

NOTHING ROUTINE IN IT SHOULD BE DONE MANUALLY

김용기 부장, Senior Solution Architect

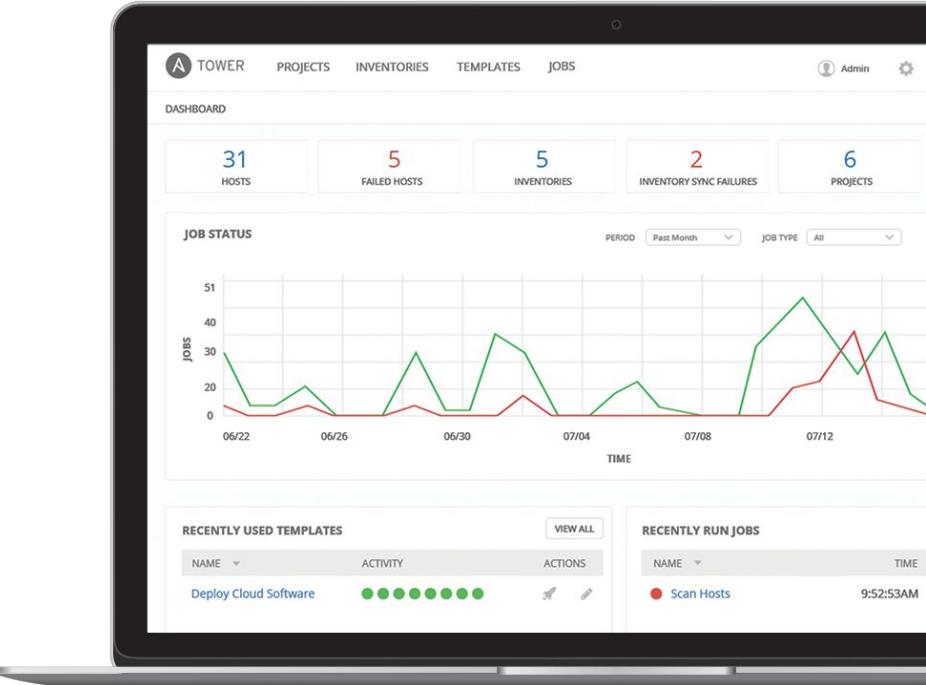
Red Hat

WHAT IS ANSIBLE AUTOMATION?

ANSIBLE

Ansible is an open source community project sponsored by Red Hat. It's a **simple automation language** that can perfectly describe IT application environments in Ansible Playbooks.

Ansible Tower is an **enterprise framework** for controlling, securing and managing your Ansible automation with a UI and RESTful API.



21,000+

Stars on GitHub

950+

Ansible modules

400,000+

Downloads a month

THE ANSIBLE WAY

CROSS PLATFORM

Agentless support for all major OS variants, physical, virtual, cloud and network devices.

HUMAN READABLE

Perfectly describe and document every aspect of your application environment.

PERFECT DESCRIPTION OF APPLICATION

Every change can be made by Playbooks, ensuring everyone is on the same page.

VERSION CONTROLLED

Playbooks are plain-text. Treat them like code in your existing version control.

DYNAMIC INVENTORIES

Capture all the servers 100% of the time, regardless of infrastructure, location, etc.

ORCHESTRATION PLAYS WELL WITH OTHERS

Every change can be made by Playbooks, ensuring everyone is on the same page.



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

WHAT CAN I DO WITH ANSIBLE?

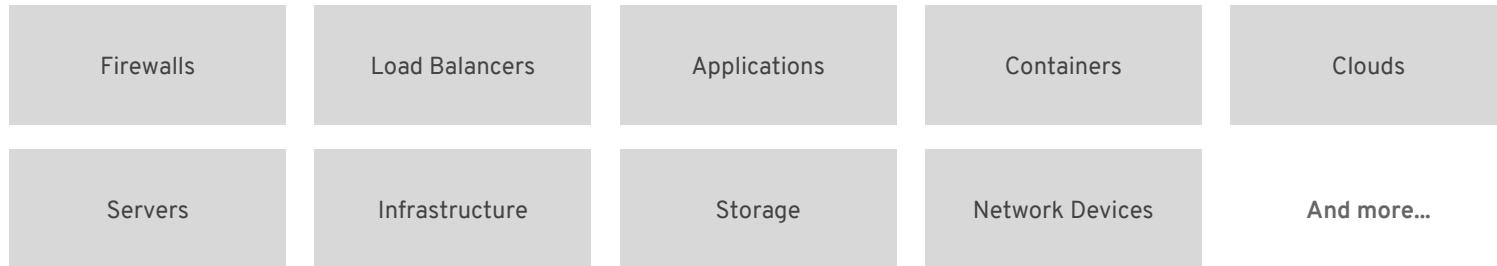
ANSIBLE

Automate the deployment and management of your entire IT footprint.

Do this...



On these...



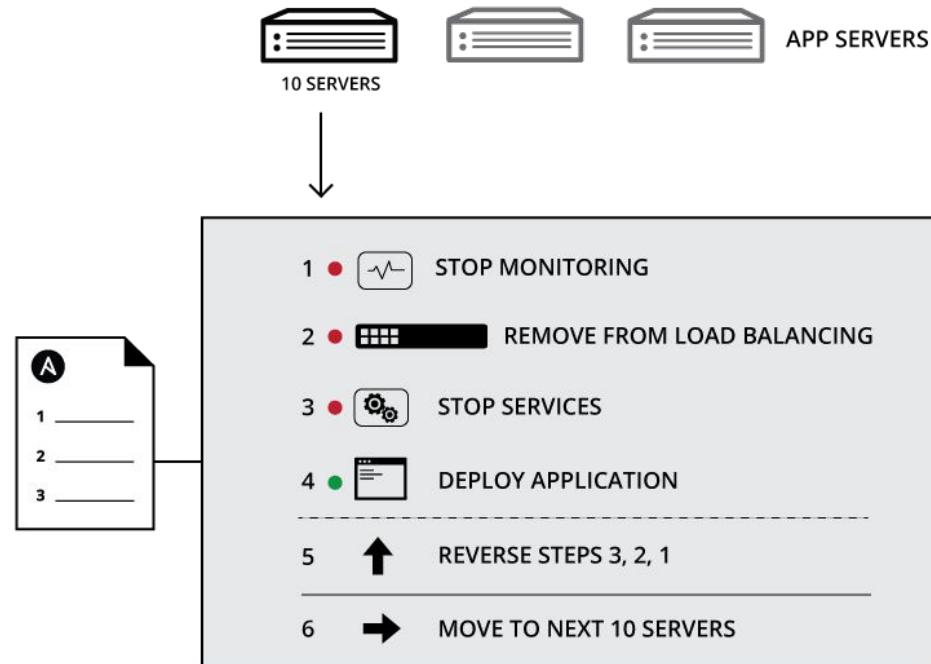
WHY IS AUTOMATION IMPORTANT?

