

Deploying PHP applications using Ansible, Ansible Vault and Ansistrano

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Things we'll be looking at



ANSIBLE



VAGRANT



What is Ansible?

Ansible is **open source software** that automates **software provisioning, configuration management, and application deployment.**



What is Ansible?

- CLI tool
- Written in Python
- Configured with YAML
- Executes remote commands
- Installs software packages
- Performs deployment steps
- Batteries included



A N S I B L E

What is Ansible?

- Hosts
- Commands
- Playbooks
- Tasks
- Roles



Why Ansible?

- Familiar syntax
- Easily readable
- No server dependencies
- Easy to add to an existing project
- Includes relevant modules (e.g. Composer)



Hosts

```
# hosts.ini
```

```
[dransible]
```

```
192.168.33.10
```

```
# hosts.yml
```

```
dransible:
```

```
  hosts:
```

```
    192.168.33.10:
```

Commands

```
ansible all -m ping
```



```
dransible | SUCCESS => {  
  "ansible_facts": {  
    "discovered_interpreter_python": "/usr/bin/python"  
  },  
  "changed": false,  
  "ping": "pong"  
}
```

```
ansible all  
  -m command  
  -a 'git pull  
  --chdir=/app'
```

```
ansible all
-m git -a 'repo=https://
github.com/opdavies/
dransible dest=/app'
```

Tasks and Playbooks

```
# playbook.yml
```

```
---
```

```
- hosts: all
```

```
vars:
```

```
  git_repo: https://github.com/opdavies/dransible
```

```
tasks:
```

```
- name: Update the code
```

```
  git:
```

```
    repo: '{{ git_repo }}'
```

```
    dest: /app
```

```
    version: master
```

```
    update: true
```

```
ansible-playbook  
ansible/playbook.yml  
-i hosts.yml
```

Roles

```
# requirements.yml
```

```
---
```

- src: geerlingguy.apache
- src: geerlingguy.composer
- src: geerlingguy.mysql
- src: geerlingguy.php
- src: geerlingguy.php-mysql


```
ansible-galaxy -r  
ansible/requirements.yml  
install
```

```
# playbook.yml
```

```
---
```

```
- hosts: all
```

```
roles:
```

- geerlingguy.apache
- geerlingguy.mysql
- geerlingguy.php
- geerlingguy.php-mysql
- geerlingguy.composer

Basic deployment

```
# ansible/provision.yml
```

```
tasks:
```

```
- name: Create a database
```

```
  mysql_db:
```

```
    name: mydatabase
```

```
    state: present
```

```
- name: Add the database user
```

```
  mysql_user:
```

```
    name: drupal
```

```
    password: secret
```

```
    priv: 'mydatabase.*:ALL'
```

```
    state: present
```

```
# ansible/deploy.yml
```

```
tasks:
```

- name: Creating project directory
file:
 - path: /app
 - state: directory
- name: Uploading application
synchronize:
 - src: "{{ playbook_dir }}/../"
 - dest: /app
- name: Installing Composer dependencies
composer:
 - command: install
 - working_dir: /app

Disadvantages

- Single point of failure
- No ability to roll back
- Sensitive data stored in plain text

Keeping secrets: Ansible Vault

```
ansible-vault create  
ansible/vault.yml
```



```
# ansible/vars/vault.yml
```

```
---
```

```
vault_database_name: mydatabase
```

```
vault_database_user: drupal
```

```
vault_database_password: secret
```

\$ANSIBLE_VAULT;1.1;AES256

36656233323539616336393838396137343939623233393338666530313
73037323366326363306531336333353163643063663335396139363762
39383133330a35636566623262353733373066363837393264616134613
16366376266646437373366373738303931616333626332353839353332
32663432346662613438330a38643539343232376138613733373636343
63864666430313866623539333039363138646331326565386263386666
35306264396230633939346532356665306564626431353936643135376
23834346635366637613235656165643361316663396530383263333064
33326264316235396431666262346637366563376330363238373331373
43533386165366531626462643662666266316639306262666539373236
343662313265376261316636623963353933613366353737363435

```
# ansible/vars/vars.yml
```

```
---
```

```
database_name: "{{ vault_database_name }}"
```

```
database_user: "{{ vault_database_user }}"
```

```
database_password: "{{ vault_database_password }}"
```

```
# ansible/provision.yml
```

```
tasks:
```

```
- name: Create a database
```

```
  mysql_db:
```

```
    name: '{{ database_name }}'
```

```
    state: present
```

```
ansible-vault edit  
ansible/vault.yml
```

```
ansible-playbook
```

```
-i hosts.yml
```

```
ansible/deploy.yml
```

```
--ask-vault-pass
```

Better deployments



ansistrano.deploy and **ansistrano.rollback** are Ansible Galaxy roles to easily manage the deployment process for scripting applications such as PHP, Python and Ruby. It's an Ansible port for Capistrano.

