

**INSTITUTO INFNET
ESCOLA SUPERIOR DE TECNOLOGIA DA
INFORMAÇÃO
GRADUAÇÃO EM GESTÃO DA TECNOLOGIA DA
INFORMAÇÃO**



Projeto em Arquitetura de Infraestrutura de Aplicações

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TESTE DE PERFORMANCE 02

Tarefa

Escreva um playbook Ansible que instale a aplicação escolhida por você para realização do TP1. Seu playbook deve automatizar o máximo possível de passos de instalação e configuração, e deve incluir comentários (e diretivas "name") que permitam compreender facilmente o que está sendo realizado.

Caso algum passo do processo não possa ser documentado, sem problemas, mas é preciso que você inclua em seu trabalho uma justificativa e uma pequena descrição desses passos, exatamente como faria em um projeto do mundo real. Por fim, você deve incluir capturas de tela que mostrem uma aplicação bem-sucedida do seu playbook.

Nesse TP será realizada a instalação automatizada do WordPress via Ansible utilizando playbook. Alguns comandos orientados no roteiro de aprendizagem foram alterados pois não funcionavam corretamente outros comandos estão obsoletos.

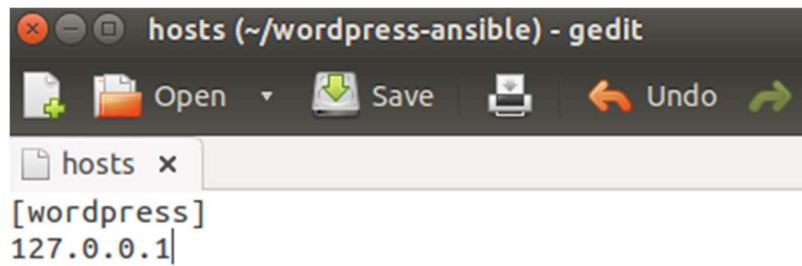
Criação do projeto para instalação/distribuição do WordPress via Ansible

Criação de diretórios e arquivos playbook.yml e host além configuração ambiente para distribuição de tarefas através de roles utilizando o comando Ansible-galaxy que criará a estrutura necessária para isso. Essa estrutura é composta várias pastas e arquivos porem iremos utilizar basicamente o "task/main.yml" dentro de cada modulo.

```
alexandre@ubuntu:~$ mkdir wordpress-ansible
alexandre@ubuntu:~$ cd wordpress-ansible
alexandre@ubuntu:~/wordpress-ansible$ touch playbook.yml
alexandre@ubuntu:~/wordpress-ansible$ touch hosts
alexandre@ubuntu:~/wordpress-ansible$ mkdir roles
alexandre@ubuntu:~/wordpress-ansible$ cd roles
alexandre@ubuntu:~/wordpress-ansible/roles$ ansible-galaxy init server
- Role server was created successfully
alexandre@ubuntu:~/wordpress-ansible/roles$ ansible-galaxy init php
- Role php was created successfully
alexandre@ubuntu:~/wordpress-ansible/roles$ ansible-galaxy init mysql
- Role mysql was created successfully
alexandre@ubuntu:~/wordpress-ansible/roles$ ansible-galaxy init wordpress
- Role wordpress was created successfully
alexandre@ubuntu:~/wordpress-ansible/roles$
```

Configuração do Inventario

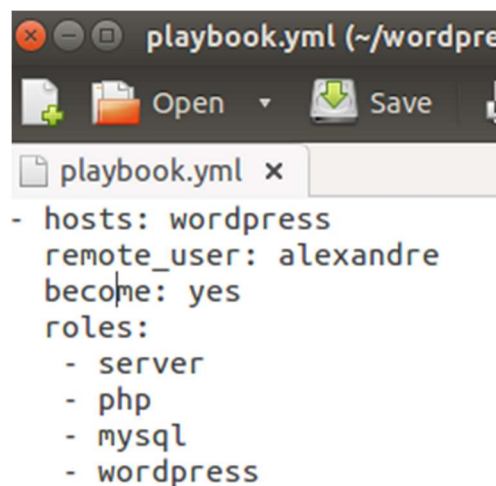
```
alexandre@ubuntu:~/wordpress-ansible$ ls
hosts  playbook.yml  roles
alexandre@ubuntu:~/wordpress-ansible$ gedit hosts
```