ANSIBLE

Your applications and systems are more than just collections of configurations. They're a finely tuned and ordered list of tasks and processes that result in your working application.

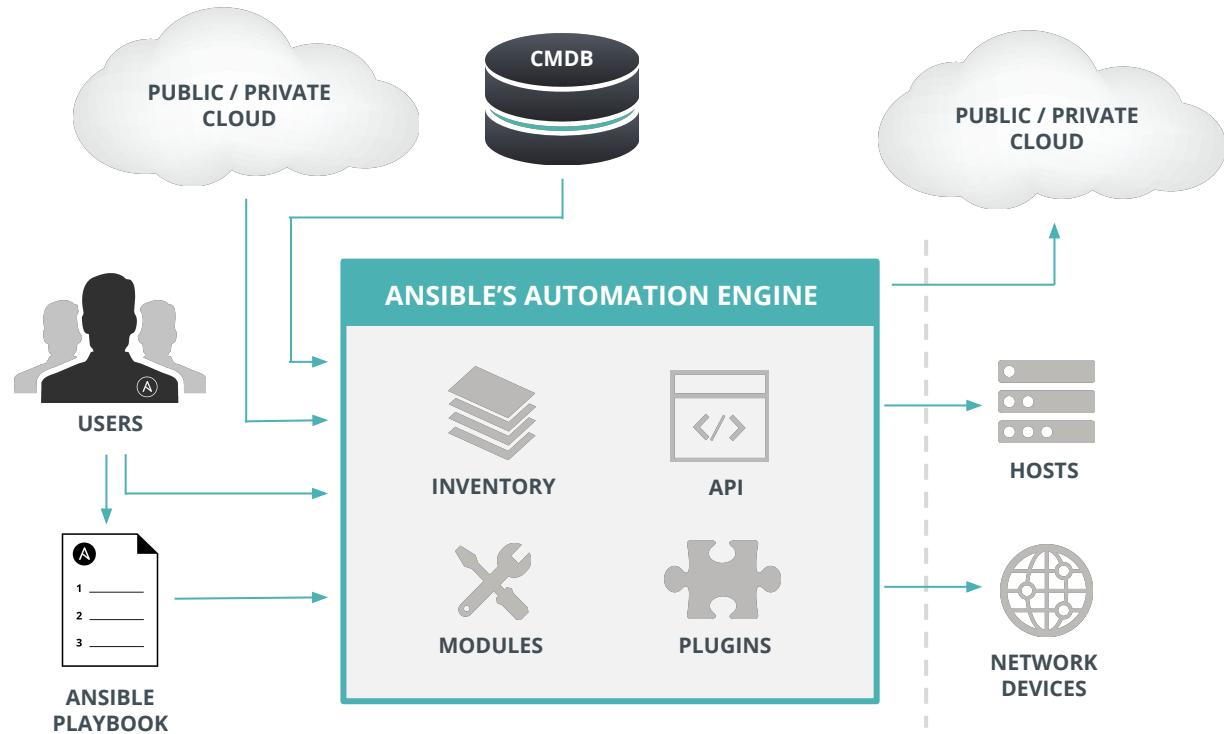
Ansible can do it all:

- Provisioning
- App Deployment
- Configuration Management
- Multi-tier Orchestration



HOW ANSIBLE WORKS

ANSIBLE



CLOUD

OpenStack, VMware, EC2, Rackspace,
GCE, Azure,
Spacewalk, Hanlon, Cobbler

CUSTOM CMDB



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FORUM
Asia Pacific



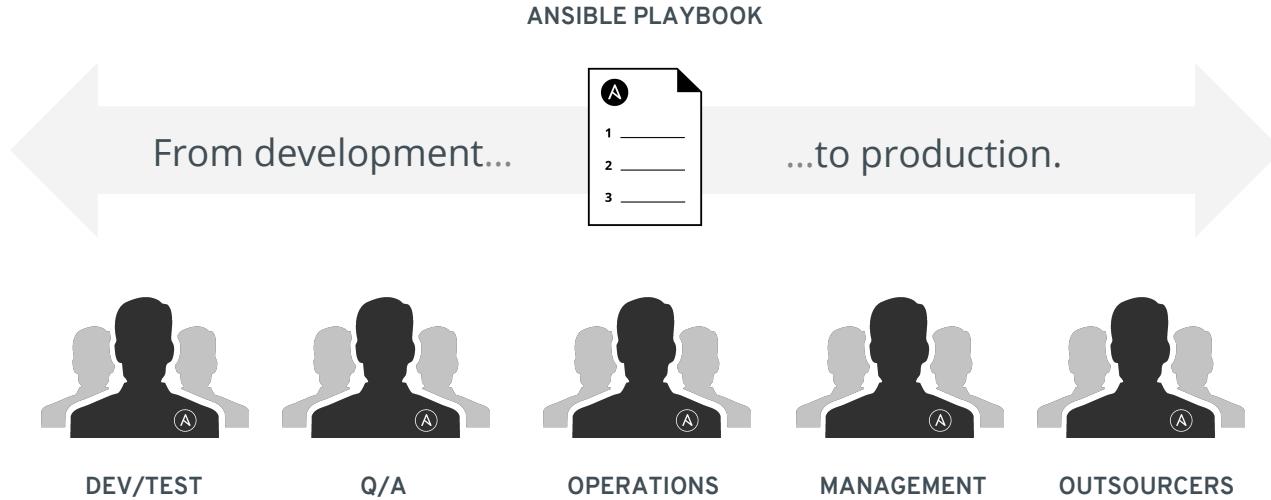
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ANSIBLE

THE LANGUAGE OF DEVOPS

COMMUNICATION IS THE KEY TO DEVOPS

ANSIBLE



Ansible is the first **automation language** that can be read and written across IT.