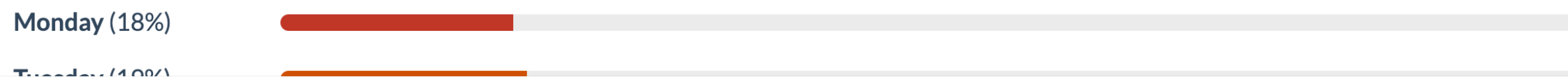
Wow! 943303 deployments so far!

Today, teams using Ansistrano have already deployed **812** times. When considering the whole month, the amount of deployments is **22145** and this year we've reached the **22145** deployments.

Ouch! 2601 rollbacks so far!

On the other hand, today teams rolled back **0** times. That's **18** times considering the whole month and **18** if considering the whole year. Rollback vs. Deployment ratio is **0.28%**, nice! Keep the good work.

Deployments by weekday



Features

- Multiple release directories
- Shared paths and files
- Customisable
- Multiple deployment strategies
- Multi-stage environments
- Prune old releases
- Rollbacks

```
# ansible/requirements.yml
```

```
---
```

```
...
```

- ansistrano.deploy
- ansistrano.rollback

```
# ansible/deploy.yml
```

```
---
```

```
- hosts: all
```

```
roles:
```

```
  - ansistrano.deploy
```

```
# ansible/deploy.yml
```

```
---
```

```
...
```

```
vars:
```

```
  project_deploy_dir: /var/www
```

```
  ansistrano_deploy_to: '{{ project_deploy_dir }}'
```

```
  ansistrano_deploy_via: git
```

```
  ansistrano_git_branch: master
```

```
  ansistrano_git_repo: 'git@github.com:opdavies/dransible'
```

```
ansible-playbook
```

```
-i hosts.yml
```

```
ansible/deploy.yml
```

```
vagrant@dransible:/app$ ls -l
```

```
total 8
```

```
lrwxrwxrwx 1    26 Jul 19 00:15 current -> ./releases/20190719001241Z
```

```
drwxr-xr-x 5 4096 Jul 22 20:30 releases
```

```
drwxr-xr-x 4 4096 Jul 19 00:00 shared
```

```
vagrant@dransible:/app/releases$ ls -l
```

```
total 20
```

```
drwxr-xr-x  5 4096 Jul 22 20:30 .  
drwxr-xr-x  4 4096 Jul 19 00:15 ..  
drwxr-xr-x 10 4096 Jul 19 00:02 20190719000013Z  
drwxr-xr-x 10 4096 Jul 19 00:14 20190719001241Z  
drwxr-xr-x  9 4096 Jul 22 20:30 20190722203038Z
```

```
# ansible/rollback.yml
```

```
---
```

```
- hosts: all
```

```
roles:
```

```
  - ansistrano.rollback
```

```
vars:
```

```
  ansistrano_deploy_to: '{{ project_deploy_dir }}'
```

