

Процесс управления конфигурацией с помощью Ansible



План

- Workflow
- Версионирование и управление зависимостями
- Тестирование
- Поиск и устранение ошибок

Workflow

- Проект разрабатывается в девелоперском окружении
- После этого он тестируется на QA окружениях
- Далее вместе с релизом ПО выкатывается на stage и бой

- Проект на ansible - такой же код, как и все остальное, поэтому должен лежать рядом или вместе с проектом
- Каждый инженер может запустить ansible локально, поэтому надо договориться о порядке, чтобы не мешать друг другу
- Выделенная машина/Rundeck/Jenkins
- Используйте теги при разработке, так гораздо быстрее

- Проект должен быть в таком состоянии, чтобы его всегда можно было запустить => нет страха что-то сломать
- Используйте все практики работы с кодом: код ревью, рефакторинг и тестирование

Версионирование ролей

- Нет рабочей системы управления версиями ролей
- Поэтому мы рекомендуем хранить все сторонние роли в системе контроля версий
- Да, будут проблемы при обновлении ролей

ansible-galaxy

- `ansible-galaxy install ansible-city.postgresql`
- И после этого добавить его в систему контроля версий
- <https://github.com/express42/ansible-repository> - наш репозиторий с пустым проектом

Тестирование

- Добавить прогон плейбуков в CI
- Тестировать идемпотентность
- Тесты для ролей
- molecule (<https://github.com/metacloud/molecule>)

Serverspec

```
describe package('apache2'), :if => os[:family] == 'ubuntu' do
  it { should be_installed }
end
```

```
describe service('httpd'), :if => os[:family] == 'redhat' do
  it { should be_enabled }
  it { should be_running }
end
```

```
describe service('apache2'), :if => os[:family] == 'ubuntu' do
  it { should be_enabled }
  it { should be_running }
end
```

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

Поиск ошибок

- -vvvv
- Модуль debug
- Пошаговое выполнение
- ansible-console
- Стратегия debug



```
→ practice ansible-playbook playbooks/common.yml -vvv
Using /Users/brun/Google Drive 42/Devops master class/Ansible/code/practice/ansible.cfg as config file

PLAYBOOK: common.yml *****
1 plays in playbooks/common.yml

PLAY [Install default packages] *****

TASK [setup] *****
<10.211.55.167> ESTABLISH SSH CONNECTION FOR USER: vagrant
<10.211.55.167> SSH: EXEC ssh -C -q -o ControlMaster=auto -o ControlPersist=60s -o Port=22 -o 'IdentityFile="/Users/brun/.vagrant.d/insecure_private_key"' -o KbdInteractiveAuthentication=no -o PreferredAuthentications=gssapi-with-mic,gssapi-keyex,hostbased,publickey -o PasswordAuthentication=no -o User=vagrant -o ConnectTimeout=10 -o ControlPath=/Users/brun/.ansible/cp/ansible-ssh-%h-%p-%r 10.211.55.167 '/bin/sh -c '"'"'sudo -H -S -n -u root /bin/sh -c '"'"'"'"'"'echo BECOME-SUCCESS-kwgywombocqjtmizrxltxfeowdanstwf; LANG=C LC_ALL=C LC_MESSAGES=C /usr/bin/python'"'"'"'"'"' && sleep 0'"'"'"'
ok: [common]

TASK [default_packages : Install GnuPG v.2] *****
task path: /Users/brun/Google Drive 42/Devops master class/Ansible/code/practice/roles/default_packages/tasks/main.yml:1
<10.211.55.167> ESTABLISH SSH CONNECTION FOR USER: vagrant
```

Пошаговое выполнение

```
→ practice ansible-playbook vars.yml --step

PLAY [Ideal playbook] *****
Perform task: TASK: Show var (N)o/(y)es/(c)ontinue: y

Perform task: TASK: Show var (N)o/(y)es/(c)ontinue: *****

TASK [Show var] *****
ok: [common] => {
    "test_var": "This is a test"
}
Perform task: TASK: Show message (N)o/(y)es/(c)ontinue: y

Perform task: TASK: Show message (N)o/(y)es/(c)ontinue: *****

TASK [Show message] *****
ok: [common] => {
    "msg": "Var is This is a test"
}

PLAY RECAP *****
common                : ok=2    changed=0    unreachable=0    failed=0
```

Модуль debug

```
vars:  
  test_var: This is a test  
  
tasks:  
  - name: Show var  
    debug:  
      var: test_var  
  
  - name: Show message  
    debug:  
      msg: "Var is {{test_var}}"
```

```
→ practice ansible-playbook vars.yml
```

```
PLAY [Ideal playbook] *****
```

```
TASK [Show var] *****
```

```
ok: [common] => {  
  "test_var": "This is a test"  
}
```

```
TASK [Show message] *****
```

```
ok: [common] => {  
  "msg": "Var is This is a test"  
}
```

```
PLAY RECAP *****
```

```
common : ok=2    changed=0    unreachable=0    failed=0
```

```
→ practice
```

ansible-console

```
|→ practice ansible-console
|Welcome to the ansible console.
|Type help or ? to list commands.
|
|brun@all (1)[f:50]$ ping
|common | SUCCESS => {
|    "changed": false,
|    "ping": "pong"
|}
|brun@all (1)[f:50]$ stat path="/home/vagrant"
|common | SUCCESS => {
|    "changed": false,
|    "stat": {
|        "atime": 1471341694.656133,
|        "ctime": 1471260336.3181677,
|        "dev": 64512,
|        "exists": true,
|        "gid": 1000,
|        "gr_name": "vagrant",
|        "inode": 277881,
|        "isblk": false,
|        "ischr": false,
|        "isdir": true,
```

