



Red Hat Training and Certification

DO274

Travis Michette

Table of Contents

Introduction	1
Repositories for this Course	1
URLs and Login Information for the Course	1
1. Getting Started with Event- Driven Ansible	3
1.1. Introduction to Event-Driven Ansible	3
1.1.1. Event-Driven Ansible	3
1.1.2. Event-Driven Ansible Components	3
1.1.3. Running Ansible Rulebooks	3
1.1.3.1. Running Ansible Rulebooks from the Command Line	3
1.1.3.2. Running Ansible Rulebooks with Event-Driven Ansible Controller	3
1.1.4. Content for the Event Source Plug-ins	3
1.1.4.1. Red Hat Ansible Certified Content	3
1.1.4.2. Ansible Validated Content	3
1.1.4.3. Getting Content from Private Automation Hub	3
1.1.5. Event-Driven Ansible Use Cases	3
1.1.5.1. Fact and Ticket Enrichment	3
1.1.5.2. High Occurrence of Low-complexity Issues	3
1.1.5.3. Security and Compliance Automation	3
1.2. Creating and Testing Ansible Rulebooks	4
1.2.1. Reading and Writing Ansible Rulebooks	4
1.2.2. Selecting Actions for Rules	4
1.2.2.1. Actions on an Automation Controller	4
1.2.3. Event Source Plug-ins and Sample Rulebooks	4
1.2.3.1. Reacting to Webhook Events	4
1.2.3.2. Reacting to Log Events	4
1.2.3.3. Reacting to URL Check Events	4
1.2.4. Testing Ansible Rulebooks	4
1.3. DEMO - Acting on Webhook Events	5
1.3.1. <Section_Sub_Intro_Here>	5
1.4. DEMO - Acting on System Journal Events	6
1.4.1. <Section_Sub_Intro_Here>	6
1.5. DEMO - Acting on Results from the URL Check Plug-in	7
1.5.1. <Section_Sub_Intro_Here>	7
1.6. DEMO - Watching the Sudoers File	8
2. Getting Started with Event- Driven Ansible Controller	9
2.1. Installing Event-Driven Ansible Controller	9

2.1.1. Planning the Installation	9
2.1.1.1. Automation Controller, Private Automation Hub, and Event- Driven Ansible Controller with External Database Servers.....	9
2.1.2. Event-Driven Ansible Controller Installation Options	9
2.1.2.1. Installation Requirements	9
2.1.2.2. Database Storage	9
2.1.3. Subscription and Support	9
2.1.4. Installing Red Hat Ansible Automation Platform	9
2.1.4.1. Installing Event-Driven Ansible Controller.....	9
2.1.5. Replacing the CA Certificate	9
2.1.5.1. Gathering Certificates and Private Keys	9
2.1.5.2. Preparing the Systems	9
2.1.6. Trusting Custom CA Certificates	9
2.1.7. Updating RPM Packages on Ansible Automation Platform Servers	9
2.2. Configuring Event-Driven Ansible Controller to Run Ansible Rulebooks.....	10
2.2.1. Event-Driven Ansible Controller Resources	10
2.2.2. Creating Credentials	10
2.2.3. Creating Projects	10
2.2.4. Creating Controller Tokens.....	10
2.2.5. Creating Ansible Rulebook Activations	10
2.2.6. Launching an Automation Controller Job Template or Workflow Template Using a Rulebook Activation	10
2.2.7. Viewing Rule Audits	10
2.3. DEMO - Configuring Event-Driven Ansible Controller to Run Ansible Rulebooks	11
2.3.1. <Section_Sub_Intro_Here>	11
3. Example Use Cases for Event- Driven Ansible.....	12
3.1. GitOps with Event-Driven Ansible	12
3.1.1. Using Webhooks in Event-Driven Ansible.....	12
3.1.2. Configuring Webhooks in the Git Repository Server	12
3.1.2.1. Configuring GitLab to use Webhooks	12
3.1.2.2. Configuring Projects in GitLab to use Webhooks.....	12
3.1.2.3. Testing a Webhook in GitLab	12
3.1.3. Using Tests from GitLab to Create Rules in Rulebooks	12
3.2. DEMO - GitOps with Event-Driven Ansible.....	13
3.2.1. <Section_Sub_Intro_Here>	13
3.3. Event-Driven Ansible and NetOps	14
3.3.1. Reacting to Network Events	14
3.3.2. Managing Network Devices	14

