Ansible Workshop - Exercises

Automation Platform

Learn to manage and run your Ansible content in AAP.

6 - Workflows

Objective

The basic idea of a *workflow* is to link multiple Job Templates together. They may or may not share inventory, playbooks or even permissions. The links can be conditional:

- if job template A succeeds, job template B is automatically executed afterwards
- but in case of failure, job template C will be run.

And the workflows are not even limited to Job Templates, but can also include project or inventory updates.

This enables new applications for Ansible automation controller: different Job Templates can build upon each other. E.g. the networking team creates playbooks with their own content, in their own Git repository and even targeting their own inventory, while the operations team also has their own repos, playbooks and inventory.

In this lab you'll learn how to setup a workflow.

Guide

Lab scenario

You have two departments in your organization:

- **Web operations team:** developing playbooks in their Git branch `webops`.
- **Web developers team:** working in their branch `webdev`.

When there is a new Node.js server to deploy, two things need to happen:

Web operations team

- Install `httpd`, `firewalld`, and `node.js`.
- Configure `SELinux` settings, open the firewall, and start `httpd` and `node.js`.

Web developers team

- Deploy the latest version of the web application and restart `node.js`.

In other words, the Web operations team prepares a server for application deployment, and the Web developers team deploys the application on the server.

To make things somewhat easier for you, everything needed already exists in a Github repository: playbooks, JSP-files etc. You just need to glue it together.

Note

In this example we use two different branches of the same repository for the content of the separate teams. In reality, the structure of your Source Control repositories depends on a lot of factors and could be different.

Set up projects

First you have to set up the Git repo as a Project like you normally would.

Warning

If you are still logged in as user **wweb**, log out of and log in as user **admin**.

Within **Automation Execution** → **Projects**, click **Create Project** to set up the web operations team's project: Fill out the form as follows:

Parameter	**Value**
Name	`Webops Git Repo`
Organization	`Default`
Default Execution Environment	`Default Execution Environment`
Source Control Credential Type	`Git`
Source Control URL	`https://github.com/ansible/workshop-examples.git`
Source Control Branch/Tag/Commit	`webops`
Options	☑ Clean ☑ Delete ☑ Update Revision on Launch

Click **Create project**.

Repeat the process to set up the **Webdev Git Repo**, using the branch `webdev`. Fill out the form as follows:

Parameter	**Value**
Name	`Webdev Git Repo`
Organization	`Default`

Default Execution Environment	`Default Execution Environment`
Source Control Credential Type	`Git`
Source Control URL	`https://github.com/ansible/workshop-examples.git`
Source Control Branch/Tag/Commit	`webdev`
Options	☑ Clean ☑ Delete ☑ Update Revision on Launch

Click **Create project**.

