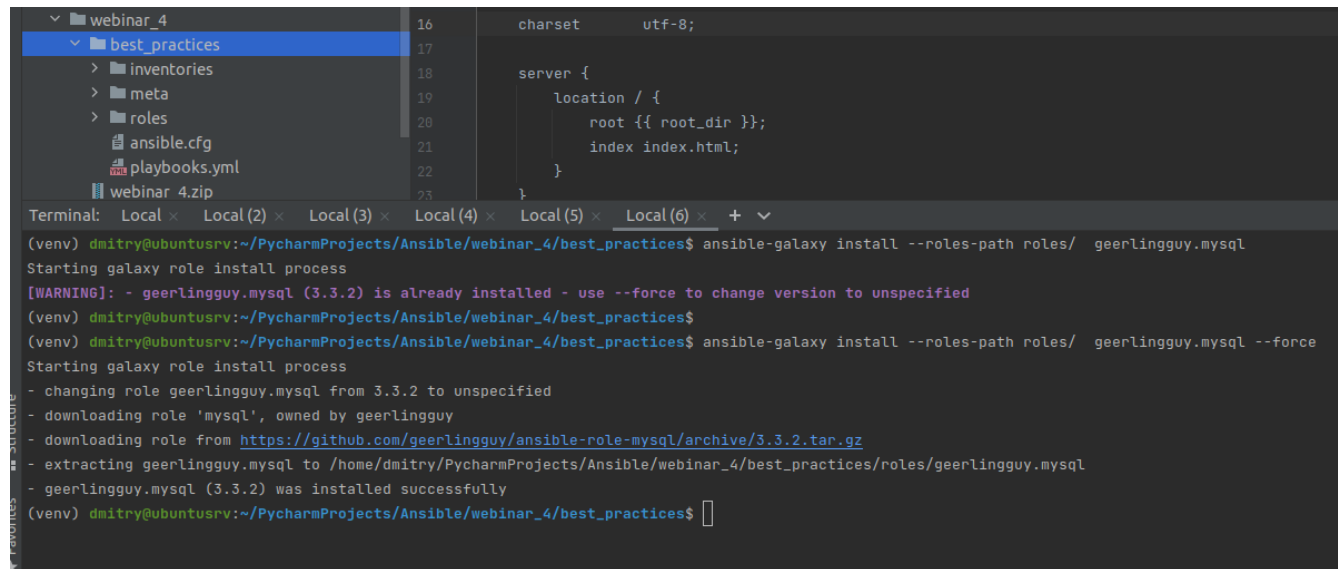


Домашняя работа №4

1. Модифицировать роль с использованием vault и tags.

Вначале для использования секретов в своем проекте проимпортировал новую роль из репозитории **Ansible Galaxy** (<https://galaxy.ansible.com/geerlingguy/mysql>)



