How to use this deck

Name:

Ansible Automation Platform - Technical Deck

Purpose:

These additional slides are for crafting technical conversations with a customer after an account executive has established a sales pitch.

It is not recommended to present the complete deck but to select slides based on the audience. The presentation length should be between **45 - 60 minutes**.

These can be focused on individual platform components, persona workflows, or used for deep dives.

Last updated:

9 August 2023 (check history for older versions)

What this deck is for?

Technical level conversation with customers covering Ansible Automation Platform 2.

What this deck is not for?

Business level discussions, or to be sent to customers without a discussion.

Google Slides source link (Red Hat internal):

https://docs.google.com/presentation/d/1sa_O12EIRG-fdChArYJf9HZe6wKDfqjnlAiH3udL39s

Feedback / Suggestions

Please send all feedback and suggestions to ansible-feedback@redhat.com.
Use the slide deck name as the reference.

Owner:

Ansible MBU, ansible-pmm-tmm@redhat.com

Ansible Deck Finder:

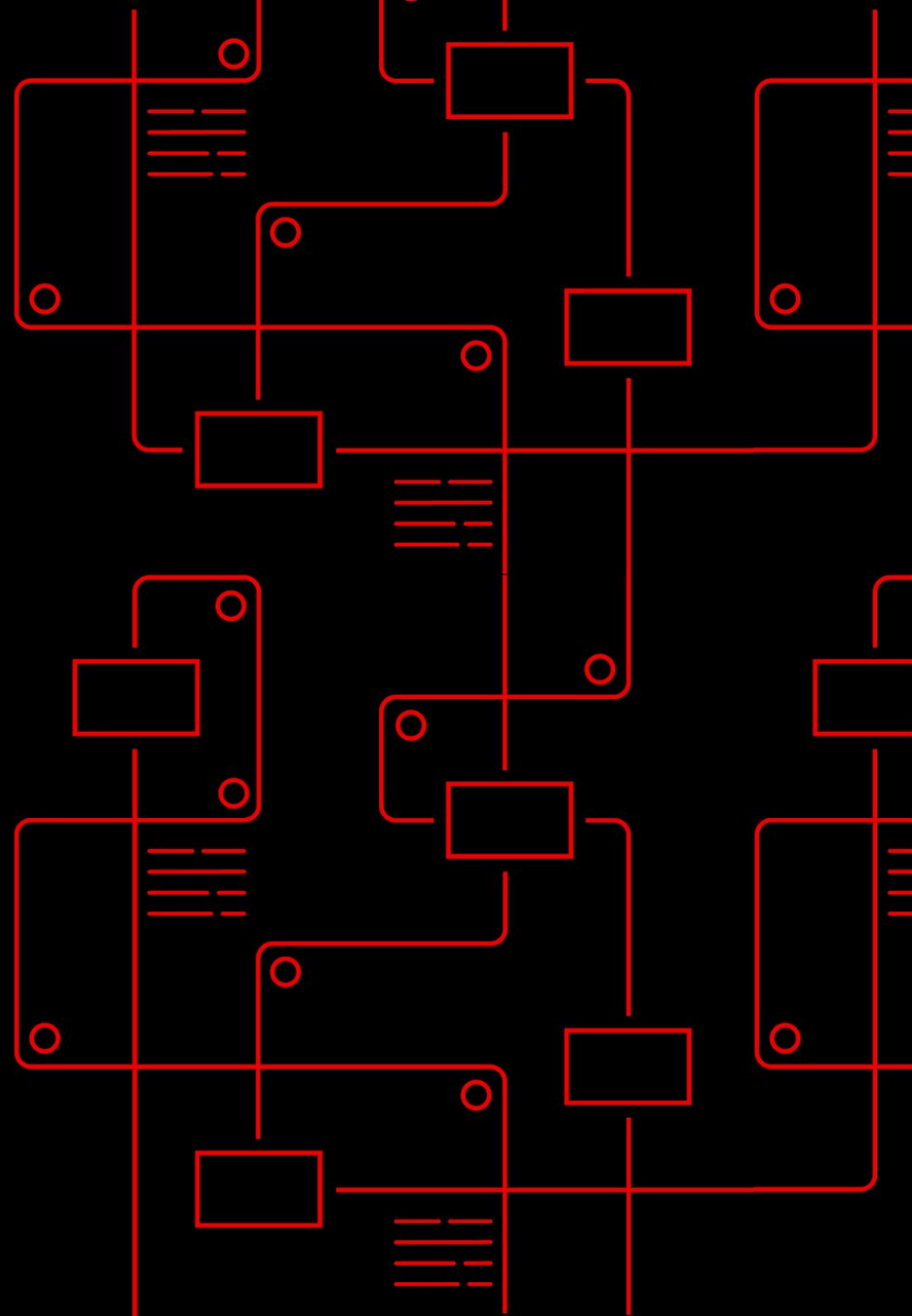
https://ansible.github.io/slides/

Note: the back of the deck contains a short appendix with playbook example slides adjusted for better color balance for visual accessibility purposes.

Red Hat
Ansible Automation
Platform

Red Hat Ansible Automation Workshop

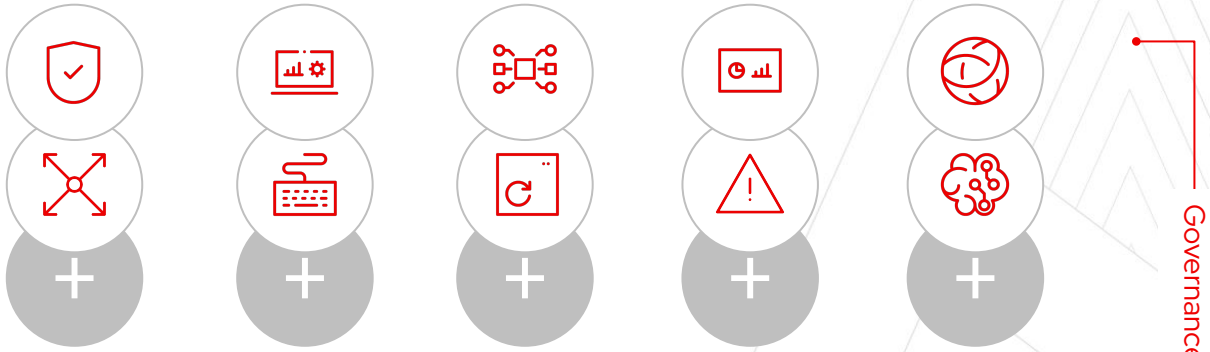
Anyone can automate...
but an enterprise needs to coordinate and scale



Many organizations share the same challenge.

