



AUTOMATION WITH ANSIBLE

DO407

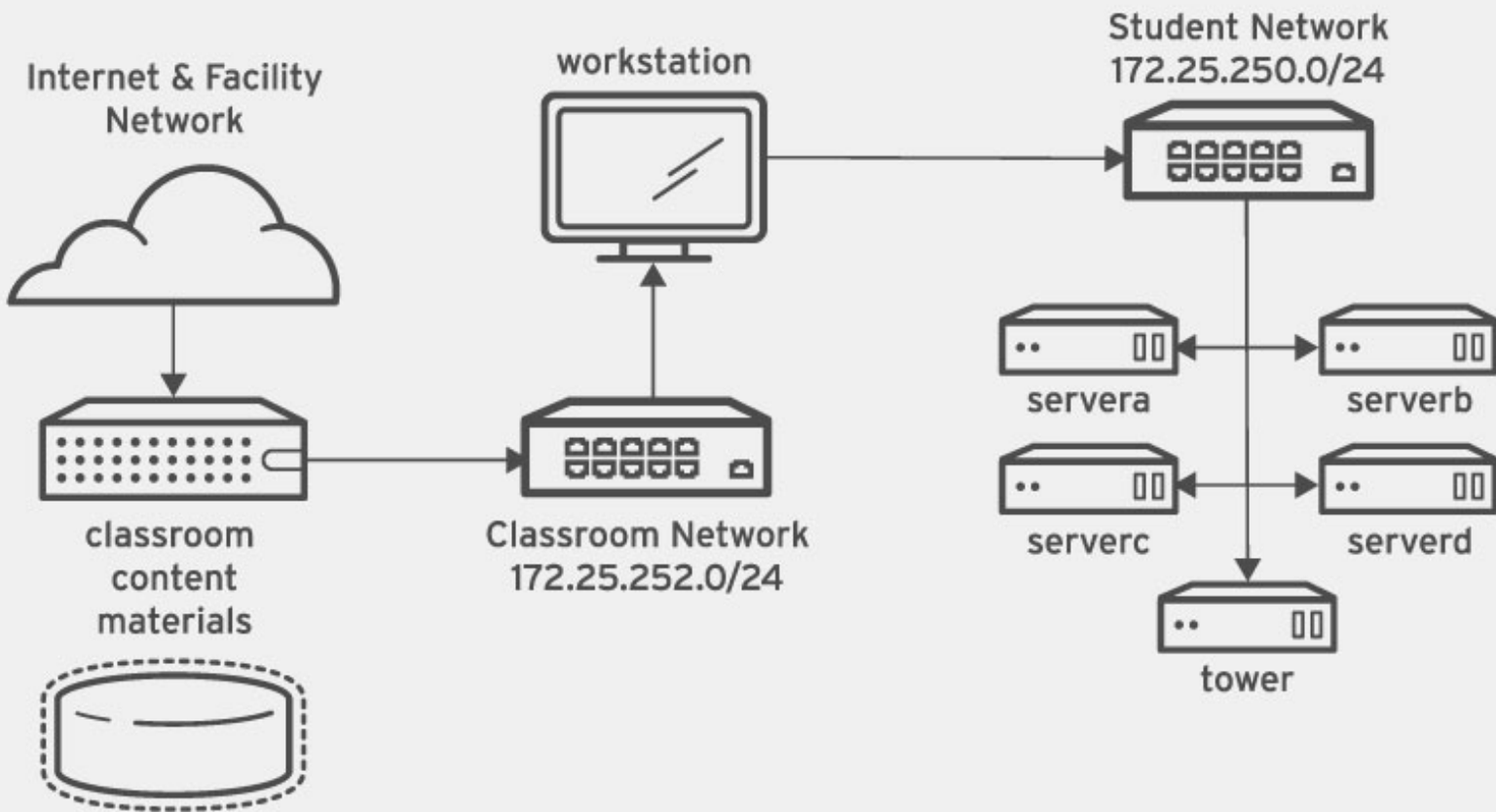
Welcome

Course Objectives and Structure

Schedule

DAY ONE	DAY TWO	DAY THREE	DAY FOUR
Introducing Ansible	Managing Variables and Inclusions (continued)	Implementing Roles (continued)	Implementing Ansible Tower
Deploying Ansible	Implementing Task Control	Optimizing Ansible	Implementing Ansible in a DevOps Environment
Implementing Playbooks	Implementing Jinja2 Templates	Implementing Ansible Vault	Comprehensive Review: Automation with Ansible
Managing Variables and Inclusions	Implementing Roles	Troubleshooting Ansible	

Orientation to the Classroom Network



Internationalization

Chapter 1: Introducing Ansible

Goal:

- Describe the terminology and architecture of Ansible.

