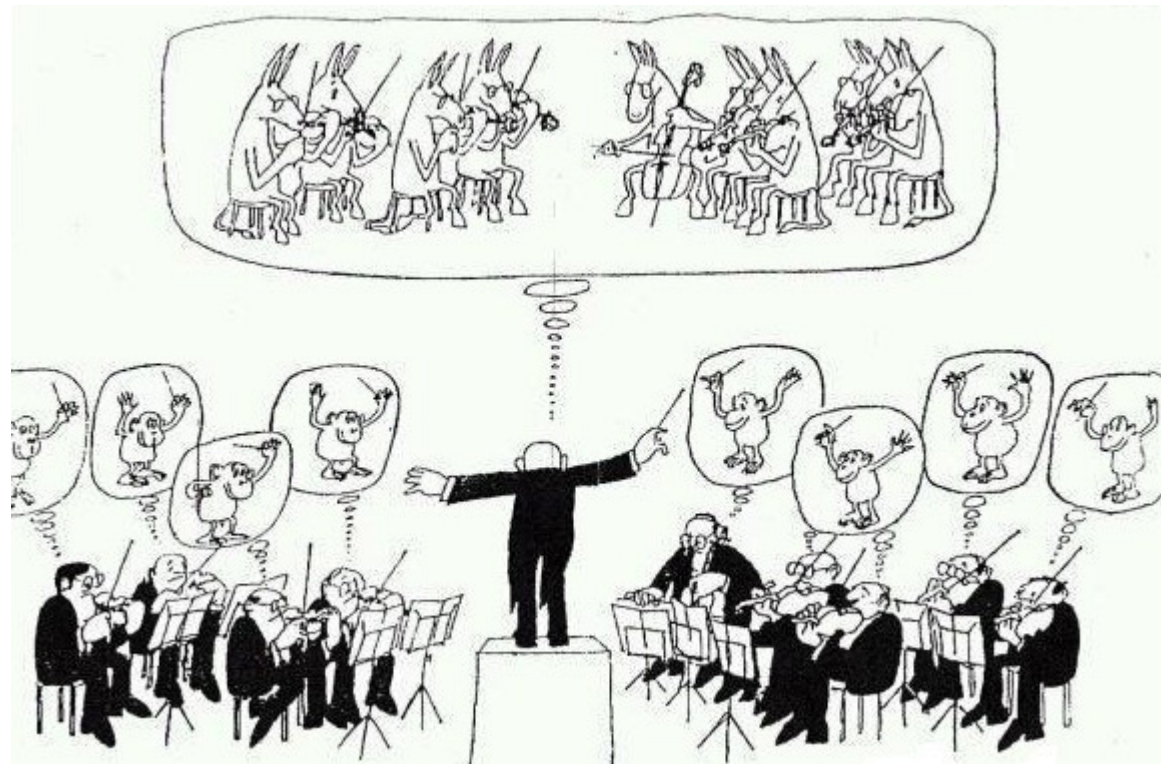




# SPS Konfigurační nástroje





- Hromadné konfigurace
- Informace o změnách



- ClusterSSH
- Puppet
- Chef
- Salt
- Cfengine
- Cdist
- Ansible
  - Ansible Tower
- Foreman



- Perl skript, xterm
- Příkazy ve speciálním okně se provádí na všech serverech
- Individuální příkazy pro jednotlivý server
- cssh
- `ssh-copy-id -i ~/.ssh/id_dsa.pub user@hostname`
- `.clusterssh/clusters`
  - `nodes = user@node1 node2 node3`
- `.csshrc`
- Parallel ssh (pssh)



- Vznik
  - Michael DeHaan (2011)
  - 2015 RedHat
- Vlastnosti
  - Ssh, bez agentů (Python)
  - Moduly
    - Apt, authorized\_keys, yum, ...
  - YAML
  - Jinja2
  - Bez práv
  - Nadstavby (Tower, AWX)



- Inventory
  - Cíle
  - Statické, dynamické
- Playbooks
  - Co se provádí (task, vars, inventory)
- Roles
  - Související úlohy (generické)
  - Ansible Galaxy
- Vars
  - Nastavení playbooks a roles
- Task
  - operace
- Templates
  - J2 šablony
  - Např. konfigurační soubory
- Handlers
  - Notifikace, (task pro služby?)
- Files



