



# Ansible Automation Platform for IBM Power

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# INSTALL; CONFIGURE - REPEAT AUTOMATE



#### WHY ANSIBLE?



#### SIMPLE

Human readable automation No special coding skills needed Tasks executed in order Usable by every team **Get productive quickly** 



#### POWERFUL

App deployment Configuration management Workflow orchestration Network automation **Orchestrate the app lifecycle** 



#### AGENTLESS

Agentless architecture Uses OpenSSH & WinRM No agents to exploit or update Get started immediately **More efficient & more secure** 

# Automate the deployment and management of the entire IT footprint



Do this							
		° <b>C</b>					
	Provisioning	Configuration Management	Application Deployment	Continuous Delivery	Orchestration	Security Automation	
On these							
F	Firewalls	Load balancers	Арр	lications	Containers	Clouds	
	Servers	Infrastructure	S S	torage	Network devices	And more	

#### **Ansible across architectures.**

Deployable on mission-critical architectures



# Ansible Terminology

**Control node** – any machine with Ansible installed and is used to run playbooks

**Managed node (a.k.a. endpoints)** – endpoint devices managed by Ansible (e.g., AIX, IBM i, Linux, z/OS, Windows, network, storage,...)

**Inventory** – a list of managed nodes so that Ansible understands the overall IT landscape

**Modules** – units of code that Ansible executes; thousands of modules available for immediate use

**Tasks** – units of action in Ansible (invoke a set of modules to do something useful)

Playbooks – ordered list of tasks and written in YAML



# What is Red Hat Ansible Engine?

Ansible Engine provides the core, agentless functionality of Ansible that everything else builds upon

Includes the basic building blocks of Ansible—the control node, managed nodes (endpoints), inventory, modules, tasks and playbooks

Commercial form of Ansible technology

Available for subscription purchase from Red Hat



https://console.redhat.com/ansible/automation-hub/repo/published/ibm/storage\_virtualize/

# **Introduction to Ansible Engine**



YAML (Yet Another Markup Language)

 $\rightarrow$  Each task invokes a module (python program). You can have multiple modules per task.

Security

# Ansible Playbook sample



</></>/> main.yml

- name: "apache installation"

yum:

- name: "httpd"
- state: "present"
- name: "apache service activation"

service:

- name: "httpd"
- state: "started"
- enabled: yes
- name: "install php7 packages"
  - include: "php7-install.yml"
  - when: php\_install|default(False)|bool

## Ansible Collections and Red Hat Automation Hub for AIX & IBM i



Collections are the standard way to extend and complement base Ansible content—and now AIX and IBM i content is available—in both community and commercial form

#### **COMMUNITY ENABLED: NO CERTIFICATION**

Collections are distributed via <u>Ansible Galaxy</u> and are provided with community-level support (i.e., no paid enterprise support subscriptions from Red Hat)

#### ENTERPRISE READY: CERTIFIED CONTENT FROM RED HAT

Collections can additionally be <u>certified</u> by Red Hat + 3<sup>rd</sup> parties by certifying them and putting them in <u>Red Hat</u> <u>Ansible Automation Hub</u>; made available via Red Hat subscriptions



## Ansible Galaxy

#### https://galaxy.ansible.com/search?keywords=ibm%20power



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	Details Read Me	Content			
	() Info		🕑 Content Score		
	Installation	\$ ansible-galaxy collection install ibm.power_ibmi NOTE: Installing collections with ansible-galaxy is only supported in ansible 2.9+ Download tarball	Community Score	4.3 / 5 Based on 1 survey. Show Deta ion	5 🛈 tails
	Install Version	1.1.2 released a day ago (latest)     Image: Comparison of the second seco	Quality of docs? Ease of use? Does what it promises?	- • • • + - • • • • + Y N	
	Ansible Conter The <b>Ansible Content fo</b> tasks on IBM i, such as c application deployment,	It for IBM Power Systems - IBM i r IBM Power Systems - IBM i provides modules, action plugins, roles and sample playbooks to automate ommand execution, system and application configuration, work management, fix management, etc.	Works without change? Ready for production?	Y N Y N	
	Ansible Conter IBM Power Systems is a resilience, scalability and edge solutions. The Pow cloud environment with	It for IBM Power Systems family of enterprise servers that helps transform your organization by delivering industry leading accelerated performance for the most sensitive, mission critical workloads and next-generation AI and er platform also leverages open source technologies that enable you to run these workloads in a hybrid consistent tools, processes and skills.			

