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# Red Hat Enterprise Linux Automation with Ansible

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VIDEO CLASSROOM



## Guided Exercise: Including and Importing Files

In this exercise, you will include and import playbooks and tasks in a top-level Ansible Playbook.

### Outcomes

You will be able to include task and playbook files in playbooks.

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

On workstation, run the `lab projects-file start` command. The script creates the working directory, `/home/student/projects-file`, and associated project files.

```
[student@workstation ~]$ lab projects-file start
```

### Procedure 6.2. Instructions

1. On workstation, as the student user, change to the `/home/student/projects-file` directory.

```
[student@workstation ~]$ cd ~/projects-file  
[student@workstation projects-file]$
```

2. Review the contents of the three files in the tasks subdirectory.

- 2.1. Review the contents of the `tasks/environment.yml` file. The file contains tasks for package installation and service administration.

```
---  
- name: Install the {{ package }} package  
  yum:  
    name: "{{ package }}"  
    state: latest  
- name: Start the {{ service }} service  
  service:  
    name: "{{ service }}"  
    enabled: true  
    state: started
```

- 2.2. Review the contents of the `tasks/firewall.yml` file. The file contains tasks for installation, administration, and configuration of firewall software.

```

---
- name: Install the firewall
  yum:
    name: "{{ firewall_pkg }}"
    state: latest

- name: Start the firewall
  service:
    name: "{{ firewall_svc }}"
    enabled: true
    state: started

- name: Open the port for {{ rule }}
  firewallld:
    service: "{{ item }}"
    immediate: true
    permanent: true
    state: enabled
    loop: "{{ rule }}"

```

2.3. Review the contents of the `tasks/placeholder.yml` file. This file contains a task for populating a placeholder web content file.

```

---
- name: Create placeholder file
  copy:
    content: "{{ ansible_facts['fqdn'] }}" has been customized using Ansible.\n"
    dest: "{{ file }}"

```

3. Review the contents of the `test.yml` file in the `plays` subdirectory. This file contains a play which tests connections to a web service.

```

---
- name: Test web service
  hosts: localhost
  become: no
  tasks:
    - name: connect to internet web server
      uri:
        url: "{{ url }}"
        status_code: 200

```

4. Create a playbook named `playbook.yml`. Define the first play with the name `Configure web server`. The play should execute against the `servera.lab.example.com` managed host defined in the inventory file. The beginning of the file should look like the following:

```

---
- name: Configure web server
  hosts: servera.lab.example.com

```

5. In the `playbook.yml` playbook, define the tasks section with three sets of tasks. Include the first set of tasks from the `tasks/environment.yml` tasks file. Define the necessary variables to install the `httpd` package and to enable and start the `httpd` service. Import the second set of tasks from the `tasks/firewall.yml` tasks file. Define the necessary variables to install the `firewalld` package to enable and start the `firewalld` service, and to allow `http` connections. Import the third task set from the `tasks/placeholder.yml` task file.

5.1. Create the tasks section in the first play by adding the following entry to the `playbook.yml` playbook.

```
tasks:
```

5.2. Include the first set of tasks from `tasks/environment.yml` using the `include_tasks` feature. Set the package and service variables to `httpd`.

```
- name: Include the environment task file and set the variables
  include_tasks: tasks/environment.yml
  vars:
    package: httpd
    service: httpd
```

5.3. Import the second set of tasks from tasks/firewall.yml using the import\_tasks feature. Set the firewall\_pkg and firewall\_svc variables to firewalld. Set the rule variable to http.

```
- name: Import the firewall task file and set the variables
  import_tasks: tasks/firewall.yml
  vars:
    firewall_pkg: firewalld
    firewall_svc: firewalld
    rule:
      - http
      - https
```

5.4. Import the last task set from tasks/placeholder.yml using the import\_tasks feature. Set the file variable to /var/www/html/index.html.

```
- name: Import the placeholder task file and set the variable
  import_tasks: tasks/placeholder.yml
  vars:
    file: /var/www/html/index.html
```

6. Add a second and final play to the playbook.yml playbook using the contents of the plays/test.yml playbook.

6.1. Add a second play to the playbook.yml playbook to validate the web server installation. Import the play from plays/test.yml. Set the url variable to http://servera.lab.example.com.

```
- name: Import test play file and set the variable
  import_playbook: plays/test.yml
  vars:
    url: 'http://servera.lab.example.com'
```

6.2. Your playbook should look like the following after the changes are complete:

```
---
- name: Configure web server
  hosts: servera.lab.example.com

  tasks:
    - name: Include the environment task file and set the variables
      include_tasks: tasks/environment.yml
      vars:
        package: httpd
        service: httpd

    - name: Import the firewall task file and set the variables
      import_tasks: tasks/firewall.yml
      vars:
        firewall_pkg: firewalld
        firewall_svc: firewalld
        rule:
          - http
          - https

    - name: Import the placeholder task file and set the variable
      import_tasks: tasks/placeholder.yml
      vars:
        file: /var/www/html/index.html

- name: Import test play file and set the variable
  import_playbook: plays/test.yml
  vars:
    url: 'http://servera.lab.example.com'
```

6.3. Save the changes to the `playbook.yml` playbook.

7. Before running the playbook, verify its syntax is correct by running `ansible-playbook --syntax-check`. If errors are reported, correct them before moving to the next step.

```
[student@workstation projects-file]$ ansible-playbook playbook.yml --syntax-check

playbook: playbook.yml
```

8. Execute the `playbook.yml` playbook. The output of the playbook shows the import of the task and play files.

```
[student@workstation projects-file]$ ansible-playbook playbook.yml

PLAY [Configure web server] *****

TASK [Gathering Facts] *****
ok: [servera.lab.example.com]

TASK [Install the httpd package] *****
changed: [servera.lab.example.com]

TASK [Start the httpd service] *****
changed: [servera.lab.example.com]

TASK [Install the firewall] *****
ok: [servera.lab.example.com]

TASK [Start the firewall] *****
ok: [servera.lab.example.com]

TASK [Open the port for ['http', 'https']] *****
changed: [servera.lab.example.com] => (item=http)
changed: [servera.lab.example.com] => (item=https)

TASK [Create placeholder file] *****
changed: [servera.lab.example.com]

PLAY [Test web service] *****

TASK [Gathering Facts] *****
ok: [localhost]

TASK [connect to internet web server] *****
ok: [localhost]

PLAY RECAP *****
localhost                : ok=2    changed=0    unreachable=0    failed=0
servera.lab.example.com   : ok=8    changed=4    unreachable=0    failed=0
```

## Finish

On workstation, run the `lab projects-file finish` script to clean up this exercise.

```
[student@workstation ~]$ lab projects-file finish
```

This concludes the guided exercise.

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