Differing skills, roles, and responsibilities

Growing number of use cases

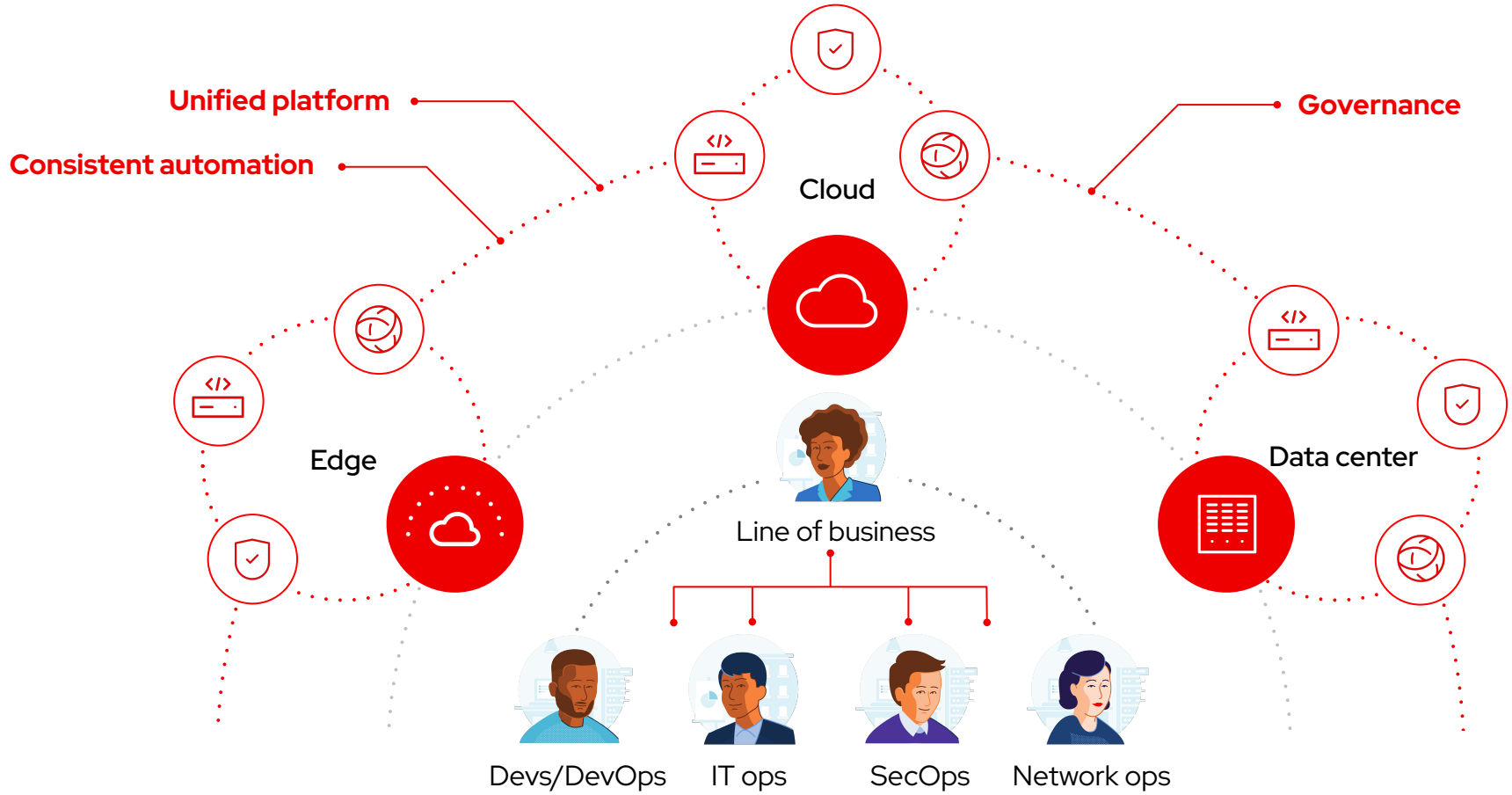