3.3.3. Running Playbooks that Include Networking Modules	14
3.3.3.1. Run Playbooks on Your Local System	14
3.3.3.2. Run Playbooks on an Automation Controller	14
3.3.4. Using Network Telemetry	14
3.3.4.1. Configuring Network Telemetry	14
3.3.4.2. Configuring gNMI on Network Switches	14
3.3.4.3. Configuring Telegraf	14
3.3.4.4. Managing and Querying Apache Kafka Topics	14
3.3.4.5. Using EDA to Query Apache Kafka	14
3.3.5. Integrating EDA with Chat Services	14
3.3.5.1. Configuring an Incoming Webhook	14
3.3.5.2. Configuring an Outgoing Webhook	14
3.4. DEMO - Event-Driven Ansible and NetOps	15
3.4.1. <Section_Sub_Intro_Here>	15
3.5. DEMO - Event-Driven Ansible and Automated Notifications	16
3.5.1. <Section_Sub_Intro_Here>	16
3.6. DEMO - Triggering Event-Driven Ansible from a Chat Room	17
3.6.1. <Section_Sub_Intro_Here>	17

Introduction



Repositories for this Course

Main Repository

- **DO274_Notes:** https://github.com/tmichett/DO274_Notes
 - Contains book components and demos and builds on Jenkins server. This is a private repository.
- **DO274_Demo:** https://github.com/tmichett/DO274_Demo
 - Contains PDF copy of book, demo source, and reference materials. This is a public repository and shared as part of the course delivery.

URLs and Login Information for the Course

- **EDA Controller:** <https://eda-controller.lab.example.com>
- **Ansible Automation Controller:** <https://controller.lab.example.com>
- **Private Automation Hub:** <https://hub.lab.example.com>
 - a. **Username:** admin
 - b. **Password:** redhat
- **Mattermost:** <http://mattermost.lab.example.com:8065>
 - a. **Username:** student
 - b. **Password:** Stud3nt123



The Mattermost DNS entry is not in the DNS server. It is only available from the Workstation VM as it is an entry in **/etc/hosts**.

```
172.25.250.220 mattermost.lab.example.com
```

1. Getting Started with Event-Driven Ansible

1.1. Introduction to Event-Driven Ansible

1.1.1. Event-Driven Ansible

1.1.2. Event-Driven Ansible Components

1.1.3. Running Ansible Rulebooks

1.1.3.1. Running Ansible Rulebooks from the Command Line

1.1.3.2. Running Ansible Rulebooks with Event-Driven Ansible Controller

1.1.4. Content for the Event Source Plug-ins

1.1.4.1. Red Hat Ansible Certified Content

1.1.4.2. Ansible Validated Content

1.1.4.3. Getting Content from Private Automation Hub

1.1.5. Event-Driven Ansible Use Cases

1.1.5.1. Fact and Ticket Enrichment

1.1.5.2. High Occurrence of Low-complexity Issues

1.1.5.3. Security and Compliance Automation

1.2. Creating and Testing Ansible Rulebooks

Section Info Here

1.2.1. Reading and Writing Ansible Rulebooks

1.2.2. Selecting Actions for Rules

1.2.2.1. Actions on an Automation Controller

1.2.3. Event Source Plug-ins and Sample Rulebooks

1.2.3.1. Reacting to Webhook Events

1.2.3.2. Reacting to Log Events

1.2.3.3. Reacting to URL Check Events

1.2.4. Testing Ansible Rulebooks

1.3. DEMO - Acting on Webhook Events

Section Info Here

Listing 1. Example Code box for CLI

```
[student@workstation ~]$ sudo yum module install container-tools
```

