How to use this deck

Name:

Lab Guide - Introduction to cloud automation

Purpose:

This deck is for teaching an Ansible Lab “Introduction to cloud automation” for Ansiblefest 2022

Last updated:

Oct 10th, 2022

What this deck is for?

Training, it goes hand-in-hand with self-paced exercises

What is this deck is NOT for?

Business level discussions

Google Slides source link (Red Hat internal):

https://docs.google.com/presentation/d/1LNzCv16dZ9nNDrfEY-wOMd1jYAZMZIlcla_fUJLsq0U/edit?usp=sharing

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Red Hat
Ansible Automation
Platform

Red Hat
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Platform

Introduction to cloud automation

Ansible Self-Guided Labs

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Introduction to cloud automation

01 What is Ansible cloud automation?

02 How does it work?

- Deploying Ansible Automation Platform

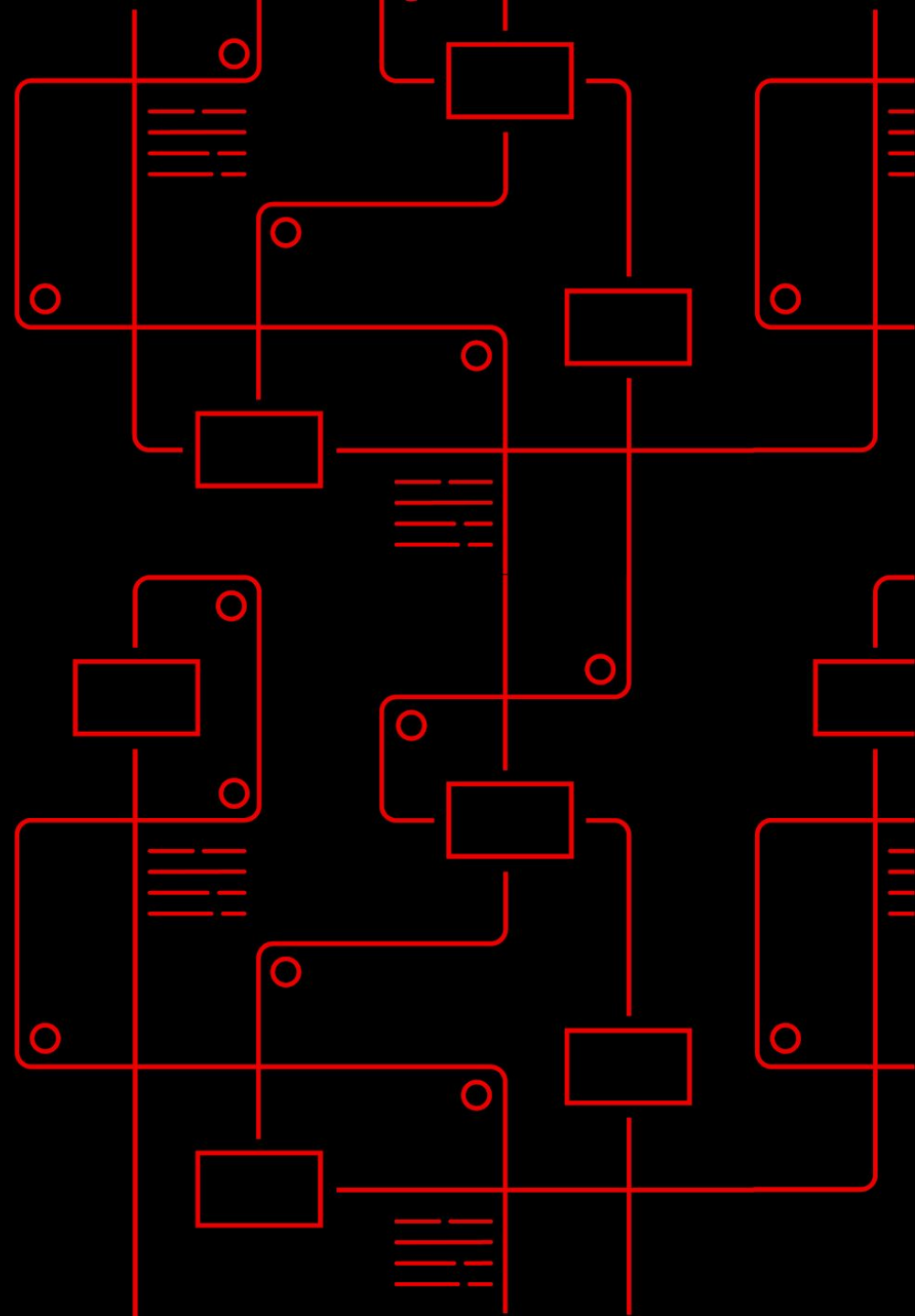
03 Lab 1 - Infrastructure visibility

04 Lab 2 - Cloud operations

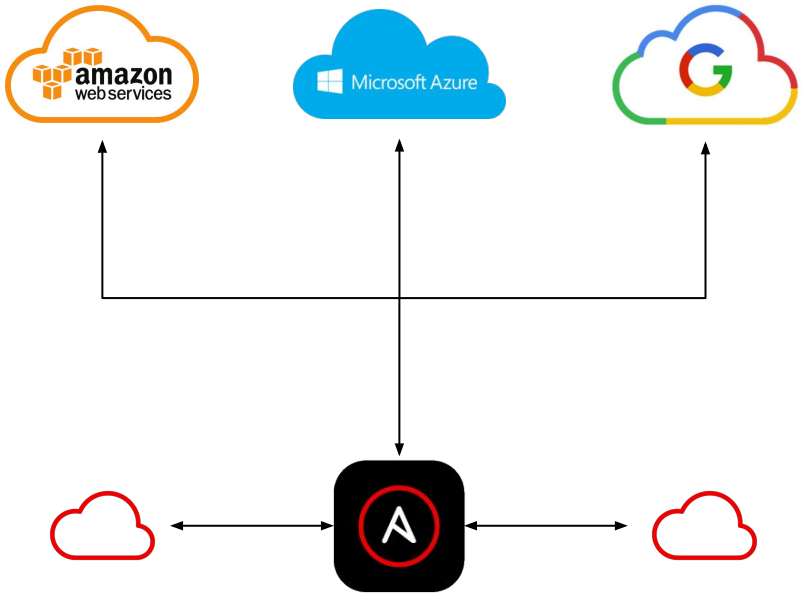
05 Lab 3 - Infrastructure optimization

06 Next steps

What is Red Hat Ansible cloud automation?



What is Ansible public cloud automation?

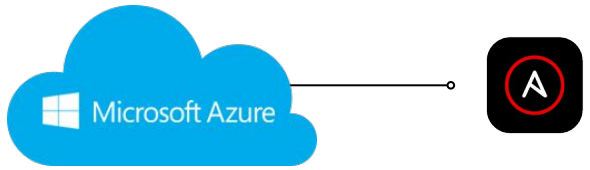


Ansible public cloud automation is our content domain focused on public cloud and automation for organization's multi-cloud deployments.

Ansible for public clouds provides administrators and app developers with the tools and an operational framework to automate operations, manage resources as infrastructure-as-code, and better support digital transformation by connecting teams across the IT organization.