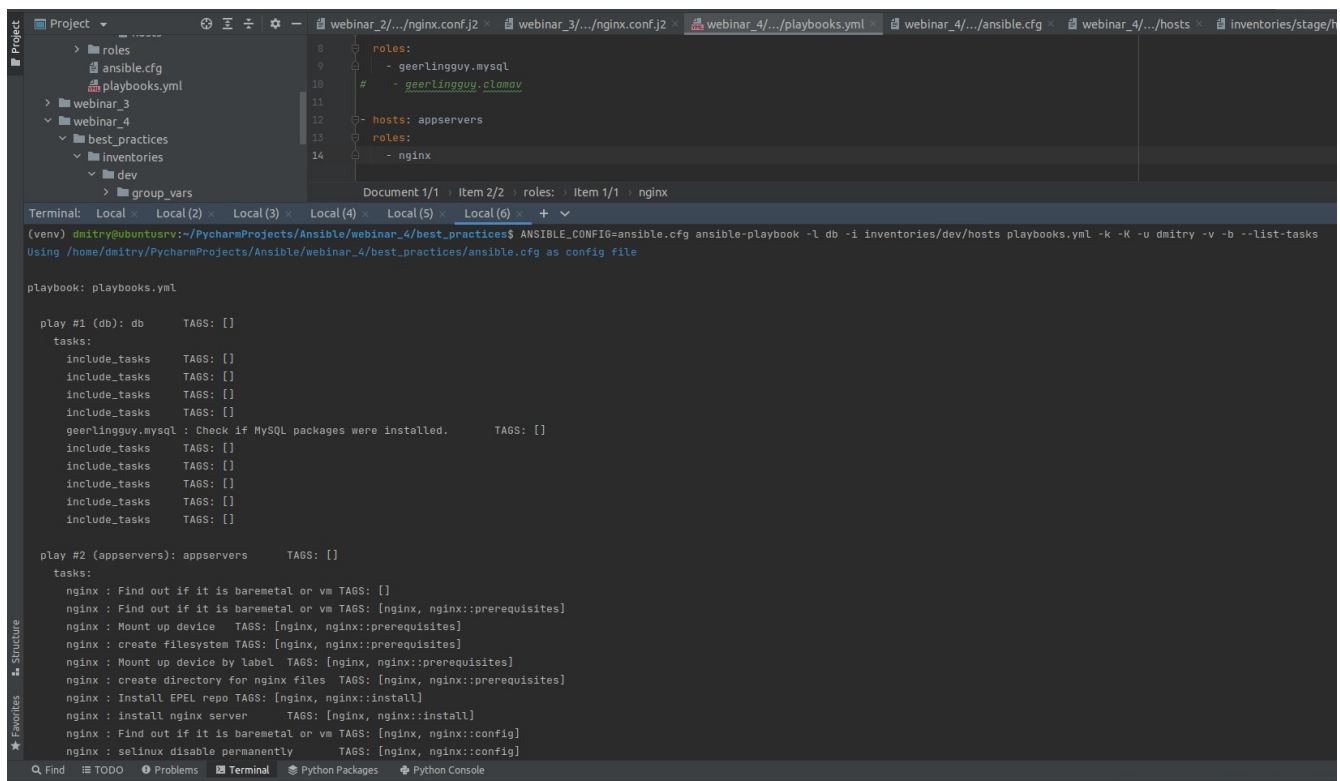
```
charset      utf-8;

server {
    location / {
        root {{ root_dir }};
        index index.html;
    }
}
```

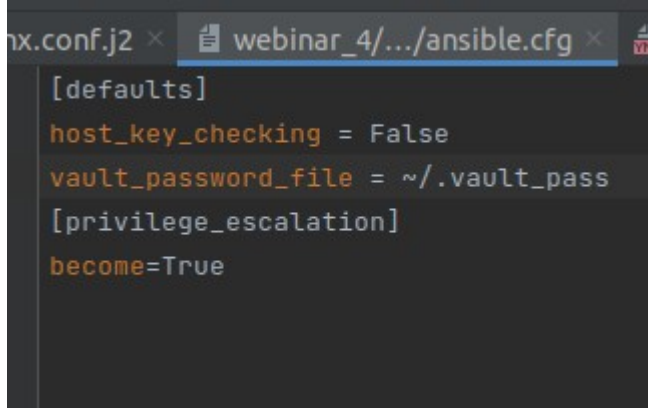
```
(venv) dmitry@ubuntu:~/PycharmProjects/Ansible/webinar_4/best_practices$ ansible-galaxy install --roles-path roles/ geerlingguy.mysql
Starting galaxy role install process
[WARNING]: - geerlingguy.mysql (3.3.2) is already installed - use --force to change version to unspecified
(venv) dmitry@ubuntu:~/PycharmProjects/Ansible/webinar_4/best_practices$
(venv) dmitry@ubuntu:~/PycharmProjects/Ansible/webinar_4/best_practices$ ansible-galaxy install --roles-path roles/ geerlingguy.mysql --force
Starting galaxy role install process
- changing role geerlingguy.mysql from 3.3.2 to unspecified
- downloading role 'mysql', owned by geerlingguy
- downloading role from https://github.com/geerlingguy/ansible-role-mysql/archive/3.3.2.tar.gz
- extracting geerlingguy.mysql to /home/dmitry/PycharmProjects/Ansible/webinar_4/best_practices/roles/geerlingguy.mysql
- geerlingguy.mysql (3.3.2) was installed successfully
(venv) dmitry@ubuntu:~/PycharmProjects/Ansible/webinar_4/best_practices$
```

