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**DT/NT : NT**

**LESSON : DEVOPS**

**SUBJECT: ANSIBLE-4**  
Ansible Roles

**BATCH : B 224**

**AWS-DEVOPS**



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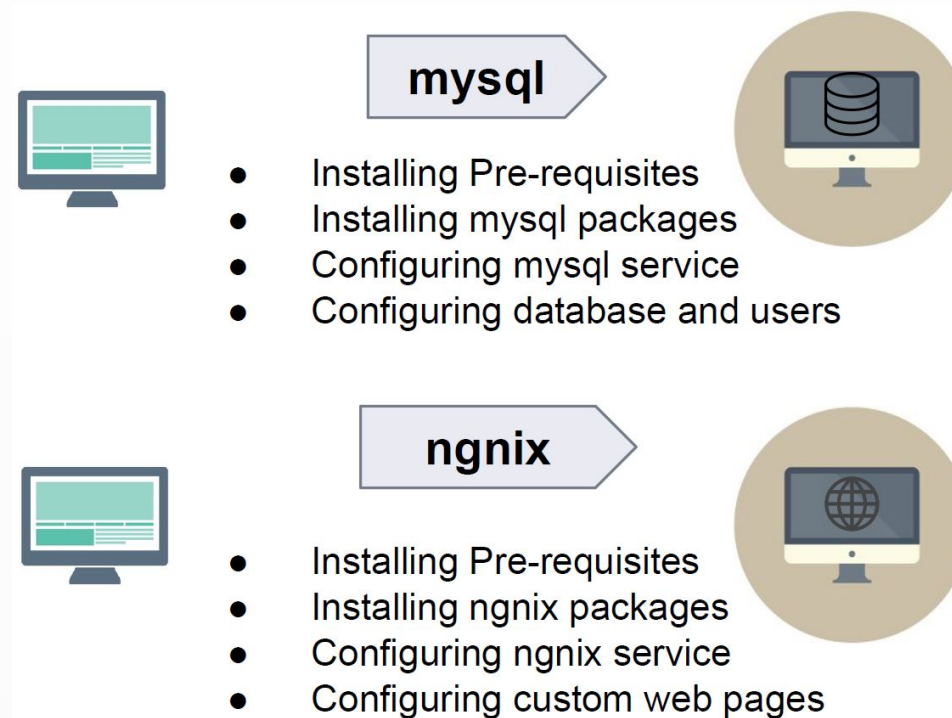


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# What is Ansible Role?

- ❑ Ansible **role** is an independent component which allows reuse of common configuration steps.
- ❑ It is used within playbook.



# What is Ansible Role?

## playbook1.yml

```
- name: Install and Configure MySQL
  hosts: db-servers
  tasks:
    - name: Install Pre-requisites
      yum: name=pre-req-packages state=present

    - name: Install MySQL Packages
      yum: name=mysql state=present

    - name: Start MySQL Service
      service: name=mysql state=started

    - name: Configure Database
      mysql_db: name=db1 state=present
```

## playbook2.yml

```
- name: Install and Configure MySQL
  hosts: db-server1...db-server100
  roles:
    - mysql
```

## mysql



- Installing Pre-requisites
- Installing mysql packages
- Configuring mysql service
- Configuring database and users



## MySQL-Role

```
tasks:
  - name: Install Pre-requisites
    yum: name=pre-req-packages state=present

  - name: Install MySQL Packages
    yum: name=mysql state=present

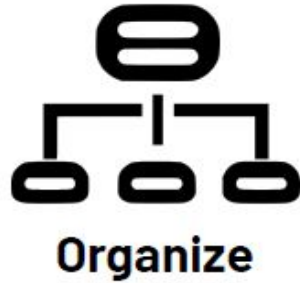
  - name: Start MySQL Service
    service: name=mysql state=started

  - name: Configure Database
    mysql_db: name=db1 state=present
```