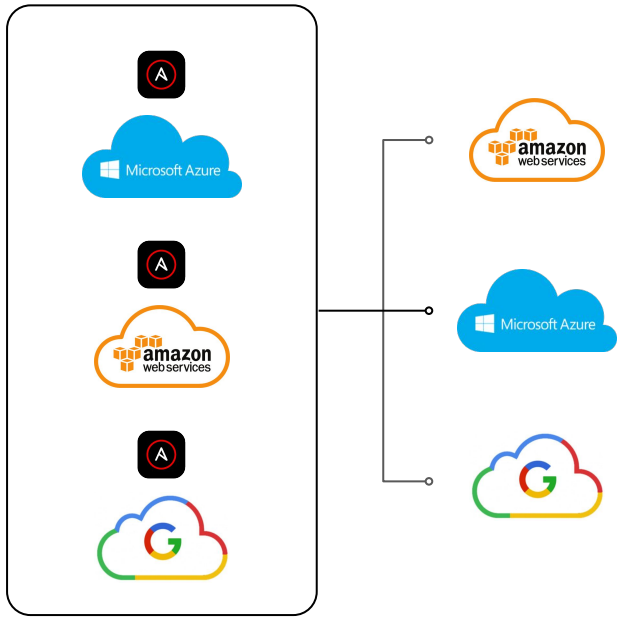
Ansible cloud automation is a set of Certified Content Collections designed to streamline and operationalize cloud operations across multiple public clouds and services

Source



Ansible on cloud–managed application: Where is Ansible Automation Platform hosted?

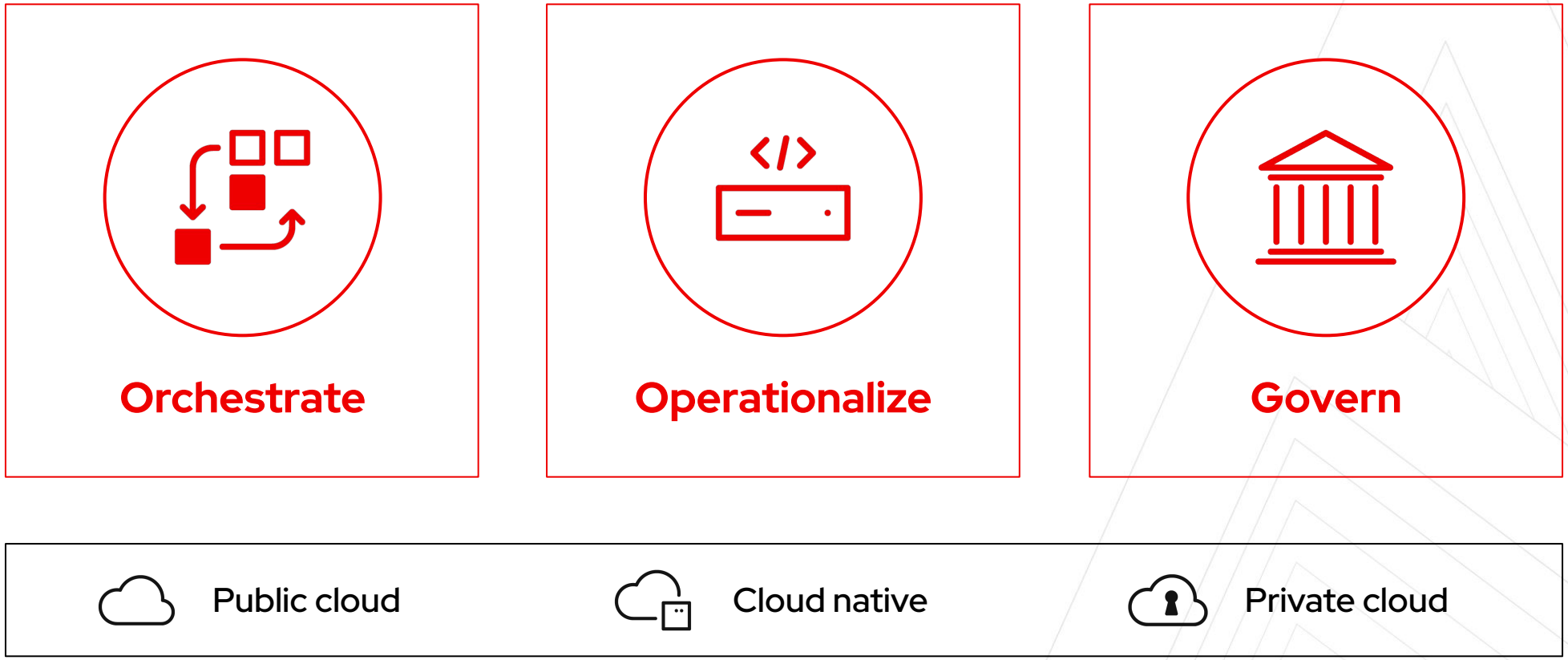
- Runs in your cloud
- Fully installed and integrated
- Fully supported by Red Hat
- Integrated into your cloud billing
- Counts toward spend agreements



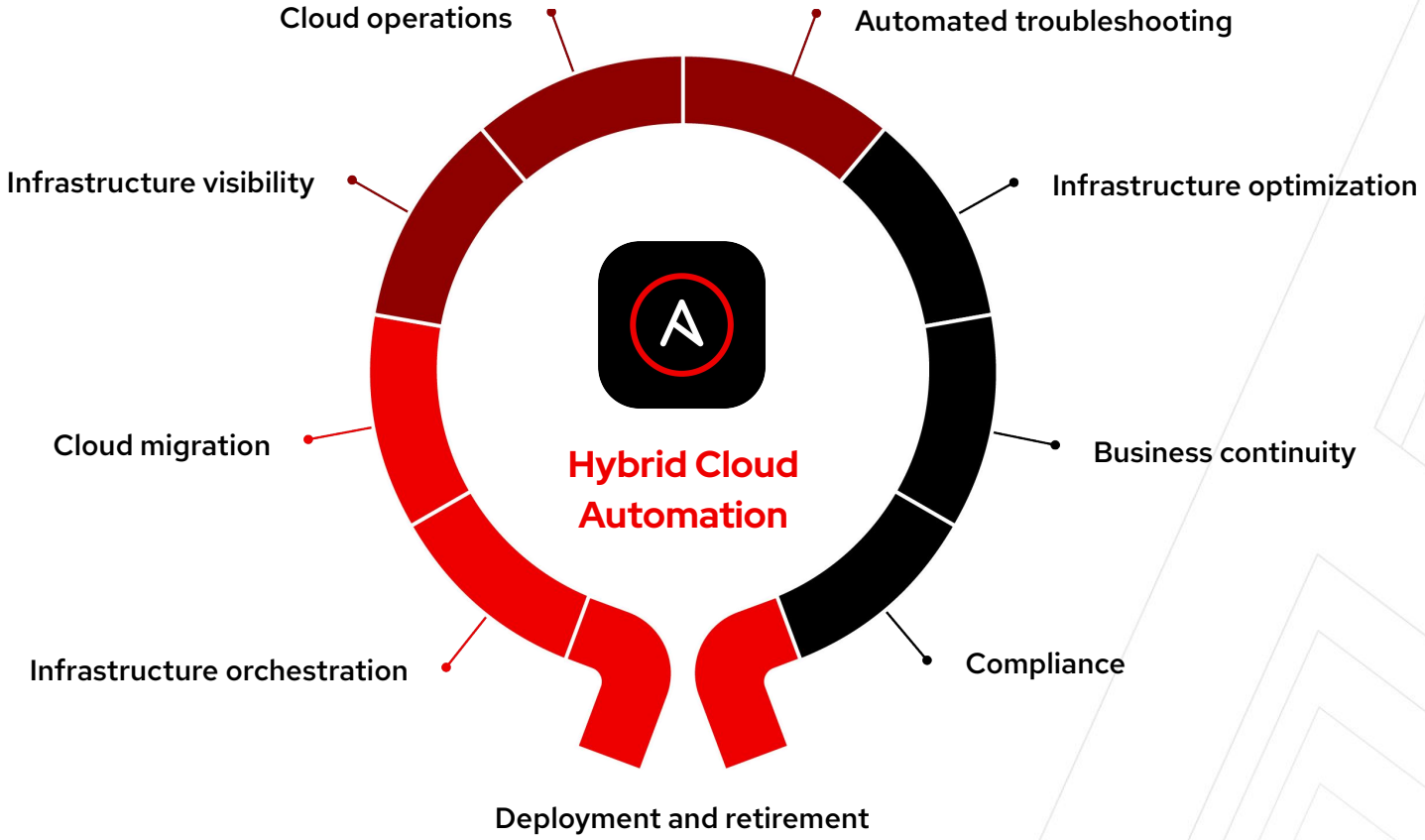
Ansible for cloud: What can Ansible Automation Platform automate?

