IT Automation with Ansible

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19.10.2017

How complicated is complicated enough?

http://www.hldataprotection.com/2010/09/articles/consumer-privacy/if-the-online-notice-is-too-complex-does-that-open-the-door-to-tort-claims/

How good is IT Automation...

https://depositphotos.com/16900495/stock-photo-good-luck.html

...if it is too complicated?

Ansible in a nutshell

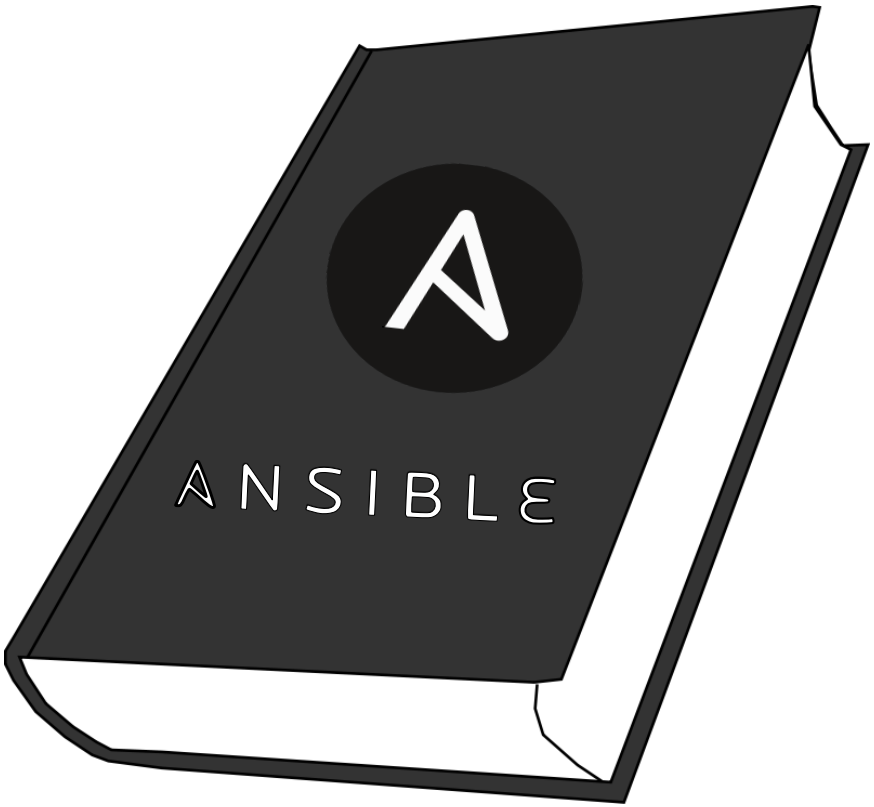
Ansible …

- … is „radically simple“
- … requires: 1 Unixnode, SSH, Python
- … needs no agent
- … describes the desired state
- … is written in YAML
- … satisfies idempotency

Run Ansible

- User: Write Statements
- Ansible: Create program
- Ansible: Copy program to Run-Node
- Ansible: Connect to Run-Node (local, SSH, PowerShell)
- Ansible: Run Program
- Ansible: Communication via JSON
- Ansible: Delete local Program
- Ansible: Give Feedback to User

Ansible dict



- **Inventory** - infrastructure as code
- **Adhoc mode** - one task + terminal
- **Playbook** - collection of tasks/roles
- **Role** - one collection of tasks
- **Task** - one Ansible command: 'apt-get install nano'
- **Jinja 2 templating** - e.g. for variables
- **Modules** - core-components: yum module, ping module,... communication via JSON

Inventory

```
[dbserver]
db1.server.com
db2.server.com

[webserver]
web1.server.com ansible_host=10.11.12.13
web2.server.com ansible_host=10.11.12.14

[appserver]
app1.server.com default_port=9418
app2.server.com default_port=42

[linuxserver:children]
dbserver
webserver
appserver
```

- defining the infrastructure
- ini or yaml syntax
- combine servers into groups
- define specific vars

Ad-hoc mode

- run only one task quickly
- either one-timer or quicker than playbook

```
$ ansible webserver -m patch \
  -a \
  "src=/src/critical.patch \
  dest=/app/bin/base"

$ ansible webserver -a "sbin/reboot"

$ ansible webserver -m ping
```