Ansible is the only **automation engine** that can automate the entire application lifecycle and continuous delivery pipeline.

PLAYBOOK EXAMPLE

ANSIBLE

```
---
```

```
- name: install and start apache
  hosts: web
  become: yes
  vars:
    http_port: 80

  tasks:
    - name: httpd package is present
      yum:
        name: httpd
        state: latest

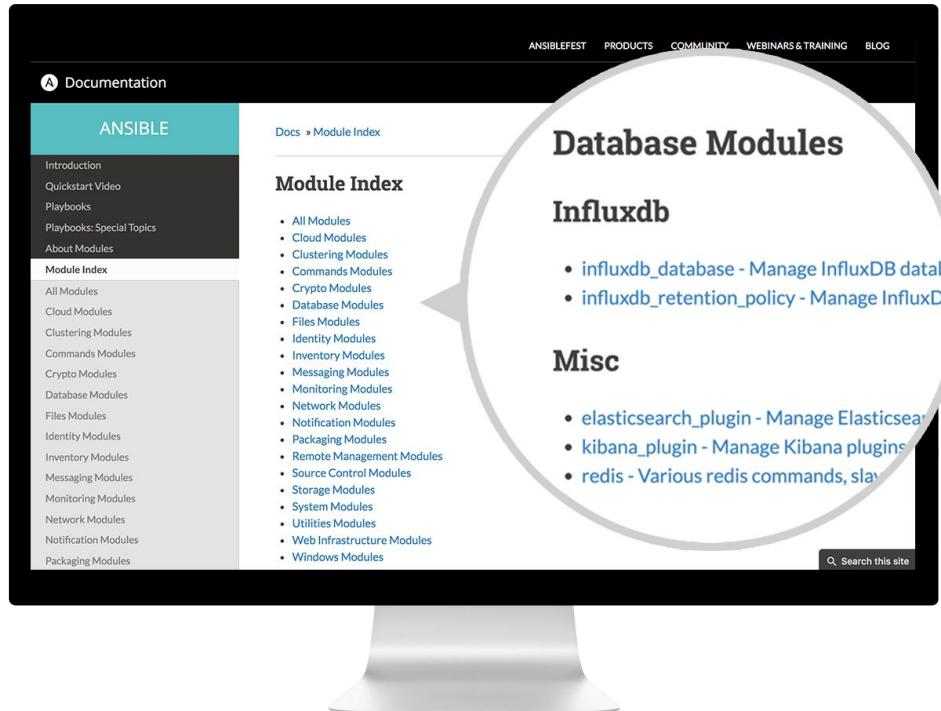
    - name: latest index.html file is present
      copy:
        src: files/index.html
        dest: /var/www/html/

    - name: httpd is started
      service:
        name: httpd
        state: started
```

ANSIBLE SHIPS WITH OVER 950 MODULES

A N S I B L E

CLOUD	VIRT AND CONTAINER	WINDOWS	NETWORK	NOTIFY
AWS	Docker	ACLs	Arista	HipChat
Azure	VMware	Files	A10	IRC
CenturyLink	RHEV	Commands	Cumulus	Jabber
CloudScale	OpenStack	Packages	Big Switch	Email
Digital Ocean	OpenShift	IIS	Cisco	RocketChat
Docker	Atomic	Regedits	Cumulus	Sendgrid
Google	CloudStack	Shell	Dell	Slack
Linode	And more...	Shares	F5	Twilio
OpenStack		Services	Juniper	And more...
Rackspace		Configs	Palo Alto	
And more...		Users	OpenSwitch	
		Domains	And more...	
		And more...		



LAMP + HAProxy + NAGIOS

github.com/ansible/ansible-examples/tree/master/lamp_haproxy

WINDOWS

github.com/ansible/ansible-examples/tree/master/windows

SECURITY COMPLIANCE

github.com/ansible/ansible-lockdown

NETWORK

github.com/privateip/network-demo

MORE...

galaxy.ansible.com

github.com/ansible/ansible-examples



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Tower

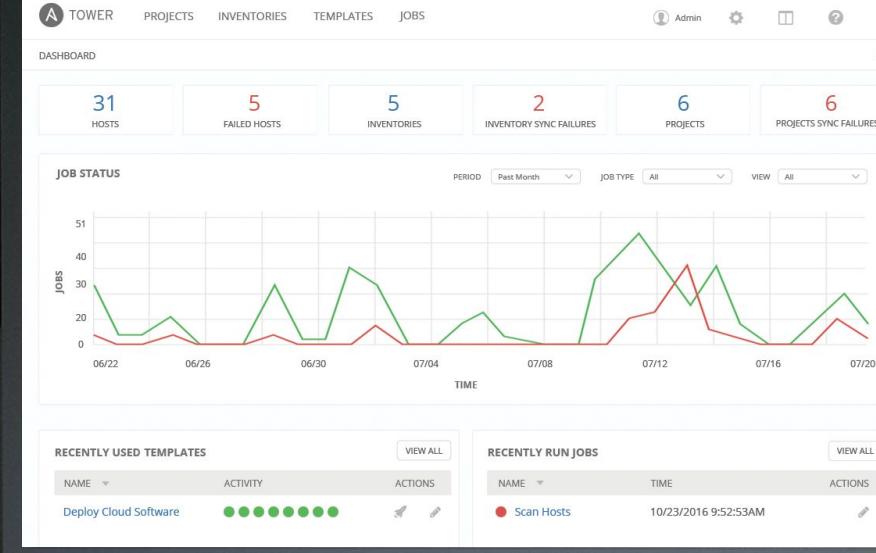
AUTOMATION FOR TEAMS

Ansible Tower technical introduction and overview

WHAT IS ANSIBLE TOWER?