- Cloud application deployment
- Infrastructure awareness and coordination
- Orchestration and operational tasks and more...

Ansible Automation for the hybrid cloud



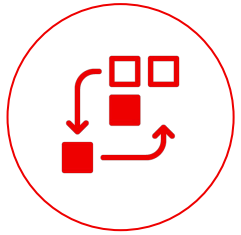
Orchestrate | **Operationalize** | **Govern**



Public cloud **Cloud native** **Private cloud**

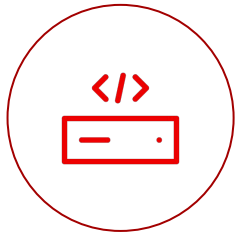
Red Hat Ansible Automation Platform

Deep diving on use-cases for cloud



Orchestrate

- Deployment and retirement
- Infrastructure orchestration
- Cloud migration



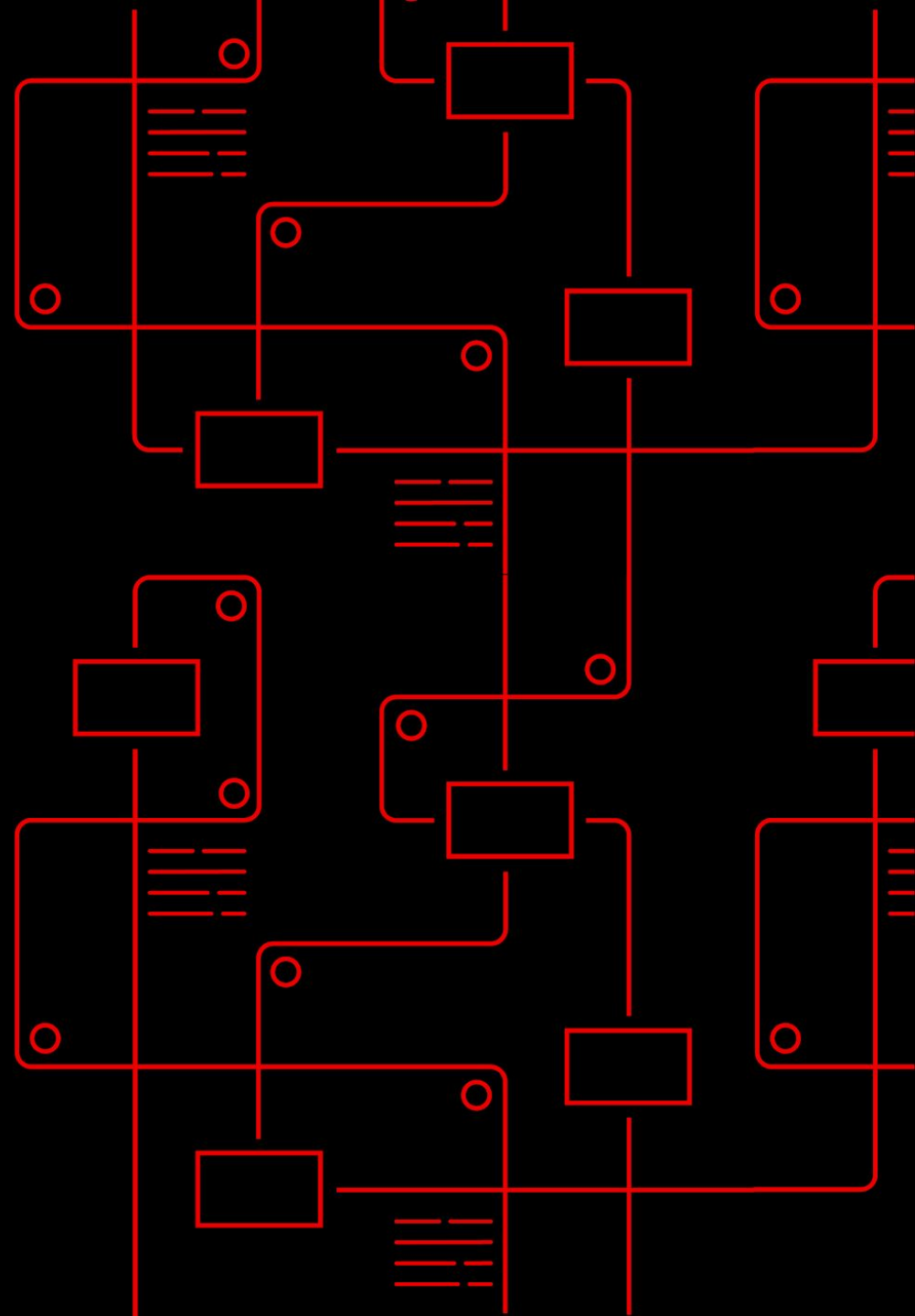
Operationalize

- Infrastructure visibility
- Cloud operations
- Automated troubleshooting

Govern

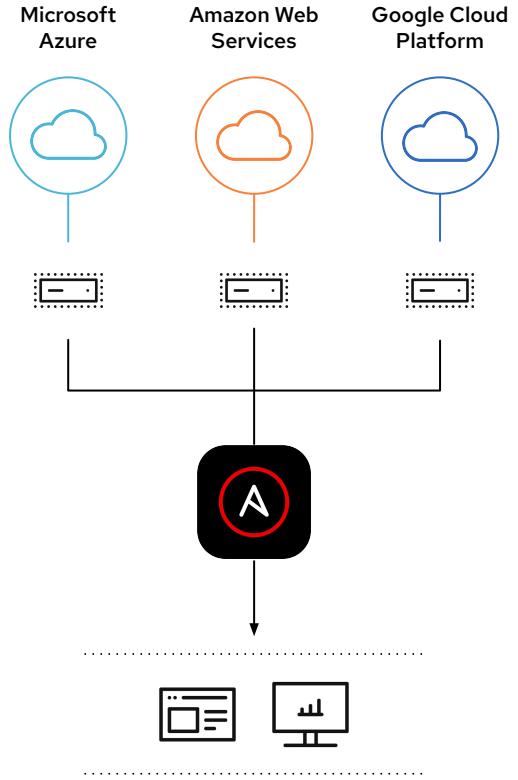
- Infrastructure optimization
- Business continuity
- Compliance

Infrastructure visibility



Infrastructure visibility

Why should you choose Ansible Automation Platform for public cloud automation?



Why is it important?