В данной роли есть секреты – переменные, которые лучше всего обезопасить от постороннего доступа с использованием встроенного механизма шифрования **ansible-vault**:

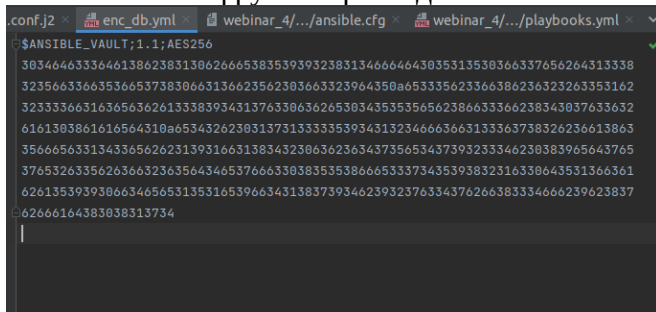
После импортирования новой роли – ее необходимо прогнать на удаленный хост: вначале проверяем какие task-и будут прогоняться данным playbook-ом “-b --list-tasks”:



Для шифрования директории создаю в `playbook.yml` настройку для хранения файла пароля:



Создаю в домашней директории файл пароля, сохраняю туда пароль.
После этого шифрую секреты для mariadb:



и выполняю установку новой роли “`geerlingguy.mysql`” с ограничением только на hosts группы `[db]`:

ANSIBLE_CONFIG=ansible.cfg ansible-playbook -l db -i inventories/dev/hosts playbooks.yml -k -K -u dmitry -v

```
roles
  > mariadb.service
Terminal: Local (4) x Local (2) x Local (3) x Local (4) x Local (5) x Local (6) x + v Document 1/1
gv[-/usr/libexec/mariadb-prepare-db-dir %n ; ignore_errors=no ; start_time=[Tue 2021-11-09 23:33:41 MSK] ; stop_time=[Tue 2021-11-09 23:33:42 MSK] ; pid=1920 ; code=exited
orStoreMax": "0", "FragmentPath": "/usr/lib/systemd/system/mariadb.service", "Group": "mysql", "GuessMainPID": "yes", "IOScheduling": "0", "Id": "mariadb.service", "IgnoreOn
IPE": "yes", "InactiveEnterTimestampMonotonic": "0", "InactiveExitTimestamp": "Tue 2021-11-09 23:33:41 MSK", "InactiveExitTimestampMonotonic": "7080025648", "JobTimeoutActi
ol-group", "KillSignal": "15", "LimitAS": "18446744073709551615", "LimitCORE": "18446744073709551615", "LimitCPU": "18446744073709551615", "LimitDATA": "18446744073709551615
": "18446744073709551615", "LimitMEMLOCK": "65536", "LimitMSGQUEUE": "819200", "LimitNICE": "0", "LimitNOFILE": "4096", "LimitNPROC": "3795", "LimitRSS": "18446744073709551615
9551615", "LimitSIGPENDING": "3795", "LimitSTACK": "18446744073709551615", "LoadState": "loaded", "MainPID": "2005", "MemoryAccounting": "no", "MemoryCurrent": "18446744073709551615",
untFlags": "0", "Names": "mariadb.service", "NeedDaemonReload": "no", "Nice": "0", "NoNewPrivileges": "no", "NonBlocking": "no", "NotifyAccess": "none", "OOMScoreAdjust": "0", "O
ly": "no", "PrivateDevices": "no", "PrivateNetwork": "no", "PrivateTmp": "yes", "ProtectHome": "no", "ProtectSystem": "no", "RefuseManualStart": "no", "RefuseManualStop": "no", "RootDirecto
system.slice -.mount", "RequiresMountsFor": "/var/tmp", "Restart": "no", "RestartUsec": "100ms", "Result": "success", "RootDirectoryStartOnly": "no", "RuntimeDirectoryMode
", "SendSIGHUP": "no", "SendSIGKILL": "yes", "Slice": "system.slice", "StandardError": "inherit", "StandardInput": "null", "StandardOutput": "journal", "StartLimitAction": "fail", "StartLimit
"10000000", "StartupBlockIOWeight": "18446744073709551615", "StartupCPUShares": "18446744073709551615", "StatusErrno": "0", "StopWhenUnneeded": "no", "SubState": "running", "SystemCallError
Number": "0", "TTYReset": "no", "TTYVHangup": "no", "TTYVTDisallocate": "no", "TasksAccounting": "no", "TasksCurrent": "18446744073709551615", "TasksMax": "18446744073709551615", "Timeout
eoutStopUsec": "5min", "TimerSlackNsec": "50000", "Transient": "no", "Type": "simple", "UMask": "0022", "UnitFilePreset": "disabled", "UnitFileState": "enabled", "User": "mysql", "WatchdogT
amp": "Tue 2021-11-09 23:33:42 MSK", "WatchdogTimestampMonotonic": "7081279116", "WatchdogUsec": "0"}

PLAY [appservers] *****
skipping: no hosts matched

PLAY RECAP *****
192.168.1.199      : ok=33   changed=8    unreachable=0    failed=0    skipped=18    rescued=0    ignored=0

(venv) dmitry@ubuntu:~/PycharmProjects/Ansible/webinar_4/best_practices$
(venv) dmitry@ubuntu:~/PycharmProjects/Ansible/webinar_4/best_practices$
```