Objectives:

- Describe Ansible concepts, reference architecture, and use cases.
- Install Ansible.

Overview of Ansible Architecture

ANSIBLE PLAYBOOK

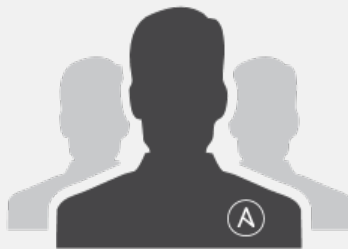


From development...

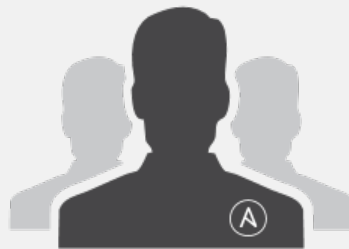
...to production.



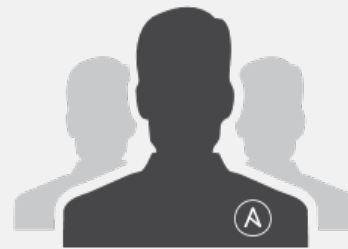
DEV/TEST



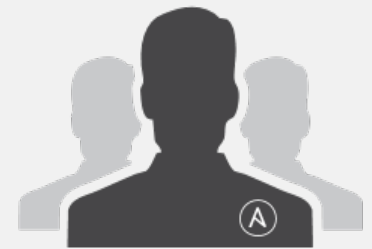
Q/A



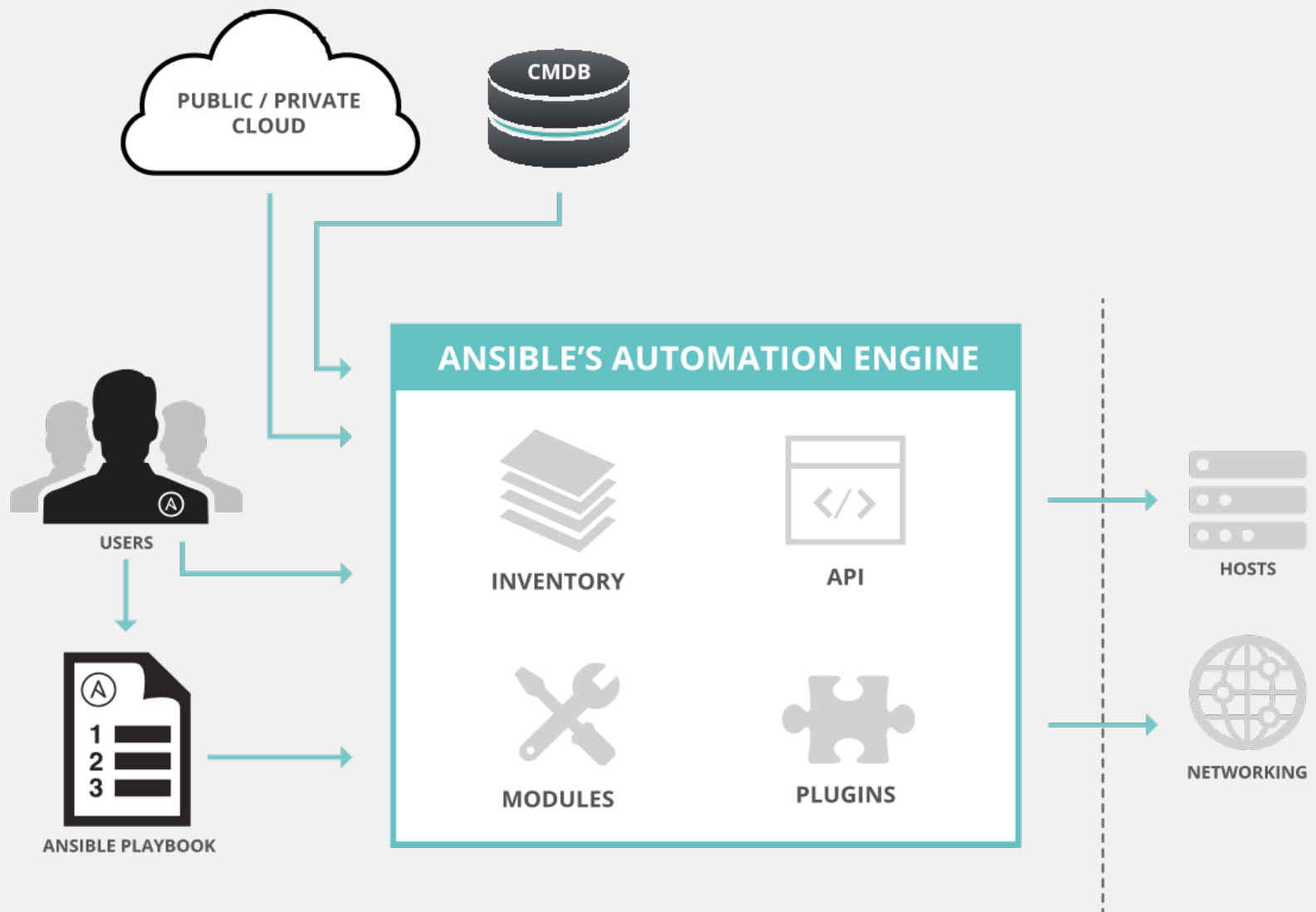
OPERATIONS

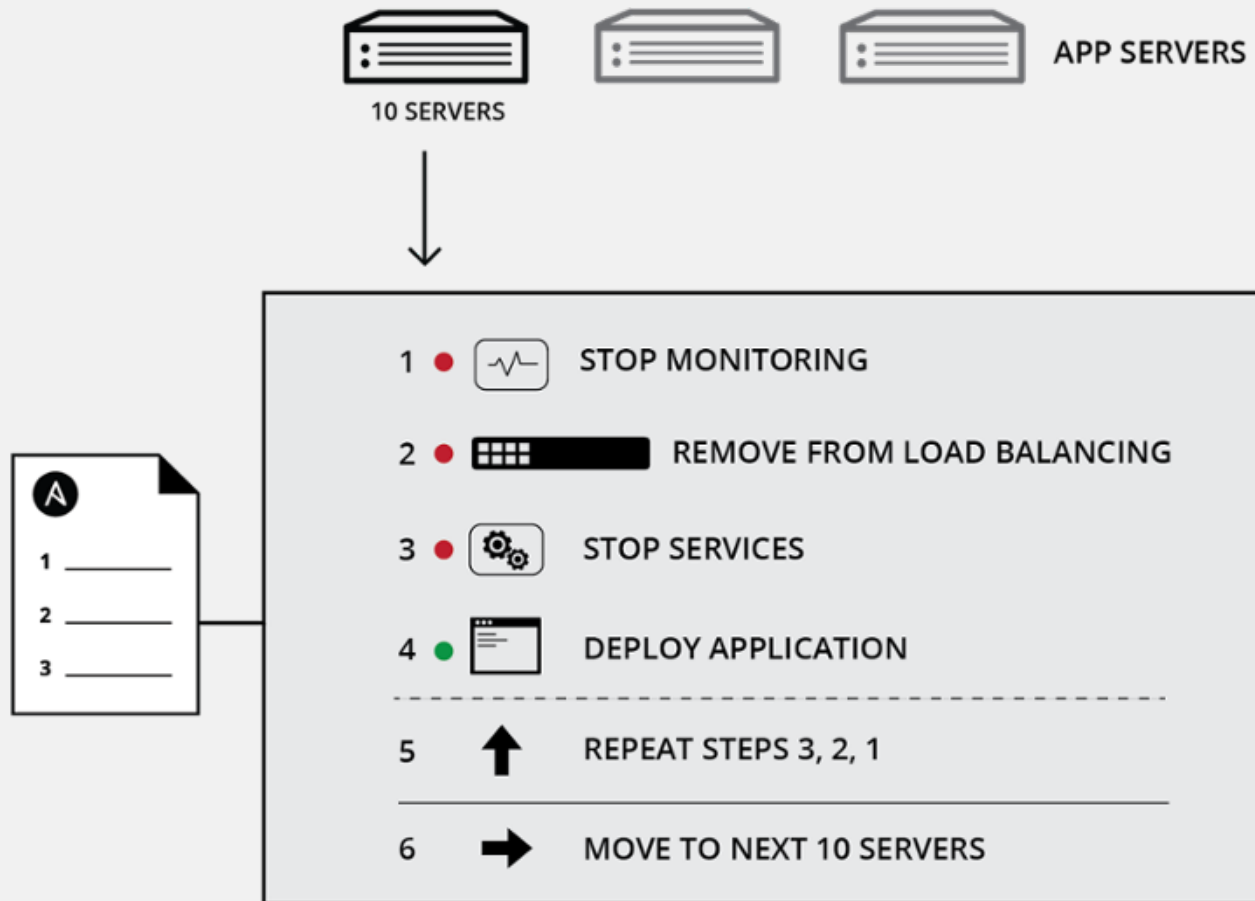


MANAGEMENT



OUTSOURCERS





Quiz: Ansible Architecture

Installing Ansible

Guided Exercise: Installing Ansible

Summary

Chapter 2: Deploying Ansible

Goal:

- Configure Ansible and run ad hoc commands.

Objectives:

- Describe Ansible inventory concepts and build a static inventory.
- Manage Ansible configuration files.
- Run Ansible ad hoc commands.
- Manage dynamic inventory.

Building an Ansible Inventory

Quiz: Building an Ansible Inventory

Managing Ansible Configuration Files

Guided Exercise: Managing Ansible Configuration Files

Running Ad Hoc Commands

Guided Exercise: Running Ad Hoc Commands

Managing Dynamic Inventories

Guided Exercise: Managing Dynamic Inventories

Lab: Deploying Ansible

Summary

Chapter 3: Implementing Playbooks