Multiple platforms and locations

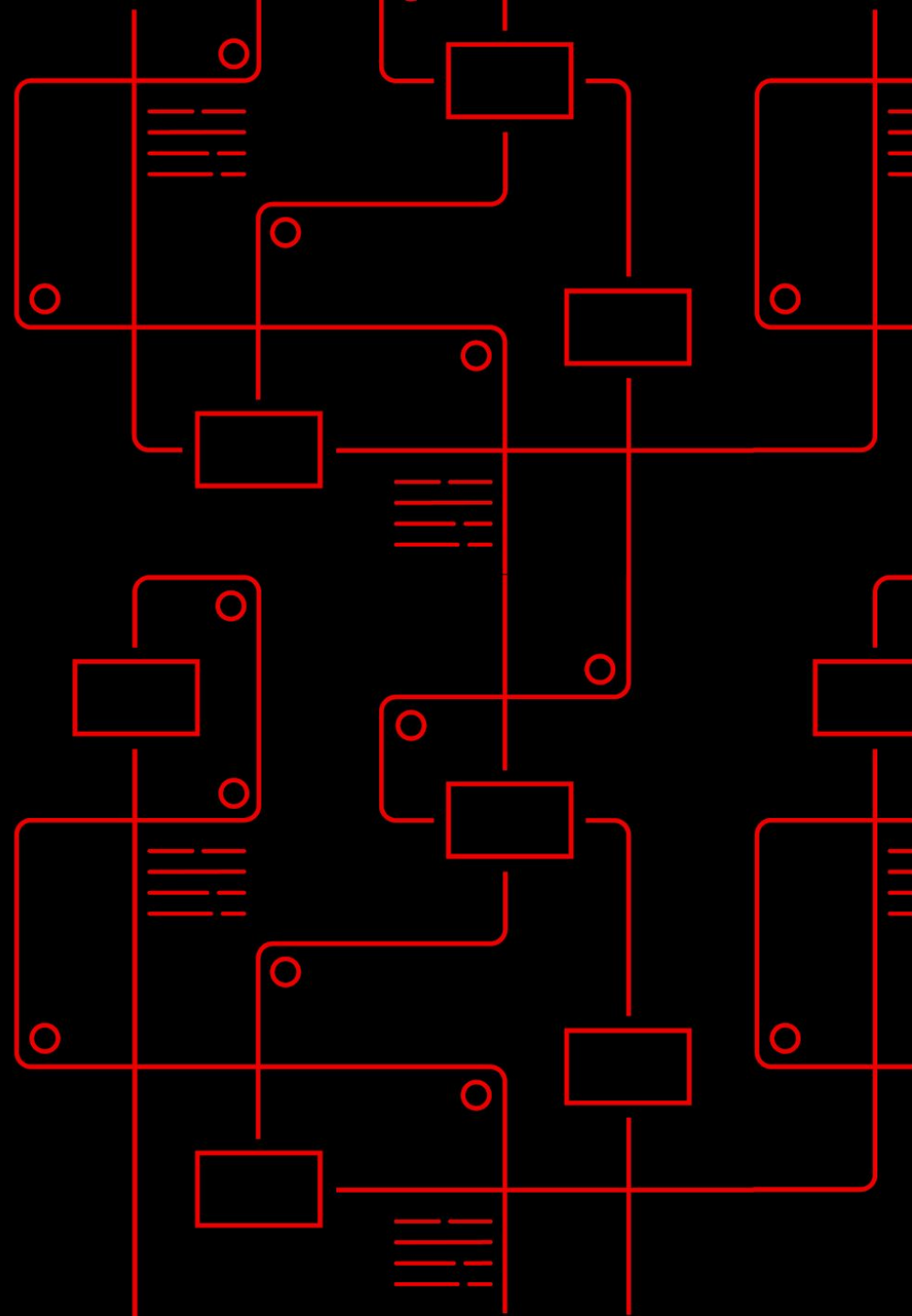
Across multiple domains

