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Red Hat Enterprise Linux Automation with Ansible

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VIDEO CLASSROOM

Guided Exercise: Getting Roles and Modules from Content Collections ☆

In this exercise, you will install a content collection and use a role or module from that content collection in a playbook.

Outcomes

You should be able to:

- Use the `ansible-galaxy` command to install a content collection.
- Use a `requirements.yml` file to install multiple collections.
- Invoke content collections roles and modules from playbooks.

  Log in to `workstation` as `student` using `student` as the password.

  On `workstation`, run the `lab role-collections start` command. This command creates the working directory, `/home/student/role-collections`, and populates it with an Ansible project.

```
[student@workstation ~]$ lab role-collections start
```

Procedure 7.4. Instructions

1. Install and then inspect the `gls.utils` collection.

    1.1. Install the `gls.utils` collection from the tar file at `http://materials.example.com/labs/role-collections/gls-utils-0.0.1.tar.gz`. You can copy and paste that URL from the `/home/student/role-collections/url.txt` file.

    ```
    [student@workstation ~]$ ansible-galaxy collection install \
    > http://materials.example.com/labs/role-collections/gls-utils-0.0.1.tar.gz
    Process install dependency map
    Starting collection install process
    Installing 'gls.utils:0.0.1' to '/home/student/.ansible/collections/ansible_collections/gls/utils'
    ```

    Notice that the preceding command installs the collection in the `/home/student/.ansible/collections/ansible_collections/gls/utils` directory.

    1.2. List the roles that the collection provides.

    ```
    [student@workstation ~]$ ls \
    > ~/.ansible/collections/ansible_collections/gls/utils/roles
    backup  restore
    ```

From the preceding output, notice that the collection provides two roles: `backup` and `restore`.

1.3. Each role provides a `README.md` file. Consult the `README.md` file for the `backup` role.

```
[student@workstation ~]$ cat \
> ~/.ansible/collections/ansible_collections/gls/utils/roles/backup/README.md
...output omitted...
```

1.4. List the modules that the collection provides.

```
[student@workstation ~]$ ls \
> ~/.ansible/collections/ansible_collections/gls/utils/plugins/modules
newping.py
```

The collection provides the `newping` module.

1.5. Use the `ansible-doc` command to consult the `newping` module documentation.

```
[student@workstation ~]$ ansible-doc gls.utils.newping
...output omitted...
```

2. Complete and then run the `/home/student/role-collections/bck.yml` playbook. That playbook uses the `gls.utils.newping` module and the `gls.utils.backup` role.

2.1. Change to the `role-collections` working directory.

```
[student@workstation ~]$ cd ~/role-collections
[student@workstation role-collections]$
```

2.2. Edit the `bck.yml` playbook. In the first task, invoke the `gls.utils.newping` module.

```
...output omitted...
  tasks:
    - name: Ensure the machine is up
      gls.utils.newping:
        data: pong
...output omitted...
```

Do not close the file yet.

2.3. In the second task, invoke the `gls.utils.backup` role. When done, save and close the file.

```
...output omitted...
    - name: Ensure configuration files are saved
      include_role:
        name: gls.utils.backup
      vars:
        backup_id: backup_etc
        backup_files:
          - /etc/sysconfig
          - /etc/yum.repos.d
...output omitted...
```

The resulting file should display as follows:

```
---
- name: Backup the system configuration
  hosts: servera.lab.example.com
  become: true
  gather_facts: false

  tasks:
    - name: Ensure the machine is up
      gls.utils.newping:
        data: pong

    - name: Ensure configuration files are saved
      include_role:
        name: gls.utils.backup
      vars:
        backup_id: backup_etc
        backup_files:
          - /etc/sysconfig
          - /etc/yum.repos.d
```

2.4. Verify the syntax of the `bck.yml` playbook.

```
[student@workstation role-collections]$ ansible-playbook --syntax-check bck.yml

playbook: bck.yml
```

2.5. Run the playbook.

```
[student@workstation role-collections]$ ansible-playbook bck.yml
...output omitted...
```

3. In the second part of this exercise, install content collections specified by a `requirements.yml` file.

    To test your work when done, run the `new_system.yml` playbook. That playbook uses the `redhat.insights.insights_client` and `redhat.rhel_system_roles.selinux` roles to configure Red Hat Insights and SELinux on the `servera` machine.

    3.1. Review the `requirements.yml` file. The file lists two collections to install from tar files hosted on the `materials.example.com` web server.

```
---
collections:
  - name: http://materials.example.com/labs/role-collections/redhat-insights-1.0.5.tar.gz
  - name: http://materials.example.com/labs/role-collections/redhat-rhel_system_roles-1.0.1.tar.gz
```

    3.2. Use the `ansible-galaxy` command with the `requirements.yml` file to install the collections.

```
[student@workstation role-collections]$ ansible-galaxy collection install \
> -r requirements.yml
Process install dependency map
Starting collection install process
Installing 'redhat.insights:1.0.5' to '/home/student/.ansible/collections/ansible_collections/redhat/insights'
Installing 'redhat.rhel_system_roles:1.0.1' to '/home/student/.ansible/collections/ansible_collections/redhat/rh
el_system_roles'
```

    3.3. Review the `new_system.yml` playbook.

```
---
- name: Configure the system
  hosts: servera.lab.example.com
  become: true
  gather_facts: true

  tasks:
    - name: Ensure the system is registered with Insights
      include_role:
        name: redhat.insights.insights_client
      vars:
        auto_config: false
        insights_proxy: http://proxy.example.com:8080

    - name: Ensure SELinux mode is Enforcing
      include_role:
        name: redhat.rhel_system_roles.selinux
      vars:
        selinux_state: enforcing
```

3.4. Run the `new_system.yml` playbook in check mode to confirm that you correctly installed the required collections. Because the classroom systems are not registered with Red Hat and might not have internet access, the `new_system.yml` playbook cannot complete successfully. However, to confirm that you correctly installed the required collections, you can still run the playbook in check mode.

```
[student@workstation role-collections]$ ansible-playbook --check new_system.yml
```

Finish

Run the `lab role-collections finish` command to clean up the managed host.

```
[student@workstation ~]$ lab role-collections finish
```

This concludes the guided exercise.