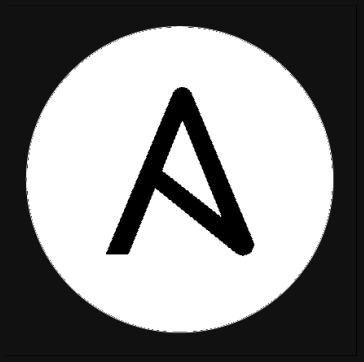
Speed Up Ansible



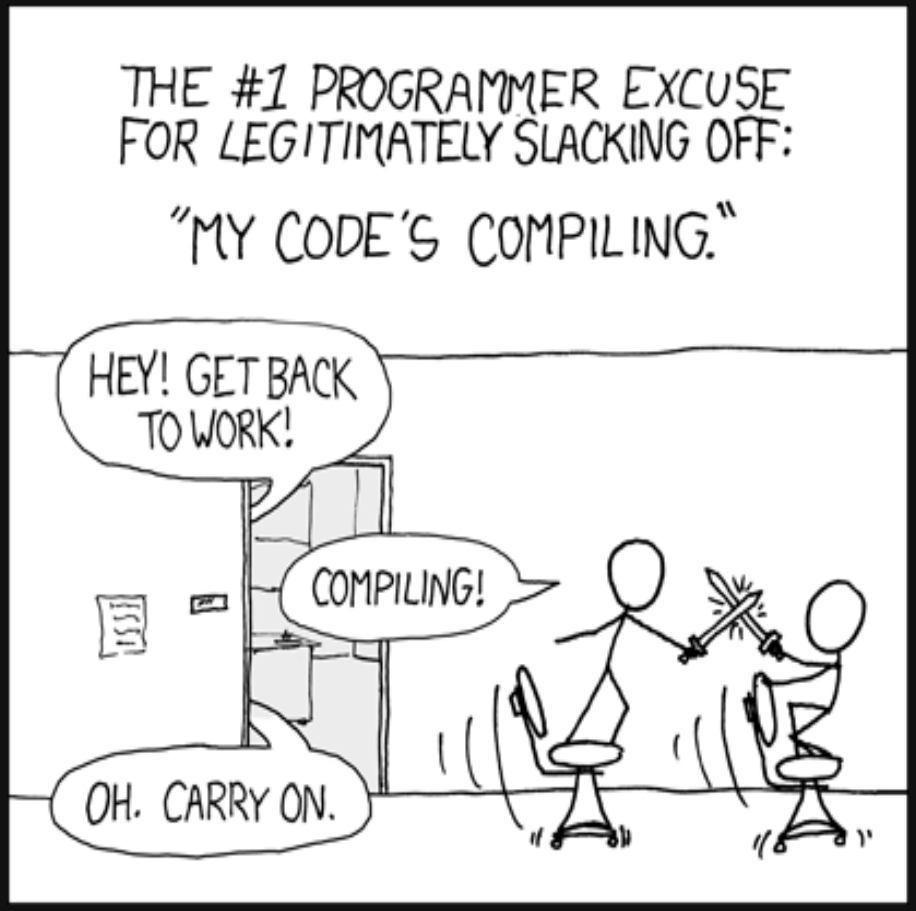
Ansible

- Application Deployment
- Configuration Management
- Continuous Delivery

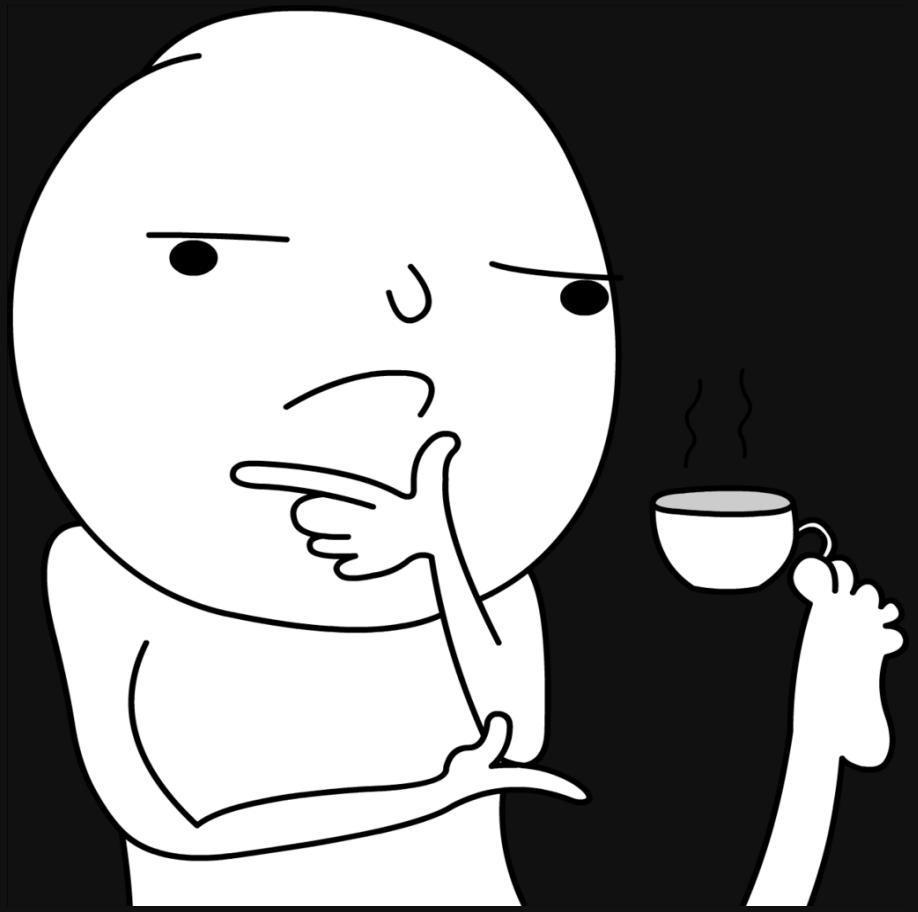
Pros:

- Easy learning curve
- Nothing to install on remote hosts
- Push-Based

Slow as hell


THE #1 PROGRAMMER EXCUSE FOR LEGITIMATELY SLACKING OFF:
"MY CODE'S COMPILING."
HEY! GET BACK TO WORK!
COMPILING!
OH. CARRY ON.

How to solve this problem?