Playbook

```yaml
---
- hosts: webserver   # where shall I run?
  become: true       # run as root
  roles:
    - bake_webserver # role 1
    - install_gitlab # role 2
```

- combination of roles
- written in YAML (or JSON)-Syntax
- ideally in combination with VCS

Role

- combination of tasks
- featuring idempotency
- ideally in combination with VCS

Setup a gitlab server

```
- name: Install GitLab dependencies.
  yum:
    name: {{ item }}
    state: installed
  with_items:
    - openssh-server
    - postfix
    - curl
    - openssl

- name: Install GitLab
  yum:
    name: {{ gitlab_edition }}
    state: present

- name: Copy GitLab configuration file.
  template:
    src: gitlab.rb.j2
    dest: /etc/gitlab/gitlab.rb
    owner: root
    group: root
    mode: 0600
notify: restart gitlab
```

Role

```yaml
- name: Install GitLab dependencies.
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```

ATIX and Ansible

ATIX and Ansible - a truly great combination

Ansible meets Engineering

Engineering for and with Ansible

+

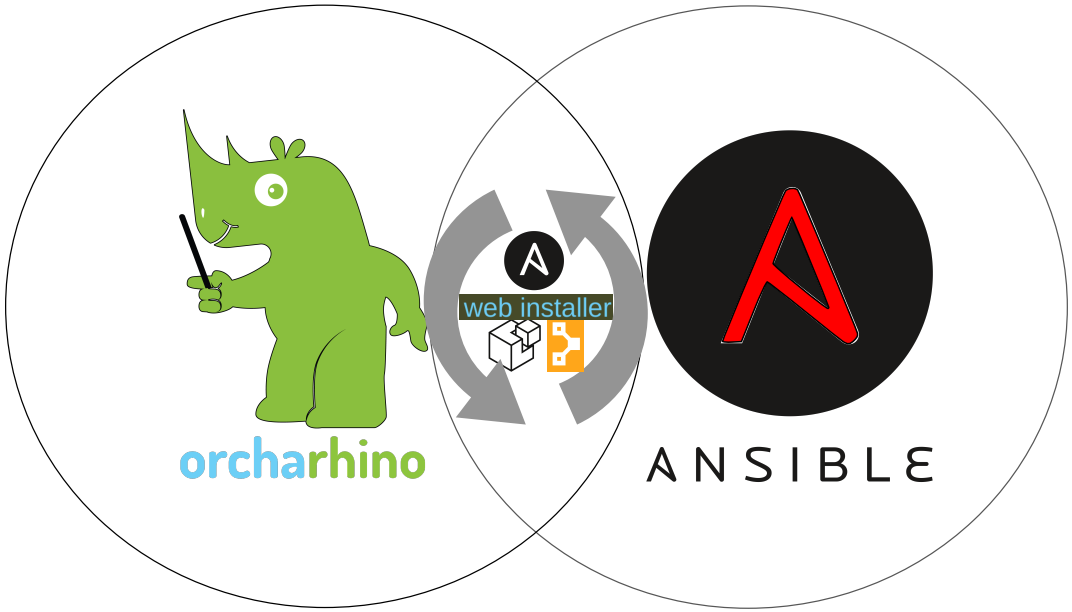
FOREMAN

- Active Member of the OpenSource Community
- Ansible Modules for Foreman (amongst main contributors)
- More modules under development
- Ansible as daily QA for orcharhino

orcharhino and Ansible

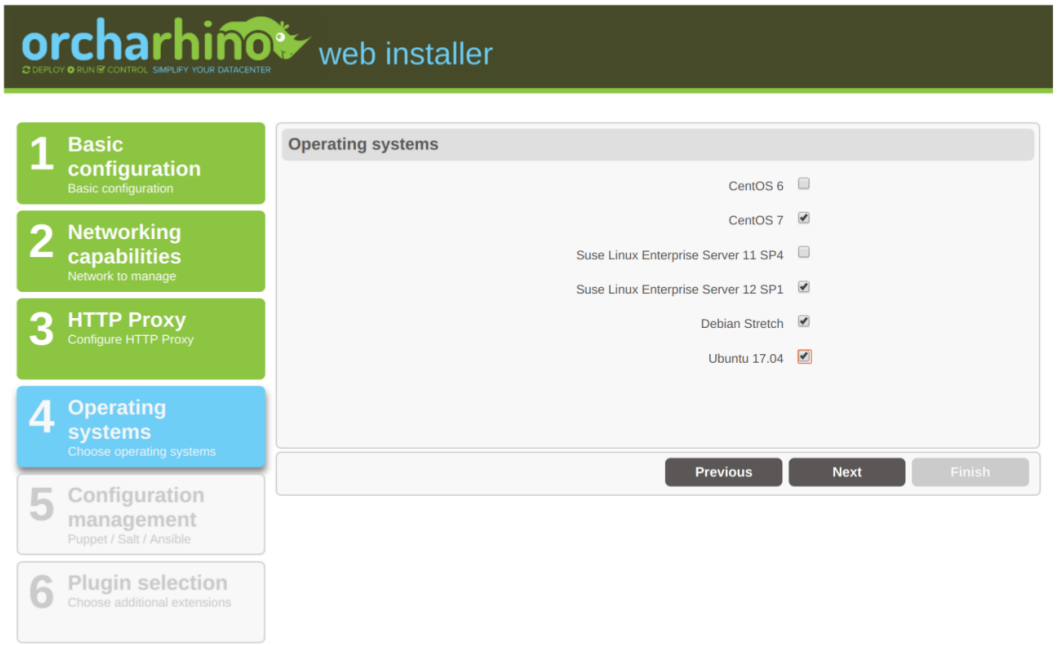
Configuration Management for ~~lazy~~ smart DevOps

- convenient and easy setup
- setup 100 % reproducible
- any combination is possible