Red Hat Ansible Automation Platform

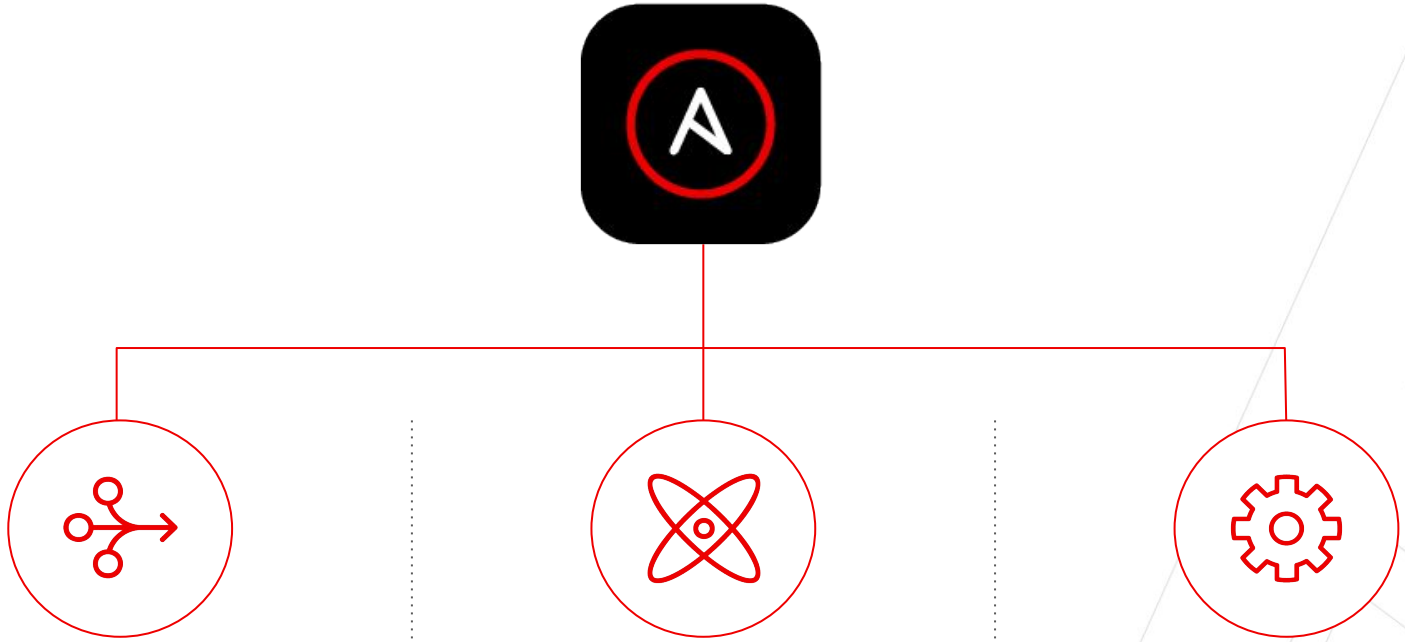
The solution? Break down the silos.