- hosts
  - 192.168.139.100
  - 192.168.139.[110:120]
  - server\_[a:q]
  - ansible\_user=oracle (port, sudo ...)
  - [servers:vars]
  - [servers:children]
  -
- Dynamic inventory
  - {„servers“:{„hosts“:[„192.168.139.100“,“192.168.139.101“]}}
  - [https://docs.ansible.com/ansible/latest/user\\_guide/intro\\_dynamic\\_inventory.html](https://docs.ansible.com/ansible/latest/user_guide/intro_dynamic_inventory.html)



- Ansible all -m ping
- Ansible all -m setup
- Ansible all [-m shell] -a „uptime“ (/bin/sh)
- Ansible all -m command -a „uptime“





- `ansible -i inventory/srv.py -m shell -a 'uname -a'`
- `ansible-playbook -i inventory/srv.py servers - -extra-vars „env=$ENV“ playbooks/servers.yml`
- `Ansible servers -m copy -a „src=/etc/x dest=/etc/y“`
  - Local to remote



- YAML
- Tasks
- Vars
  - Přetěžování (default, playbook, run)
- Roles
- Include
- Výsledky tasks



- Apt, yum ...
- cmd
  - ansible all -m apt -a "name=vim state=present"
  - ansible all -m apt -a "name=vim state=absent"
- playbook
  - name: install vim
    - apt: name=vim state=present
  
  - name: install handy packages
    - apt: name={{ item }} state=present
    - with\_items:
      - htop
      - tmux
      - nmap
      - iptraf
      - toilet



- Instalace
  - apt: name=ntp state=present
  - copy: src=ntp.conf dest=/etc/ntp.conf owner=root mode=0644
  - (template)
  - service: name=ntp state=restarted enabled=yes
- Změna řádky
  - lineinfile: dest=/etc/ssh/ssh\_config \  
• regexp='^[\\s]\*HashKnownHosts' \  
• line='HashKnownHosts no'
- Práce s uživateli
  - user: name=root groups=root state=present \  
• password="nejaky hash hesla"



```
# /etc/ansible/site.yml
---
- hosts: webservers
  user: ansible
  sudo: yes
  vars:
    http_port: 80
  tasks:
    - name: zajistuji instalaci httpd a git
      yum: pkg={{ item }} state=installed
      with_items:
        - httpd
        - git
    - name: zapisuji apache konfiguraci
      template: src=httpd.conf.j2 dest=/etc/httpd/conf/httpd.conf
      notify:
        - restart httpd
    - name: kontroluji, jestli apache bezi
      service: name=httpd state=started
    - name: nahravam web z repositare
      git: repo=http://github.com/davidkarban/simplewebpage.git dest=/var/www/html/
  handlers:
    - name: restart httpd
      service: name=httpd state=restarted
```

- Standardní httpd.conf
- Listen {{ http\_port }}



```
#site.yml
```

```
---
```

- hosts: webservers
- roles:
  - apache

```
#/etc/ansible/roles
```

```
apache/
```

```
files/
```

```
templates/
```

```
tasks/
```

```
handlers/
```

```
vars/
```



tasks/main.yml, handlers/main.yml, vars/main.yml

copy a script - files/

template - templates/

```
#main.yml
```

```
---
```

```
- hosts: webservers
```

```
  roles:
```

```
    - common
```

```
    - apache
```

```
    - {role: apache_vhost, vhost_domain=simplewebpage.com, \
      vhost_dir=/var/www/simplewebpage.com/www}
```





```
# /etc/ansible/roles/common/tasks/main.yml
---
- name: nahravam ssh klic
  authorized_key: user=root state=present key={{ item }}
  with_file:
    - public-keys/david.karban.pub

- name: ladim .vimrc
  lineinfile: dest=/root/.vimrc regexp=^syntax line="syntax on" create=yes

- name: instaluji utility na RHEL systemy
  yum: name={{ item }} state=present
  with_items: common_packages
  when: ansible_os_family == "RedHat"

- name: instaluji utility na Debian systemy
  apt: name={{ item }} state=present
  with_items: common_packages
  when: ansible_os_family == "Debian"

- name: instaluji dalsi utility na Debian systemy
  apt: name={{ item }} state=present
  with_items: common_debian_packages
  when: ansible_os_family == "Debian"
```



```
# /etc/ansible/roles/common/vars/main.yml
```

```
---
```

```
common_packages:
```

- links
- mc
- strace

```
common_debian_packages:
```

- htop



# Best practices

approved by  
dsn.felk.cvut.cz

- Ansible x cmd !!!
- Generování dokumentace
- Tagy – lze pustit jen tag
- Verze
-



- <https://github.com/duncs/clusterssh/wiki>
- <https://www.root.cz/serialy/konfiguracni-a-orchestracni-nastroj-ansible/>
- <https://docs.ansible.com/>
-