Ansible Tower is an **enterprise framework** for controlling, securing and managing your Ansible automation – with a **UI and RESTful API**.

- **Role-based access control**
- **Deploy** entire applications with **push-button deployment** access
- All automations are **centrally logged**





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ANSIBLE®
Tower

TOWER EMPOWERS TEAMS TO AUTOMATE

CONTROL

KNOWLEDGE

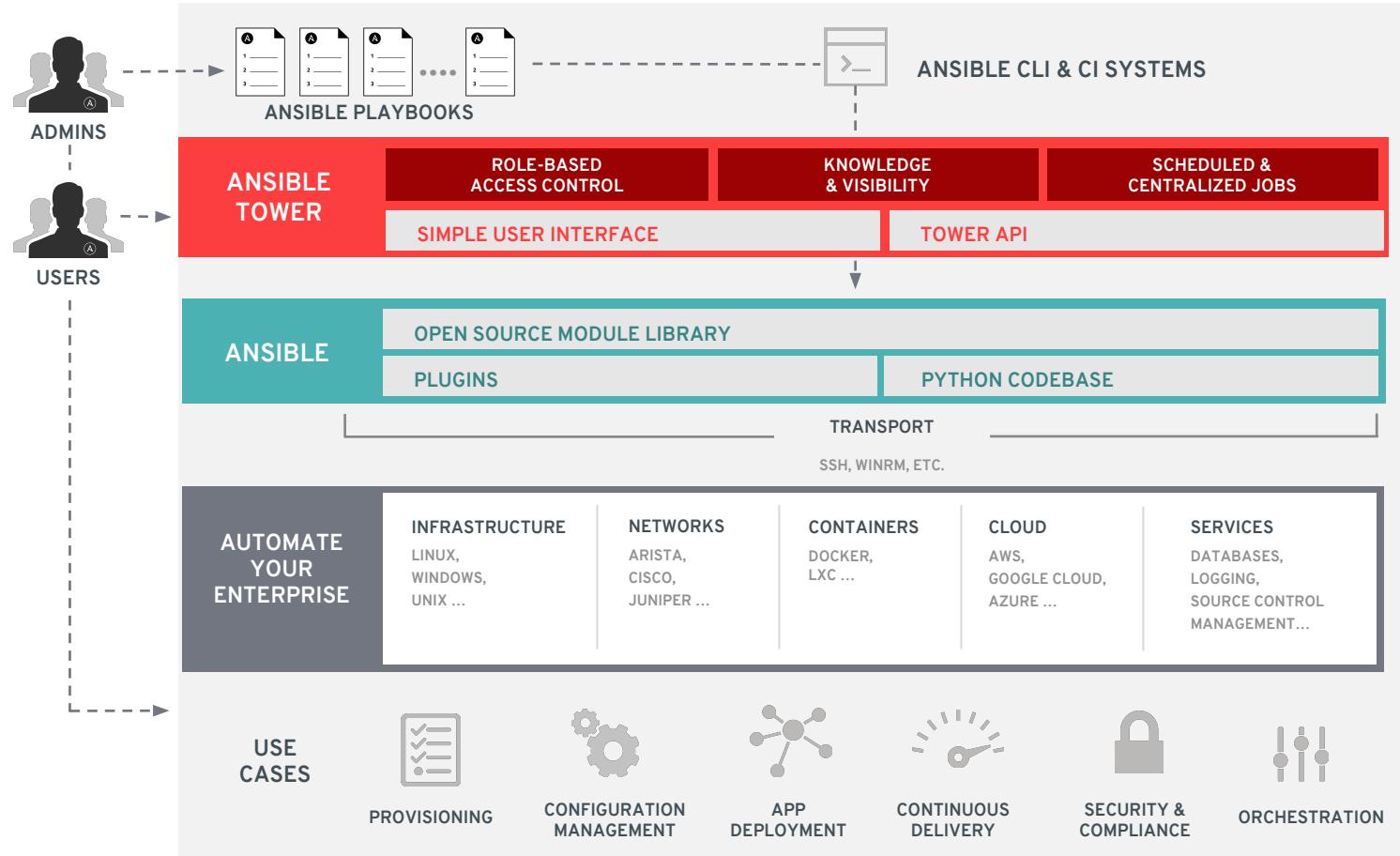
DELEGATION

SIMPLE

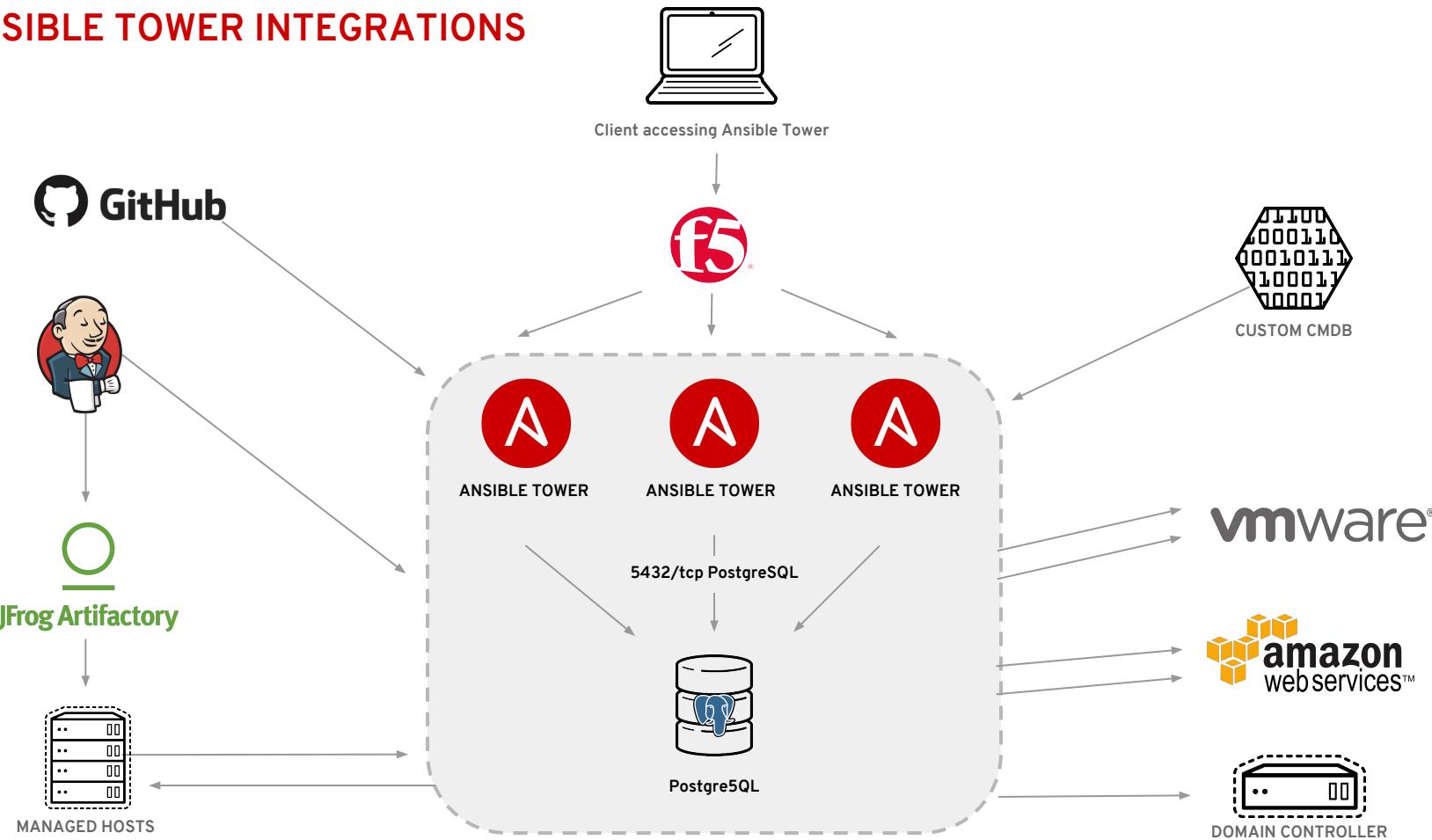
POWERFUL

AGENTLESS