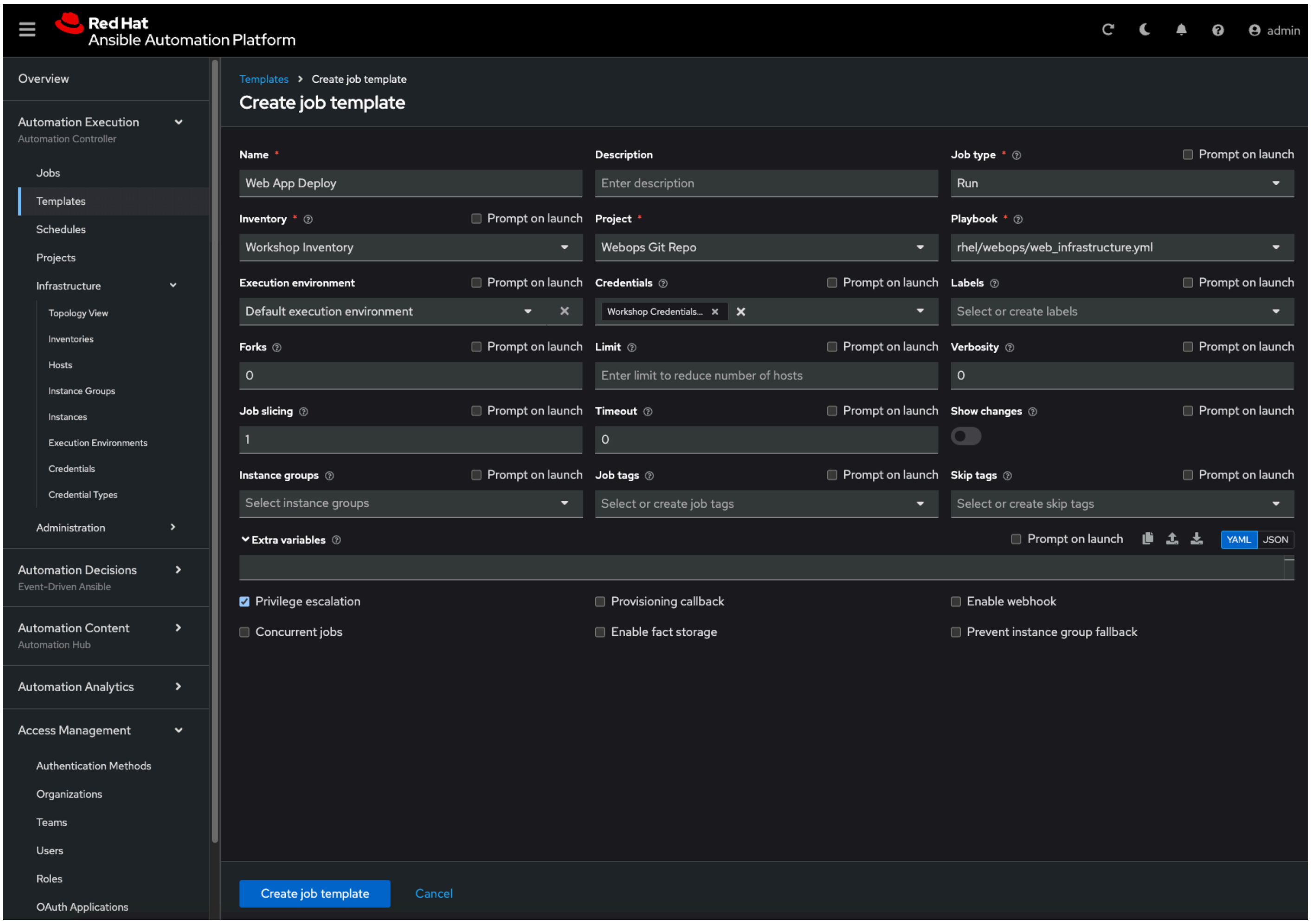
Set up job templates

Now you have to create two Job Templates like you would for "normal" Jobs.

Within **Automation Execution** → **Templates** → **Create template** → **Create job template**, fill out the form with the following values:

Parameter	**Value**
Name	`Web App Deploy`
Job Type	`Run`
Inventory	`Workshop Inventory`
Project	`Webops Git Repo`
Execution Environment	`Default execution environment`
Playbook	`rhel/webops/web_infrastructure.yml`
Credentials	`Workshop Credentials`
Limit	`web`
Options	☑ Privilege Escalation

Click **Create job template**.



Create job template

Name *	Description	Job type * □ Prompt on launch
Web App Deploy	Enter description	Run
Inventory * □ Prompt on launch	Project *	Playbook *
Workshop Inventory	Webops Git Repo	rhel/webops/web_infrastructure.yml
Execution environment □ Prompt on launch	Credentials □ Prompt on launch	Labels □ Prompt on launch
Default execution environment	Workshop Credentials...	Select or create labels
Forks □ Prompt on launch	Limit □ Prompt on launch	Verbosity □ Prompt on launch
0	Enter limit to reduce number of hosts	0
Job slicing □ Prompt on launch	Timeout □ Prompt on launch	Show changes □ Prompt on launch
1	0	○
Instance groups □ Prompt on launch	Job tags □ Prompt on launch	Skip tags □ Prompt on launch
Select instance groups	Select or create job tags	Select or create skip tags

Extra variables □ Prompt on launch

☑ Privilege escalation □ Provisioning callback □ Enable webhook

□ Concurrent jobs □ Enable fact storage □ Prevent instance group fallback

Click **Create job template**, and then repeat the process for the **Node.js Deploy** template, changing the project to **Webdev Git Repo** and the playbook to `rhel/webdev/install_node_app.yml`.