Проверяю mariadb на хосте 192.168.1.199:

```
[dmitry@ansible1 ~]$
[dmitry@ansible1 ~]$
[dmitry@ansible1 ~]$ systemctl status mariadb
● mariadb.service - MariaDB database server
   Loaded: loaded (/usr/lib/systemd/system/mariadb.service; enabled; vendor preset: disabled)
   Active: active (running) since Tue 2021-11-09 23:33:57 MSK; 2min 49s ago
     Process: 3414 ExecStartPost=/usr/libexec/mariadb-wait-ready $MAINPID (code=exited, status=0/SUCCESS)
     Process: 3378 ExecStartPre=/usr/libexec/mariadb-prepare-db-dir %n (code=exited, status=0/SUCCESS)
    Main PID: 3413 (mysqld_safe)
      CGroup: /system.slice/mariadb.service
              └─3413 /bin/sh /usr/bin/mysqld_safe --basedir=/usr
                 └─3953 /usr/libexec/mysqld --basedir=/usr --datadir=/var/lib/mysql...

Nov 09 23:33:55 ansible1.localdomain systemd[1]: Stopped MariaDB database se....
Nov 09 23:33:55 ansible1.localdomain systemd[1]: Starting MariaDB database s....
Nov 09 23:33:55 ansible1.localdomain mariadb-prepare-db-dir[3378]: Database M...
Nov 09 23:33:56 ansible1.localdomain mysqld_safe[3413]: 211109 23:33:56 mysql...
Nov 09 23:33:56 ansible1.localdomain mysqld_safe[3413]: 211109 23:33:56 mysql...
Nov 09 23:33:57 ansible1.localdomain systemd[1]: Started MariaDB database se....
Hint: Some lines were ellipsized, use -l to show in full.
[dmitry@ansible1 ~]$
[dmitry@ansible1 ~]$
```

2. переделать роли из ссылки по формату пройденных уроков

<https://www.andreyus.com/razvorachivaem-django-s-ansible/>

2.1. После создания структуры каталогов выполнил первую роль, закомментировав остальные и переименовав пакеты, выпущенные для CentOS:

ANSIBLE_CONFIG=ansible.cfg ansible-playbook -i inventories/hosts django-allroles.yml -k -K -u dmitry

Ansible | webinar_4 | Django | django-allroles.yml

Project | templates | ansible.cfg | playbooks.yml | Django | inventories | hosts | roles | django | gunicorn | nginx | postgresql | servergeneral | files | handlers | meta | tasks | main.yml | templates | vars | ansible.cfg | django-allroles.yml | webinar_4.zip | main.py

Document 1/1 | Item 1/1 | hosts: | django_servers

```
1 ---
2
3 - hosts: django_servers
4   become: true
5   roles:
6     - servergeneral
7     # - nginx
8     # - postgresql
9     # - django
10    # - gunicorn
11
```

Terminal: Local | Local(2) | Local(3) | Local(4) | Local(5) | Local(6) | Local(7) | + | -

(venv) dmitry@ubuntu:~/PycharmProjects/Ansible/webinar_4/Django\$ ANSIBLE_CONFIG=ansible.cfg ansible-playbook -i inventories/hosts django-allroles.yml -k -K -u dmitry -vvvv -b --list-tasks

ansible-playbook [core 2.11.6]

config file = /home/dmitry/PycharmProjects/Ansible/webinar_4/Django/ansible.cfg

configured module search path = ['/home/dmitry/.ansible/plugins/modules', '/usr/share/ansible/plugins/modules']

ansible python module location = /home/dmitry/PycharmProjects/Ansible/venv/lib/python3.8/site-packages/ansible

ansible collection location = /home/dmitry/PycharmProjects/Ansible/venv/lib/python3.8/site-packages/ansible_collections

executable location = /home/dmitry/PycharmProjects/Ansible/venv/bin/ansible-playbook

python version = 3.8.10 (default, Sep 28 2021, 16:10:42) [GCC 9.3.0]