Goal:

- Write Ansible plays and execute a playbook.

Objectives:

- Write a basic Ansible Playbook and run it using the `ansible-playbook` command.
- Write and run a more sophisticated Ansible Playbook using multiple plays and privilege escalation.

Writing and Running Playbooks

Guided Exercise: Writing and Running Playbooks

Implementing Multiple Plays

Guided Exercise: Implementing Multiple Plays

Lab: Implementing Playbooks

Summary

Chapter 4: Managing Variables and Inclusions

Goal:

- To describe variable scope and precedence, manage variables and facts in a play, and manage inclusions.

Objectives:

- Manage variables in Ansible projects
- Manage Facts in Playbooks
- Include variables and tasks from external files into a playbook

Managing Variables

Guided Exercise: Managing Variables

Managing Facts

Guided Exercise: Managing Facts

Managing Inclusions

Guided Exercise: Managing Inclusions

Lab: Managing Variables and Inclusions

Summary

Chapter 5: Implementing Task Control

Goal:

- Manage task control, handlers, and tags in Ansible playbooks.

Objectives:

- Construct conditionals and loops in a playbook
- Implement handlers in a playbook
- Implement tags in a playbook
- Resolve errors in a playbook

Constructing Flow Control

Guided Exercise: Constructing Flow Control

Implementing Handlers

Guided Exercise: Implementing Handlers

Implementing Tags

Guided Exercise: Implementing Tags

Handling Errors

Guided Exercise: Handling Errors

Lab: Implementing Task Control

Summary

Chapter 6: Implementing Jinja2 Templates

Goal:

- Implement a Jinja2 template.

Objectives:

- Describe Jinja2 templates.
- Implement Jinja2 templates.

Describing Jinja2 Templates

Quiz: Describing Jinja2 Templates

Implementing Jinja2 Templates

Guided Exercise: Implementing Jinja2 Templates

Lab: Implementing Jinja2 Templates

Summary

Chapter 7: Implementing Roles

Goal:

- Create and manage roles.

Objectives:

- Describe the structure and behavior of a role.
- Create a role.
- Deploy roles with Ansible Galaxy.

Describing Role Structure

Quiz: Describing Role Structure

Creating Roles

Guided Exercise: Creating Roles

Deploying Roles with Ansible Galaxy

Ansible Galaxy | Find, ...

https://galaxy.ansible.com

Search


☆

📁

⬇

🏠


☰




[ABOUT](#) [EXPLORE](#) [BROWSE ROLES](#) [BROWSE AUTHORS](#) [SIGN IN](#)

Ansible Galaxy is your hub for finding, reusing and sharing the best Ansible content.