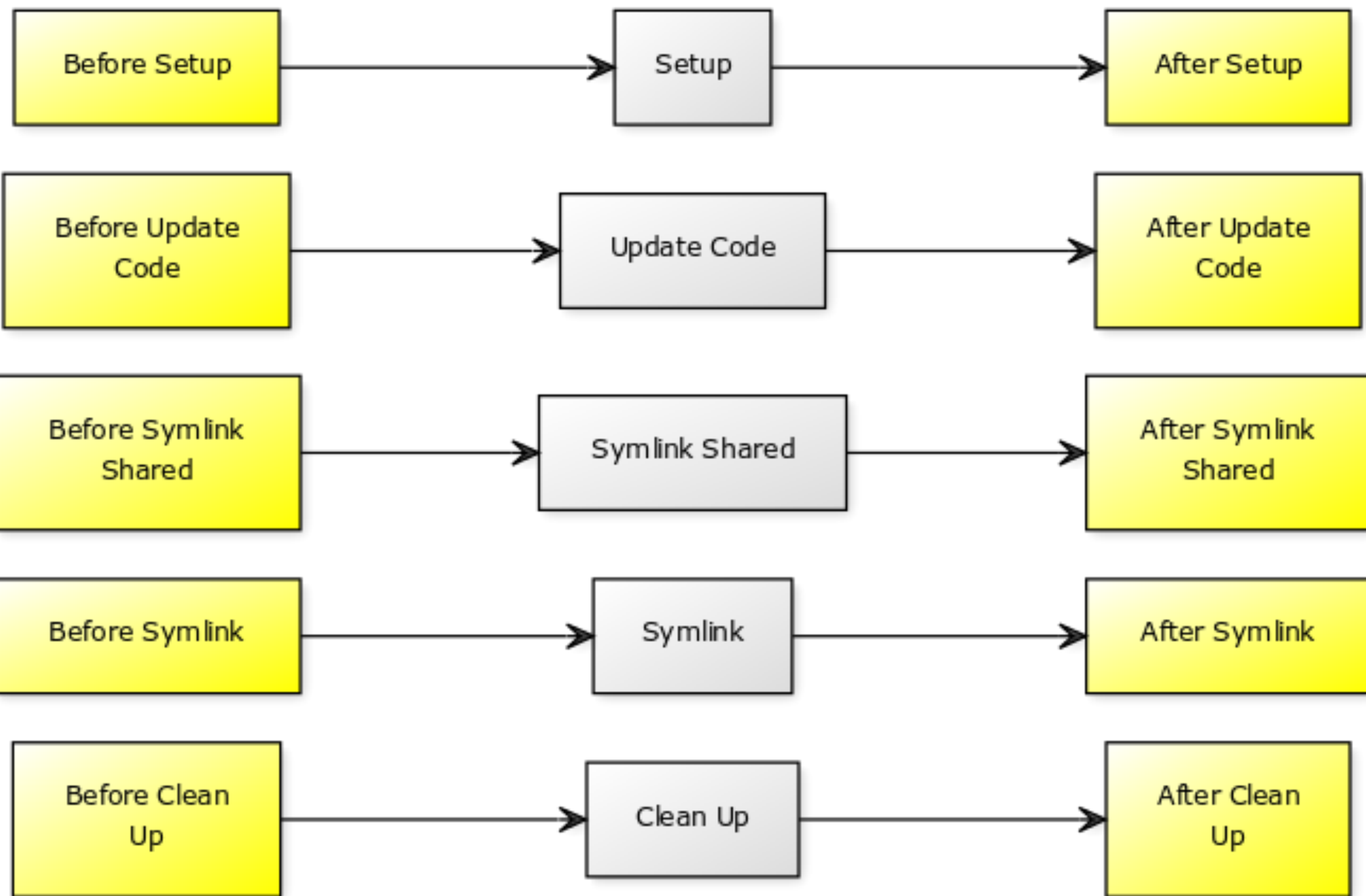


```
ansible-playbook
```

```
-i hosts.yml
```

```
ansible/rollback.yml
```

Customising Ansistrano: Build Hooks



```
# ansible/deploy.yml
```

```
vars:
```

```
...
```

```
ansistrano_after_symlink_shared_tasks_file: "{{ playbook_dir }}/deploy/after-symlink-shared.yml"
```

```
ansistrano_after_symlink_tasks_file: "{{ playbook_dir }}/deploy/after-symlink.yml"
```

```
ansistrano_after_update_code_tasks_file: "{{ playbook_dir }}/deploy/after-update-code.yml"
```

```
release_web_path: "{{ ansistrano_release_path.stdout }}/web"
```

```
release_drush_path: "{{ ansistrano_release_path.stdout }}/vendor/bin/drush"
```

```
# ansible/deploy/after-update-code.yml
```

```
---
```

```
- name: Install Composer dependencies
```

```
  composer:
```

```
    command: install
```

```
    working_dir: '{{ ansistrano_release_path.stdout }}'
```

```
# ansible/deploy/after-symlink-shared.yml
```

```
---
```

```
- name: Run database updates
```

```
  command: '{{ release_drush_path }} --root {{ release_web_path }} updatedb'
```

```
# ansible/deploy/after-symlink.yml
```

```
---
```

```
- name: Clear Drupal cache
```

```
  command: '{{ release_drush_path }} --root {{ release_web_path }} cache-rebuild'
```

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Demo

Questions?