Configuração do playbook

O playbook estará apontado para roles onde as task serão configuradas.

```
alexandre@ubuntu:~/wordpress-ansible$  
alexandre@ubuntu:~/wordpress-ansible$ gedit playbook.yml
```



Primeiro teste do playbook sem as configurações das roles.

```
alexandre@ubuntu:~/wordpress-ansible$ ansible-playbook -i hosts playbook.yml  
  
PLAY [wordpress] *****  
  
TASK [Gathering Facts] *****  
ok: [127.0.0.1]  
  
PLAY RECAP *****  
127.0.0.1 : ok=1 changed=0 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0  
  
alexandre@ubuntu:~/wordpress-ansible$
```

Configuração das task nas roles

Server

```
alexandre@ubuntu:~/wordpress-ansible$  
alexandre@ubuntu:~/wordpress-ansible$ gedit roles/server/tasks/main.yml
```

```
main.yml (~/.wordpress-ansible/roles/server/tasks)
Open Save Undo
main.yml x
---
# tasks file for server
- name: Atualiza o cache apt de nosso servidor
  apt: update_cache=yes cache_valid_time=3600

- name: Instala os pacotes necessarios
  apt: name={{ item }} state=present
  with_items:
    - apache2
    - mysql-server
    - php5-mysql
    - php5
    - libapache2-mod-php5
    - php5-mcrypt
    - python-mysqldb
```