jinja version = 3.0.2

libyaml = True

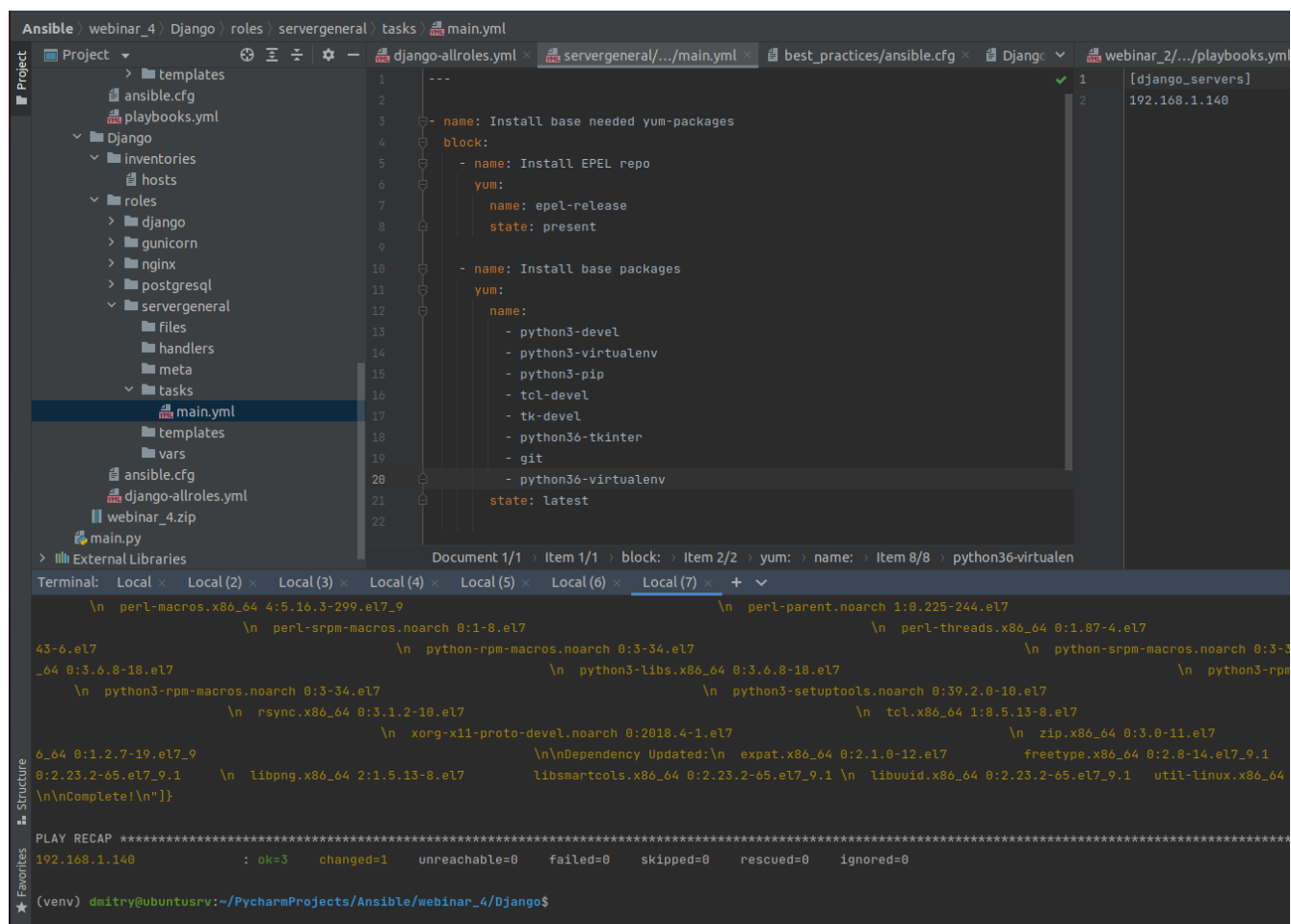
Using /home/dmitry/PycharmProjects/Ansible/webinar_4/Django/ansible.cfg as config file

setting up inventory plugins

host_list declined parsing /home/dmitry/PycharmProjects/Ansible/webinar_4/Django/inventories/hosts as it did not pass its verify_file() method

script declined parsing /home/dmitry/PycharmProjects/Ansible/webinar_4/Django/inventories/hosts as it did not pass its verify_file() method

auto declined parsing /home/dmitry/PycharmProjects/Ansible/webinar_4/Django/inventories/hosts as it did not pass its verify_file() method



2.2. Затем раскомментировал вторую роль по установке NGINX и выполнил ее:
 Проверил какие роли будут выполняться:

ANSIBLE_CONFIG=ansible.cfg ansible-playbook -i inventories/hosts django-allroles.yml -k -K -u
 dmitry -vvvv -b --list-tasks

```
1 ---
2 - name: Install Nginx
3   yum:
4     name: nginx
5     state: latest
6     update_cache: yes
7   # register: nginxinstalled
8   notify:
9     - nginx start
10
11 - name: Add Nginx cofig
12   # when: nginxinstalled is success
13   template:
14     src: templates/default.j2
15     dest: /etc/nginx/nginx.conf
16     owner: nginx
17     group: nginx
18   notify:
19     - reload nginx
20   become: yes
21
22 - name: Create Root Directory for Nginx
23   # when: nginxinstalled is success
24   file:
25     path: /etc/nginx
26     state: directory
27     mode: '0755'
```