Re-use

# What is Ansible Role?



mysql



- Installing Pre-requisites
- Installing mysql packages
- Configuring mysql service
- Configuring database and users

## MySQL-Role

### tasks

```
tasks:
- name: Install Pre-requisites
  yum: name=pre-req-packages state=present

- name: Install MySQL Packages
  yum: name=mysql state=present

- name: Start MySQL Service
  service: name=mysql state=started

- name: Configure Database
  mysql_db: name=db1 state=present
```

### vars

```
mysql_packages:
- mysql
- mysql-server
db_config:
  db_name: db1
```

### defaults

```
mysql_user_name: root
mysql_user_password: abcd
```

### handlers

### templates



# What is Ansible Role?

## Roles Directory Structure:

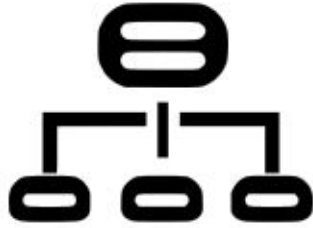
- ✓ **Tasks:** Contains the main list of tasks to be executed by the role.
- ✓ **Handlers:** Contains handlers, which are tasks that only run when notified by another task.
- ✓ **Defaults:** Contains default variables for the role.
- ✓ **Vars:** Contains variables that are more likely to be changed.
- ✓ **Files:** Contains static files which can be deployed via this role.
- ✓ **Templates:** Contains templates which can be deployed via this role.
- ✓ **Meta:** Contains metadata about the role, such as dependencies.



# What is Ansible Role?



Share



Organize



Re-use



mysql



- Installing Pre-requisites
- Installing mysql packages
- Configuring mysql service
- Configuring database and users

```
$ ansible-galaxy init mysql
```

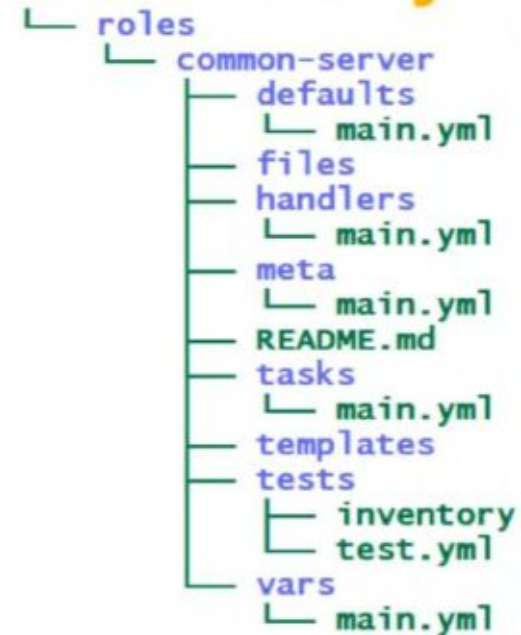
```
/etc/ansible/ansible.cfg
```

```
roles_path = /etc/ansible/roles
```

```
playbook2.yml
```