Log Into Galaxy with GitHub



Use an existing account not associated with GitHub


 **DOWNLOAD**

Jump-start your automation project with great content from the Ansible community. Galaxy provides pre-packaged units of work known to Ansible as **roles**. Roles can be dropped into Ansible PlayBooks and immediately applied to your infrastructure

 **SHARE**

Be an active member of the community and help other Ansible users by sharing roles you create.

Maybe you have a role for installing and configuring a popular software package or a

 **FEATURED**

ROLE: carlosbuenosvinos.ansistrano-deploy - Ansible role to deploy scripting applications like PHP, Python, Ruby, etc...

< ● ○ ○ >

Ansible Galaxy | Bro... x +

https://galaxy.ansible.com/list#/roles?page=1&page_size=10&autocomplete=install git Search ☆ 📁 ⬇ 🏠 ☰

A GALAXY ABOUT EXPLORE **BROWSE ROLES** BROWSE AUTHORS SIGN IN

BROWSE ROLES

Keyword ▾ Search roles 🔍 SORT Relevance ▾ ⌵

Keyword: install git x CLEAR ALL

git 2	git 10
Install git	git installation
Author davidkarban	Author AsianChris
Platforms Debian, EL, Ubuntu	Platforms Ubuntu
Tags NA	Tags development, system
Created 12/8/15 9:15 AM	Created 6/13/15 8:11 PM
Last Imported NA	Last Imported NA
👁 Watch 1 ⭐ Star 0	👁 Watch 1 ⭐ Star 0
gitlab 1	git 5
Undev Gitlab installation	Install GIT
Author zzet	Author jasonrsavino

POPULAR TAGS

system	2778
development	1537
web	1372
monitoring	546
database	523
networking	516
packaging	467
cloud	392
nosql	183
sql	174
...	...

Guided Exercise: Deploying Roles with Ansible Galaxy

Lab: Implementing Roles

Summary

Chapter 8: Optimizing Ansible

Goal:

- Tune how Ansible executes plays and tasks using host patterns, delegation, and parallelism

Objectives:

- Specify managed hosts for plays and ad hoc commands using host patterns
- Configure delegation in a playbook
- Configure parallelism in Ansible

Selecting Hosts with Host Patterns

Guided Exercise: Selecting Hosts with Host Patterns

Configuring Delegation

Guided Exercise: Configuring Delegation

Configuring Parallelism

Guided Exercise: Configuring Parallelism

Lab: Optimizing Ansible

Summary

Chapter 9: Implementing Ansible Vault

Goal:

- Manage encryption with Ansible Vault.

Objectives:

- Create, edit, rekey, encrypt, and decrypt files.
- Run a playbook with Ansible Vault.

Configuring Ansible Vault

Guided Exercise: Configuring Ansible Vault

Executing with Ansible Vault

Guided Exercise: Executing with Ansible Vault

Lab: Implementing Ansible Vault

Summary

Chapter 10: Troubleshooting Ansible

Goal:

- Troubleshoot playbooks and managed hosts.

Objectives:

- Troubleshooting playbooks.
- Troubleshooting managed hosts.