Thanks!

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Managing data across deployments

```
# ansible/deploy.yml
```

```
vars:
```

```
# ...
```

```
ansistrano_shared_paths:
```

```
- "{{ drupal_root }}/sites/default/files"
```

```
vagrant@dransible: /app/shared/web/sites/default/files$ ls -la
```

```
total 28
```

```
drwxrwxrwx 6 4096 Jul 19 00:18 .  
drwxr-xr-x 3 4096 Jul 19 00:00 ..  
drwxrwxr-x 2 4096 Jul 22 21:24 css  
-rwxrwxrwx 1 487 Jul 19 00:02 .htaccess  
drwxrwxr-x 2 4096 Jul 19 00:19 js  
drwxrwxrwx 3 4096 Jul 19 00:18 php  
drwxrwxrwx 2 4096 Jul 19 00:03 styles
```

```
vagrant@dransible:/app/current/web/sites/default$ ls -la
```

```
total 48
```

```
dr-xr-xr-x 2 4096 Jul 19 00:14 .  
drwxr-xr-x 3 4096 Jan 22 17:30 ..  
-rw-r--r-- 1 6762 Jul 19 00:14 default.services.yml  
-rw-r--r-- 1 31342 Jul 19 00:14 default.settings.php  
lrwxrwxrwx 1 45 Jul 19 00:14 files -> ../../../../../../../shared/web/sites/default/files  
lrwxrwxrwx 1 35 Jul 19 00:12 settings.php -> /tmp/app/sites/default/settings.php
```

Generating Drupal settings files per deployment


```
# ansible/vars/vault.yml
```

```
---
```

```
vault_database_name: drupal
```

```
vault_database_user: drupal
```

```
vault_database_password: drupal
```

```
vault_hash_salt: dfgiy$fd2!34gsf2*34g74
```

```
# ansible/vars/vars.yml
```

```
---
```

```
database_name: "{{ vault_database_name }}"
```

```
database_password: "{{ vault_database_password }}"
```

```
database_user: "{{ vault_database_user }}"
```

```
hash_salt: "{{ vault_hash_salt }}"
```

```
# ansible/vars/vars.yml
```

```
---
```

```
drupal_settings:
```

```
- drupal_root: /tmp/app
```

```
  sites:
```

```
    - name: default
```

```
      settings:
```

```
        databases:
```

```
          default:
```

```
            default:
```

```
              driver: mysql
```

```
              host: localhost
```

```
              database: '{{ database_name }}'
```

```
              username: '{{ database_user }}'
```

```
              password: '{{ database_password }}'
```

```
      hash_salt: '{{ hash_salt }}'
```

```
      config_directories:
```

```
        sync: ../config/sync
```

```
// templates/settings.php.j2
// {{ ansible_managed }}

{% for key, values in item.1.settings.databases.items() %}
{% for target, values in values.items() %}
$databases['{{ key }}']['{{ target }}'] = array(
    'driver' => '{{ values.driver|default('mysql') }}',
    'host' => '{{ values.host|default('localhost') }}',
    'database' => '{{ values.database }}',
    'username' => '{{ values.username }}',
    'password' => '{{ values.password }}',
);

{% endfor %}
{% endfor %}

{% if item.1.settings.base_url is defined %}
$base_url = '{{ item.1.settings.base_url }}';
{% endif %}
```

```
- name: Remove settings.php
  file:
    path: '{{ ansistrano_release_path.stdout }}/web/sites/{{ item.1.name|default("default") }}/settings.php'
    state: absent
  with_subelements:
    - '{{ drupal_settings }}'
    - sites

- name: Link settings.php
  file:
    src: '/tmp/app/sites/{{ item.1.name|default("default") }}/settings.php'
    dest: '{{ ansistrano_release_path.stdout }}/web/sites/{{ item.1.name|default("default") }}/settings.php'
    state: link
  with_subelements:
    - '{{ drupal_settings }}'
    - sites
```