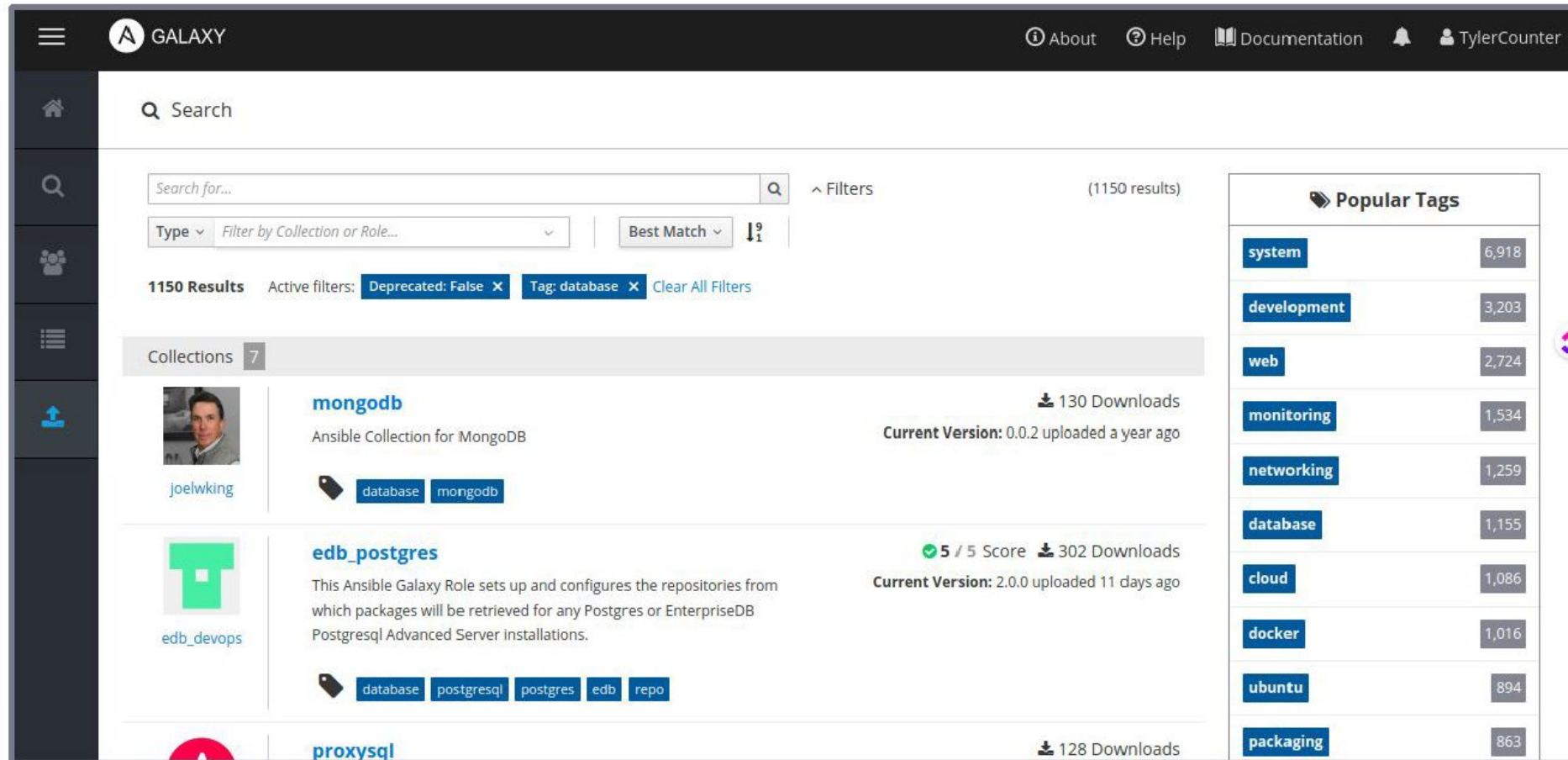
```
- name: Install and Configure MySql
  hosts: db-server1...db-server100
  roles:
    - mysql
```

## Roles: Directory Structure



# Find Roles & Ansible Galaxy

**Ansible Galaxy** is a repository for Ansible Roles that are available to drop directly into your Playbooks to streamline your automation projects.



The screenshot displays the Ansible Galaxy web interface. At the top, there's a navigation bar with a hamburger menu, the 'GALAXY' logo, and links for 'About', 'Help', 'Documentation', and a user profile 'TylerCounter'. Below this is a search bar with the text 'Search for...' and a search icon. To the right of the search bar, it says '(1150 results)'. Below the search bar, there are filters: 'Type' (dropdown), 'Filter by Collection or Role...' (dropdown), and 'Best Match' (dropdown). Below the filters, it says '1150 Results' and 'Active filters: Deprecated: False x Tag: database x Clear All Filters'. The main content area shows a list of roles. The first role is 'mongodb' by 'joelwking', with 130 Downloads and 'Current Version: 0.0.2 uploaded a year ago'. The second role is 'edb\_postgres' by 'edb\_devops', with a '5 / 5 Score', 302 Downloads, and 'Current Version: 2.0.0 uploaded 11 days ago'. The third role is 'proxysql' with 128 Downloads. On the right side, there's a 'Popular Tags' section with a list of tags and their counts: system (6,918), development (3,203), web (2,724), monitoring (1,534), networking (1,259), database (1,155), cloud (1,086), docker (1,016), ubuntu (894), and packaging (863).