Troubleshooting Playbooks

Guided Exercise: Troubleshooting Playbooks

Troubleshooting Ansible Managed Hosts

Guided Exercise: Troubleshooting Ansible Managed Hosts

Lab: Troubleshooting Ansible

Summary

Chapter 11: Implementing Ansible Tower

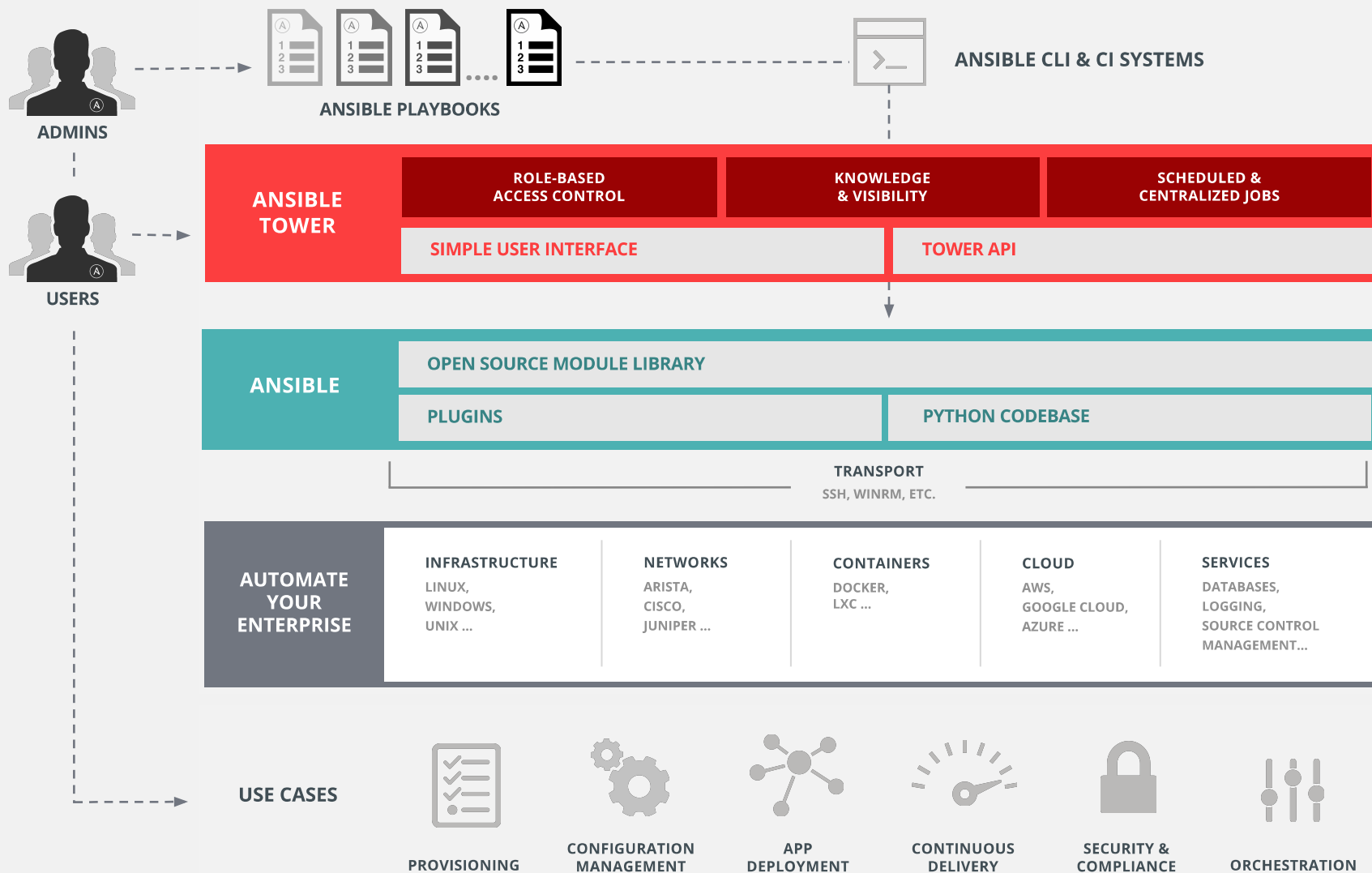
Goal:

- Implement Ansible Tower.

Objectives:

- Describe the architecture, use cases, and installation requirements of Ansible Tower.
- Install a new Ansible Tower on a single node using the `setup.sh` script.
- Navigate and describe the Ansible Tower web user interface, and successfully launch a job using the demo job template, project, credential, and inventory.