Execução do playbook chamando o task da role server.

```
alexandre@ubuntu:~/wordpress-ansible$
alexandre@ubuntu:~/wordpress-ansible$ ansible-playbook -i hosts playbook.yml

alexandre@ubuntu:~/wordpress-ansible$ ansible-playbook -i hosts playbook.yml
PLAY [wordpress] *****
TASK [Gathering Facts] *****
ok: [127.0.0.1]

TASK [server : Atualiza o cache apt de nosso servidor] *****
changed: [127.0.0.1]

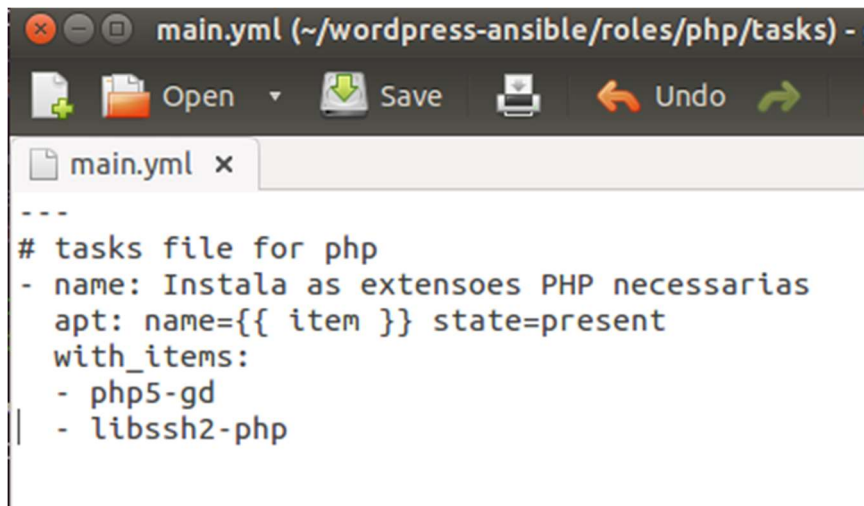
TASK [server : Instala os pacotes necessarios] *****
[DEPRECATION WARNING]: Invoking "apt" only once while using a loop via
squash_actions is deprecated. Instead of using a loop to supply multiple items
and specifying 'name: "{{ item }}"', please use 'name: ['apache2', 'mysql-
server', 'php5-mysql', 'php5', 'libapache2-mod-php5', 'php5-mcrypt', 'python-
mysqldb']' and remove the loop. This feature will be removed in version 2.11.
Deprecation warnings can be disabled by setting deprecation_warnings=False in
ansible.cfg.
changed: [127.0.0.1] => (item=[u'apache2', u'mysql-server', u'php5-mysql', u'php5', u'libapache2-mod-php5', u'php5-mcrypt', u'python-mysqldb'])

PLAY RECAP *****
127.0.0.1 : ok=3 changed=2 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0

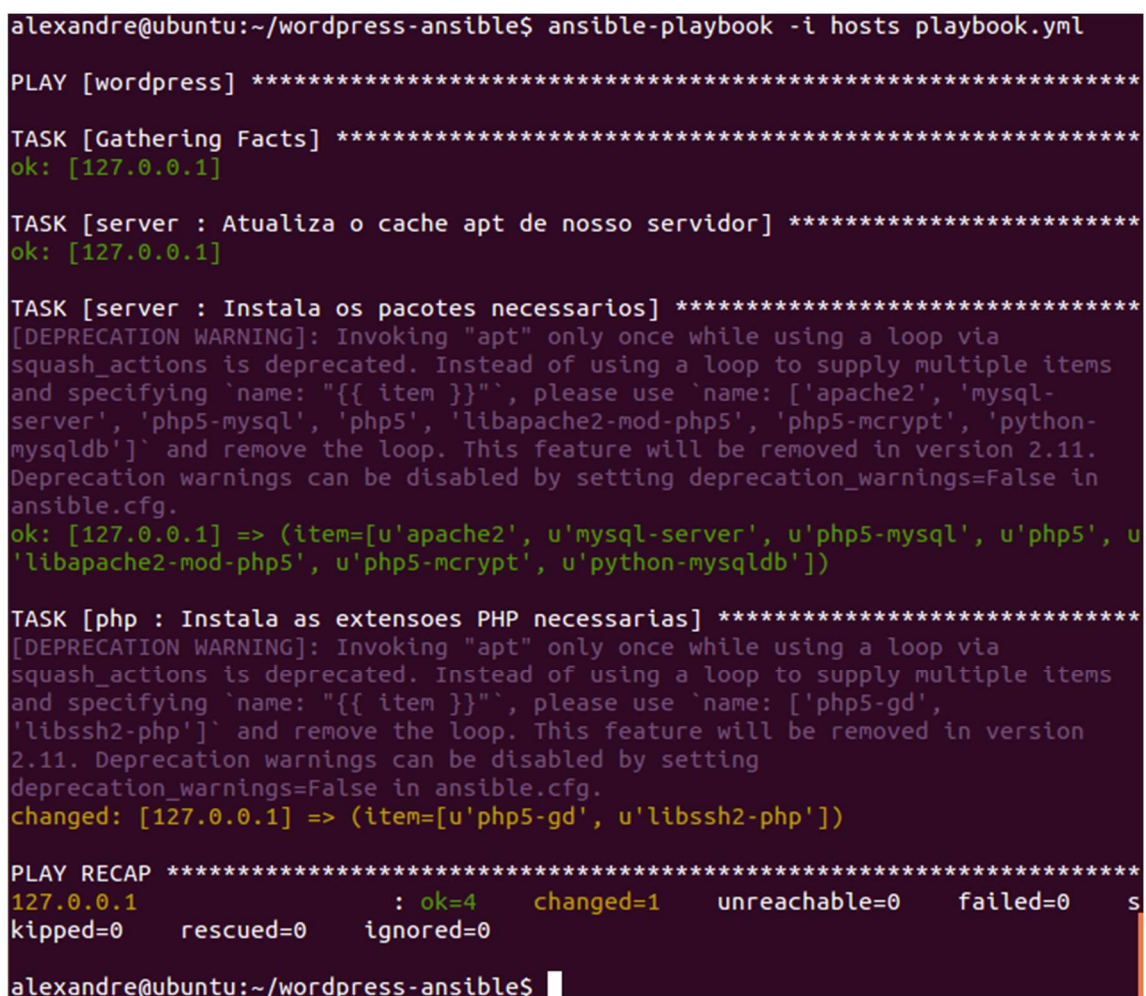
alexandre@ubuntu:~/wordpress-ansible$
```

PHP

```
alexandre@ubuntu:~/wordpress-ansible$
alexandre@ubuntu:~/wordpress-ansible$ gedit roles/php/tasks/main.yml
```

