

Ansible Workshop - Exercises

# Automation Platform

Learn to manage and run your Ansible  
content in AAP.



# 3 - Projects & Job Templates

## Objective

An Ansible automation controller **Project** is a logical collection of Ansible playbooks. You can manage your playbooks by placing them into a source code management (SCM) system supported by automation controller such as Git or Subversion.

This exercise covers:

- Understanding and using an Ansible automation controller Project
- Using Ansible playbooks kept in a Git repository.
- Creating and using an Ansible Job Template

## Guide

### Setup Git Repository

For this demonstration we will use playbooks stored in a Git repository:

<https://github.com/ansible/workshop-examples>

A playbook to install the Apache web server has already been committed to the directory **rhel/apache**,

`apache_install.yml`:

```

---
- name: Apache server installed
  hosts: web

  tasks:
    - name: latest Apache version installed
      yum:
        name: httpd
        state: latest

    - name: latest firewalld version installed
      yum:
        name: firewalld
        state: latest

    - name: firewalld enabled and running
      service:
        name: firewalld
        enabled: true
        state: started

    - name: firewalld permits http service
      firewalld:
        service: http
        permanent: true
        state: enabled
        immediate: yes

    - name: Apache enabled and running
      service:
        name: httpd
        enabled: true
        state: started

```

### Tip

Note the difference to other playbooks you might have written! Most importantly there is no `become` set, this has to be done later in the Job template!

To configure and use this repository as a **Source Control Management (SCM)** system in automation controller you have to create a **Project** that uses the repository

## Create the Project

- Go to **Resources** → **Projects** click the **Add** button. Fill in the form:

Parameter	Value
Name	Workshop Project
Organization	Default
Default Execution Environment	Default Execution Environment

Source Control Type	Git
---------------------	-----

Enter the URL into the Project configuration:

Parameter	Value
Source Control URL	<code>https://github.com/ansible/workshop-examples.git</code>
Options	Select <b>Clean</b> , <b>Delete</b> and <b>Update Revision on Launch</b> to request a fresh copy of the repository and to update the repository when launching a job.

- Click **SAVE**

The new project will be synced automatically after creation. But you can also do this manually: Sync the Project again with the Git repository by going to the **Projects** view and clicking the circular arrow **Sync Project** icon to the right of the Project.

After starting the sync job, go to the **Jobs** view: there is a new job for the update of the Git repository.

## Create a Job Template and Run a Job

A job template is a definition and set of parameters for running an Ansible job. Job templates are useful to execute the same job many times. So before running an Ansible **Job** from automation controller you must create a **Job Template** that pulls together:

- **Inventory**: On what hosts should the job run?
- **Credentials** What credentials are needed to log into the hosts?
- **Project**: Where is the playbook?
- **What** playbook to use?

Okay, let's just do that: Go to the **Resources -> Templates** view, click the **Add** button and choose **Add job template**.



### Tip

Remember that you can often click on magnifying glasses to get an overview of options to pick to fill in fields.

Parameter	Value
Name	<code>Install Apache</code>
Job Type	<code>Run</code>

Inventory	Workshop Inventory
Project	Workshop Project
Execution Environment	Default execution environment
Playbook	rhel/apache/apache_install.yml
Credentials	Workshop Credential
Limit	web
Options	<input checked="" type="checkbox"/> Privilege Escalation

- Click **Save**

You can start the job by directly clicking the blue **Launch** button, or by clicking on the rocket in the Job Templates overview. After launching the Job Template, you are automatically brought to the job overview where you can follow the playbook execution in real time:

Job Details

Jobs > Install Apache

Details

◀ Back to Jobs

Details

Output

Status

Successful

Started

8/2/2021, 3:45:14 PM

Finished

8/2/2021, 3:45:43 PM

Job Template

Install Apache

Job Type

Playbook Run

Launched By

admin

Inventory

Workshop Inventory

Project

Workshop Project

Revision

fe1f099af84ce0f8a93eb5b16fb2c8b5b6dc60de

Playbook

rhel/apache/apache\_install.yml

Limit

web

Verbosity

0 (Normal)

Execution Environment

Default execution environment

Execution Node

localhost

Instance Group

controlplane

Job Slice

0/1

Credentials

SSH: Workshop Cred...

Created

8/2/2021, 3:45:07 PM by admin

Last Modified

8/2/2021, 3:45:14 PM

Variables

YAML

JSON

1

Artifacts

YAML

JSON

1

## Job Run

Jobs > Install Apache

### Output

◀ Back to Jobs   Details   **Output**

**Install Apache**   Plays 1   Tasks 6   Hosts 3   Elapsed 00:00:28

Stdout   🔍

```
0 Identity added: /runner/artifacts/13/ssh_key_data (/runner/artifacts/13/ssh_key_data)
1
2 PLAY [Apache server installed] ***** 15:45:18
3
4 TASK [Gathering Facts] ***** 15:45:18
5 ok: [node1]
6 ok: [node3]
7 ok: [node2]
8
9 TASK [latest Apache version installed] ***** 15:45:20
10 ok: [node3]
11 ok: [node1]
12 changed: [node2]
13
14 TASK [latest firewalld version installed] ***** 15:45:28
15 ok: [node1]
16 ok: [node3]
17 changed: [node2]
18
19 TASK [firewalld enabled and running] ***** 15:45:37
```

Since this might take some time, have a closer look at all the details provided:

- All details of the job template like inventory, project, credentials and playbook are shown.
- Additionally, the actual revision of the playbook is recorded here - this makes it easier to analyse job runs later on.
- Also the time of execution with start and end time is recorded, giving you an idea of how long a job execution actually was.
- Selecting **Output** shows the output of the running playbook. Click on a node underneath a task and see that detailed information are provided for each task of each node.

After the Job has finished go to the main **Jobs** view: All jobs are listed here, you should see directly before the Playbook run an Source Control Update was started. This is the Git update we configured for the **Project** on launch!

## Challenge Lab: Check the Result

Time for a little challenge:

- Use an ad hoc command on all hosts to make sure Apache has been installed and is running.

You have already been through all the steps needed, so try this for yourself.



### Tip

What about `systemctl status httpd` ?

## ✓ Solution

- Go to **Resources** → **Inventories** → **Workshop Inventory**
- In the **Hosts** view select `node1` , `node2` , `node3` and click **Run Command**
- Within the **Details** window, select **Module** `command` , in **Arguments** type `systemctl status httpd` and click **Next**.
- Within the **Execution Environment** window, select **Default execution environment** and click **Next**.
- Within the **Machine Credential** window, select **Workshop Credential** and click **Launch**.

## Info

The output of the results is displayed once the command has completed.

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