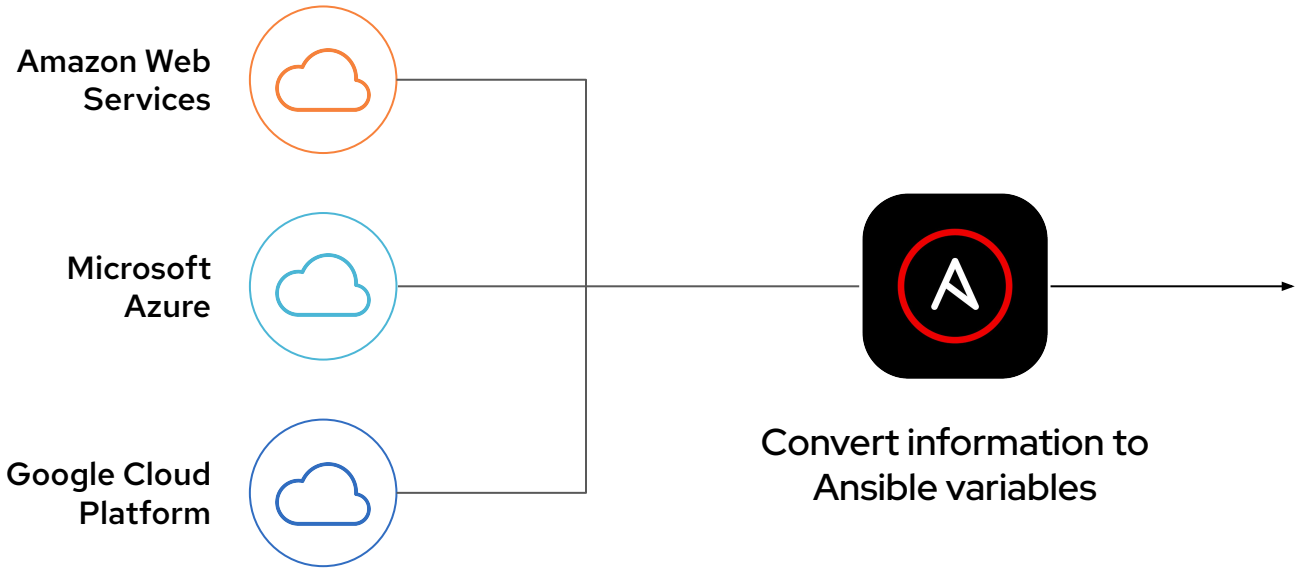
- Read-only, no changing of production configs
- Understand your cloud footprint
- Good intro level use-case for cloud administrators

Why Red Hat Ansible Automation Platform?

- Push button via WebUI
- Easy scheduling
- Multi-cloud

Cloud automation begins and ends with structured data

Public cloud resources



Create customized reports with flexible data outputs

```
retrieved_info.availability_zones:
- group_name: us-east-1
  messages: []
  network_border_group: us-east-1
  opt_in_status: opt-in-not-required
  region_name: us-east-1
  state: available
  zone_id: use1-az1
  zone_name: us-east-1a
  zone_type: availability-zone

<<rest of output removed for brevity>>
```

Red Hat
Ansible Automation
Platform

Create report

What can I collect?

Create customized reports

Virtual instances and containers

Linux
Containers
Windows
Kubernetes
Hypervisors

Cloud resources

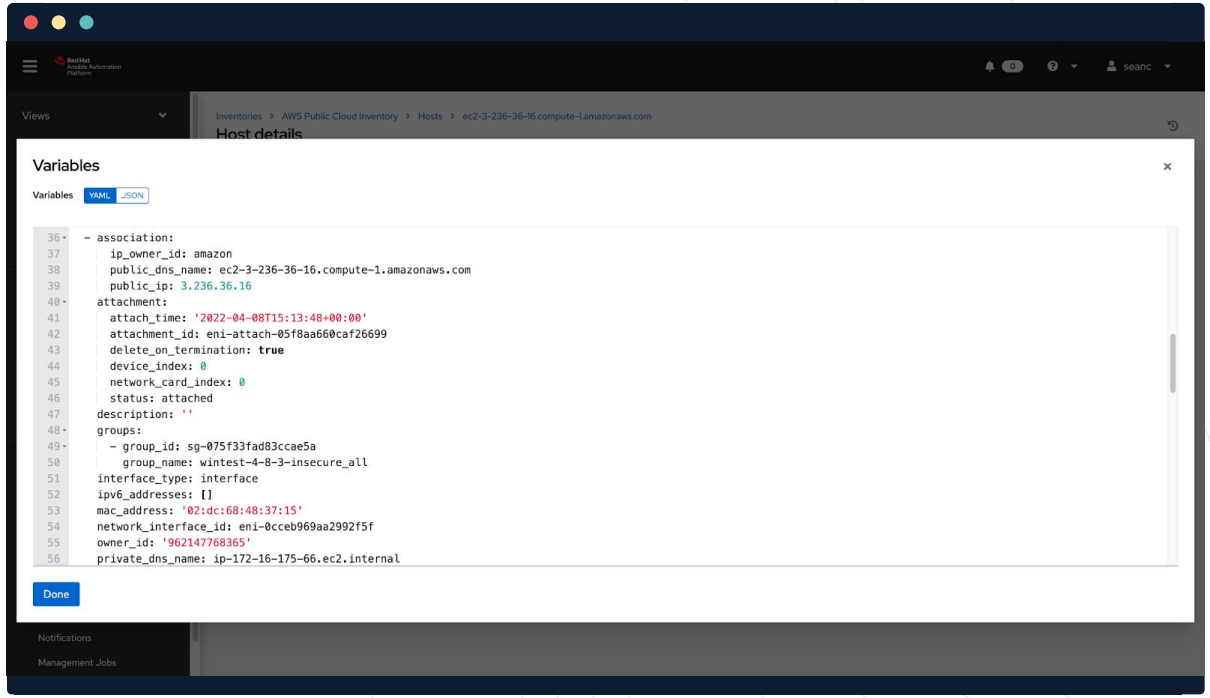
Storage
Networking
Virtual firewalls
IAM
Services

IAM: Identity and access management

Automation controller

Clouds as code

- **Convert clouds** into JSON/YAML using malleable Ansible modules
- **View structured data** via Automation controller for easy troubleshooting
- **Send data** to your tool of choice or simply create simple, dynamic documentation