Parameter	Value
Name	`Node.js Deploy`
Job Type	`Run`
Inventory	`Workshop Inventory`
Project	`Webdev Git Repo`
Execution Environment	`Default execution environment`
Playbook	`rhel/webdev/install_node_app.yml`
Credentials	`Workshop Credentials`
Limit	`web`

Options	☑ Privilege Escalation

Click **Create job template**.

Tip

If you want to know what the Ansible Playbooks look like, check out the Github URL and switch to the appropriate branches.

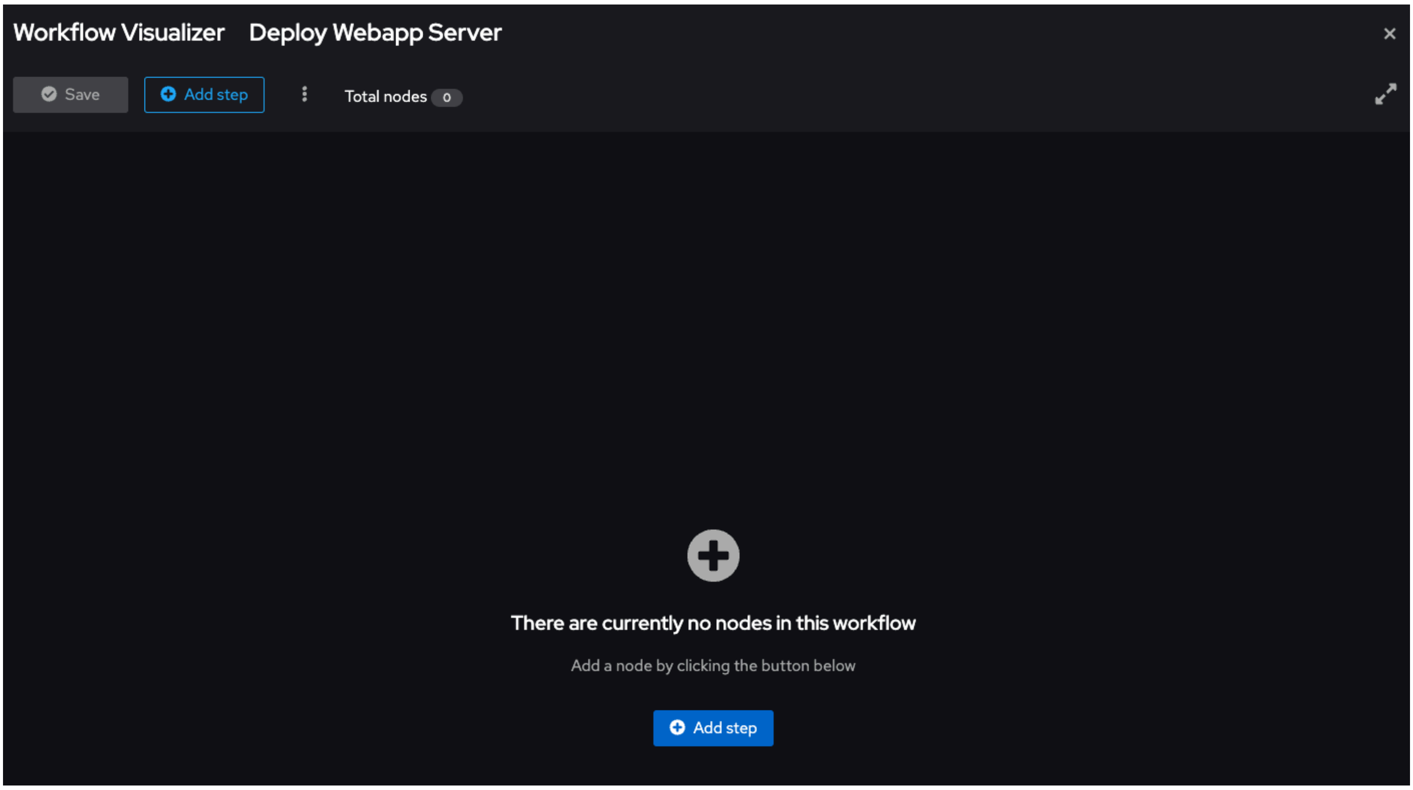
Set up the workflow

Workflows are configured in the **Templates** view, you might have noticed you can choose between **Create job template** and **Create workflow job template** when adding a template.

Within **Automation Execution** → **Templates** → **Create template** → **Create workflow job template**, fill in the details:

Parameter	Value
Name	`Deploy Webapp Server`
Organization	`Default`

Click **Create workflow job template** to open the **Workflow Visualizer**.

