Wait, what?

Getting your bearings with ServerSpec

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We are constantly learning about our environment

- Developers shop jobs a lot
- Have you seen the mailing list?
- We change jobs a lot
- Our jobs change a lot all on their own
- `We are always the newbie`

Why write tests?

With ServerSpec or any similar tool?

- Tests are documentation
- Your team may not survive
- Tools come and go
- No matter what happens to the tools or your team, tests will persist as documentation of your intentions and proof that the service is configured as you expected

ServerSpec

- Extension of RSpec
- Is a Ruby gem

Software Reuse

spec spec spec...

- RSpec
- ServerSpec
- DockerSpec
- SpecInfra ¯\_(ツ)_/¯

Installing ServerSpec

- It's a Ruby gem, you'll need Ruby 2.0.x+ installed
  `sudo gem install serverspec`
- Rake, too: `sudo gem install rake`
- SSH access to the servers you are testing
- Sudo not required, but it makes life easier

```
$ serverspec-init
Select OS type:
  1) UN*X
  2) Windows
Select number: 1
Select a backend type:
  1) SSH
  2) Exec (local)
Select number: 1
Vagrant instance y/n: n
Input target host name: waitwat
 + spec/
 + spec/waitwat/
 + spec/waitwat/sample_spec.rb
 + spec/spec_helper.rb
 + Rakefile
```

```ruby
require 'spec_helper'
describe package('httpd') do
  it { should be_installed }
end

describe service('httpd') do
  it { should be_enabled }
  it { should be_running }
end

describe port(80) do
  it { should be_listening }
end

describe file(/etc/httpd/conf/httpd.conf) do
  it {should be_file}
```

Resources

https://serverspec.org/resource_types.html

- packages
- services
- ports
- files
- commands
- users and groups
- cron

Run the tests

- RSpec tests usually go in a folder called `spec`)
- calling ServerSpec is exactly the same as any other RSpec test

```
rspec spec
```

- this will run all the tests in the spec folder
- or `spec/ask/for/whichever/spec.rb` you want
- you can also use a Rakefile to automate more complex tests

Demo: 1 ServerSpec-Samvera

- code: tinyurl.com/uclalibrary-serverspec-samvera
- demo

Scaling up to more than one server

https://tinyurl.com/uclalibrary-serverspec-samvera

Spec_helper

```ruby
require 'serverspec'
require 'pathname'
require 'net/ssh'
require 'yaml'

base_spec_dir = Pathname.new(File.join(File.dirname(__FILE__)))

Dir[base_spec_dir.join('shared/**/*.rb')].sort.each{ |f| require f }

set :backend, :ssh
set :disable_sudo, true

set :path, '/usr/sbin:$PATH'

properties = YAML.load_file(base_spec_dir.join('properties.yml'))
```