Стратегия debug

```
strategy: debug
```

```
vars:
```

```
  test_var: This is a test
```

```
tasks:
```

```
  - name: Show var
```

```
    debug:
```

```
      var: test_var
```

```
  - name: Show message
```

```
    ping:
```

```
      data: "Var is {{wrong_var}}"
```


→ `practice ansible-playbook vars.yml`

PLAY [Ideal playbook] *****

TASK [Show var] *****

```
ok: [common] => {
    "test_var": "This is a test"
}
```

TASK [Show message] *****

```
fatal: [common]: FAILED! => {"failed": true, "msg": "the field 'args' has an invalid value, which appears to include a variable that is undefined. The error was: 'wrong_var' is undefined\n\nThe error appears to have been in '/Users/brun/Google Drive 42/Devops master class/Ansible/code/practice/vars.yml': line 16, column 7, but may\nbe elsewhere in the file depending on the exact syntax problem.\n\nThe offending line appears to be:\n\n    - name: Show message\n      ^ here\n"}
```

Debugger invoked

(debug) p task

TASK: Show message

(debug) p task.args

{u'data': u'Var is {{wrong_var}}'}

(debug) task.args['data']='asdf'

(debug) p vars['test_var']

u'This is a test'

(debug) r

ok: [common]

Название задачи

Аргументы

Повторить задачу

PLAY RECAP *****

common : ok=2 changed=0 unreachable=0 failed=0

ANSIBLE_KEEP_REMOTE_FILES=1

```
- hosts: all  
gather_facts: no
```

```
tasks:
```

```
- name: Do not delete tempfile  
  file:  
    path: /home/ubuntu/test.txt  
    state: touch
```

```
→ 1 ANSIBLE_KEEP_REMOTE_FILES=1 ansible-playbook test.yml -vvv
Using /Users/brun/Google Drive 42/Devops master class/Ansible/code/1/ansible.cfg as config file
```

```
PLAYBOOK: test.yml *****
1 plays in test.yml
```

```
PLAY [all] *****
```

```
TASK [Do not delete tempfile] *****
```

```
task path: /Users/brun/Google Drive 42/Devops master class/Ansible/code/1/test.yml:5
```

```
<52.49.123.214> ESTABLISH SSH CONNECTION FOR USER: ubuntu
<52.49.123.214> SSH: EXEC ssh -C -q -o ControlMaster=auto -o ControlPersist=60s -o 'IdentityFile="id_rsa_ansi
ble-2016-nov"' -o KbdInteractiveAuthentication=no -o PreferredAuthentications=gssapi-with-mic,gssapi-keyex,hostbased,publickey -o PasswordAuthentication=no -o User=ubuntu -o ConnectTimeout=10 -o ControlPath=/Users/brun/.ansible/cp/ansible-ssh-%h-%p-%r 52.49.123.214 '/bin/sh -c ''( umask 77 && mkdir -p "` echo $HOME/.ansible/tmp/ansible-tmp-1478595835.6-102182762044750 `"' && echo ansible-tmp-1478595835.6-102182762044750="` echo $HOME/.ansible/tmp/ansible-tmp-1478595835.6-102182762044750 `"' ) && sleep 0'''''
```

```
<52.49.123.214> PUT /var/folders/c3/zybc_xy546b0gqr9fddt85nc0000gn/T/tmpK3EaGo TO /home/ubuntu/.ansible/tmp/ansible-tmp-1478595835.6-102182762044750/file
```

```
<52.49.123.214> SSH: EXEC sftp -b - -C -o ControlMaster=auto -o ControlPersist=60s -o 'IdentityFile="id_rsa_ansi
ble-2016-nov"' -o KbdInteractiveAuthentication=no -o PreferredAuthentications=gssapi-with-mic,gssapi-keyex,hostbased,publickey -o PasswordAuthentication=no -o User=ubuntu -o ConnectTimeout=10 -o ControlPath=/Users/brun/.ansible/cp/ansible-ssh-%h-%p-%r '[52.49.123.214]'
```

```
<52.49.123.214> ESTABLISH SSH CONNECTION FOR USER: ubuntu
```

```
<52.49.123.214> SSH: EXEC ssh -C -q -o ControlMaster=auto -o ControlPersist=60s -o 'IdentityFile="id_rsa_ansi
ble-2016-nov"' -o KbdInteractiveAuthentication=no -o PreferredAuthentications=gssapi-with-mic,gssapi-keyex,hostbased,publickey -o PasswordAuthentication=no -o User=ubuntu -o ConnectTimeout=10 -o ControlPath=/Users/brun/.ansible/cp/ansible-ssh-%h-%p-%r -tt 52.49.123.214 '/bin/sh -c ''LANG=C LC_ALL=C LC_MESSAGES=C /usr/bin/python /home/ubuntu/.ansible/tmp/ansible-tmp-1478595835.6-102182762044750/file && sleep 0'''''
```

```
changed: [myhost] => {"changed": true, "dest": "/home/ubuntu/test.txt", "diff": {"after": {"path": "/home/ubuntu/test.txt", "state": "touch"}, "before": {"path": "/home/ubuntu/test.txt", "state": "file"}}, "gid": 1000, "group": "ubuntu", "invocation": {"module_args": {"backup": nul
```