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Ansible Automation
Platform

Lab Time

Lab 1 - Infrastructure visibility

15 Minutes

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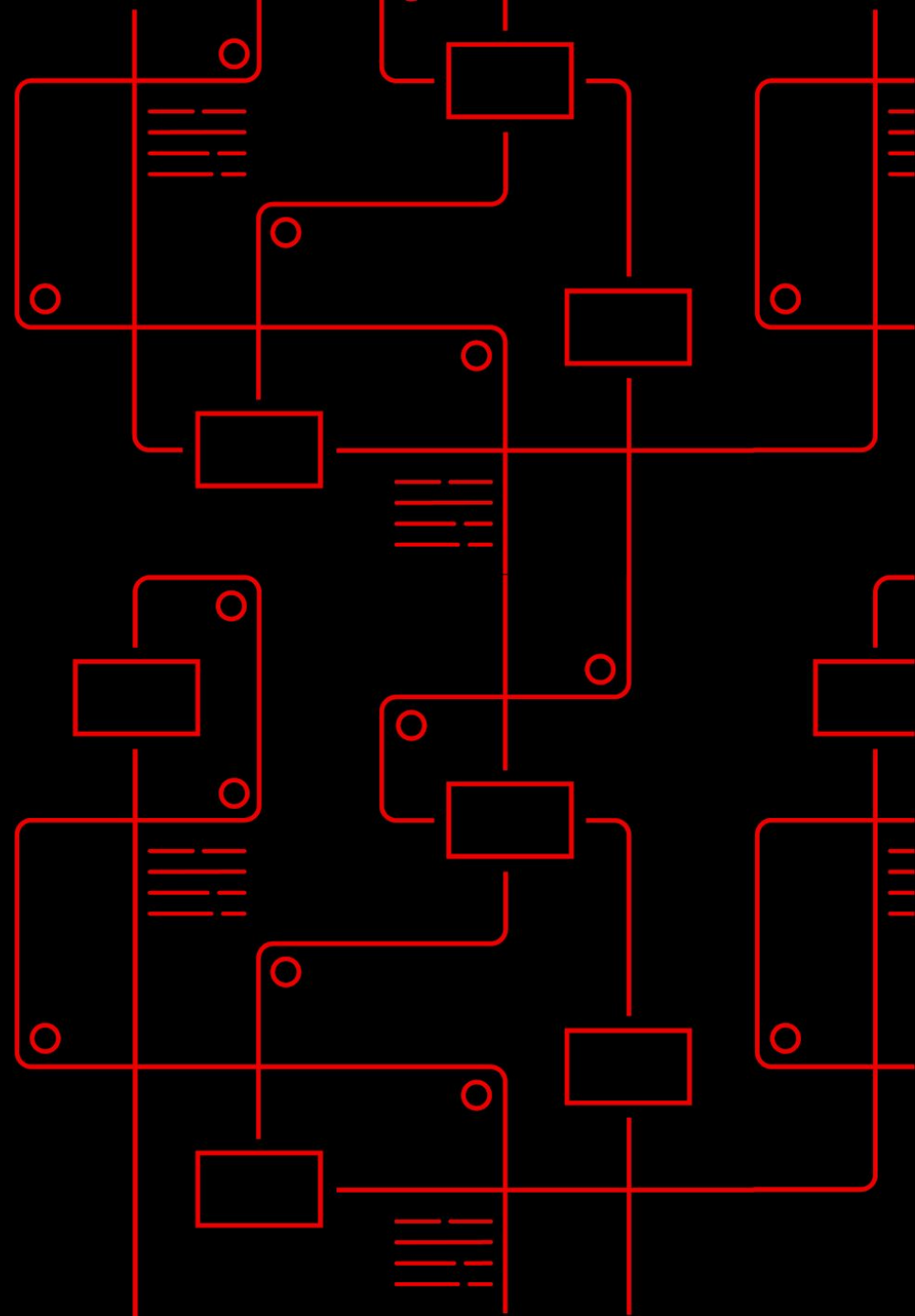
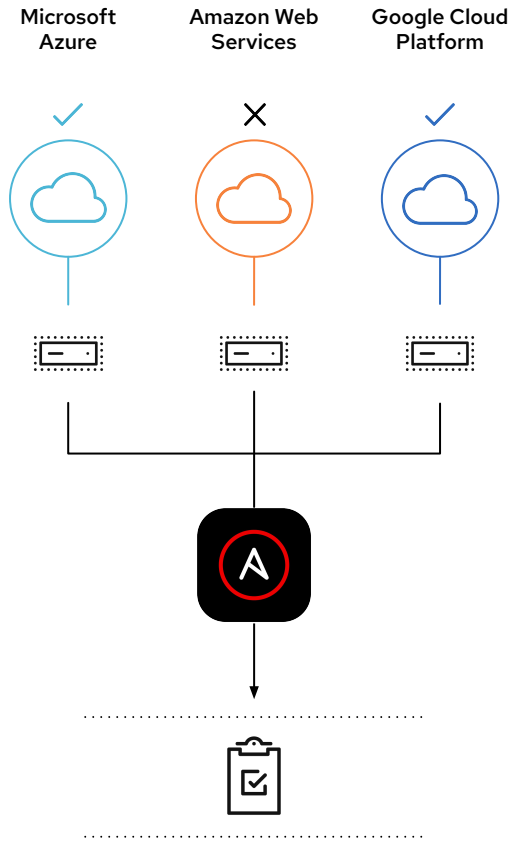
Ansible Automation
Platform

Cloud operations



Cloud operations



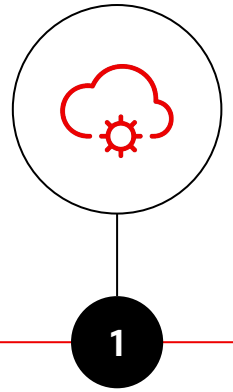
Why is it important?

- Application deployments and CI/CD pipelines
- Life cycle management and enforcement
- OS patching and maintenance

Why Red Hat Ansible Automation Platform?

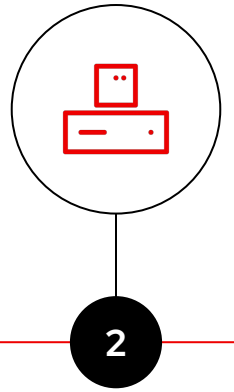
- Works on immutable and mutable infrastructure
- Access to certified content for infrastructure, hybrid-cloud, Windows/Linux, application deployment, and security
- Turn key dynamic inventory with major public cloud providers

