

Testen des Puppet Controlrepos

whoami

Hannes Schaller

- ▶ Puppet User seit Version 2.4
- ▶ Foreman user und contributor
- ▶ Senior Linux System Manager

- ▶ <https://github.com/cyberkov>
- ▶ <https://github.com/apa-it>

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140

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30.000.000

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7.500.000

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260.000.000

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25.000.000 €

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Loop

Archive

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Die Herausforderung

Die Herausforderung

- ▶ Wir arbeiten nach „roles and profiles“ Prinzip
- ▶ Standard Puppet controlrepo
- ▶ PDK funktioniert nur für Module
- ▶ Sicherstellung der Funktion aller Klassen auf allen unterstützten Betriebssystemen ist schwierig
- ▶ Funktionstüchtigkeit bei unterschiedlichen Parameterwerten muss sichergestellt sein

```
control-repo/  
├── data/  
│   ├── nodes/  
│   └── common.yaml  
├── manifests/  
│   └── site.pp  
├── scripts/  
│   ├── code_manager_config_version.rb  
│   ├── config_version.rb  
│   └── config_version.sh  
├── site-modules/  
│   ├── profile/  
│   └── role/  
├── LICENSE  
├── Puppetfile  
├── README.md  
├── environment.conf  
└── hiera.yaml
```

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Die Lösung

onceover

“Onceover is a tool to automatically run basic tests on an entire Puppet controlrepo. It includes automatic parsing of the Puppetfile, environment.conf and others in order to run stop silly mistakes ever reaching your Puppet Master!”

- <https://github.com/dylanratcliffe/onceover>

onceover...

- ▶ ... verwendet r10k um die erforderlichen puppet module zu laden
- ▶ ... erzeugt an Hand der test_matrix Tests für alle Kombinationen von Betriebssystemen und Klassen
- ▶ Einfaches erzeugen von integration-tests
- ▶ ... führt puppet-rspec mit einem CustomFormatter aus

Setup

```
apatecschaller test ~/sources/apa/windows-puppet onceover init
created spec
created spec/onceover.yaml
created spec/pre_conditions
created spec/pre_conditions/README.md
created spec/factsets
created spec/factsets/README.md
created Rakefile
created Gemfile
changed .gitignore
apatecschaller test U:1 ?:5 ~/sources/apa/windows-puppet
```

- ▶ [root@vrhel7 ~]# puppet facts > \$(factor fqdn).yaml
- ▶ localhost:\$ scp vrhel7:~/*yaml spec/factsets/

Setup – spec/onceover.yaml

```
1 ---
2 opts:
3   :format:
4     #- 'documentation'
5     - 'OnceoverFormatter'
6 # Classes to be tested
7 classes:
8   - profile::application::apache
9   - profile::application::docker
10  - profile::application::elasticsearch
11  - profile::application::java
12  - profile::application::kibana
13  - profile::application::letsencrypt
14  - profile::application::lsyncd
15  - profile::application::memcache
16  - profile::application::mysql
17  - profile::application::nginx
18  - profile::application::php
19  - profile::application::postgresql
20  - profile::application::redis
```

```
94 # Nodes to tests classes on, this refers to a 'fact'
95 # depending on whether you are running 'spec' or
96 nodes:
97   - debian7.puppettest.apa.at
98   - debian8.puppettest.apa.at
99   - debian9.puppettest.apa.at
100  - ubuntu14.puppettest.apa.at
101  - ubuntu16.puppettest.apa.at
102  - ubuntu18.puppettest.apa.at
103  - rhel5.puppettest.apa.at
104  - rhel6.puppettest.apa.at
105  - rhel7.puppettest.apa.at
106  - rhel8.puppettest.apa.at
107
108 # You can group classes here to save typing
109 class_groups:
110   windows_roles: []
111   non_windows_roles:
112     include: 'all_classes'
113     exclude: 'windows_roles'
114   bare_minimum:
115     - profile::base
116     - profile::base::configuration
117     - profile::base::etckeeper
118     - profile::base::puppetinfo
119     - profile::base::vmtools
120     - profile::networking::ntp
```