Terminal: Local (7) x + v

```
setting up inventory plugins
host_list declined parsing /home/dmitry/PycharmProjects/Ansible/webinar_4/Django/inventories/hosts as it did not pass its verify_file() method
script declined parsing /home/dmitry/PycharmProjects/Ansible/webinar_4/Django/inventories/hosts as it did not pass its verify_file() method
auto declined parsing /home/dmitry/PycharmProjects/Ansible/webinar_4/Django/inventories/hosts as it did not pass its verify_file() method
Parsed /home/dmitry/PycharmProjects/Ansible/webinar_4/Django/inventories/hosts inventory source with ini plugin
1 plays in django-allroles.yml

playbook: django-allroles.yml

play #1 (django_servers): django_servers TAGS: []
tasks:
  nginx : Install Nginx TAGS: []
  nginx : Add Nginx cofig TAGS: []
  nginx : Create Root Directory for Nginx TAGS: []
(venv) dmitry@ubuntu:~/PycharmProjects/Ansible/webinar_4/Django$
```

затем выполнив его:

ANSIBLE_CONFIG=ansible.cfg ansible-playbook -i inventories/hosts django-allroles.yml -k -K -u dmitry -v

```
File Edit View Navigate Code Refactor Run Tools VCS Window Help
Ansible | webinar_4 | Django | roles | nginx | tasks | main.yml

Project | Project | files_from_Prepod | inventory | templates | nginx.conf.j2 | ansible.cfg | playbook.yml | webinar_2 | best_practices | inventories | dev | group_vars | all | vars.yml | hosts | stage

10
11 - name: Add Nginx cofig
12   # when: nginxinstalled is success
13   template:
14     src: templates/default.j2
15     dest: /etc/nginx/nginx.conf
16     owner: nginx
17     group: nginx
18   notify:
19     - reload nginx
20   become: yes
21
22 - name: Create Root Directory for Nginx
23   # when: nginxinstalled is success

Document 1/1 | Item 2/3 | become: | yes

Terminal: Local (2) | Local (3) | Local (4) | Local (5) | Local (6) | Local (7) | + | v

inity", "CPUSchedulingPolicy": "0", "CPUSchedulingPriority": "0", "CPUSchedulingResetOnFork": "no", "CPUShares": "18446744073709551615", "CanIsolate": "no", "C
oundingSet": "18446744073709551615", "ConditionResult": "yes", "ConditionTimestamp": "Wed 2021-11-10 03:37:52 MSK", "ConditionTimestampMonotonic": "11814011001
dependencies": "yes", "Delegate": "no", "Description": "The nginx HTTP and reverse proxy server", "DevicePolicy": "auto", "ExecMainCode": "0", "ExecMainExitTimestamp
nic": "0", "ExecMainStatus": "0", "ExecReload": "{ path=/usr/sbin/nginx ; argv[]={usr/sbin/nginx -s reload ; ignore_errors=no ; start_time=[n/a] ; stop_time=[n
r/sbin/nginx ; argv[]={usr/sbin/nginx ; ignore_errors=no ; start_time=[n/a] ; stop_time=[n/a] ; pid=0 ; code=(null) ; status=0/0 }", "ExecStartPre": "{ path=us
t_time=[n/a] ; stop_time=[n/a] ; pid=0 ; code=(null) ; status=0/0 }", "FailureAction": "none", "FileDescriptorStoreMax": "0", "FragmentPath": "/usr/lib/systemd/
"Id": "nginx.service", "IgnoreOnIsolate": "no", "IgnoreOnSnapshot": "no", "IgnoreSIGPIPE": "yes", "InactiveEnterTimestamp": "Wed 2021-11-10 03:37:53 MSK", "Ina
mp": "Wed 2021-11-10 03:37:52 MSK", "InactiveExitTimestampMonotonic": "11814017211", "JobTimeoutAction": "none", "JobTimeoutUsec": "0", "KillMode": "process", "
"18446744073709551615", "LimitCPU": "18446744073709551615", "LimitDATA": "18446744073709551615", "LimitFSIZE": "18446744073709551615", "LimitLOCKS": "1844674407
LimitNICE": "0", "LimitNOFILE": "4096", "LimitNPROC": "3795", "LimitRSS": "18446744073709551615", "LimitRTPRIO": "0", "LimitRTTIME": "18446744073709551615", "Li
dState": "loaded", "MainPID": "0", "MemoryAccounting": "no", "MemoryCurrent": "18446744073709551615", "MemoryLimit": "18446744073709551615", "MountFlags": "0",
NoNewPrivileges": "no", "NonBlocking": "no", "NotifyAccess": "none", "OOMScoreAdjust": "0", "OnFailureJobMode": "replace", "PIDFile": "/run/nginx.pid", "Permiss
o", "PrivateTmp": "yes", "ProtectHome": "no", "ProtectSystem": "no", "RefuseManualStart": "no", "RefuseManualStop": "no", "RemainAfterExit": "no", "Requires": "
", "Restart": "no", "RestartUsec": "100ms", "Result": "exit-code", "RootDirectoryStartOnly": "no", "RuntimeDirectoryMode": "0755", "SameProcessGroup": "no", "Se
"system.slice", "StandardError": "inherit", "StandardInput": "null", "StandardOutput": "journal", "StartLimitAction": "none", "StartLimitBurst": "5", "StartLim
1615", "StartupCPUShares": "18446744073709551615", "StatusErrno": "0", "StopWhenUnneeded": "no", "SubState": "failed", "SyslogLevelPrefix": "yes", "SyslogPriori
ngup": "no", "TTYVTDisallocate": "no", "TasksAccounting": "no", "TasksCurrent": "18446744073709551615", "TasksMax": "18446744073709551615", "TimeoutStartUsec":
ransient": "no", "Type": "forking", "UMask": "0022", "UnitFilePreset": "disabled", "UnitFileState": "enabled", "WantedBy": "multi-user.target", "Wants": "networ
": "0"}}}

PLAY RECAP *****
192.168.1.140 : ok=5 changed=2 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0

(venv) dmitry@ubuntu:~/PycharmProjects/Ansible/webinar_4/Django$
```