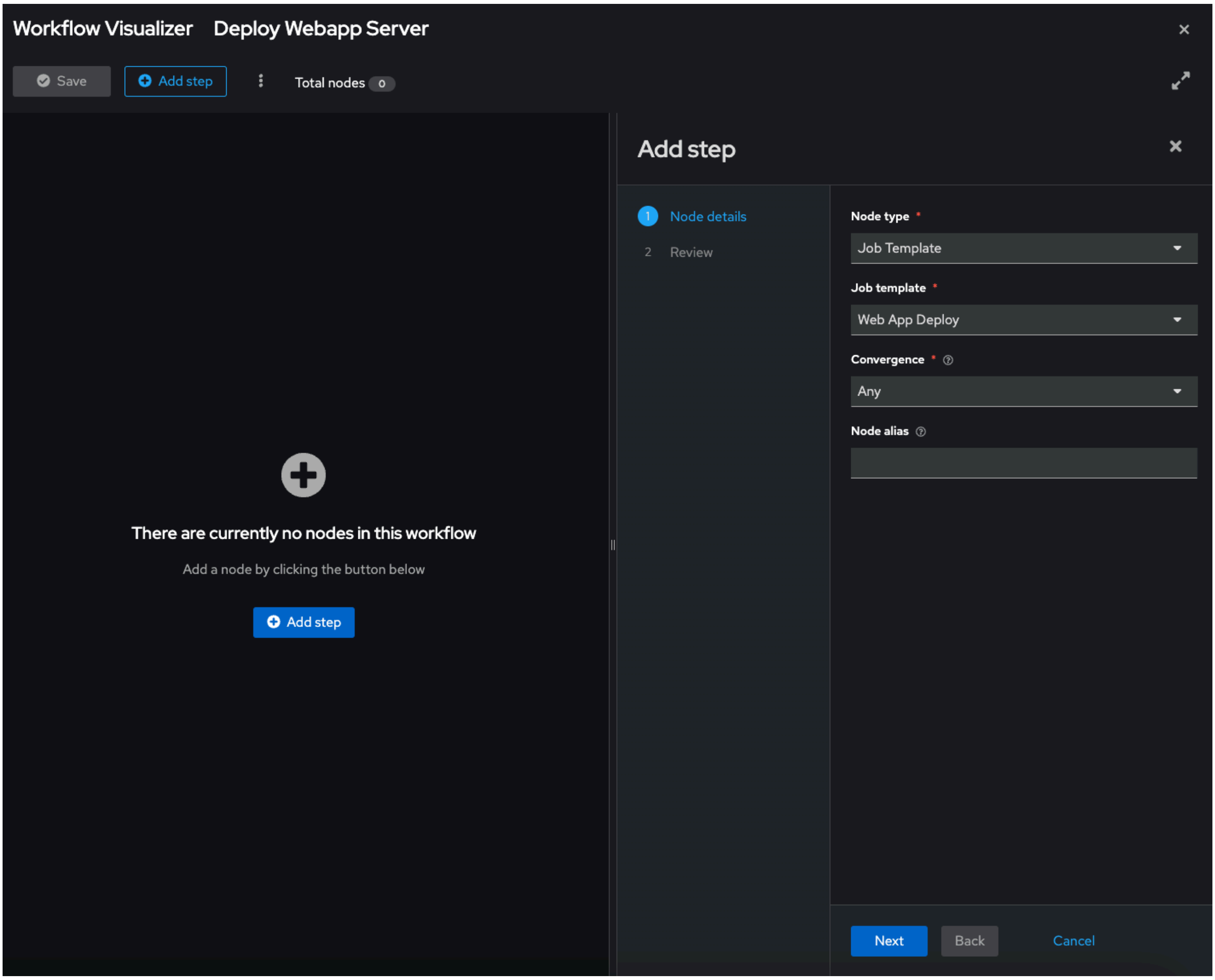


There are currently no nodes in this workflow

Add a node by clicking the button below

Click the **Add Step** button and assign the **Web App Deploy** job template to the first node. Add a second node by clicking the 3 dot sign, selecting the "Add step and link" and assign the **Node.js Deploy** template with the **Run on**

success status type. Select **Next** and **Finish** to complete the workflow.