Setup – spec/onceover.yaml

```
173 test_matrix:  
174   - ubuntu_servers:  
175     classes: 'debian_tests'  
176     tests: 'spec'  
177     tags:  
178       - 'ubuntu'  
179   - debian_servers:  
180     classes: 'debian_tests'  
181     tests: 'spec'  
182     tags:  
183       - 'debian'  
184   - redhat_servers:  
185     classes: 'redhat_tests'  
186     tests: 'spec'  
187     tags:  
188       - 'redhat'  
189   - legacy_servers:  
190     classes: 'bare_minimum'  
191     tests: 'spec'
```

Testen!

```
~/sources/apa/puppet ❏ bundle exec onceover run spec -s
```

```
profile::application::memcache: P P P P P P P P P P  
profile::application::mysql: P P P P P P P P P P  
profile::application::nginx: P P P P P P P P P P  
profile::application::php: P P P P P P P P P P
```

Eigene Tests – spec/classes/myclass_spec.rb

```
1 # frozen_string_literal: true
2
3 # Mein erster Test
4 require 'spec_helper'
5
6 describe 'profile::application::mysql' do
7   context 'without parameters' do
8     let(:params) { {} }
9     it { should compile }
10  end
11  context 'with databases defined' do
12    let(:params) do
13      {
14        'databases' => {
15          'db1' => {
16            'user' => 'franzi',
17            'password' => 'example',
18            'host' => 'localhost'
19          }
20        }
21      }
22    end
23  end
24 end
```

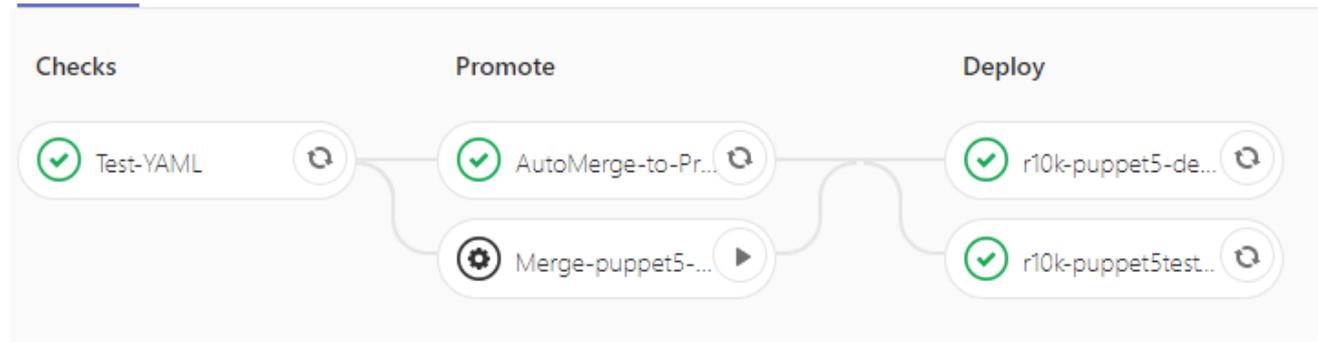
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Continuous Integration

Worked fine in dev. Ops problem now.

```
1 specs:  
2   stage: unit  
3   image: puppet/puppet-dev-tools  
4   script:  
5     - onceover run spec -p  
6   only:  
7     refs:  
8       - merge_requests  
9     changes:  
10      - '**/*.pp'
```

Pipeline Jobs 5



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Ausblick

Ausblick

- ▶ overcommit - <https://github.com/sds/overcommit>
 - ▶ Whitespace-checks, yamllint, etc
- ▶ onceover-codequality - <https://github.com/declarativesystems/onceover-codequality>
 - ▶ Linting, syntaxchecks
- ▶ puppet-litmus - https://github.com/puppetlabs/puppet_litmus
 - ▶ Acceptance-testing mit Docker

Vielen Dank für Ihre Aufmerksamkeit!

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