Tag	Count
system	6,918
development	3,203
web	2,724
monitoring	1,534
networking	1,259
database	1,155
cloud	1,086
docker	1,016
ubuntu	894
packaging	863

# Find Roles & Ansible Galaxy

The screenshot shows the Ansible Galaxy interface. The search bar at the top contains the text 'mysql', which is circled in red. Below the search bar, it indicates '330 Results'. The 'Collections' section is expanded, showing three results:

- mysql** (community): MySQL collection for Ansible. It lists 4 Modules (mysqlLib, mysql\_variables, mysql\_info, mysql), 0 Roles, and 2 Plugins (mysql, mysql). It is tagged with 'database', 'mysql', and 'mysql57'.
- proxysql** (community): ProxySQL collection for Ansible. It lists 1 Module (proxysql\_mysql), 0 Roles, and 1 Plugin (mysql). It is tagged with 'database', 'mysql', and 'proxysql'.
- sql\_query** (johnd): Select/insert/update/delete records in an sql database. It is tagged with 'database', 'sql', 'query', 'mysql', 'postgresql', 'mssql', 'sqlclustering', 'table', 'row', 'select', and 'row'.

At the bottom, the 'Roles' section is also expanded, showing a result for **mysql** (pearlmguy): MySQL driver for RHEL/Ubuntu and Debian/Ubuntu. It is tagged with 'database', 'db', 'mysql', 'mysql', and 'sql'.

\$ ansible-galaxy search mysql

Found 1318 roles matching your search. Showing first 1000.

Name	Description
-----	-----
Outsider ansible_zabbix_agent	Installing and maintaining zabbix-agent for RedHat/Debian/Ubuntu.
Ox81.grafana	Grafana - an analytics and monitoring observability platform
Ox81.prometheus	Prometheus - a multi-dimensional time-series data monitoring and
Inr.unattended	install and configure unattended upgrade
Inr.zabbix_agent2	install and configure zabbix-agent2
Inr.zabbix_host	configure host zabbix settings
Infinitum.mysql	Simply installs MySQL 5.7 on Xenial.
4linuxdevops.mysql-server	Instalacao e Configuracao do servidor MySQL
5KYDEV0P5.skydevops-mysql	Install and configure MySQL Database
AAbouZaid.yourls	Manage Yourls, a URL shortener web app.
aalaesar.install_nextcloud	Add a new Nextcloud instance in your infrastructure. The role man
aalaesar.upgrade-nextcloud	Upgrade an Nextcloud instance in your infrastructure. The role man
AAROC.AAROC_fg-db	your description