AT ANSIBLE'S CORE IS AN OPEN-SOURCE AUTOMATION ENGINE



ANSIBLE TOWER INTEGRATIONS



NEW IN TOWER

WORKFLOWS

String together job templates to create something new – no Playbook required

SCALE-OUT CLUSTERING

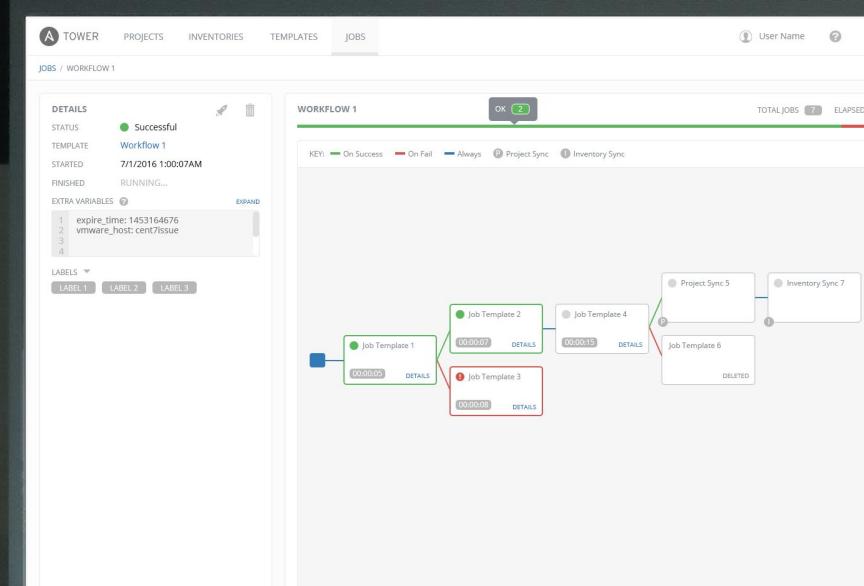
Quickly add job capacity and HA capabilities

DETAILED JOB OUTPUT

Information at your fingertips

LOG AGGREGATION AND DELIVERY

Automatically push job output data to Splunk, Sumologic and more



JOB STATUS UPDATE

Heads-up NOC-style automation dashboard displays everything going on in your Ansible environment.

