer builds app
- Developer runs app
- Developer needs to deploy app into production
ABOUT THE APP

- POSIX-y
- Few dependencies
  - System Libraries
  - runtime language (JavaScript, Python, Ruby, etc)
  - packages for language (NPM, CPAN, PyPI, Gems, etc)
DEPLOYMENT OPTIONS

- Tarball
- Debs/RPMs
- Language tools (pip, gem, cpan, etc)
- Deployment tools
  - Maven, ANT, Make
  - Capistrano, Vlad, Fabric, etc
  - Puppet, Chef, Salt, Ansible
HAPPILY EVER AFTER
UNTIL...
VULNERABILITY DISCOVERED IN APPLICATION CODE
VULNERABILITY IN APPLICATION CODE

- Re-roll Tarballs and deploy
- Re-build deb/rpm packages, put in repo, deploy
- Update deployment tools/recipes and deploy
VULNERABILITY IN COMMUNITY PACKAGE
VULNERABILITY IN COMMUNITY PACKAGE

- Check for update
- Check update for compatibility with application code
- Check updated application for compatibility underlying stack
NEW VERSION OF YOUR RUNTIME IS RELEASED
- Check compatibility with application
- Find/fix edge-case issues
- Check compatibility with community packages
- Check compatibility with application
WHAT IF THEY DON'T WORK TOGETHER?
FORK IT!
OR WORSE
DON'T UPGRADE ANYTHING
BUT THERE'S A BETTER WAY
THE OS IS SUBSTRATE
YOUR APPLICATION IS THE COLONY
TWO SETS OF DEFINITIONS

- A host on your network
  - monitoring
  - orchestration
  - (system) packages
- Your application stack
  - apps that make up your stack
THE BENEFITS

- Your application is now autonomous
- You can move from OS to OS as long as your application stack is supported on the target platform
- You can push updates to your substrate much more easily
- You can update your dependencies at will
- You can maintain your own forks without system conflicts
- You can run multiple versions in parallel on the same system
- You can wrap it all in meta-packages
THE BENEFITS (CONTINUED)

- Parallel installations with ${PREFIX}
- Chroot “jail” for simple process isolation
- Tarball-able (not recommended but better than some solutions)
- Highly portable and easily maintainable
- Many many more…
QUESTIONS