## Ansible modules for Power

# ANSIBLE

#### https://console.redhat.com/ansible/automation-hub/?keywords=ibm%20power

Collections			
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## More Advanced Use Cases

- Automating the Installation of SAP S/4HANA and SAP HANA on IBM Power Systems using Red Hat Ansible : <u>https://blogs.sap.com/2020/11/03/automating-the-</u> installation-of-sap-s-4hana-and-sap-hana-on-ibm-powersystems-using-red-hat-ansible/
- Deploying SAP Software in Red Hat OpenShift on IBM Power Systems : <u>http://www.redbooks.ibm.com/abstracts/redp5619.html</u> <u>?Open</u>
- SAP HANA for IBM Power Systems Ansible integration with IBM PowerVC : <u>https://mediacenter.ibm.com/media/SAP+HANA+for+IB</u> <u>M+Power+Systems+-</u> +Ansible+integration+with+IBM+PowerVC/1\_eilgkit8
- Oracle DB and Ansible automation : <u>https://github.com/IBM/ansible-power-aix-oracle-dba</u>

# Red Hat Ansible

SAP S/4HANA & SAP HANA

## Oracle DB

# IBM Power Systems

## Ansible Automation Platform 2



Interactive trainings: <u>https://www.redhat.com/en/interactive-labs/ansible?sc\_cid=7015Y000003t7aWQAQ</u>

#### **Enterprises need more for their automation.**





### An integrated solution for the enterprise.





Manage

Red Hat Ansible Automation Platform

#### Inventories

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## Projects

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## Create template

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## Launch template job: install OSS utils on IBM i

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https://mutual-it-aac-aap.apps.p1323.c	cecc.ihost.com/#/inventories				

### Check default passwords with 5250 and survey feature

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### Show jobs history, schedule, activities...

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## Show team access rights

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## Workflow job editor

Instances

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Credential Types															
Notifications															
Management Jobs															
Instance Groups															



- Prompt/Suggestion data is encrypted in transit and is ephemeral
- Customer Ansible playbooks and customized models are stored in customer- owned Cloud Object storage and are not shared with IBM, Red Hat, or any other customers

## Starting with Ansible

- 1. Write prompt in Ansible task description
- 2. Press ENTER at the end of the task description line to generate AI content recommendations
- 3. Press **TAB** to accept the suggestion
- 4. Press ESC to reject the suggestion. Rejected suggestion analytics train the model.
- 5. Modify suggestion analytics used to train the model.

#### IBM watsonx Code Assistant for Red Hat Ansible Lightspeed



^ example of multi-task content generation with 4 tasks

#### The Ansible Lightspeed Experience



#### **Task Generation**

1	
	- name: Deploy monitoring
	hosts: monitoring
	become: true
	# module_defaults:
	# ansible.posix.firewalld:
	# permanent: true
10	tasks:
11	– name: Include redhat.rhel_system_roles.cockpit
12	ansible.builtin.include_role:
13	name: redhat.rhel_system_roles.cockpit
14	
15	– name: Copy files/cockpit.conf to /etc/cockpit/
16	ansible.builtin.copy:
17	src: ./files/cockpit.conf
18	dest: /etc/cockpit/
19	owner: root
20	group: root
21	mode: '0644'
22	$\sim$
23	# - name: Restart cockpit service
24	
25	// # - name: Allow cockpit through firewall

- Generate tasks for a playbook or role from natural language task description
- Ansible Lightspeed suggests Ansible Tasks within Ansible Playbook and Ansible Task files

~2500

Ansible Developers using Tech Preview



Code Recommendation Acceptance



## **Content source matching**

20	- name ansit	Start and ena	ble httpd vice:	service	9
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	inervisor				

- Ansible Lightspeed ensures transparency and trust in generative AI by consistently providing clear references to the original sources of content.
- Each suggestion will include a potential source, its author, and its license.