Introduction to Ansible Tower



Quiz: Introduction to Ansible Tower

Installing Ansible Tower

Guided Exercise: Installing Ansible Tower

Navigating the Ansible Tower Web Interface

DASHBOARD



4

HOSTS

0

FAILED HOSTS

2

INVENTORIES

0

INVENTORY SYNC FAILURES

1

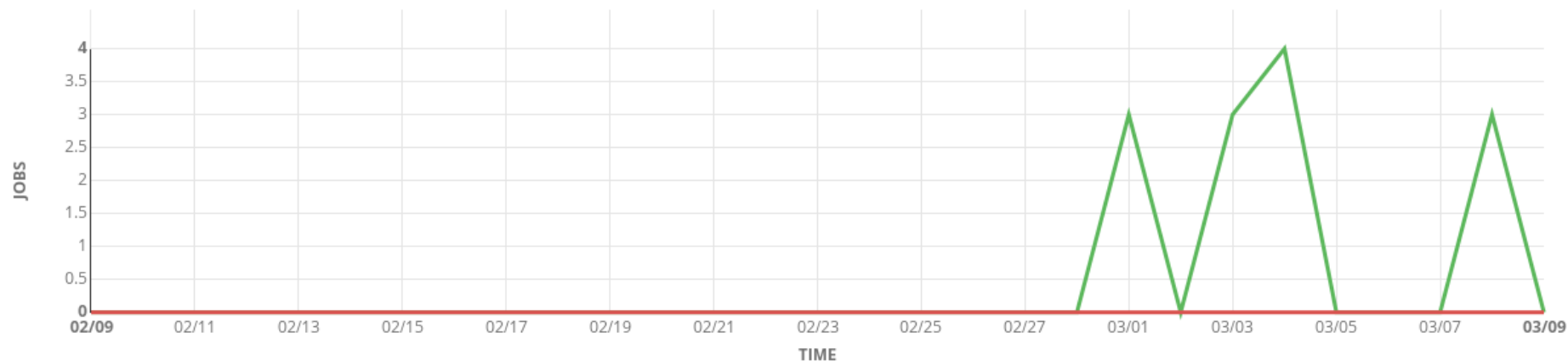
PROJECTS

0

PROJECT SYNC FAILURES

JOB STATUS

PERIOD PAST MONTH JOB TYPE ALL VIEW ALL



RECENTLY USED TEMPLATES

[VIEW ALL](#)

NAME	ACTIVITY	ACTIONS
Demo Job Template	● ● ● ●	

RECENT JOB RUNS

[VIEW ALL](#)

NAME	TIME
● Demo Job Template	3/7/2017 7:46:13 PM



TOWER

PROJECTS

INVENTORIES


TEMPLATES

JOB



admin




 TOWER


PROJECTS


INVENTORIES


TEMPLATES


JOB

 admin









SETTINGS

ORGANIZATIONS

Group all of your content to manage permissions across departments in your company.

USERS

Allow others to sign into Tower and own the content they create.

TEAMS

Split up your organization to associate content and control permissions for groups.

CREDENTIALS

Add passwords, SSH keys, etc. for Tower to use when launching jobs against machines, or when syncing inventories or projects.

MANAGEMENT JOBS

Manage the cleanup of old job history, activity streams, data marked for deletion, and system tracking info.

INVENTORY SCRIPTS

Create and edit scripts to dynamically load hosts from any source.

NOTIFICATIONS

Create templates for sending notifications with Email, HipChat, Slack, and SMS.

VIEW YOUR LICENSE

View and edit your license information.

CONFIGURE TOWER

Edit Tower's configuration.

ABOUT TOWER

View information about this version of Ansible Tower.

NOTIFICATION TEMPLATES 1

Search



KEY

+ ADD

EXAMPLES: `id:>10` `created:>="2000-01-01T00:00:00Z"` `created:<2000-01-01` `name:foobar`

FIELDS: id, type, created, modified, name, description, organization, notification_type, notification_configuration

RELATED FIELDS: modified_by, unified_job_template, notification, activity_stream, created_by, organization

ADDITIONAL INFORMATION: For additional information on advanced search search syntax please see the Ansible Tower [documentation](#).

GROUPS 0

RUN COMMANDS

+ ADD GROUP

PLEASE ADD ITEMS TO THIS LIST

HOSTS 1

SYSTEM TRACKING

+ ADD HOST

SEARCH



KEY

HOSTS ▲

ACTIONS

☐ ☐ localhost



ITEMS 1 - 1 OF 1

DEMO PROJECT

DETAILS

PERMISSIONS

NOTIFICATIONS

* NAME

Demo Project

DESCRIPTION

* ORGANIZATION

Default

* SCM TYPE

Manual

PROJECT BASE PATH ?

/var/lib/awx/projects

* PLAYBOOK DIRECTORY ?