Listing 2. Example Code box for YAML

```
---
- name: Deploy HTTPD Server Demo
  hosts: server
  collections:

  tasks:

## Start and Run the HTTPD Container
- name: Start the Apache Container
  podman_container:
```

Example 1. LAB/Exercise: Hands-On Activity Example

1. Download a container image.
 - a. Registry: **registry.access.redhat.com**
 - b. Image: **ubi7**
2. Run the container

1.3.1. <Section_Sub_Intro_Here>

1.4. DEMO - Acting on System Journal Events

Section Info Here

Listing 3. Example Code box for CLI

```
[student@workstation ~]$ sudo yum module install container-tools
```

Listing 4. Example Code box for YAML

```
---
- name: Deploy HTTPD Server Demo
  hosts: server
  collections:

  tasks:

  ## Start and Run the HTTPD Container
  - name: Start the Apache Container
    podman_container:
```

Example 2. LAB/Exercise: Hands-On Activity Example

1. Download a container image.
 - a. Registry: **registry.access.redhat.com**
 - b. Image: **ubi7**
2. Run the container

1.4.1. <Section_Sub_Intro_Here>

1.5. DEMO - Acting on Results from the URL Check Plug-in

Section Info Here

Listing 5. Example Code box for CLI

```
[student@workstation ~]$ sudo yum module install container-tools
```

Listing 6. Example Code box for YAML

```
---
- name: Deploy HTTPD Server Demo
  hosts: server
  collections:

  tasks:

## Start and Run the HTTPD Container
- name: Start the Apache Container
  podman_container:
```

Example 3. LAB/Exercise: Hands-On Activity Example

1. Download a container image.
 - a. Registry: **registry.access.redhat.com**
 - b. Image: **ubi7**
2. Run the container

1.5.1. <Section_Sub_Intro_Here>

1.6. DEMO - Watching the Sudoers File

Section Info Here

Example 4. Creating Events Based on Sudoers File Changes

1. Download a container image.
 - a. Registry: **registry.access.redhat.com**
 - b. Image: **ubi7**
2. Run the container

2. Getting Started with Event- Driven Ansible Controller

2.1. Installing Event-Driven Ansible Controller

Section Info Here

2.1.1. Planning the Installation

2.1.1.1. Automation Controller, Private Automation Hub, and Event- Driven Ansible Controller with External Database Servers

2.1.2. Event-Driven Ansible Controller Installation Options

2.1.2.1. Installation Requirements

2.1.2.2. Database Storage

2.1.3. Subscription and Support

2.1.4. Installing Red Hat Ansible Automation Platform

2.1.4.1. Installing Event-Driven Ansible Controller

2.1.5. Replacing the CA Certificate

2.1.5.1. Gathering Certificates and Private Keys

2.1.5.2. Preparing the Systems

2.1.6. Trusting Custom CA Certificates

2.1.7. Updating RPM Packages on Ansible Automation Platform Servers

2.2. Configuring Event-Driven Ansible Controller to Run Ansible Rulebooks

Section Info Here

2.2.1. Event-Driven Ansible Controller Resources

2.2.2. Creating Credentials

2.2.3. Creating Projects

2.2.4. Creating Controller Tokens

2.2.5. Creating Ansible Rulebook Activations

2.2.6. Launching an Automation Controller Job Template or Workflow Template Using a Rulebook Activation

2.2.7. Viewing Rule Audits

2.3. DEMO - Configuring Event-Driven Ansible Controller to Run Ansible Rulebooks

Section Info Here

Listing 7. Example Code box for CLI

```
[student@workstation ~]$ sudo yum module install container-tools
```

Listing 8. Example Code box for YAML

```
---
- name: Deploy HTTPD Server Demo
  hosts: server
  collections:

  tasks:

## Start and Run the HTTPD Container
- name: Start the Apache Container
  podman_container:
```