SSH Multiplexing

Ansible use OpenSSH

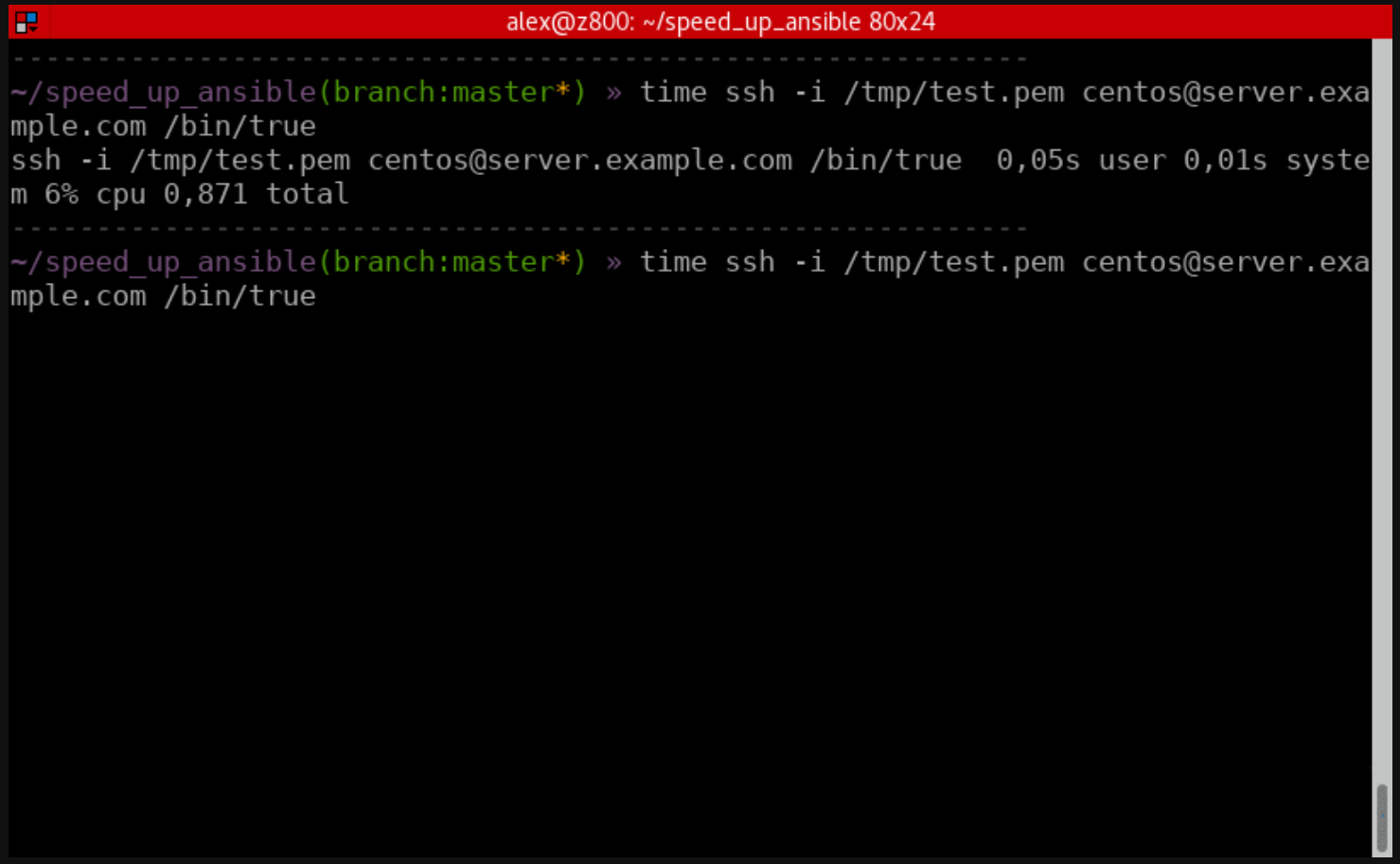
↓

Manage communications

↓

SSH Multiplexing by default

SSH Multiplexing



Default

ControlMaster	auto
ControlPath	$HOME/.ansible/cp/ansible-ssh-%%h-%%p-%%r
ControlPersist	60s

ansible.cfg

```
[ssh_connection]
ssh_args =  -o ControlMaster=auto -o ControlPersist=30m
control_path = %(directory)s/ansible-%%r@%%h:%%p
control_path_dir = ~/.ssh
```

Ansible tasks execution

1. Generates Python script
2. Copy to remote host
3. Executes the Python script

Pipelining

```
cat python.py | ssh example.org
```

Optimization that allows Ansible execute the Python script by piping it to the SSH session

Configure pipelining

ansible.cfg

```
[ssh_connection]
pipelining = True
```

playbook.yml

```
- hosts: all
  vars:
      ansible_ssh_pipelining: no
  tasks:
    - name: Enable ansible pipelining
      lineinfile:
        regexp: '^\w+\s+requiretty'
        dest: /etc/sudoers
        state: absent
      tags:
        - enable_pipelining
```

Facts

```
- hosts: all
  remote_user: root
  tasks:
  - name: ensure apache is at the latest version
    yum: name=httpd state=latest
  - name: write the apache config file
    template: src=/srv/httpd.j2 dest=/etc/httpd.conf

- hosts: all
  remote_user: root
  tasks:
  - name: ensure postgresql is at the latest version
    yum: name=postgresql state=latest
  - name: ensure that postgresql is started
    service: name=postgresql state=started
```