- easily extendable



orcharhino and Ansible

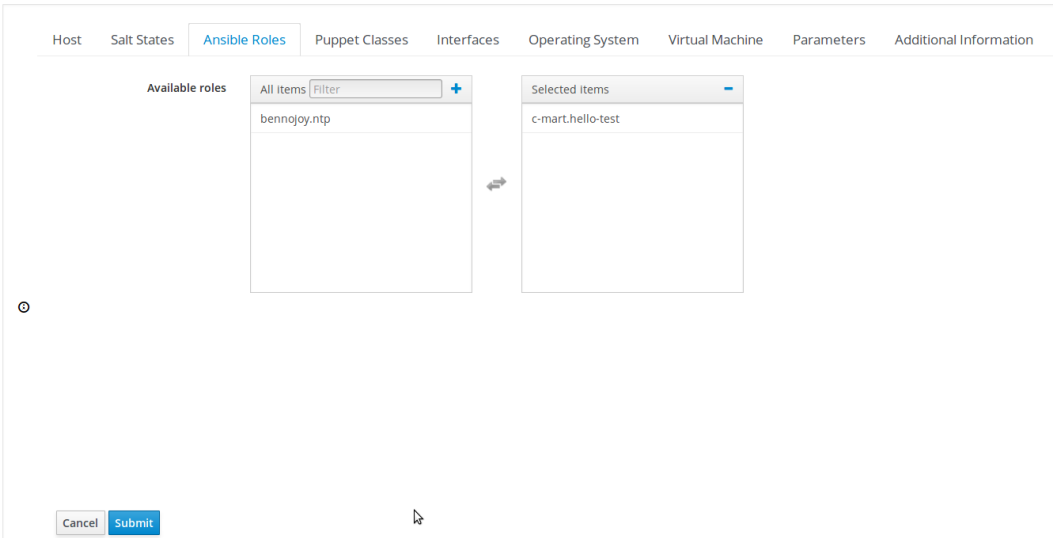
Webinstaller



- Installer for orcharhino
- Configure according to your needs
- Installer writes config
- Runs playbook
- Idempotency ↔Customize and rerun

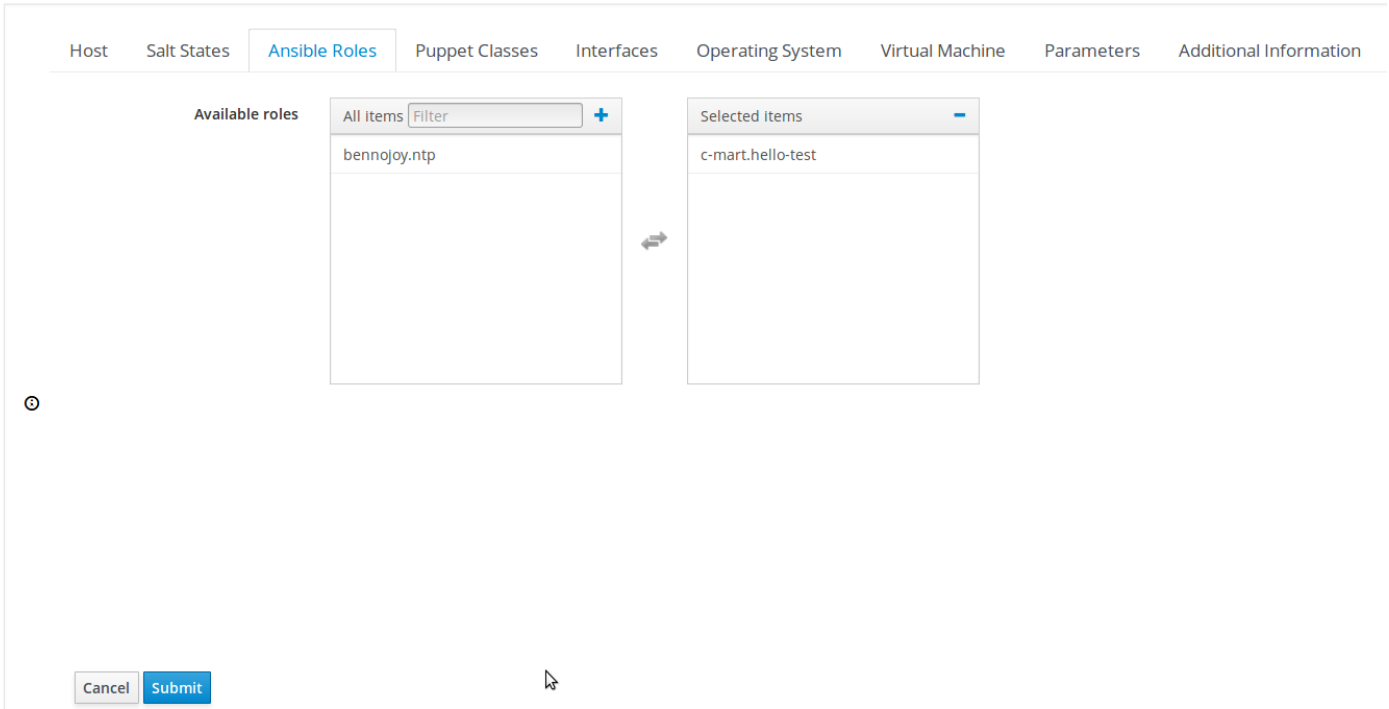
orcharhino and Ansible

Use Ansible within orcharhino

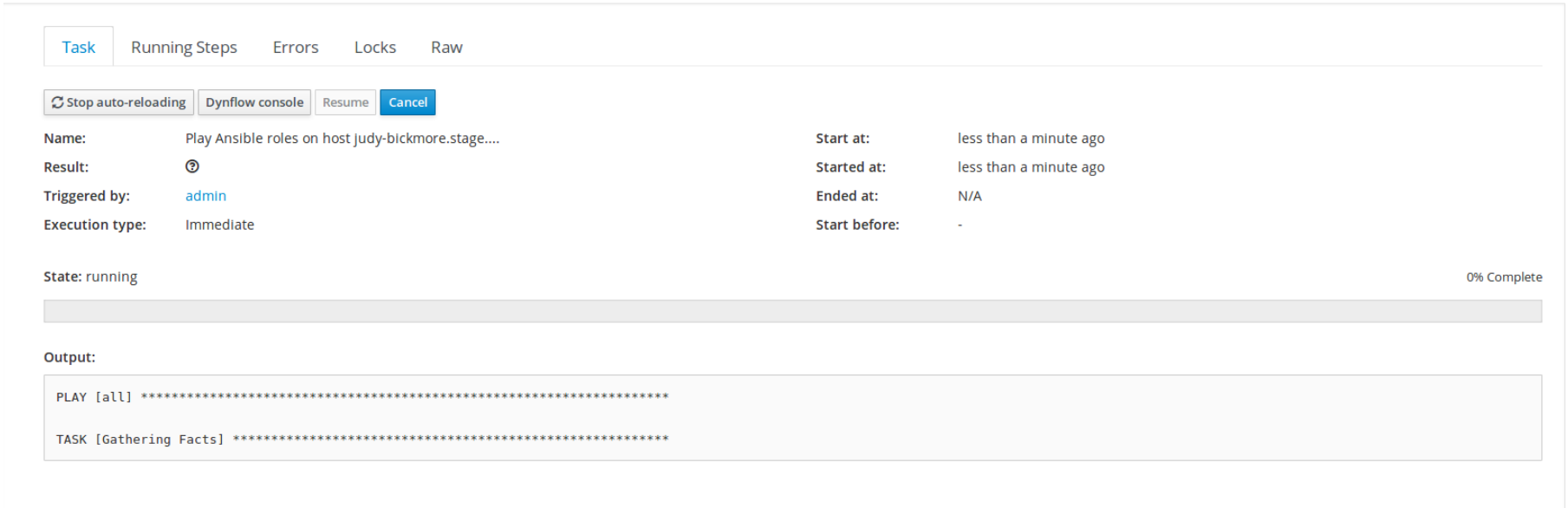


- Run playbooks from orcharhino
- in combination with Puppet or standalone