The screenshot shows the Ansible Tower interface with two main panels. On the left, a card displays job details: Status (Successful), Started at 1:00:07 AM, Finished at 1:00:12 AM, Template (Update License Server), Job Type (Playbook Run), Launched By (User), Inventory (License Server), Project (License), Revision (00000000), Playbook (store.yml), Credential (License Server Deployment), Limit (Store), Verbosity (Update License Server), and Extra Variables (expire_time: 1453164676, vmware_host: cent7issue). Labels below the card include UPDATES and QA. On the right, a log viewer titled 'REMOVE VMWARE HOST' shows a playbook run with 3 tasks completed. The log output includes:

```
PLAY [Remove VMWare Host] *****
GATHERING FACTS *****
TASK: [ansiblelicense | install required packages via yum] *****
ok: [74.207.226.226]
ok: [74.207.226.226]

TASK: [ansiblelicense | update setuptools] *****
ok: [74.207.226.226]

TASK: [ansiblelicense | update pip] *****
ok: [74.207.226.226]

TASK: [ansiblelicense | create unprivileged user for ansiblelicense] *****
skipping: [74.207.226.226]
skipping: [74.207.226.226]

TASK: [ansiblelicense | configure ansiblelicense directory permissions] *****
changed: [74.207.226.226]
changed: [74.207.226.226]

TASK: [ansiblelicense | enable maintenance page] *****
ok: [74.207.226.226]

TASK: [ansiblelicense | check ssh connection to github] *****
ok: [74.207.226.226]

PLAY RECAP *****

```

Metrics at the top right indicate 0 plays, 0 tasks, 0 hosts, and an elapsed time of 00:00:03.

The screenshot shows the Ansible Tower interface with the 'ACTIVITY STREAM' section selected. The top navigation bar includes links for TOWER, PROJECTS, INVENTORIES, TEMPLATES, JOBS, and user admin. Below the navigation is a search bar with 'ACTIVITY STREAM | ALL ACTIVITY' and filters for 'REFRESH', 'All Activity', 'INITIATED BY', and a search input. The main area displays a table of activity logs:

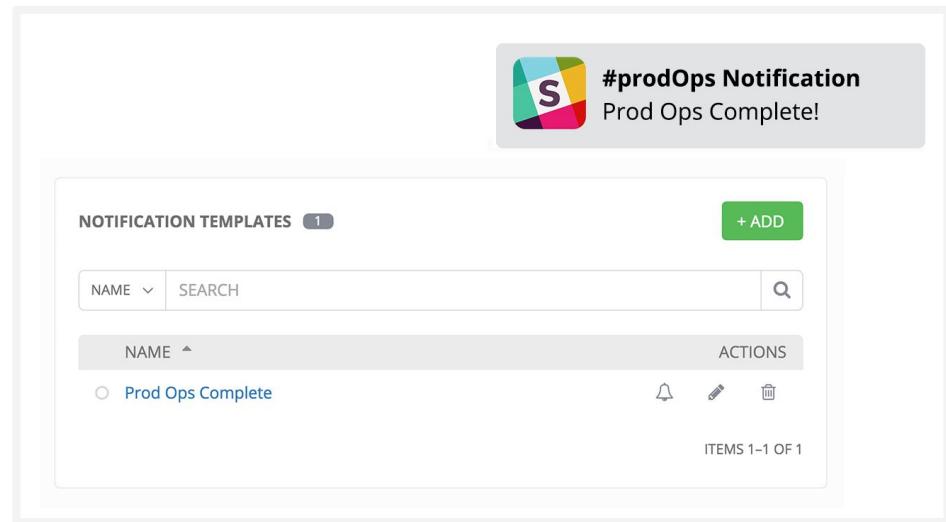
TIME	INITIATED BY	EVENT	ACTIONS
10/3/2016 5:00:52 PM	admin	created schedule Daily remediation	🔍
10/3/2016 4:51:45 PM	admin	deleted schedule Hourly scan	🔍
10/3/2016 4:51:13 PM	admin	created schedule Hourly scan	🔍

ACTIVITY STREAM

Securely stores every Job that runs, and enables you to view them later, or export details through Tower's API.

INTEGRATED NOTIFICATIONS

Stay informed of your automation status via **integrated notifications**. Connect Slack, Hipchat, SMS, email and more.



The screenshot shows the 'NOTIFICATION TEMPLATES' section of the Ansible Tower web interface. At the top right is a green '+ ADD' button. Below it is a search bar with 'NAME' and 'SEARCH' fields, and a magnifying glass icon. The main table has 'NAME' as the header for the first column and 'ACTIONS' as the header for the second column. One row is visible, labeled 'Prod Ops Complete'. To the right of this row are three icons: a bell (notifications), a pencil (edit), and a trash can (delete). At the bottom right of the table area, it says 'ITEMS 1-1 OF 1'.

NAME	ACTIONS
Prod Ops Complete	

JOB TEMPLATES SCHEDULES / JOB TEMPLATE SCHEDULES.EDIT

DAILY REMEDIATION

* NAME: Daily remediation

* START DATE (MM/DD/YYYY): 10/03/2016

* START TIME (HH24:MM:SS): 01 : 23 : 45

* LOCAL TIME ZONE: America/New_York

* REPEAT FREQUENCY: Day

FREQUENCY DETAILS

* EVERY: 1 DAYS

* END: Never

SCHEDULE DESCRIPTION

every day

OCCURRENCES (Limited to first 10) DATE FORMAT LOCAL TIME UTC

10/03/2016 01:23:45 EDT

SCHEDULE JOBS

Enables you to run any Job now, later, or forever.

MANAGE AND TRACK YOUR INVENTORY

Tower's **inventory syncing** and **provisioning callbacks** allow nodes to request configuration on demand, enabling autoscaling.

The screenshot shows the Ansible Tower interface for managing cloud servers. The top navigation bar includes links for TOWER, PROJECTS, INVENTORIES, TEMPLATES, JOBS, and user admin options. The current view is under the INVENTORIES section, specifically managing a 'Cloud Staging Servers' inventory. The main form is titled 'CLOUD SERVERS' and contains the following fields:

- NAME:** Cloud servers
- DESCRIPTION:** (empty)
- SOURCE:** Amazon EC2
- CLOUD CREDENTIAL:** Amazon keys
- REGIONS:** US East (Northern Virginia)
- INSTANCE FILTERS:** tag:Name=*staging*
- ONLY GROUP BY:** (empty)
- UPDATE OPTIONS:** Overwrite (checked), Overwrite Variables (checked), Update on Launch (unchecked)
- VARIABLES:** YAML (radio button selected), JSON (radio button unselected)
- A preview pane below shows a single entry: 1 - [redacted]

LAUNCH JOB | DEPLOY SOFTWARE ×

INVENTORY **CREDENTIAL** **SURVEY**

* ENTER NUMBER OF SERVICE INSTANCES.