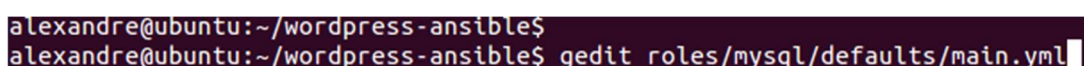
```
main.yml (~/.wordpress-ansible/roles/php/tasks) -  
Open Save Undo  
main.yml x  
---  
# tasks file for php  
- name: Instala as extensoes PHP necessarias  
  apt: name={{ item }} state=present  
  with_items:  
    - php5-gd  
    - libssh2-php
```



```
alexandre@ubuntu:~/wordpress-ansible$ ansible-playbook -i hosts playbook.yml  
PLAY [wordpress] *****  
  
TASK [Gathering Facts] *****  
ok: [127.0.0.1]  
  
TASK [server : Atualiza o cache apt de nosso servidor] *****  
ok: [127.0.0.1]  
  
TASK [server : Instala os pacotes necessarios] *****  
[DEPRECATION WARNING]: Invoking "apt" only once while using a loop via  
squash_actions is deprecated. Instead of using a loop to supply multiple items  
and specifying `name: "{{ item }}"`, please use `name: ['apache2', 'mysql-  
server', 'php5-mysql', 'php5', 'libapache2-mod-php5', 'php5-mcrypt', 'python-  
mysqldb']` and remove the loop. This feature will be removed in version 2.11.  
Deprecation warnings can be disabled by setting deprecation_warnings=False in  
ansible.cfg.  
ok: [127.0.0.1] => (item=[u'apache2', u'mysql-server', u'php5-mysql', u'php5', u'  
'libapache2-mod-php5', u'php5-mcrypt', u'python-mysqldb'])  
  
TASK [php : Instala as extensoes PHP necessarias] *****  
[DEPRECATION WARNING]: Invoking "apt" only once while using a loop via  
squash_actions is deprecated. Instead of using a loop to supply multiple items  
and specifying `name: "{{ item }}"`, please use `name: ['php5-gd',  
'libssh2-php']` and remove the loop. This feature will be removed in version  
2.11. Deprecation warnings can be disabled by setting  
deprecation_warnings=False in ansible.cfg.  
changed: [127.0.0.1] => (item=[u'php5-gd', u'libssh2-php'])  
  
PLAY RECAP *****  
127.0.0.1 : ok=4 changed=1 unreachable=0 failed=0 s  
kipped=0 rescued=0 ignored=0  
  
alexandre@ubuntu:~/wordpress-ansible$
```

MySQL

O arquivo main.yml da pasta default define parâmetros usados como variáveis para a role MySQL e WordPress.



```
alexandre@ubuntu:~/wordpress-ansible$  
alexandre@ubuntu:~/wordpress-ansible$ gedit roles/mysql/default/main.yml
```

```
main.yml (~/.wordpress-ansible/roles/mysql/defaults) - gedit
---
# defaults file for mysql
# nome do banco de dados da aplicacao
wp_mysql_db: wordpress
# login a ser criado para a aplicacao
wp_mysql_user: wordpress
# senha a ser atribuida para o login da aplicacao
wp_mysql_password: wp_db_password
```

```
alexandre@ubuntu:~/wordpress-ansible$
alexandre@ubuntu:~/wordpress-ansible$ gedit roles/mysql/tasks/main.yml
```

```
main.yml (~/.wordpress-ansible/roles/mysql/tasks) - gedit
---
# tasks file for mysql
- name: Cria o banco de dados para o WordPress
  mysql_db: name={{ wp_mysql_db }} state=present

- name: Cria um usuario de banco para o WordPress
  mysql_user:
    name={{ wp_mysql_user }}
    password={{ wp_mysql_password }}
    priv=*.*:ALL
```