Day 2 operational activities



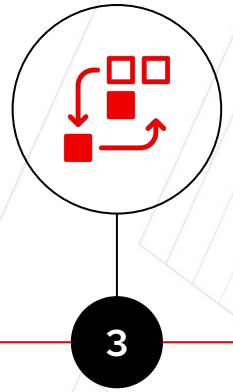
1

Modify cloud resources



2

Modify host operating systems and applications

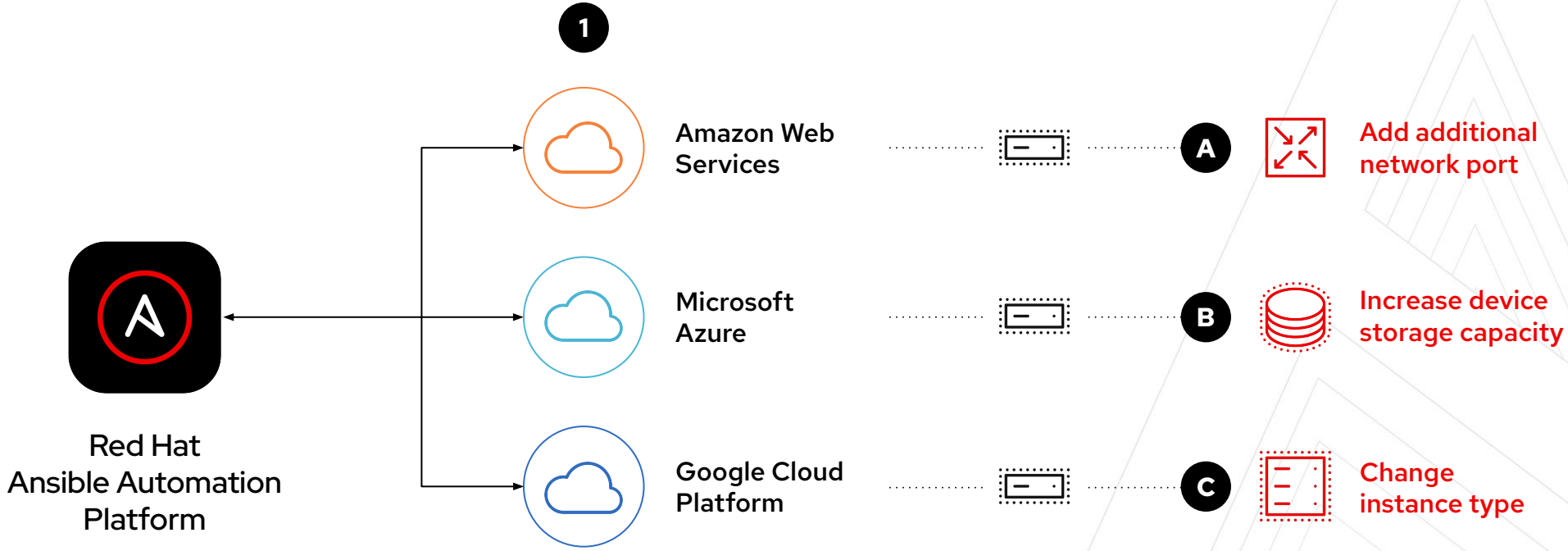


3

Orchestrate multiple systems together

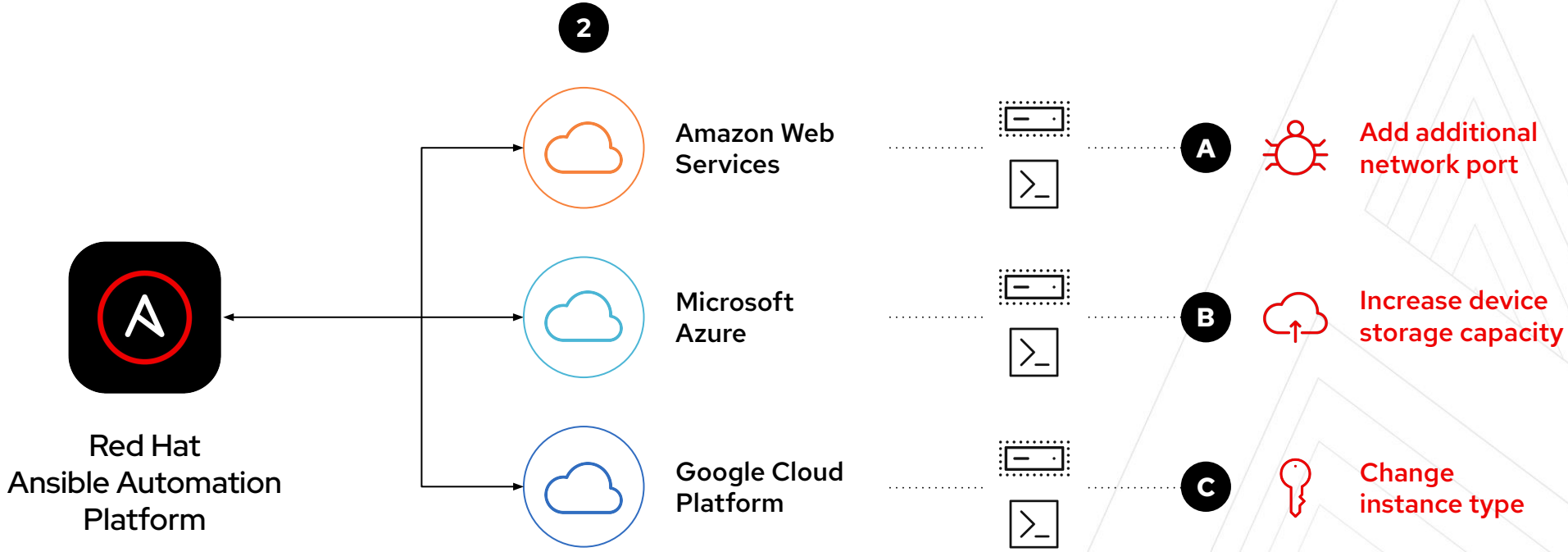
Modify cloud resources

Examples of day 2 operational activities

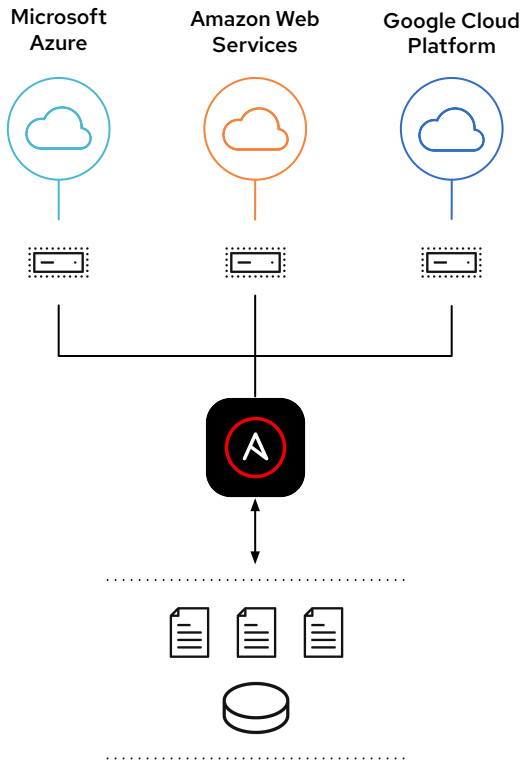


Modify host operating systems

Examples of day 2 operational activities



Life cycle management is more than just provisioning



Keep systems and applications up to date

Create workflows for GitOps methodology

Validate operational state of applications

Lab Time

Lab 2 - Cloud Operations

15 Minutes

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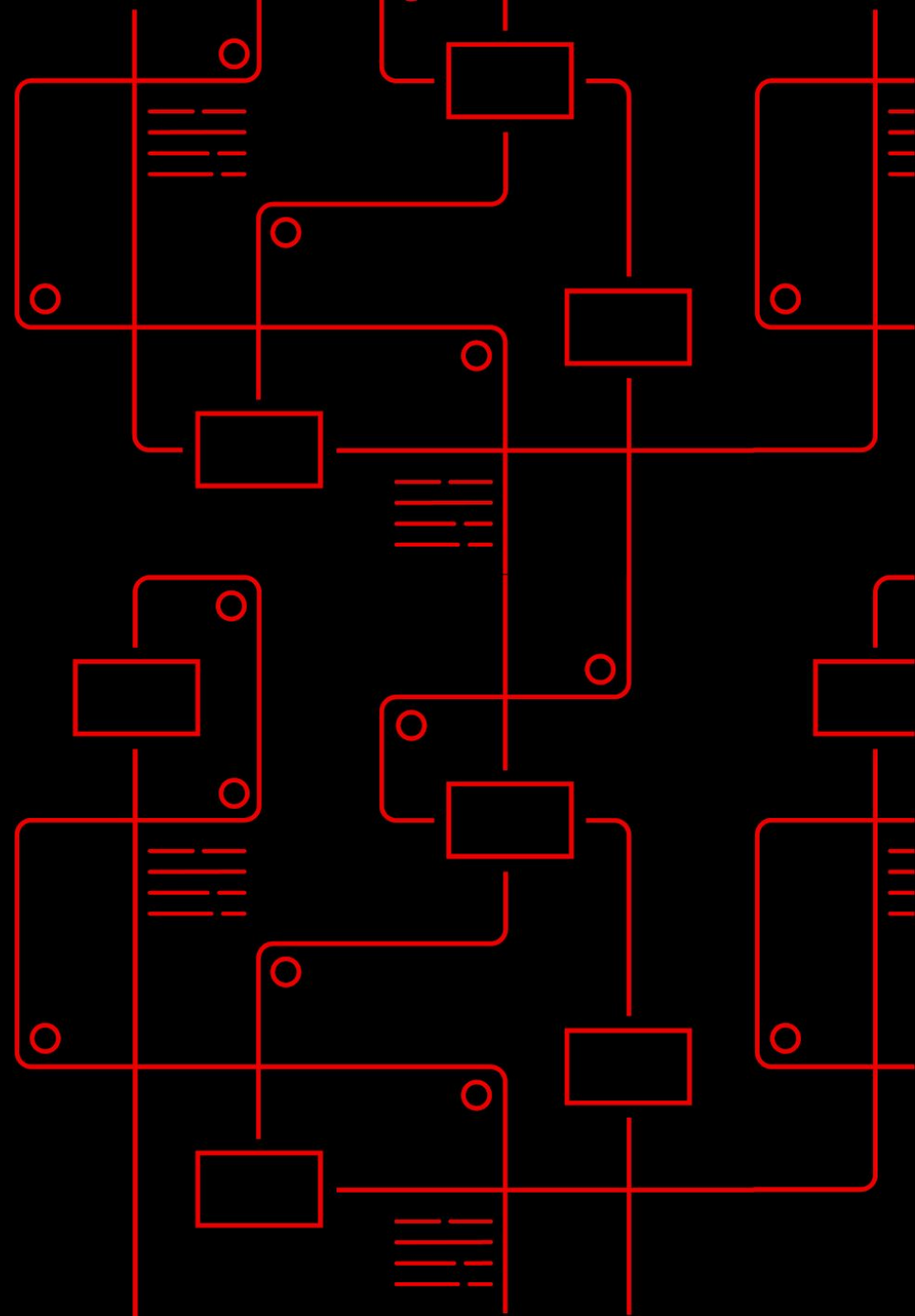