* PLEASE SELECT THE SERVICE OWNER.

* ENTER PASSWORD FOR DEPLOYED CERTIFICATE.
 SHOW

INVENTORY CREDENTIAL
Cloud staging servers Staging ssh key

CANCEL LAUNCH

SELF-SERVICE IT

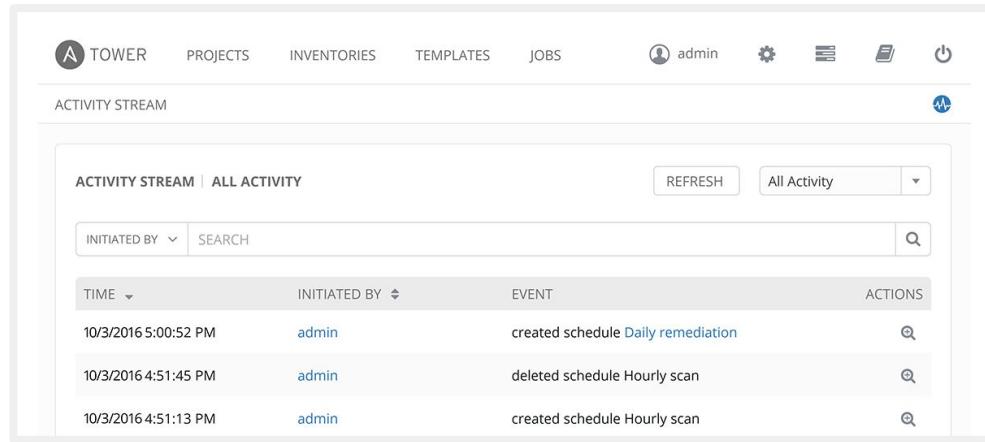
Tower lets you launch Playbooks with just a single click. It can prompt you for variables, let you choose from available secure credentials and monitor the resulting deployments.

REMOTE COMMAND EXECUTION

Run simple tasks on any hosts with Tower's **remote command execution**. Add users or groups, reset passwords, restart a malfunctioning service or patch a critical security issue, quickly.

The screenshot shows the 'EXECUTE COMMAND' dialog box within the Ansible Tower interface. The dialog has several input fields and settings:

- MODULE:** A dropdown menu set to "yum".
- HOST PATTERN:** A text input field containing "host1:host2".
- ENABLE PRIVILEGE ESCALATION:** A checked checkbox.
- FORKS:** A dropdown menu set to "0".
- ARGUMENTS:** A text input field containing "name=openssl state=latest".
- MACHINE CREDENTIAL:** A dropdown menu showing "Staging ssh key".
- VERBOSITY:** A dropdown menu set to "0 (Normal)".



The screenshot shows the Ansible Tower interface with the 'TOWER' logo at the top left. The top navigation bar includes links for 'PROJECTS', 'INVENTORIES', 'TEMPLATES', 'JOBS', and a user icon labeled 'admin'. To the right of the user icon are icons for settings, a gear, a clipboard, and a power button. Below the navigation is a section titled 'ACTIVITY STREAM' with a sub-section 'ACTIVITY STREAM | ALL ACTIVITY'. It features a search bar with 'INITIATED BY' dropdown and a 'SEARCH' input field. A 'REFRESH' button and a dropdown menu set to 'All Activity' are also present. The main area displays a table of recent events:

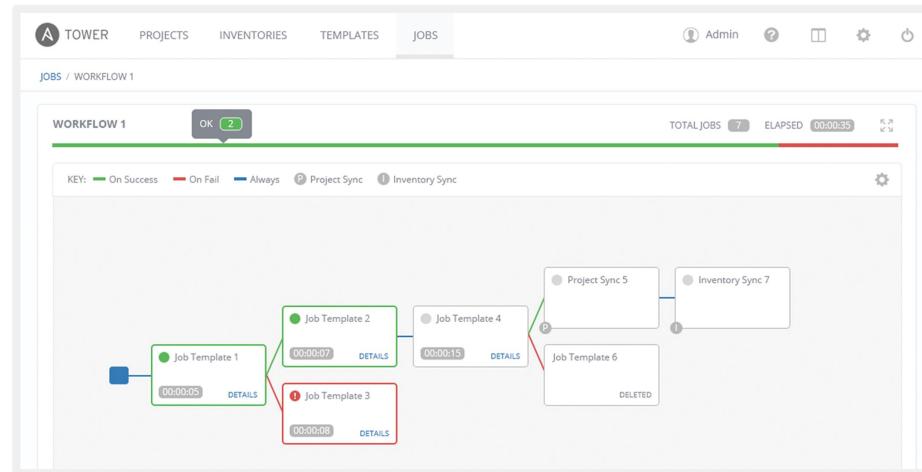
TIME	INITIATED BY	EVENT	ACTIONS
10/3/2016 5:00:52 PM	admin	created schedule Daily remediation	🔍
10/3/2016 4:51:45 PM	admin	deleted schedule Hourly scan	🔍
10/3/2016 4:51:13 PM	admin	created schedule Hourly scan	🔍

EXTERNAL LOGGING

Connect Tower to your external logging and analytics provider to perform analysis of automation and event correlation across your entire environment.

MULTI-PLAYBOOK WORKFLOWS

Tower's multi-Playbook workflows chains any number of Playbooks together to create a single workflow. Different Jobs can be run depending on success or failure of the prior Playbook.



SELECTED ANSIBLE TOWER CUSTOMERS



JPMORGAN
CHASE & CO.



J.CREW



T-Mobile

AMERICA'S
NAVY



RED HAT
FORUM
Asia Pacific



redhat®

AUTOMATION = ACCELERATION



"Simplicity scales. If you do things in complex ways, they become very difficult to maintain, and you end up paying a lot more for operations later."