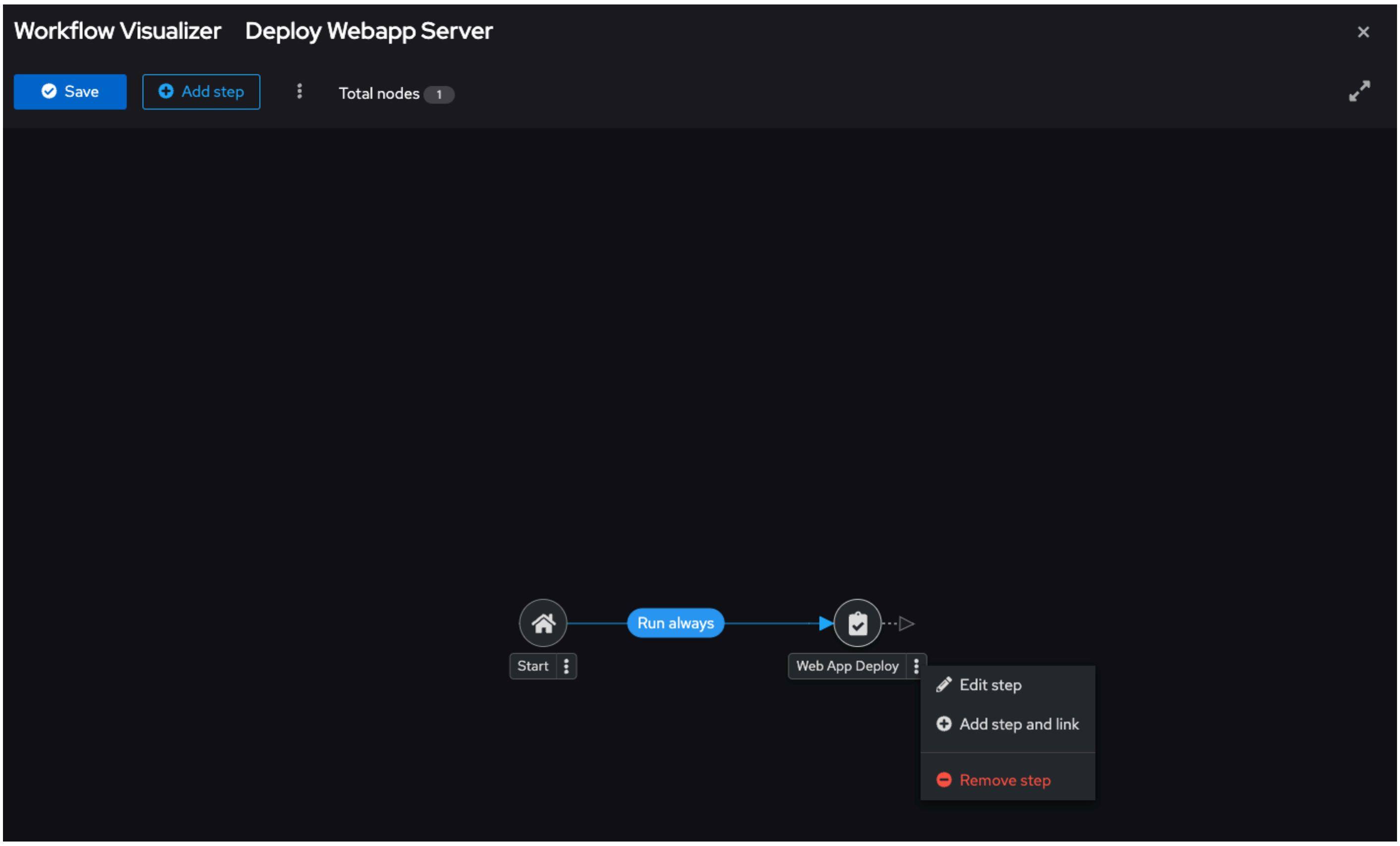


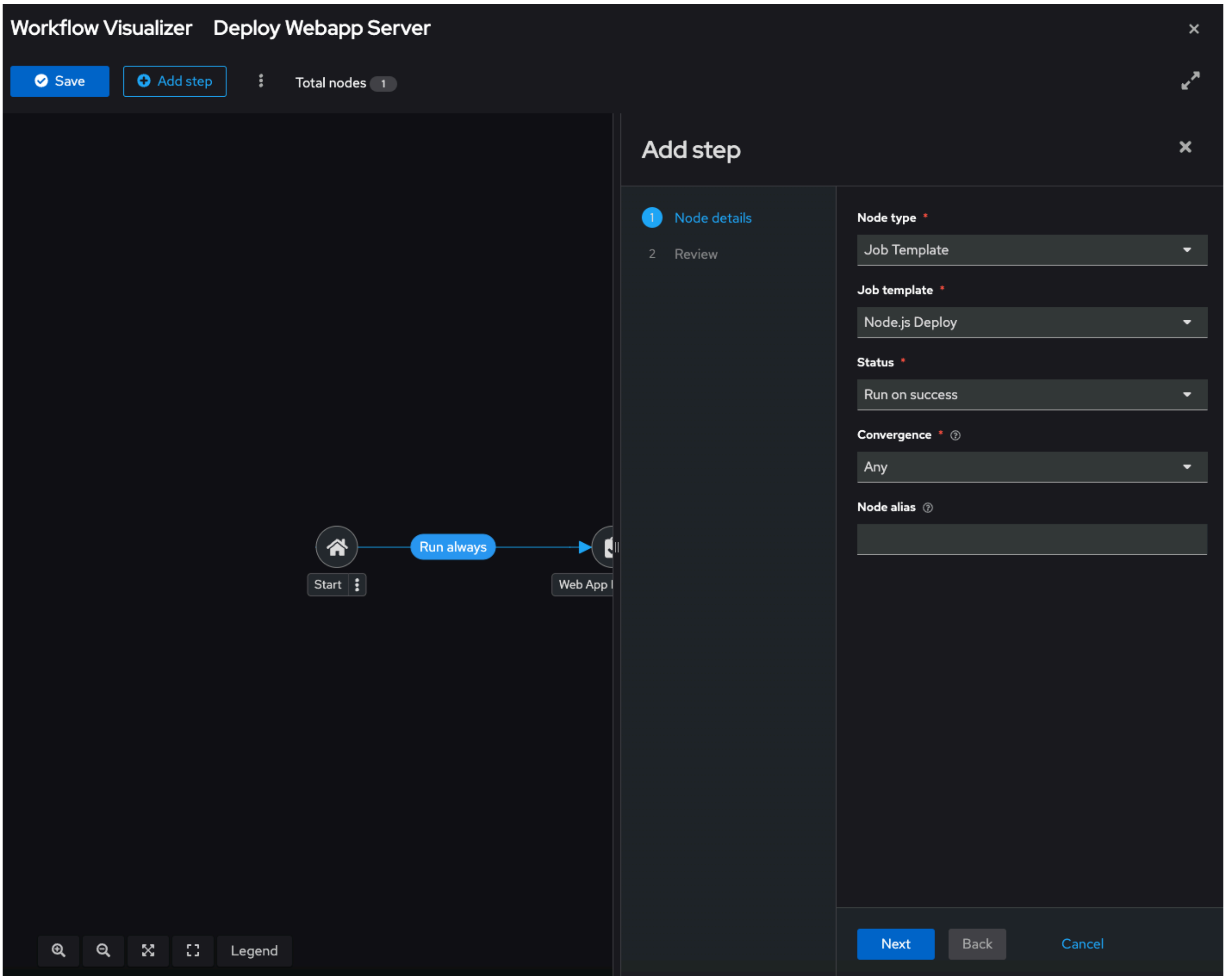
Node type * Job Template

Job template * Web App Deploy

Convergence * Any

Node alias





Node type * Job Template

Job template * Node.js Deploy

Status * Run on success

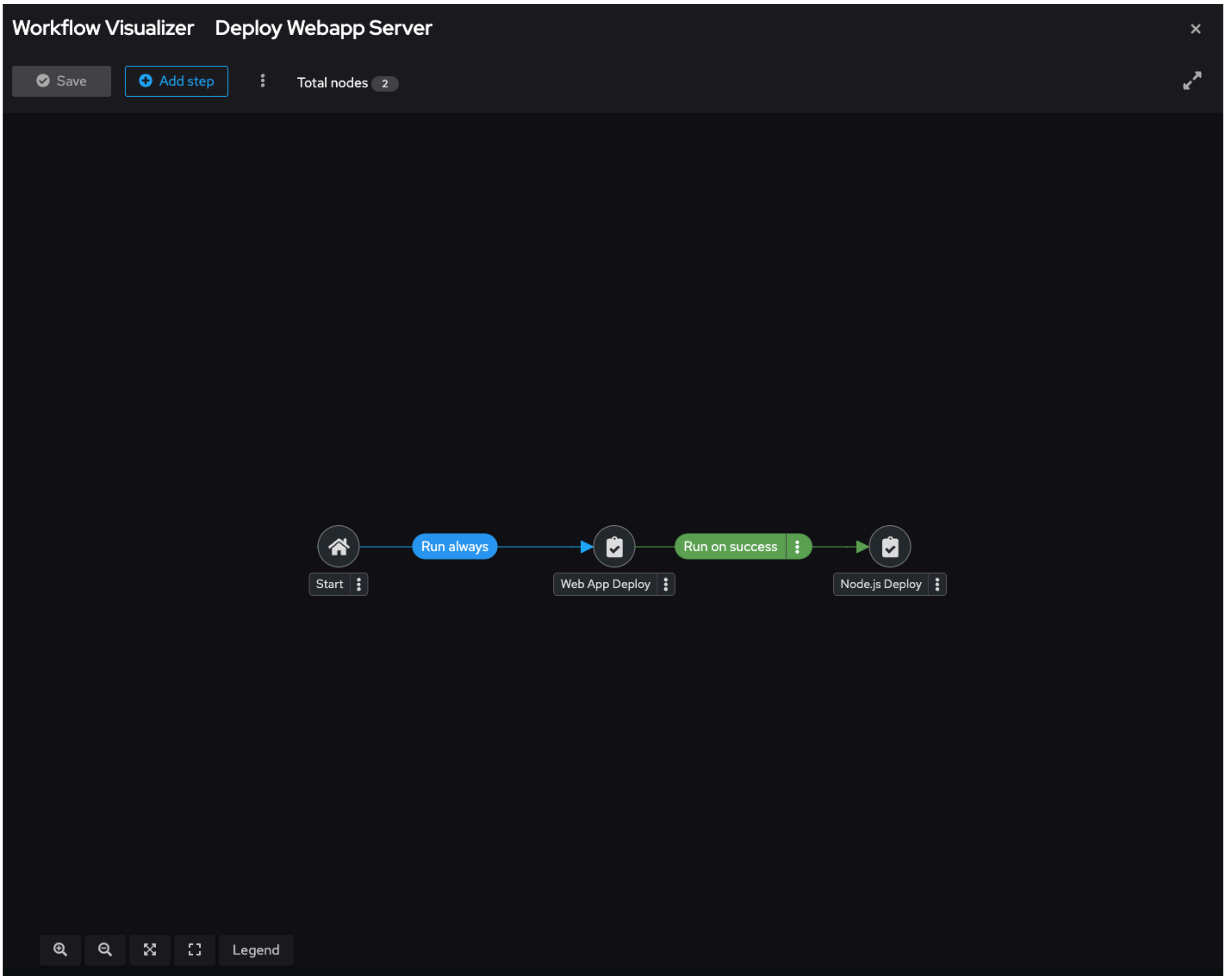
Convergence * Any

Node alias

Click **Save** to finalize the workflow.