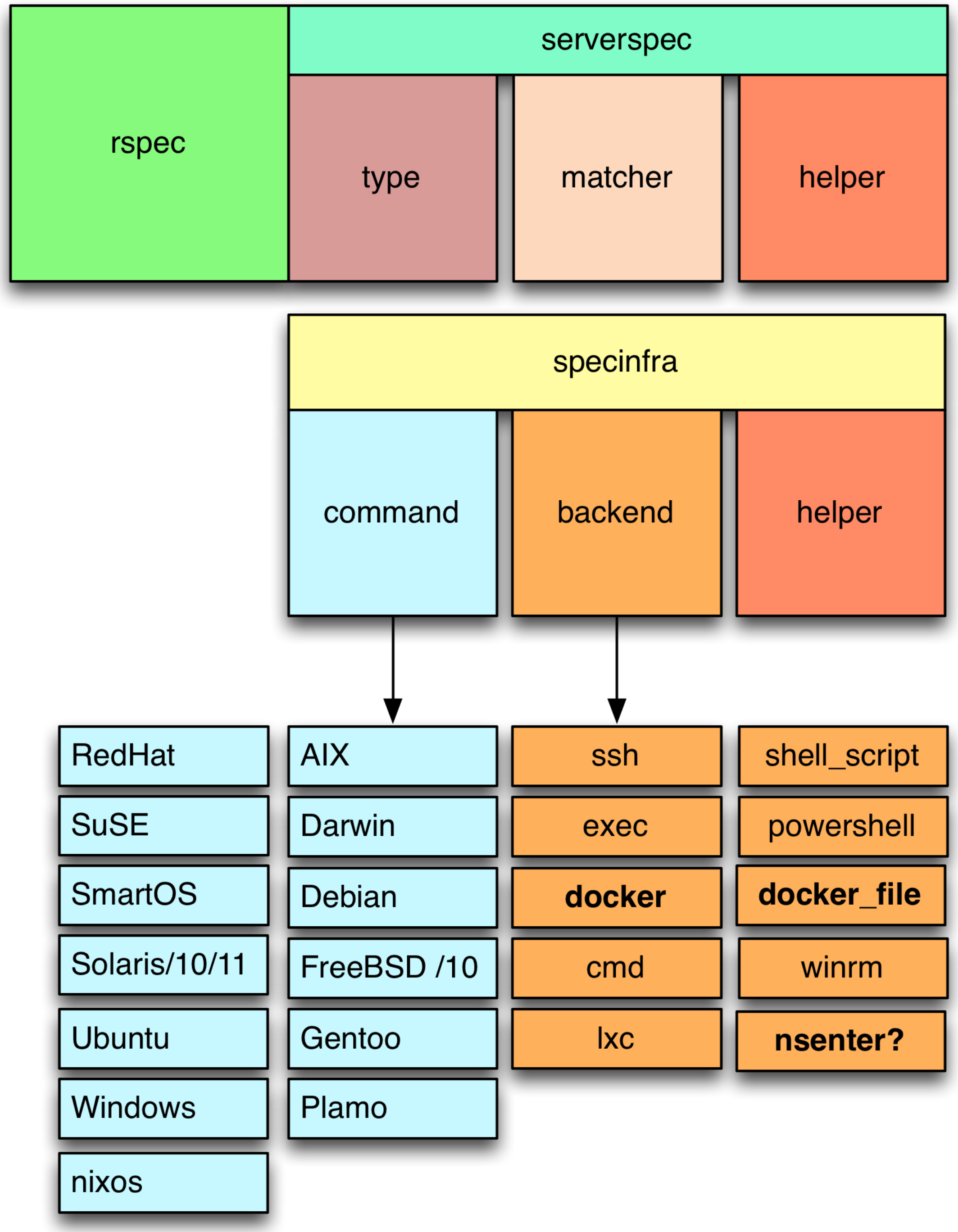
Use a Rakefile

- automate the running of complex tests
- Rake is a software task management and build automation tool
- Similar to Make
- Written in Ruby

Sharing code

https://serverspec.org/advanced_tips.html

https://tinyurl.com/uclalibrary-serverspec-samvera


rspec
serverspec
type
matcher
helper
specinfra
command
backend
helper
RedHat
SuSE
SmartOS
Solaris/10/11
Ubuntu
Windows
nixos
AIX
Darwin
Debian
FreeBSD /10
Gentoo
Plamo
ssh
exec
docker
cmd
lxc
shell_script
powershell
docker_file
winrm
nsenter?

Gotchas

- you'll need to be sure the `ss` command is available on the test target
  - this installed by default on RHEL
  - for Ubuntu, you'll need to install the `iproute2` package
- you'll need to be sure `/usr/sbin` is in the path, if your test target is RHEL
  - you can set the `:path` in spec_helper

Containers? Docker?

- many options are available, worth researching
- DockerSpec: https://github.com/zuazo/dockerspec

Demo: 2 Docker-Cantaloupe

- code: github.com/UCLALibrary/docker-cantaloupe
- demo

Thanks

- Inspiration for this talk: JJ Asghar's /Rants and Ramblings blog post on ServerSpec: https://jjasghar.github.io/blog/2013/07/12/serverspec the-new-best-way-to-learn-and-audit-your-infrastructure/
- *ServerSpec Components*, adapted from "Introduction to Test-Driven Docker Development," by Peter Roßbach, Wednesday, August 12, 2015, Entwickler.de

Slides: github.com/hardyoyo/code4lib19-serverspec-talk