# Generate an Ansible task with Lightspeed

2 – name:	Deploy	monitorin
-----------	--------	-----------

- hosts: monitoring
- become: true
- # module\_defaults:
- # ansible.posix.firewalld:
- # permanent: true

#### tasks:

11

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23 24 25

- name: Include redhat.rhel\_system\_roles.cockpit
  ansible.builtin.include\_role:
  name: redhat.rhel\_system\_roles.cockpit
  - name: rednat.rnet\_system\_roles.cockpit
- name: Copy files/cockpit.conf to /etc/cockpit/
  ansible.builtin.copy:
   src: ./files/cockpit.conf
   dest: /etc/cockpit/
   owner: root
   group: root
   mode: '0644'

# - name: Restart cockpit service



# - name: Allow cockpit through firewall

# Generate an Ansible playbook with Lightspeed

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$\sim$	✓ ANSIBLE CONTENT CREATOR		
ρ	Elevate automation with a toolkit for efficient Ansible content creation.		
<u>و</u> م	Get started		
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$(\black)$	Logged in as: ibm-wxca-demo-user (licensed)	Show All Commands Ctrl + Shift + P	
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522			

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## IBM RedBooks for Ansible



IBM Power Quick Reference Guide

#### Ansible Automation for DevOps

#### Overview

The Ansible Automation for DevOps service is designed to help you get started with Ansible for DevOps or automated operations, leveraging customized playbooks.

**Power to Cloud Rewards** 

#### Target Audience

 Clients using Power that are considering Ansible for DevOps and/or AIX and IBM i automated operations

#### Why Use This Service?

- Are you using or considering Ansible as part of your DevOps tools?
- Are you considering modernizing or migrating existing AIX or IBM i automated operations scripts to include Ansible?

#### Benefits

- The service will help you get started successfully with Ansible automation on Power
- It will help you gain experience with Ansible for DevOps
- It will help you quantify the benefits of using Ansible for modernizing the automation for your IT environment

#### **Service Provided**

- Implement and configure Ansible core on Power
- Advise on using Ansible ad-hoc commands and playbooks
- Advise on building Ansible modules and working with roles
- Advise on use of Red Hat Ansible collections for Power, targeted at AIX and IBM i operations
- Advise on integrating Ansible with PowerVC via REST APIs
- Advise on using Ansible playbooks for automation of common tasks such as:
  - Configuring systems
  - Deploying software
  - Implementing patches
  - Updating security settings
- Develop sample Ansible playbooks for deploying VMs with PowerVC and selected DevOps or automation tasks

#### Deliverables

- Implementation of Ansible and provision of sample playbooks customized for DevOps and automated operations
- Recommendations for potential use cases of Ansible for configuration, software and security management
- Recommendations on additional for enterprise capabilities such as Red Hat Ansible Automation Controller
- Skills enablement and guidance on best practices for managing automated operations and DevOps with Ansible



#### IBM Technology Services



## **Ansible Resources**

Ansible on Power Systems IBM homepage : https://www.ibm.com/support/pages/ansible-power-systems

Ansible on Power Systems IBM i homepage : https://www.ibm.com/support/pages/ansible-support-ibm-i

#### Ansible on Power Systems Red Hat homepage :

https://www.ansible.com/integrations/infrastructure/ibm-power-systems

#### Ansible on Power tutorial :

https://github.com/IBM-Cloud/terraform-provider-ibm/tree/master/examples/ansible/examples/simple-vm-power-vs/

Ansible content collection for Power (AIX, IBM i, HMC, VIOS) : <u>https://galaxy.ansible.com/search?keywords=ibm%20and%20power&order\_by=-</u> <u>relevance&page=1&deprecated=false&type=collection</u>

Using Ansible for AIX (video): <a href="https://www.ibig.apible-aix">ibm.biz/ansible-aix</a>

Using Ansible for IBM i (video): <a href="https://www.ibm.biz/ansible-l">ibm.biz/ansible-l</a>

Do More with Less: Automating IBM Storage FlashSystem Tasks with REST APIs, Scripting, and Ansible <a href="https://www.redbooks.ibm.com/abstracts/redp5736.html">https://www.redbooks.ibm.com/abstracts/redp5736.html</a>



