

# Ansible Roles



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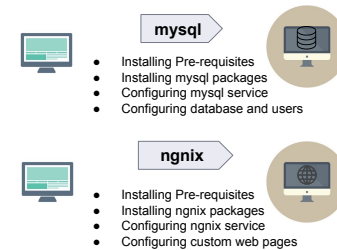
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## What is Ansible Role?

## What is Ansible Role?

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



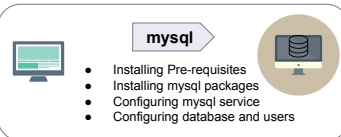
## What is Ansible Role?

### 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-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?



Organize



Re-use



### 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?



Share



Organize



Re-use



```
$ 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

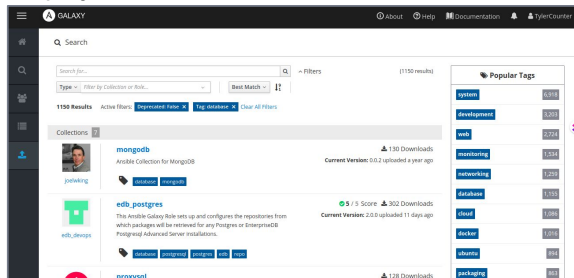
```
roles
├── common-server
│   ├── defaults
│   │   └── main.yml
│   ├── files
│   ├── handlers
│   │   └── main.yml
│   ├── meta
│   │   └── main.yml
│   ├── README.md
│   ├── tasks
│   │   └── main.yml
│   ├── templates
│   ├── tests
│   │   ├── inventory
│   │   └── test.yml
│   └── vars
│       └── main.yml
```

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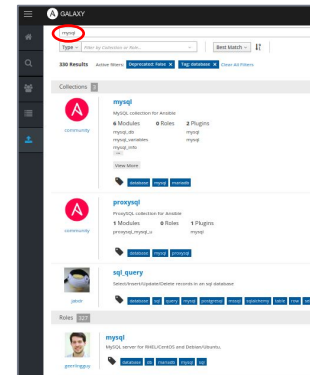
## Find Roles & Ansible Galaxy

## 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.



## Find Roles & Ansible Galaxy



### \$ ansible-galaxy search mysql

```
Found 1218 roles matching your search. Showing first 1000.

Name                                     Description
-----
outsider ansible_zabbix_agent           Installing and maintaining zabbix-agent for Redhat/Debian/Ubuntu.
RedHat grafana                         Grafana - an analytics and monitoring observability platform
RedHat prometheus                      Prometheus - a multi-dimensional time-series data monitoring and
lar.unattended                         Install and configure unattended upgrade
lar.zabbix_agent2                      Install and configure zabbix-agent2
lar.zabbix_host                        Configure host zabbix settings
lefinthus mysql                       Simply installs MySQL 5.7 on Xenial.
4linecode mysql_server                Installs & Configures db server MySQL
skydevops skydevops-mysql             Install and configure MySQL Database
Abou2aid youris                       Manage Youris, a URL shortener web app.
jalestar install-nextcloud            Add a new Nextcloud instance in your infrastructure. The role man
jalaslar upgrade-nextcloud            Upgrade an Nextcloud instance in your infrastructure. The role ma
ABDOC ABOC fr-db                      your description
```



# Interview Q/A

## Q1) What is Ansible?

**Ans:** Ansible is developed in . It is a software tool. It is useful while deploying any application using ssh [Python language](#) without any downtime. Using this tool one can manage and configure software applications very easily.

# Interview Q/A

## Q2) Ansible Playbooks vs Roles

**Ans:**

Roles	Playbooks
Roles are reusable subsets of a play.	Playbooks contain Plays.
A set of tasks for <a href="#">accomplishing certain role</a> .	Maps among hosts and roles.
Example: common, <a href="#">webservers</a> .	Example: site.yml, fooservers.yml, <a href="#">webservers.yml</a> .

# Interview Q/A

**Q3) What are the advantages of using Ansible?**

**Ans:** The main three advantages of using this tool is, i.e. Ansible

- Agentless
- Very low overhead
- Good performance

# Interview Q/A

**Q4) Compare Ansible VS Puppet**

**Ans:**

Ansible	Puppet
Simplest Technology	Complex Technology
Written in YAML language	Written in Ruby language
Agent-less install and deploy	Easy install
No support for Windows	Support for all major OS's
GUI -work under progress	Good GUI
CLI accepts commands in almost any language	Must learn the Puppet DSL



# Interview Q/A

## Q5) How Ansible Works?

**Ans:** There are many similar automation tools available like , Capistrano, Chef, Salt, Space Walk etc, but Ansible Puppet categorize into two types of server: controlling machines and nodes.

The controlling machine, where Ansible is installed and Nodes are managed by this controlling machine over SSH. The location of nodes are specified by controlling machine through its inventory.

The controlling machine (Ansible) deploys modules to nodes using SSH protocol and these modules are stored temporarily on remote nodes and communicate with the Ansible machine through a JSON connection over the standard output.

Ansible is agent-less, that means no need of any agent installation on remote nodes, so it means there are no any background daemons or programs are executing for Ansible, when it's not managing any nodes.

Ansible can handle '100's of nodes from a single system over SSH connection and the entire operation can be handled and executed by one single command 'ansible'. But, in some cases, where you required to execute multiple commands for a deployment, here we can build playbooks.

Playbooks are bunch of commands which can perform multiple tasks and each playbooks are in YAML file format.

# THANKS!

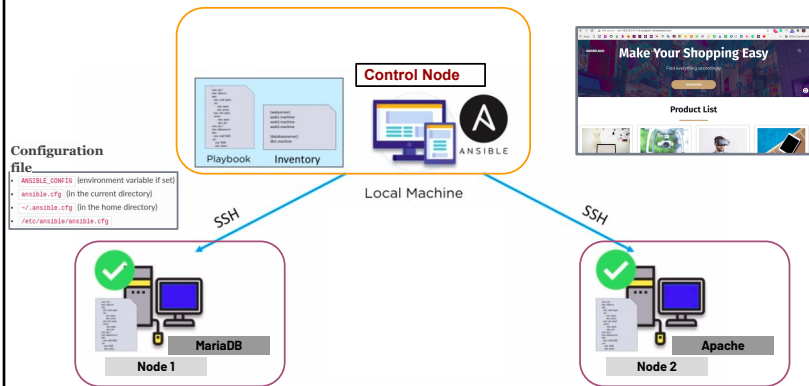
## Any questions?

You can find me at:

► [tyler@clarusway.com](mailto:tyler@clarusway.com)



### HANDS-ON 3: Provisioning a Web Server and a Database Server with a Dynamic Website Using Ansible



### HANDS-ON 3: Provisioning a Web Server and a Database Server with a Dynamic Website Using Ansible