Nesse ponto por algum motivo as variáveis de ambiente definidas *roles/mysql/defaults/main.yml* não funcionaram, por isso alterei para o *roles/mysql/tasks/main.yml* para os valores diretos além de algumas outras alterações na sintaxe do código. Ficando o arquivo conforme abaixo:

```
*main.yml (~/.wordpress-ansible/roles/mysql/tasks) - gedit
---
# tasks file for mysql
- name: Cria o banco de dados para o WordPress
  mysql_db:
    name: wordpress
    state: present

- name: Cria um usuario de banco para o WordPress
  mysql_user:
    name: wordpress
    password: wp_db_password
    priv: '*.*:ALL'
```

```
alexandre@ubuntu:~/wordpress-ansible$ ansible-playbook -i hosts playbook.yml

PLAY [wordpress] *****

TASK [Gathering Facts] *****
ok: [127.0.0.1]

TASK [server : Atualiza o cache apt de nosso servidor] *****
ok: [127.0.0.1]

TASK [server : Instala os pacotes necessarios] *****
[DEPRECATION WARNING]: Invoking "apt" only once while using a loop via
squash_actions is deprecated. Instead of using a loop to supply multiple items
and specifying 'name: "{{ item }}"', please use 'name: ['apache2', 'mysql-
server', 'php5-mysql', 'php5', 'libapache2-mod-php5', 'php5-mcrypt', 'python-
mysqldb']' and remove the loop. This feature will be removed in version 2.11.
Deprecation warnings can be disabled by setting deprecation_warnings=False in
ansible.cfg.
ok: [127.0.0.1] => (item=[u'apache2', u'mysql-server', u'php5-mysql', u'php5', u
'libapache2-mod-php5', u'php5-mcrypt', u'python-mysqldb'])

TASK [php : Instala as extensoes PHP necessarias] *****
[DEPRECATION WARNING]: Invoking "apt" only once while using a loop via
squash_actions is deprecated. Instead of using a loop to supply multiple items
and specifying 'name: "{{ item }}"', please use 'name: ['php5-gd',
'libssh2-php']' and remove the loop. This feature will be removed in version
2.11. Deprecation warnings can be disabled by setting
deprecation_warnings=False in ansible.cfg.
ok: [127.0.0.1] => (item=[u'php5-gd', u'libssh2-php'])

TASK [mysql : Cria o banco de dados para o WordPress] *****
changed: [127.0.0.1]

TASK [mysql : Cria um usuario de banco para o WordPress] *****
changed: [127.0.0.1]

PLAY RECAP *****
127.0.0.1 : ok=6 changed=2 unreachable=0 failed=0 s
kipped=0 rescued=0 ignored=0

alexandre@ubuntu:~/wordpress-ansible$
```

WordPress

```
alexandre@ubuntu:~/wordpress-ansible$
alexandre@ubuntu:~/wordpress-ansible$ gedit roles/wordpress/tasks/main.yml
```

```
main.yml (~/wordpress-ansible/roles/wordpress/tasks) - gedit
main.yml x
---
# tasks file for wordpress
- name: Baixa o WordPress
  get_url:
    url: https://wordpress.org/latest.tar.gz
    dest: /tmp/wordpress.tar.gz
    validate_certs: no

- name: Descompacta o WordPress
  unarchive:
    src: /tmp/wordpress.tar.gz
    dest: /var/www/
    copy: no

- name: Atualiza o site Apache padrao
  lineinfile:
    path: /etc/apache2/sites-enabled/000-default.conf
    regexp: '(.)+DocumentRoot /var/www/html'
    line: 'DocumentRoot /var/www/wordpress'
  notify:
    - name: Reinicia o Apache

- name: Renomeia o arquivo de configuracao de exemplo
  command: mv /var/www/wordpress/wp-config-sample.php /var/www/wordpress/wp-config.php creates=/var/www/wordpress/wp-config.php

- name: Atualiza a configuracao WordPress
  lineinfile:
    path: /var/www/wordpress/wp-config.php
    regexp: '{{ item.regexp }}'
    line: '{{ item.line }}'
  with_items:
    - {'regexp': "define\\('DB_NAME', '(.)+\\');" , 'line': "define('DB_NAME', 'wordpress');"}
    - {'regexp': "define\\('DB_USER', '(.)+\\');" , 'line': "define('DB_USER', 'wordpress');"}
    - {'regexp': "define\\('DB_PASSWORD', '(.)+\\');" , 'line': "define('DB_PASSWORD', 'wp_db_password');"}