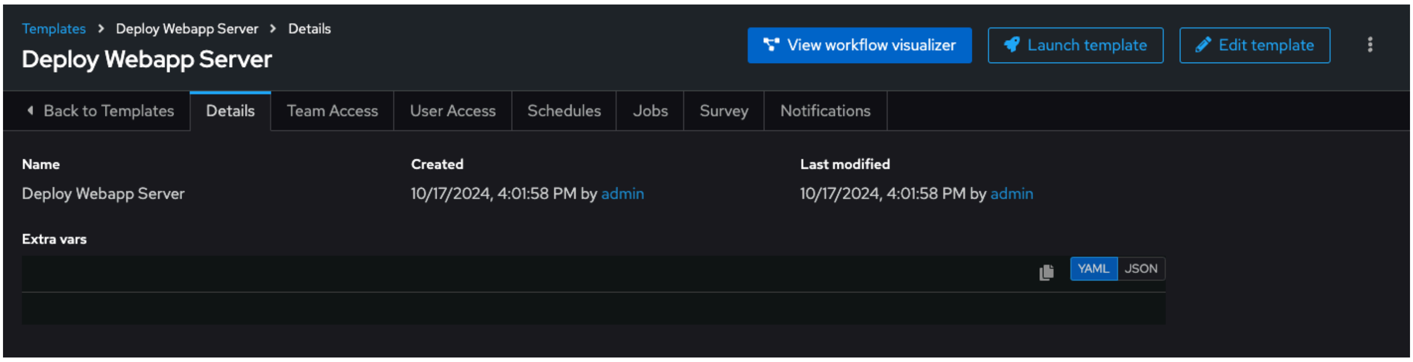
Tip

The run type allows for more complex workflows. You could lay out different execution paths for successful and for failed playbook runs.



Launch workflow

Within the **Deploy Webapp Server** template, click **Launch template**.



Deploy Webapp Server

Name
Deploy Webapp Server

Created
10/17/2024, 4:01:58 PM by admin

Last modified
10/17/2024, 4:01:58 PM by admin

Extra vars

Once the workflow completes, verify the result.

- Go to **Automation Execution** → **Infrastructure** → **Inventories** → **Workshop Inventory**.
- Select the Hosts tab and select `node1` and click **Run Command**.
- Within the Details window, select Module `command`, in Arguments type `curl http://node1/nodejs` and click Next.
- Within the Execution Environment window, select `Default execution environment` and click Next.
- Within the Credential window, select `Workshop Credentials` and click Next.

Review your inputs and click Finish.

Verify that the output result shows `Hello World`

Note

`XX` is the number of the job run.