Example 5. LAB/Exercise: Hands-On Activity Example

1. Download a container image.
 - a. Registry: **registry.access.redhat.com**
 - b. Image: **ubi7**
2. Run the container

2.3.1. <Section_Sub_Intro_Here>

3. Example Use Cases for Event- Driven Ansible

3.1. GitOps with Event-Driven Ansible

Section Info Here

3.1.1. Using Webhooks in Event-Driven Ansible

3.1.2. Configuring Webhooks in the Git Repository Server

3.1.2.1. Configuring GitLab to use Webhooks

3.1.2.2. Configuring Projects in GitLab to use Webhooks

3.1.2.3. Testing a Webhook in GitLab

3.1.3. Using Tests from GitLab to Create Rules in Rulebooks

3.2. DEMO - GitOps with Event-Driven Ansible

Section Info Here

Listing 9. Example Code box for CLI

```
[student@workstation ~]$ sudo yum module install container-tools
```

Listing 10. Example Code box for YAML

```
---
- name: Deploy HTTPD Server Demo
  hosts: server
  collections:

  tasks:

  ## Start and Run the HTTPD Container
  - name: Start the Apache Container
    podman_container:
```

Example 6. LAB/Exercise: Hands-On Activity Example

1. Download a container image.
 - a. Registry: **registry.access.redhat.com**
 - b. Image: **ubi7**
2. Run the container

3.2.1. <Section_Sub_Intro_Here>

3.3. Event-Driven Ansible and NetOps

Section Info Here

3.3.1. Reacting to Network Events

3.3.2. Managing Network Devices

3.3.3. Running Playbooks that Include Networking Modules

3.3.3.1. Run Playbooks on Your Local System

3.3.3.2. Run Playbooks on an Automation Controller

3.3.4. Using Network Telemetry

3.3.4.1. Configuring Network Telemetry

3.3.4.2. Configuring gNMI on Network Switches

3.3.4.3. Configuring Telegraf

3.3.4.4. Managing and Querying Apache Kafka Topics

3.3.4.5. Using EDA to Query Apache Kafka

3.3.5. Integrating EDA with Chat Services

3.3.5.1. Configuring an Incoming Webhook

3.3.5.2. Configuring an Outgoing Webhook

3.4. DEMO - Event-Driven Ansible and NetOps

Section Info Here

Listing 11. Example Code box for CLI

```
[student@workstation ~]$ sudo yum module install container-tools
```

Listing 12. Example Code box for YAML

```
---
- name: Deploy HTTPD Server Demo
  hosts: server
  collections:

  tasks:

  ## Start and Run the HTTPD Container
  - name: Start the Apache Container
    podman_container:
```

Example 7. LAB/Exercise: Hands-On Activity Example

1. Download a container image.
 - a. Registry: **registry.access.redhat.com**
 - b. Image: **ubi7**
2. Run the container

3.4.1. <Section_Sub_Intro_Here>

3.5. DEMO - Event-Driven Ansible and Automated Notifications

Section Info Here

Listing 13. Example Code box for CLI

```
[student@workstation ~]$ sudo yum module install container-tools
```

Listing 14. Example Code box for YAML

```
---
- name: Deploy HTTPD Server Demo
  hosts: server
  collections:

  tasks:

  ## Start and Run the HTTPD Container
  - name: Start the Apache Container
    podman_container:
```

Example 8. LAB/Exercise: Hands-On Activity Example

1. Download a container image.
 - a. Registry: **registry.access.redhat.com**
 - b. Image: **ubi7**
2. Run the container

3.5.1. <Section_Sub_Intro_Here>

3.6. DEMO - Triggering Event-Driven Ansible from a Chat Room

Section Info Here

Listing 15. Example Code box for CLI

```
[student@workstation ~]$ sudo yum module install container-tools
```

Listing 16. Example Code box for YAML

```
---
- name: Deploy HTTPD Server Demo
  hosts: server
  collections:

  tasks:

## Start and Run the HTTPD Container
- name: Start the Apache Container
  podman_container:
```

Example 9. LAB/Exercise: Hands-On Activity Example

1. Download a container image.
 - a. Registry: **registry.access.redhat.com**
 - b. Image: **ubi7**
2. Run the container

3.6.1. <Section_Sub_Intro_Here>