Between play and play, facts are always gathered

Facts not needed

- Declare in playbooks:

```
- hosts: all
  gather_facts: False
  ...
```

- Make it by default:

```
[defaults]
gathering = explicit
```

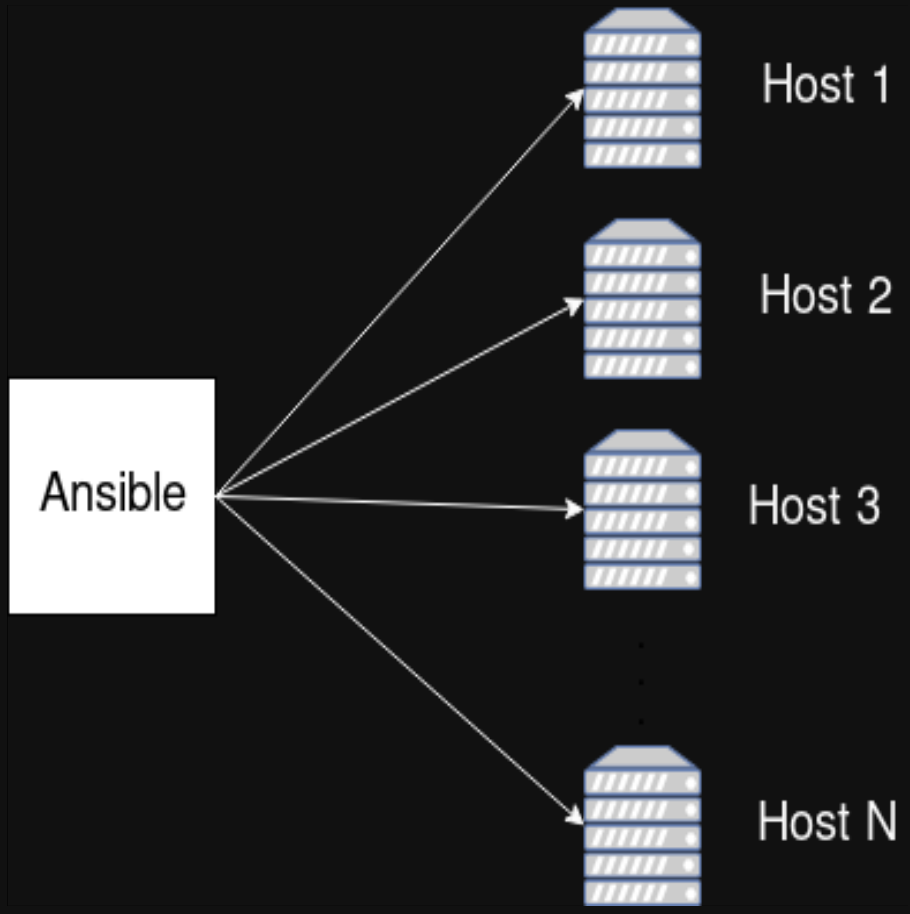
Facts Caching

- Json
- Redis
- memcached

ansible.cfg

```
[defaults]
gathering = smart
fact_caching = jsonfile
fact_caching_connection = ./.facts
fact_caching_timeout = 86400
```

Parallelism



Number of hosts configured in parallel

Parallelism

- ansible.cfg

```
[defaults]
forks = 25
```

- parameter

```
--forks 25
```

- enviroment var

```
ANSIBLE_FORKS=25
```

Parallelism

Limit with **SERIAL** at play level

```
- hosts: all
  serial: 3
```

```
- hosts: all
  serial:
  - 1
  - 5
  - 10
```

```
- hosts: all
  serial: "30%"
```

```
- hosts: all
  serial:
  - 1
  - 5
  - "20%"
```

Parallelism

Strategies

- linear
- serial
- free

Install packages or update

Mirrors

Tools like yum's **reposync** or **apt-cacher-ng**

Proxy cache

```
- name: Update all packages (cache)
  run_once: true
  delegate_to: "{{ play_hosts[0] }}"
  yum: name=* state=latest

- name: Update all packages
  yum: name=* state=latest
```

Deploying inmutable instances

Create an updated instance with **ec2_ami** Ansible module, let you deploy faster and secured

with_items

```
- name: Installing basic packages
  yum:
    name: "{{ item }}"
    state: latest
  with_items:
    - curl
    - gcc
    - bc
    - net-tools
    - unzip
    - rsync
    - bash-completion
```

APT cache time

```
- name: Installing useful packages
  apt:
    name: "{{ item }}"
    update_cache: yes
    cache_valid_time: 3600
  with_items:
    - vim
    - htop
```

Async tasks

```
- name: "Running tests {{ running_test_level }}"
  shell: "{{ available_tests[running_test_level] }} {{ item }}"
  with_items: "{{ range(tests_parallel_executions|int) | list }}"
  async: 400
  poll: 0
  register: run_tests

- name: 'Take return of tests'
  async_status: jid={{ run_tests.results[item].ansible_job_id }}
  register: job_result
  until: job_result.finished
  retries: 1000
  delay: 20
  with_items: "{{ range(tests_parallel_executions|int) | list }}"
```

Thanks!

Any questions???