```



```
alexandre@ubuntu: ~/wordpress-ansible
alexandre@ubuntu:~/wordpress-ansible$ ansible-playbook -i hosts playbook.yml

PLAY [wordpress] *****

TASK [Gathering Facts] *****
ok: [127.0.0.1]

TASK [server : Atualiza o cache apt de nosso servidor] *****
ok: [127.0.0.1]

TASK [server : Instala os pacotes necessarios] *****
[DEPRECATION WARNING]: Invoking "apt" only once while using a loop via squash_actions is deprecated. Instead of using a loop to supply multiple items and specifying 'name: "{{ item }}"', please use 'name: ['apache2', 'mysql-server', 'php5-mysql', 'php5', 'libapache2-mod-php5', 'php5-mcrypt', 'python-mysqldb']' and remove the loop. This feature will be removed in version 2.11. Deprecation warnings can be disabled by setting deprecation_warnings=False in ansible.cfg.
ok: [127.0.0.1] => (item=[u'apache2', u'mysql-server', u'php5-mysql', u'php5', u'libapache2-mod-php5', u'php5-mcrypt', u'python-mysqldb'])

TASK [php : Instala as extensoes PHP necessarias] *****
[DEPRECATION WARNING]: Invoking "apt" only once while using a loop via squash_actions is deprecated. Instead of using a loop to supply multiple items and specifying 'name: "{{ item }}"', please use 'name: ['php5-gd', 'libssh2-php']' and remove the loop. This feature will be removed in version 2.11. Deprecation warnings can be disabled by setting deprecation_warnings=False in ansible.cfg.
ok: [127.0.0.1] => (item=[u'php5-gd', u'libssh2-php'])

TASK [mysql : Cria o banco de dados para o WordPress] *****
ok: [127.0.0.1]

TASK [mysql : Cria um usuario de banco para o WordPress] *****
ok: [127.0.0.1]

TASK [wordpress : Baixa o WordPress] *****
ok: [127.0.0.1]

TASK [wordpress : Descompacta o WordPress] *****
changed: [127.0.0.1]

TASK [wordpress : Atualiza o site Apache padrao] *****
ok: [127.0.0.1]

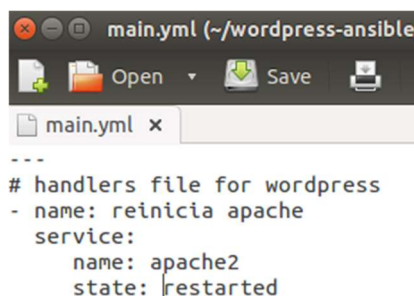
TASK [wordpress : Renomeia o arquivo de configuracao de exemplo] *****
ok: [127.0.0.1]

TASK [wordpress : Atualiza a configuracao WordPress] *****
changed: [127.0.0.1] => (item={u'regexp': u'define\\(\\(DB_NAME', '(.)+\\)\\);', u'line': u'define('DB_NAME', 'wordpress');'})
changed: [127.0.0.1] => (item={u'regexp': u'define\\(\\(DB_USER', '(.)+\\)\\);', u'line': u'define('DB_USER', 'wordpress');'})
changed: [127.0.0.1] => (item={u'regexp': u'define\\(\\(DB_PASSWORD', '(.)+\\)\\);', u'line': u'define('DB_PASSWORD', 'wp_db_password');'})

PLAY RECAP *****
127.0.0.1 : ok=11 changed=2 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0
```

No arquivo `roles/wordpress/task/main.yml` fizemos uma alteração na configuração do Apache para que ele abra a página do WordPress, dessa forma precisamos reinicia-lo. Para isso, fizemos a chamada *notif*, no entanto, para que funcione precisamos configurar o tratador que será evocado quando chamarmos o *notif*. Configuramos o tratador em `roles/wordpress/handlers/main.yml`.

```
alexandre@ubuntu:~/wordpress-ansible$
alexandre@ubuntu:~/wordpress-ansible$ roles/wordpress/handlers/main.yml
```



```
---
# handlers file for wordpress
- name: reinicia apache
  service:
    name: apache2
    state: restarted
```

Aplicação rodando.