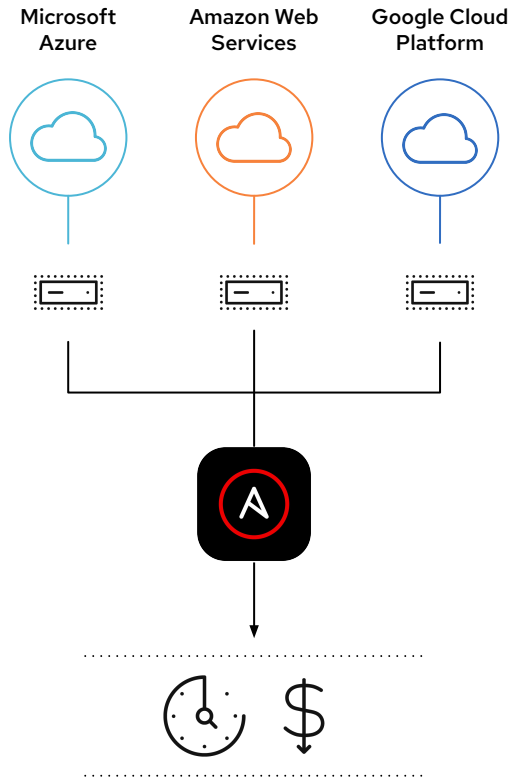
Infrastructure optimization



Infrastructure optimization



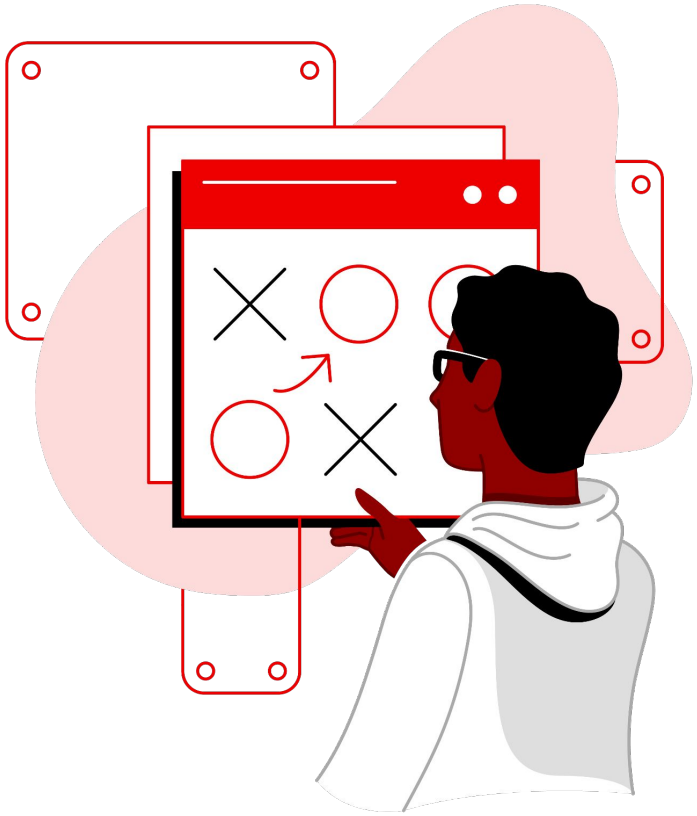
Why is it important?

- Turn off unused resources
- Rightsize cloud resources
- Recover orphaned resources

Why Red Hat Ansible Automation Platform?

- Adopt automation incrementally with discrete automation jobs
- Schedule workflows to continually audit your clouds
- Use workflow approvals to understand changes before production

Automating common operational tasks



Look outside the common public cloud use-case of provisioning and deprovisioning resources and instead look at automating common operational tasks.

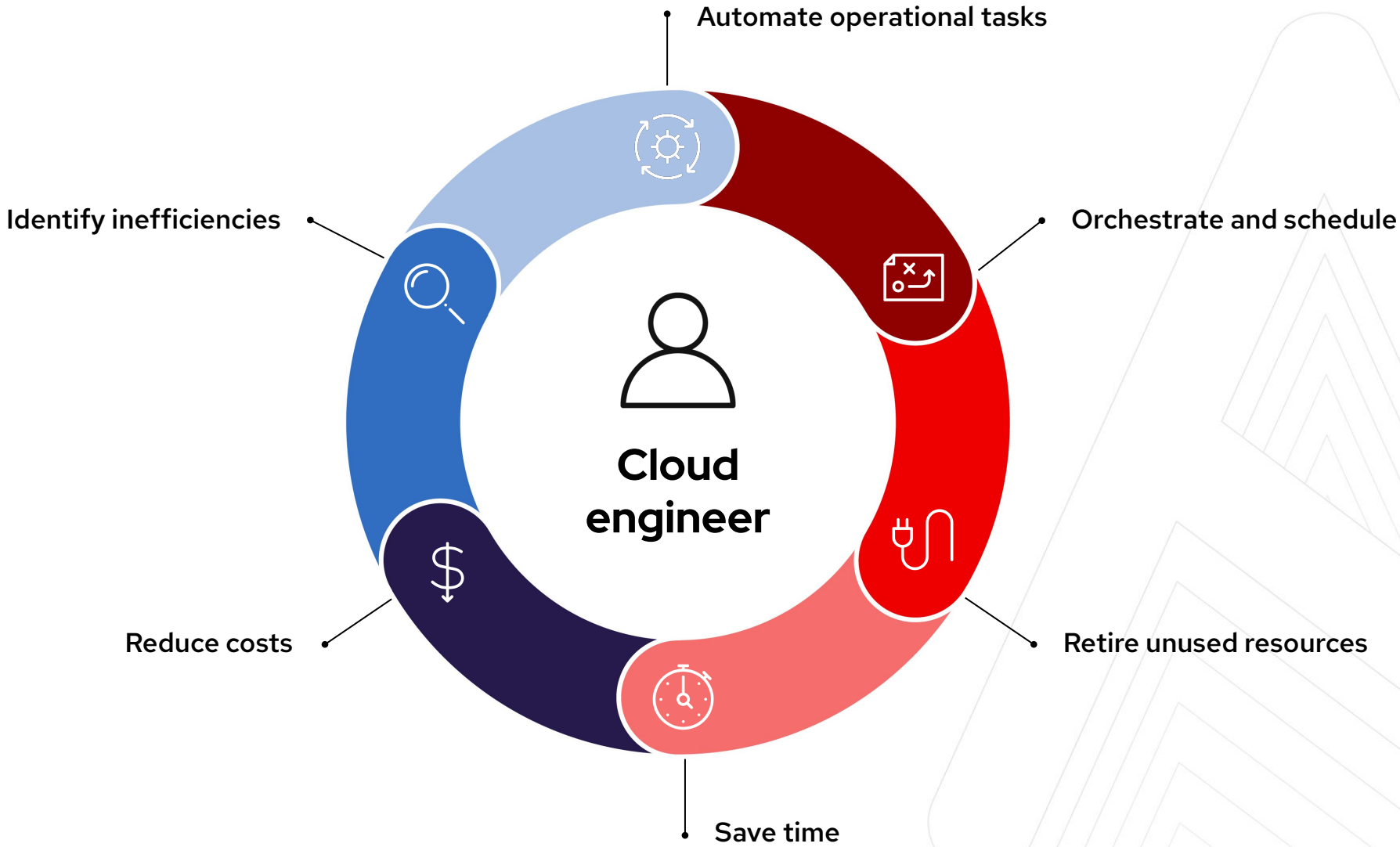
Examples of routine issues in public cloud:

Did automated testing leave resources behind and fail to deprovision?

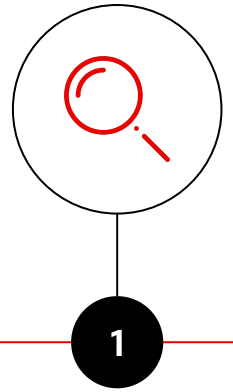
- Did cloud instances get left on?
- Did cloud networks and subnets fail to delete?
- Did DNS entries fail to get recycled?

Are you using incorrect Marketplace images?

- Are we using inappropriate (too large or too small) instances?
- Are we being charged incorrectly for using software?
- Will EOL or subscription lapses cause outages or issues?

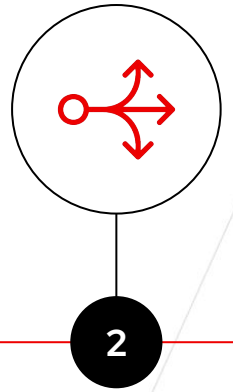

Automate operational tasks
Identify inefficiencies
Orchestrate and schedule
Cloud engineer
Reduce costs
Retire unused resources
Save time

Example use-cases



1

Automation strategy for bespoke orphaned instances



2

Automation strategy for automated instances

Automation strategy for bespoke orphaned instances

Deploy

Instance spun up outside of automation framework

Missing tags

Tagging was not setup correctly through the web console

Red Hat Ansible

Scheduled job finds orphaned instances

Alert

Sync to Slack, email, ITSM, and more to signal to cloud operators the issue

Enforce

Automatically fix issues or turn off instances out of compliance

Automation strategy for automated instances

Failed cleanup

Application deprovisioning left cloud resources online

On too long

Ephemeral instances have been on longer than they should be

Red Hat Ansible

Scheduled job finds compliance instances

Alert

Sync to Slack, email, ITSM, and more to signal to cloud operators the issue

Power off

Clean up instances and resources

Lab Time

Lab 3 - Infrastructure optimization

15 Minutes

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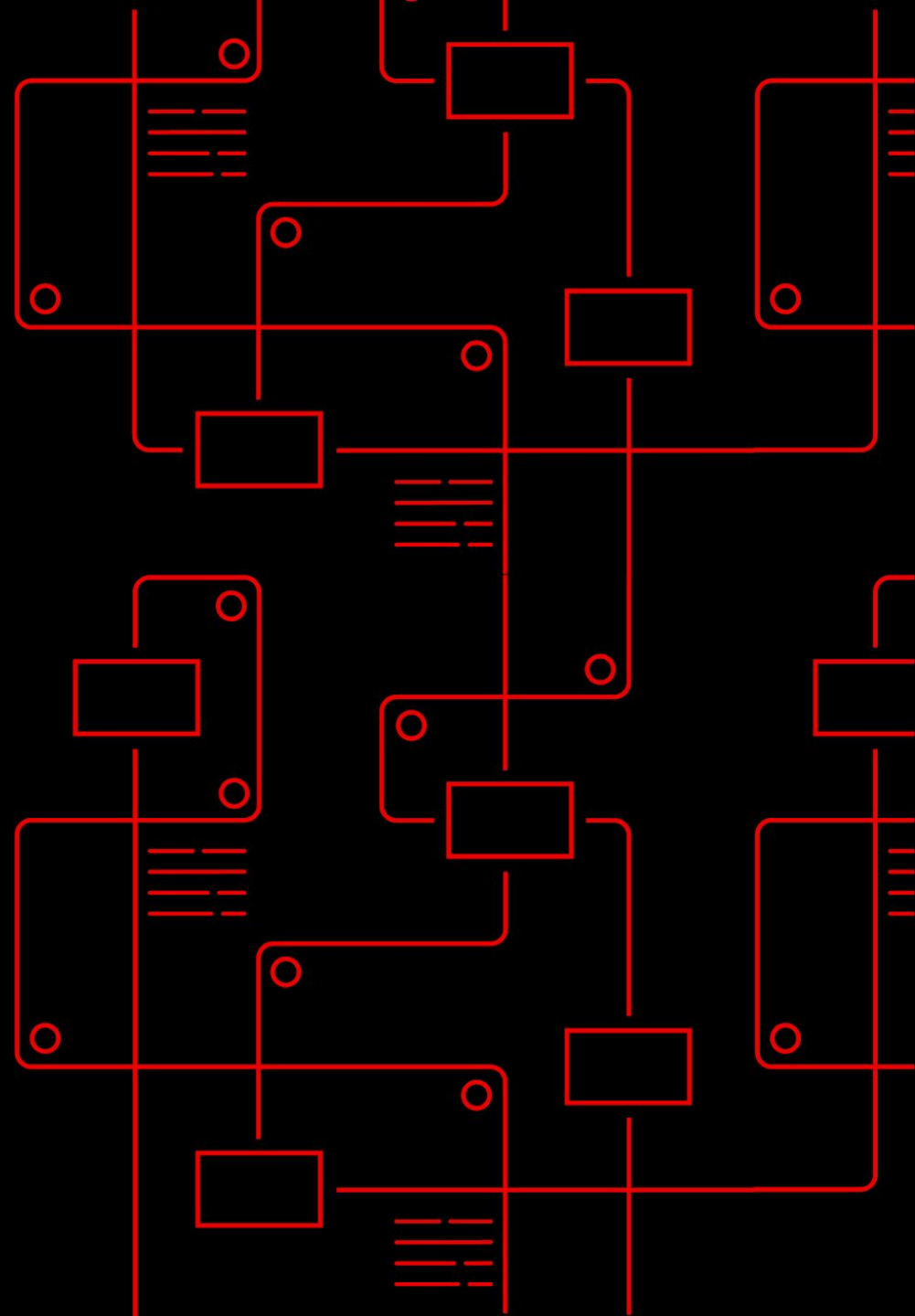
Next steps



Learning resources

Continue your automation journey with Red Hat Ansible for public cloud automation

Ansible Automation Labs
red.ht/ansible_labs

E-book:
An IT executive's guide to automation
red.ht/automate_guide

Ansible Basics:
Automation Technical Overview
red.ht/automation_basics

Thank you

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