- under active developement

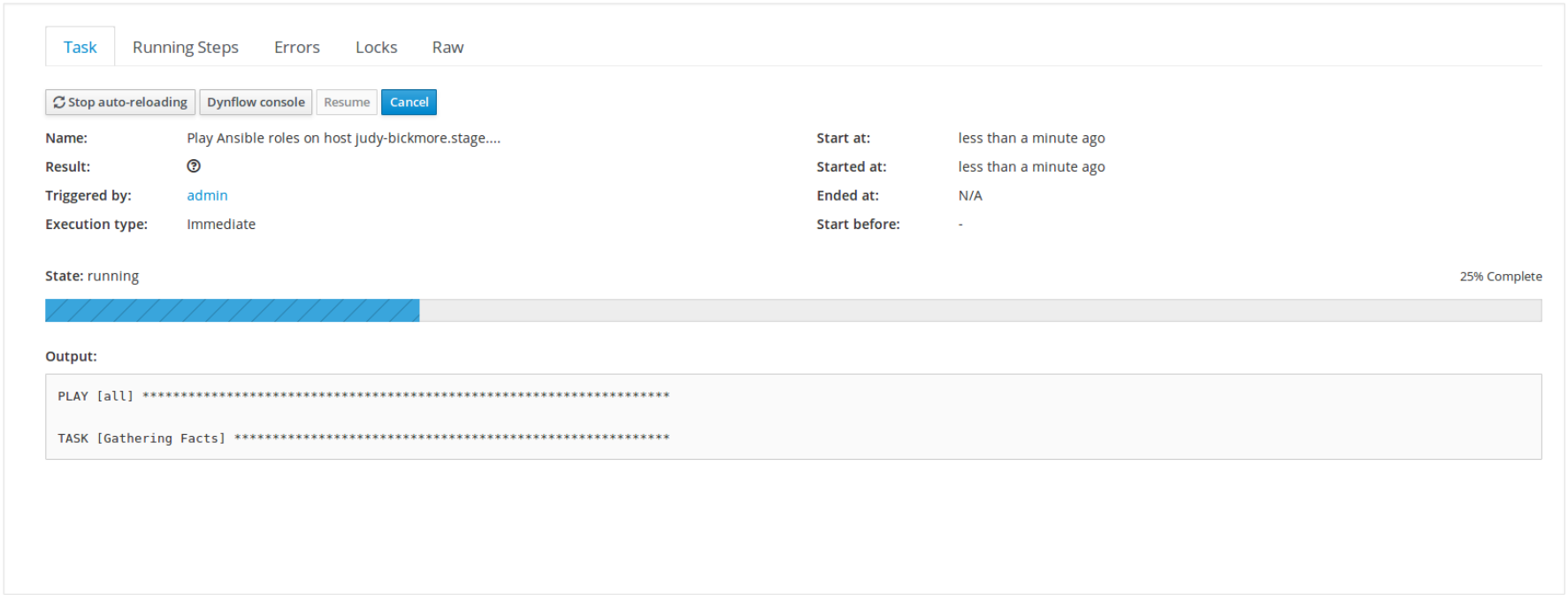
orcharhino and Ansible



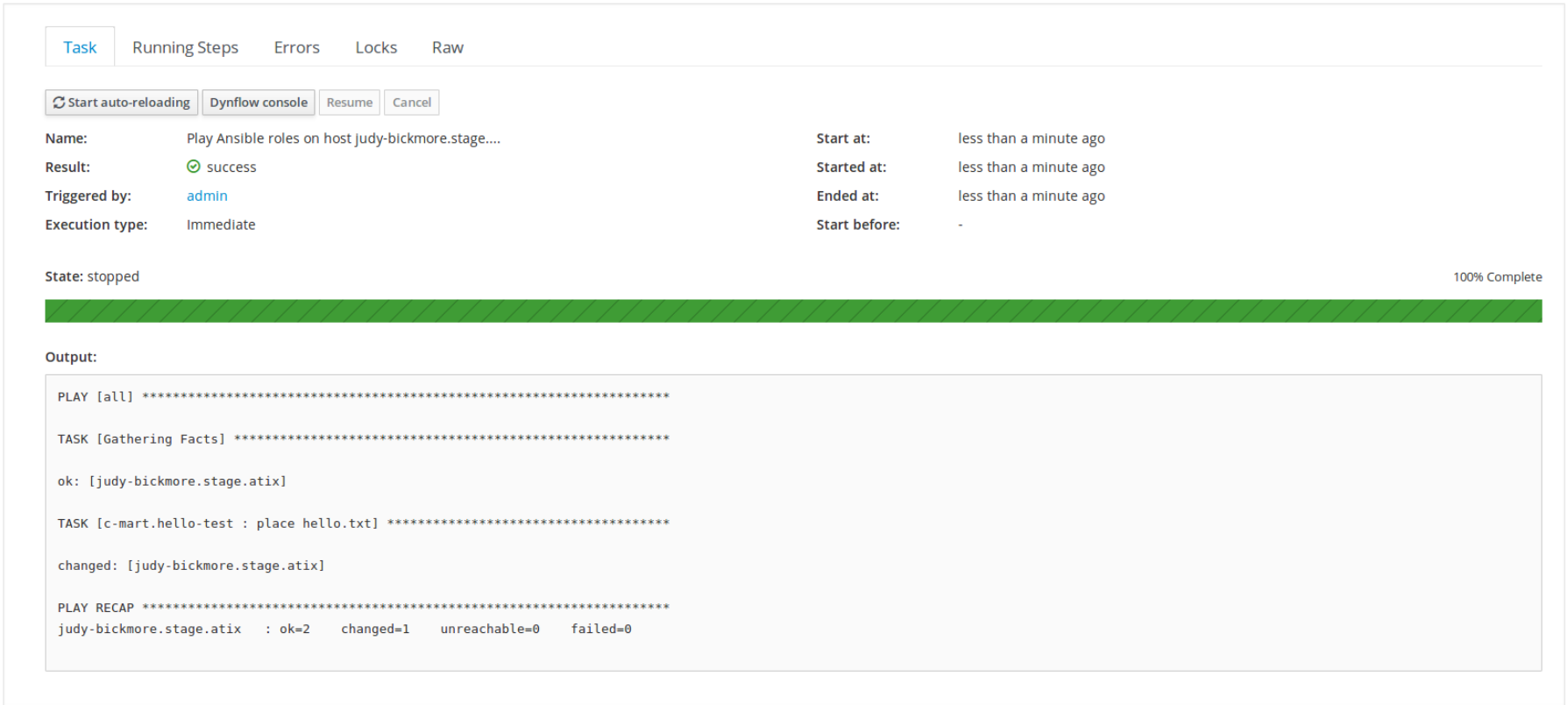
orcharhino and Ansible



orcharhino and Ansible

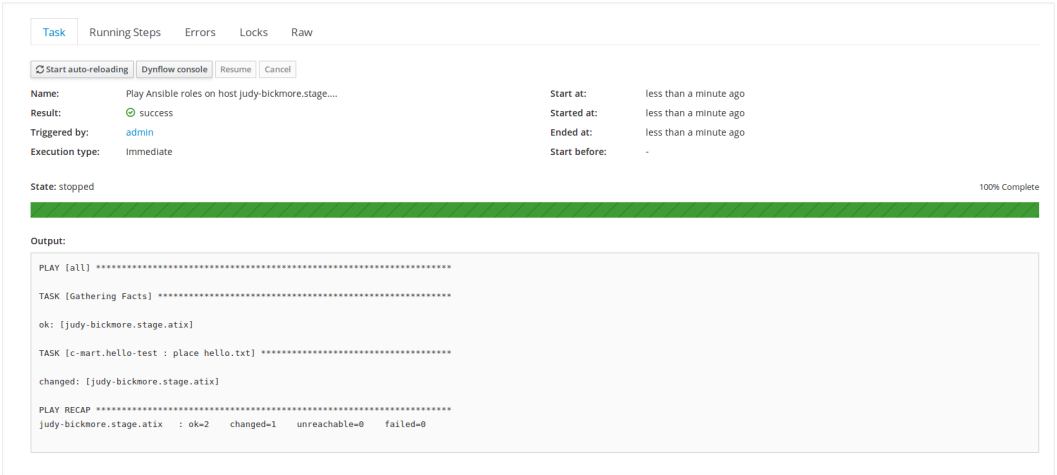


orcharhino and Ansible



orcharhino and Ansible

Use Ansible within orcharhino



- Run playbooks from orcharhino
- in combination with Puppet or standalone
- under active developement by community

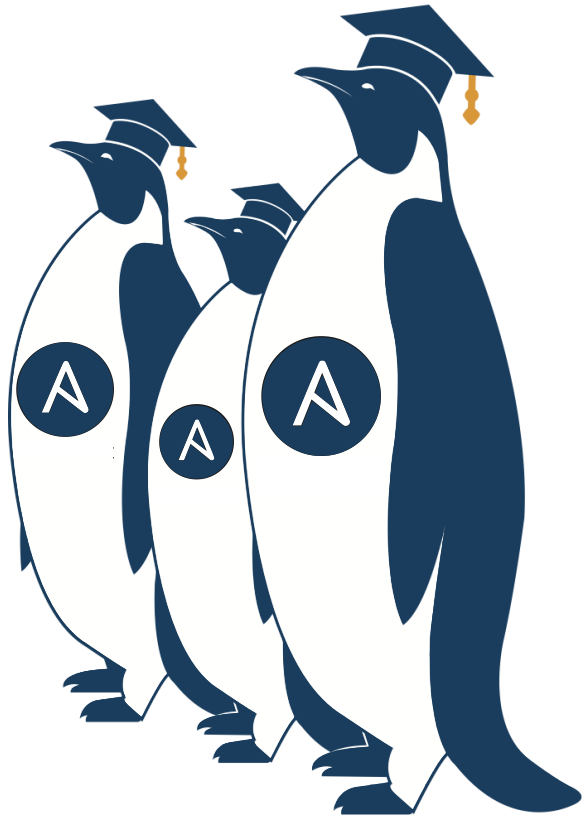
Ansible Consulting

Example projects

- (one time) Deployment of infrastructures
- interface to virtualization
- CI - CD integration
- VCS integration
- Springboot framework
- Compliance Management
- ...

Ansible Training

- From end of 2017, Begin of 2018
- 3 days
- Hands-on based
- topics (can) include
  - Ansible basics
  - From Paper to Playbook
  - Jinja Templating
  - Ansible + VCS
  - (Tower)



Summary

Ansible - Simple and versatile IT Automation

- Engineering
- Consulting
- Training
- Support