_4_demo_project

CANCEL

SAVE

DEMO JOB TEMPLATE

DETAILS

COMPLETED JOBS

PERMISSIONS

NOTIFICATIONS

ADD SURVEY

* NAME

Demo Job Template

DESCRIPTION

* JOB TYPE ?

Run

☐ Prompt on launch

* INVENTORY ?

Demo Inventory

☐ Prompt on launch

* PROJECT ?

Demo Project

* PLAYBOOK ?

hello_world.yml

* MACHINE CREDENTIAL ?

Demo Credential

☐ Prompt on launch

CLOUD CREDENTIAL ?

NETWORK CREDENTIAL ?

FORKS ?

0

LIMIT ?

☐ Prompt on launch

* VERBOSITY ?

0 (Normal)

JOB TAGS ?

☐ Prompt on launch

SKIP TAGS ?

☐ Prompt on launch

OPTIONS

- ☐ Enable Privilege Escalation ?
- ☐ Allow Provisioning Callbacks ?
- ☐ Enable Concurrent Jobs ?

LABELS ?

EXTRA VARIABLES ? ☒ YAML ☐ JSON

1 ---

☐ Prompt on launch

CANCEL

SAVE

TOWER

PROJECTS

INVENTORIES

TEMPLATES

JOBS

admin

TEMPLATES

TEMPLATES 1

SEARCH

KEY

NAME

TYPE

ACTIVITY

LABELS

Demo Job Template

Job Template

Start a job using this template

ACTIONS

ITEMS 1 - 1 OF 1

DETAILS

STATUS ● Successful

STARTED 4/2/2017 5:32:10 PM

FINISHED 4/2/2017 5:32:16 PM

TEMPLATE [Demo Job Template](#)

JOB TYPE Run

LAUNCHED BY [admin](#)

INVENTORY [Demo Inventory](#)

PROJECT ● [Demo Project](#)

REVISION 347e44fea036c94d5f60e544de006453ee5c71ad

PLAYBOOK hello_world.yml

MACHINE CREDENTIAL [Demo Credential](#)

FORKS 0

VERBOSITY 0 (Normal)

EXTRA VARIABLES ?

1

DEMO JOB TEMPLATE

PLAYS 1 TASKS 2 HOSTS 1 ELAPSED 00:00:06

SEARCH

KEY

1

2

3

4

5

6

7

8

9

10

11

12

13

14

PLAY [Hello World Sample]

17:32:15

TASK [setup]

17:32:15

ok: [localhost]

TASK [Hello Message]

17:32:16

ok: [localhost] => {

"msg": "Hello World!"

}

PLAY RECAP

17:32:16

localhost

: ok=2

changed=0

unreachable=0

failed=0

^ TOP

JOBS

JOBS

SCHEDULES

SEARCH



KEY

ID	NAME	TYPE	FINISHED	LABELS	ACTIONS
3	Demo Job Template	Playbook Run	4/2/2017 5:32:16 PM		
4	Demo Project	SCM Update	4/2/2017 5:32:09 PM		
2	Demo Project	SCM Update	4/2/2017 4:34:28 PM		
1	Cleanup Fact Details	Management Job	4/1/2017 6:31:14 PM		

ITEMS 1 - 4 OF 4

Guided Exercise: Navigating the Ansible Tower Web Interface

Quiz: Implementing Ansible Tower

Summary

Chapter 12: Implementing Ansible in a DevOps Environment

Goal:

- Implement Ansible in a DevOps environment using Vagrant.

Objectives:

- Describe Ansible in a DevOps environment and provision Vagrant machines.
- Deploy Vagrant in a DevOps environment.

Provisioning Vagrant Machines

Guided Exercise: Provisioning Vagrant Machines

Deploying Vagrant in a DevOps Environment

Guided Exercise: Deploying Vagrant in a DevOps Environment

Lab: Implementing Ansible in a DevOps Environment

Summary

Chapter 13: Comprehensive Review: Automation with Ansible

Goal:

- Demonstrate skills learned in this course by installing, optimizing, and configuring Ansible for the management of managed hosts.

Sections:

- Comprehensive Review

Comprehensive Review

Lab: Deploying Ansible

Lab: Creating Playbooks

Lab: Creating Roles and Using Dynamic Inventory

Lab: Optimizing Ansible

Lab: Deploying Ansible Tower and Executing Jobs



THANK YOU!