"With Ansible Tower, we just click a button and deploy to production in 5 minutes. It used to take us 5 hours with 6 people sitting in a room, making sure we didn't do anything wrong (and we usually still had errors). We now deploy to production every other day instead of every 2 weeks, and nobody has to be up at 4am making sure it was done right."



"Everyone in this room needs to retool around Ansible automation. All Starbucks network changes will be scheduled using Ansible Tower by the end of 2017."



GALAXY

10,000 ROLES AT YOUR DISPOSAL

Re-usable Roles and Container Apps that allow you to do more, faster

Built into the Ansible CLI and Tower

galaxy.ansible.com

ANSIBLE NETWORK AUTOMATION

Use Ansible to manage, validate, and continuously track heterogeneous network device configurations and deployments.

Network modules are included as part of the Ansible distribution.

25+

Networking platforms

250+

Networking Modules

ansible.com/networking

WHY AUTOMATE YOUR NETWORK?

PLAN AND PROTOTYPE VIRTUALLY

Use tasks as reusable building blocks

USE YOUR CURRENT DEVELOPMENT PRACTICES

Agile, DevOps, Waterfall

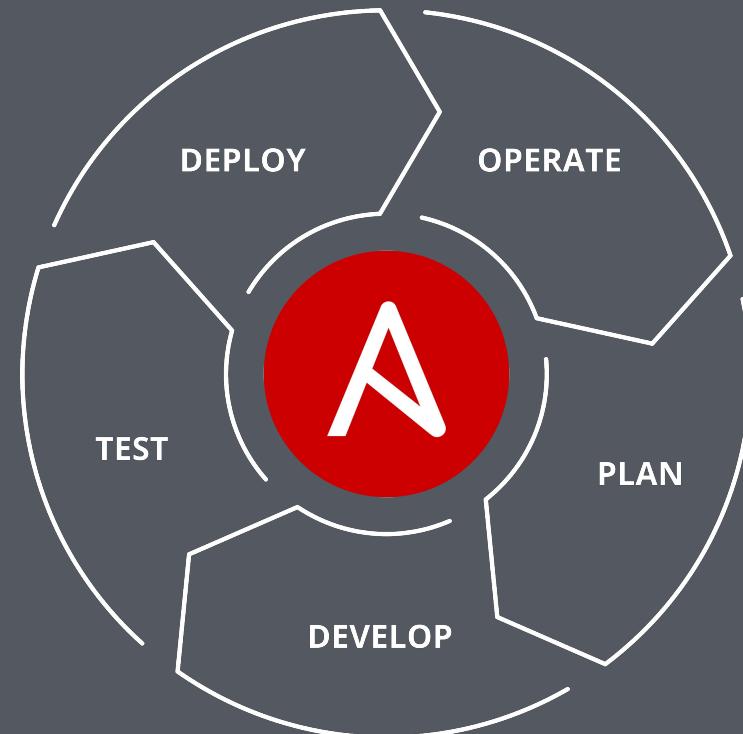
GO BEYOND THE “PING” TEST

Integrate with formal testing platforms

BE CONFIDENT DURING DEPLOYMENT

Validate changes were successful

ENSURE AN ON-GOING STEADY-STATE



PLAYBOOK EXAMPLE: NETWORK AUTOMATION

ANSIBLE

```
---
```

```
- name: configure ios interface
  hosts: ios01
  tasks:
    - name: collect device running-config
      ios_command:
        commands: show running-config interface GigabitEthernet0/2
        provider: "{{ cli }}"
      register: config

    - name: administratively enable interface
      ios_config:
        lines: no shutdown
        parents: interface GigabitEthernet0/2
        provider: "{{ cli }}"
      when: '"shutdown" in config.stdout[0]'

    - name: verify operational status
      ios_command:
        commands:
          - show interfaces GigabitEthernet0/2
          - show cdp neighbors GigabitEthernet0/2 detail
      waitfor:
        - result[0] contains 'line protocol is up'
        - result[1] contains 'iosxr03'
        - result[1] contains '10.0.0.42'
      provider: "{{ cli }}"
```

ANSIBLE WINDOWS AUTOMATION

Use Ansible to deploy and manage Windows systems and applications.

70+

Windows Modules

350+

Powershell DSC resources

ansible.com/windows

PLAYBOOK EXAMPLE: WINDOWS

ANSIBLE

```
- hosts: new_servers
  tasks:
    - name: ensure common OS updates are current
      win_updates:
        register: update_result

    - name: ensure domain membership
      win_domain_membership:
        dns_domain_name: contoso.corp
        domain_admin_user: '{{ domain_admin_username }}'
        domain_admin_password: '{{ domain_admin_password }}'
        state: domain
      register: domain_result

    - name: reboot and wait for host if updates or domain change require it
      win_reboot:
        when: update_result.reboot_required or domain_result.reboot_required

    - name: ensure local admin account exists
      win_user:
        name: localadmin
        password: '{{ local_admin_password }}'
        groups: Administrators

    - name: ensure common tools are installed
      win_chocolatey:
        name: '{{ item }}'
      with_items: ['sysinternals', 'googlechrome']
```



ANSIBLE CONTAINER

Use Ansible to define, build,
orchestrate, and deploy container applications.

WHY WOULD YOU STILL USE SHELL SCRIPTS TO DEFINE CONTAINER PAYLOADS?

- Build images using Ansible Playbooks
- Orchestrate containers from your images, à la docker-compose up
- Push images to public or private registries
- Generate Ansible Roles to ship your images to Kubernetes, OpenShift, etc.

github.com/ansible/ansible-container

GETTING STARTED

Have you used Ansible already?

Try Tower for free: ansible.com/tower-trial

Would you like to learn Ansible?

It's easy to get started: ansible.com/get-started

Want to learn more?

Videos, webinars, case studies, whitepapers: ansible.com/resources



THANK YOU



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linkedin.com/company/red-hat



twitter.com/RedHatNews



youtube.com/user/RedHatVideos