

## Red Hat Ansible Platform Einführung

Creating, operating, and consuming automation

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Red Hat Ansible Platform technical deck



Anyone can automate... but an enterprise needs to coordinate and scale



## Many organizations share the same challenge

Too many unintegrated, domain-specific tools





Why the Red Hat<sup>®</sup> Ansible<sup>®</sup> Automation Platform?



## Why the Ansible Automation Platform?



#### Powerful

Orchestrate complex processes at enterprise scale.



#### Simple

Simplify automation creation and management across multiple domains.



#### Agentless

Easily integrate with hybrid environments.



## Automate the deployment and management of automation Your entire IT footprint





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certified platforms

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## What makes a platform?



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## Create



## Create

#### The automation lifecycle





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#### Ansible playbooks

- name: install and start apache
hosts: web
become: yes

#### tasks:

- name: httpd package is present
  yum:
   name: httpd
   state: latest
- name: latest index.html file is present
   template:
   src: files/index.html
   dest: /var/www/html/
- name: httpd is started
   service:
   name: httpd
   state: started



## What makes up an Ansible playbook?





## Ansible plays

What am I automating?



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#### What are they?

Top level specification for a group of tasks. Will tell that play which hosts it will execute on and control behavior such as fact gathering or privilege level.

#### Building blocks for playbooks

Multiple plays can exist within an Ansible playbook that execute on different hosts.

- name: install and start apache
hosts: web
become: yes



## Ansible modules

The "tools in the toolkit"



#### What are they?

Parametrized components with internal logic, representing a single step to be done. The modules "do" things in Ansible.

#### Language

Usually Python, or Powershell for Windows setups. But can be of any language.

- name: latest index.html file ...
template:
 src: files/index.html
 dest: /var/www/html/



## Ansible plugins

#### The "extra bits"



#### What are they?

Plugins are pieces of code that augment Ansible's core functionality. Ansible uses a plugin architecture to enable a rich, flexible, and expandable feature set.





## Ansible roles

#### Reusable automation actions



#### What are they?

Group your tasks and variables of your automation in a reusable structure. Write roles once, and share them with others who have similar challenges in front of them.





## Collections

Simplified and consistent content delivery



#### What are they?

Collections are a data structure containing automation content:

- Modules
- Playbooks
- Roles
- Plugins
- Docs
- Tests





nginx\_core

playbooks

plugins

roles

README.md

• • •

nginx





## Automation Hub

#### Trusted source

#### **Customer controlled**

Deploying either on-prem or to a cloud, customers can run their own private instances of Automation Hub integrated into Red Hat Ansible Automation Platform.

#### Private content

Manage the lifecycle and internal distribution of in-house Ansible content within Private Automation hub.

#### Customizable Content Catalog

Via synch from community (Galaxy) and supported (Automation Hub) sources, customers can supply internal users with approved content in one controlled location in Private Automation hub.





## Automation Execution Environments

Components needed for automation, packaged in a cloud-native way





### Develop, test, run

How to develop, test and run containerized Ansible content





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## Operate

#### The automation lifecycle





## A playbook run

#### Where it all starts

- A playbook is interpreted and run against one or multiple hosts - task by task. The order of the tasks defines the execution.
- In each task, the module does the actual work.





## Components of Automation





## Anatomy of Automation Operation





## Execution of content

#### Running at the core

- The central execution of automation content is managed and done either via central cluster..
- Can also sync git repositories, takes care of execution environments, collections, credentials, inventory and logging.
- Full audit trail of the execution, including what version of content was executed, what variable values were provided, etc.





## Inventories and credentials

#### How to talk to others

- An inventory is a collection of hosts (nodes) with associated data and groupings that the automation platform can connect to and manage:
  - · Nodes
  - · Groups
  - $\cdot\,$  Can be static or dynamic
  - · Smart inventories possible
- And what usernames and passwords do you use during connection? That is kept in the credentials.





## Workflows

## Combine automation to create something bigger

- Workflows enable the creation of powerful holistic automation, chaining together multiple pieces of automation and events.
- Simple logic inside these workflows can trigger automation depending on the success or failure of previous steps.

E Section Analog Automation Platform	🜲 💿 😧 👻 🛓 colin 👻
Jobs > AWS - ec2 enforce owner tag workflow Output	
Back to Jobs Details Output	
AWS - ec2 enforce owner AWS - ec2 enforce owner AWS - ec2 enforce owner AWS - ec2 enforce owner AWS - ec2 enforce owner	i lotal Nodes 5



## API

### Integration of automation into larger workflows

- The API provides programmatic access to the automation via a defined interface.
- Underneath it is still powered by the same bits and pieces which are at the core: workflows, inventories, etc.
- It offers simple integration into other tools like ITSM, SOAR, etc.





## Dashboards

#### Understand what is going on



Overview of the actual cluster, the jobs happening, the nodes connected, what works and fails right at this moment.



Overview across clusters, better insight into use cases of automation; insight into adoption of automation per organization.



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Consume



#### Red Hat Ansible Platform technical deck: Consume









## Where to go next

Learn more
Workshops
► <u>Documents</u>
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Get serious
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