После чего, зашел на удаленный хост и проверил статус NGINX:


```
dmitry@ansible3:~  
dmitry@ubuntusrv:~$ ssh dmitry@192.168.1.140  
dmitry@192.168.1.140's password:  
Last login: Wed Nov 10 03:54:27 2021 from ubuntusrv.lan  
[dmitry@ansible3 ~]$  
[dmitry@ansible3 ~]$  
[dmitry@ansible3 ~]$ systemctl status nginx  
● nginx.service - The nginx HTTP and reverse proxy server  
   Loaded: loaded (/usr/lib/systemd/system/nginx.service; enabled; vendor preset: disabled)  
   Active: active (running) since Wed 2021-11-10 03:54:28 MSK; 55s ago  
     Process: 16954 ExecStart=/usr/sbin/nginx (code=exited, status=0/SUCCESS)  
     Process: 16951 ExecStartPre=/usr/sbin/nginx -t (code=exited, status=0/SUCCESS)  
     Process: 16950 ExecStartPre=/usr/bin/rm -f /run/nginx.pid (code=exited, status=0/SUCCESS)  
    Main PID: 16956 (nginx)  
   CGroup: /system.slice/nginx.service  
           └─16956 nginx: master process /usr/sbin/nginx  
             └─16959 nginx: worker process  
               └─16960 nginx: worker process  
  
Nov 10 03:54:28 ansible3.localdomain systemd[1]: Starting The nginx HTTP and....  
Nov 10 03:54:28 ansible3.localdomain nginx[16951]: nginx: the configuration f...  
Nov 10 03:54:28 ansible3.localdomain nginx[16951]: nginx: configuration file ...  
Nov 10 03:54:28 ansible3.localdomain systemd[1]: Started The nginx HTTP and ....  
Hint: Some lines were ellipsized, use -l to show in full.  
[dmitry@ansible3 ~]$
```

2.3. Остальные роли – не успел:

```
django-allroles.yml x Django/.../ta  
1 ---  
2  
3 - hosts: django_servers  
4   become: true  
5   roles:  
6     - servergeneral  
7     - nginx  
8     # - postgresql  
9     # - django  
10    # - gunicorn  
11
```