





# Test driven development for Ansible



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# Test driven development for Ansible

## Topics:

- Ansible
- Ansible with Containers
- Ansible testing with Molecule



## Ansible Problems:

- Applying Playbooks on fresh host
- Applying Playbooks on various operating system versions
- Idempotence
- Testing

# Test driven development for Ansible

## Topics:

- Ansible
- Ansible with **Containers**
- Ansible testing with **Molecule**

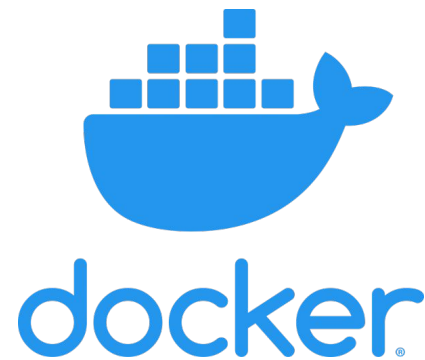
## Ansible Problems:

- Applying Playbooks on fresh host
- Applying Playbooks on various operating system versions
- Idempotence
- Testing



# On demand fresh machine

- IBM Cloud, AWS, ...
- VirtualBox (via Vagrant)
- Docker, Podman
  - Systemd services
  - Docker on Fedora
  - Podman recreating



podman

# Docker - Systemd problem

```
community.docker.docker_container:  
  name: "mycentos8"  
  image: "centos:8"  
  entrypoint: /sbin/init  
  volumes:  
    - /sys/fs/cgroup:/sys/fs/cgroup:ro  
  tmpfs:  
    - /run  
    - /run/lock  
    - /tmp
```

# Docker - Systemd problem

```
community.docker.docker_container:  
  name: "debian11"  
  image: "geerlingguy/docker-debian11-ansible"  
  entrypoint: /sbin/init  
  volumes:  
    - /sys/fs/cgroup:/sys/fs/cgroup:ro  
  tmpfs:  
    - /run  
    - /run/lock  
    - /tmp
```

# Demo time



[gitlab.com/vician/linuxdays-2021-molecule](https://gitlab.com/vician/linuxdays-2021-molecule)

Playbook: `docker.yml`

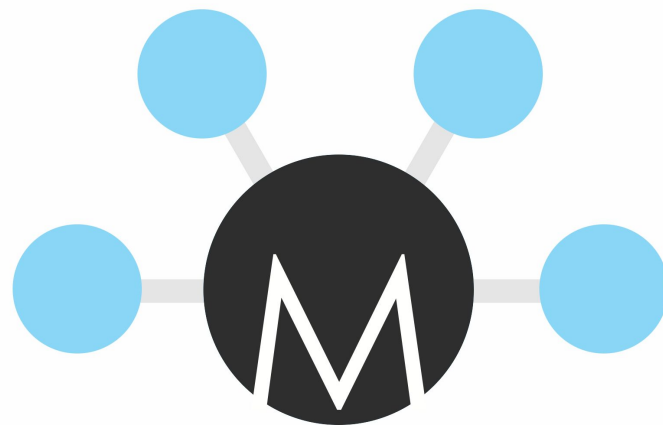
# Podman - Systemd problem

- *Yes, sadly we can not fix this issue. RHEL7/Centos7 systemd containers can not run on a cgroup V2 machine, The systemd is too old.*
- Recreating - manual when exists and destroying.



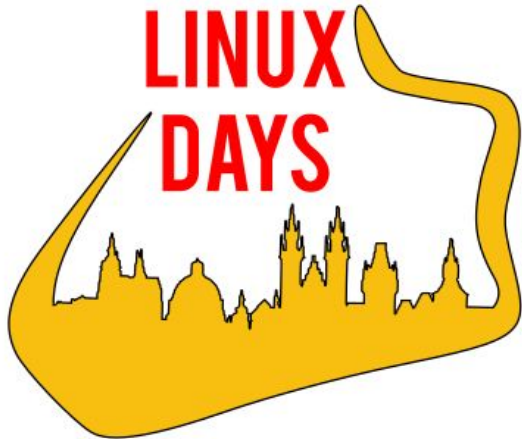
# Molecule

- Test framework for Ansible
- Supports: docker, podman, ...
- Use tags to skip any task



Molecule

# Demo time



[gitlab.com/vician/linuxdays-2021-molecule](https://gitlab.com/vician/linuxdays-2021-molecule)

```
molecule init role -d docker nginx0
```

Roles: nginx1, nginx2

# Molecule matrix

- `molecule matrix test`
- `lint`
  - `ansible-lint`
  - `yamllint`
- `create`
- `prepare - prepare.yml`
- `converge`
- `idempotence`
- `verify - verify.yml`
- `destroy`

## Usage:

- `molecule test`

## Or debugging:

- `molecule create`
- `molecule converge`
- `docker exec -it INSTANCE  
/bin/bash`
- `molecule destroy`

# Demo time



[gitlab.com/vician/linuxdays-2021-molecule](https://gitlab.com/vician/linuxdays-2021-molecule)

```
molecule init role -d docker nginx0
```

Roles: nginx1, nginx2

# Automatic tests

- Molecule supports various CI
- Better to split to several jobs
  - Platforms (OS versions)
  - Scenarios
  - Lint
- Gitlab CI: PYCODE=1

## Steps:

- Install
- molecule test
- Profit

# Demo time



[gitlab.com/vician/linuxdays-2021-molecule](https://gitlab.com/vician/linuxdays-2021-molecule)

Roles: nginx3

[gitlab.com/vician/linuxdays-2021-molecule/-/pipelines](https://gitlab.com/vician/linuxdays-2021-molecule/-/pipelines)

# Automatic tests

- Resource optimization
- More code standards
- Dependency testing



**KEEP  
CALM  
AND  
Have Fun  
While Testing**