# Use Roles

```
$ ansible-galaxy install geerlingguy.mysql
```

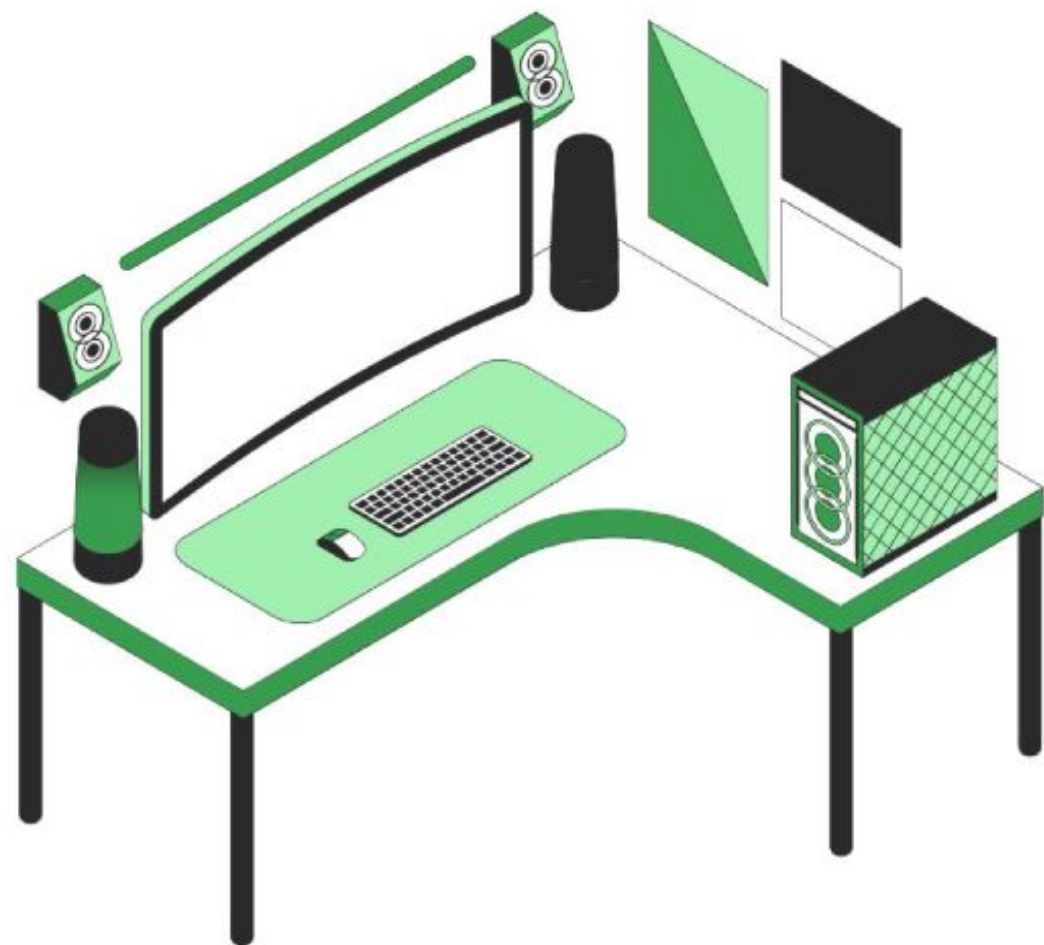
```
ercan@ubuntu:~/Desktop/ansible$ ansible-galaxy install geerlingguy.mysql
- downloading role 'mysql', owned by geerlingguy
- downloading role from https://github.com/geerlingguy/ansible-role-mysql/archive/3.3.0.tar.gz
- extracting geerlingguy.mysql to /home/ercan/.ansible/roles/geerlingguy.mysql
- geerlingguy.mysql (3.3.0) was installed successfully
```

## playbook.yml

```
- name: Install and Configure MySQL
  hosts: db-server
  roles:
    - geerlingguy.mysql
```

```
- name: Install and Configure MySQL
  hosts: db-server
  roles:
    - role: geerlingguy.mysql
      become: yes
      vars:
        mysql_user_name: db-user
```

The screenshot shows the Ansible Galaxy interface for the 'mysql' role. The role is owned by geerlingguy. The 'Info' section shows the minimum Ansible version as 2.9. The 'Installation' section shows the role was installed 5 days ago. The 'Tags' section shows the role is tagged with 'database', 'db', 'mysql', 'mysql', and 'sql'. The 'OS Platforms' section shows the role is compatible with various Linux distributions. The 'Versions' section shows the role has multiple versions available, with the latest being 3.3.0, released 3 months ago.



# Do you have any questions?

Send it to us! We hope you learned  
something new.