Why Red Hat® Ansible® Automation Platform?



Ansible is the de facto automation language.



Simple

Human-readable language with quick adoption

Powerful

Universal language spanning multiple IT domains

Agentless

Easily integrate with hybrid environments

Supported and certified content you can trust.

150+

Certified Content Collections

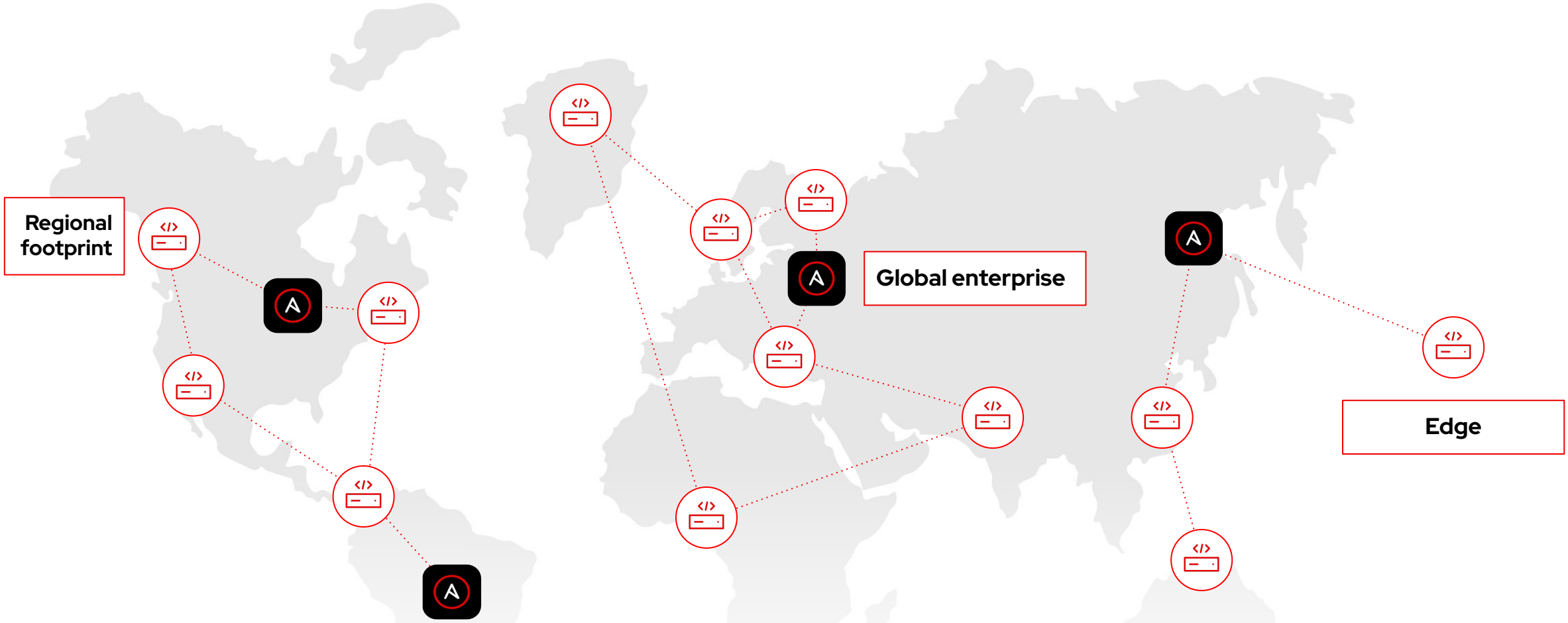
55+

Certified technology partners

Infrastructure | Cloud | Network | Security | Edge

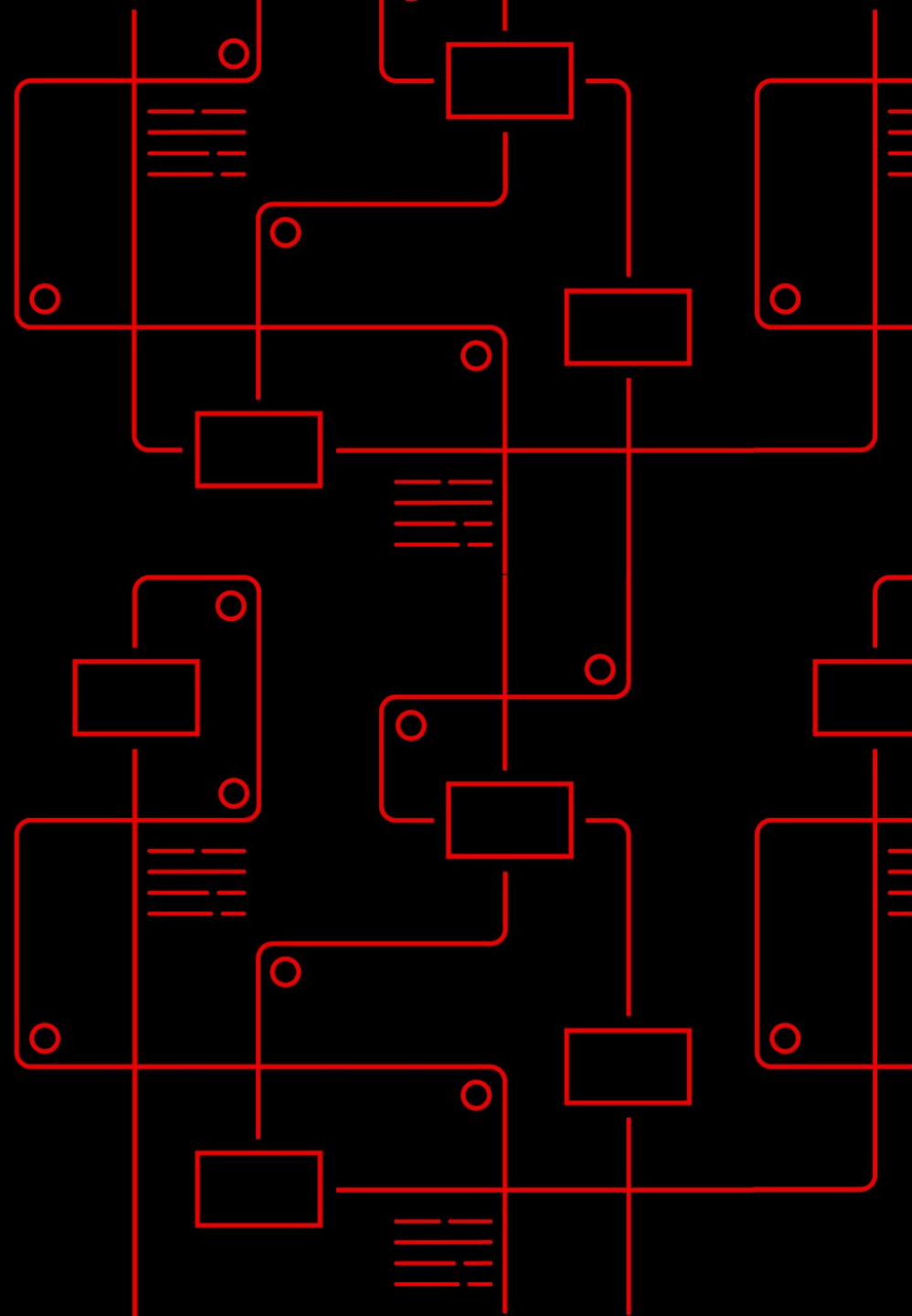
Red Hat Ansible Automation Platform

The flexibility to scale, wherever that may be.



Red Hat
Ansible Automation
Platform

What is Red Hat® Ansible® Automation Platform?



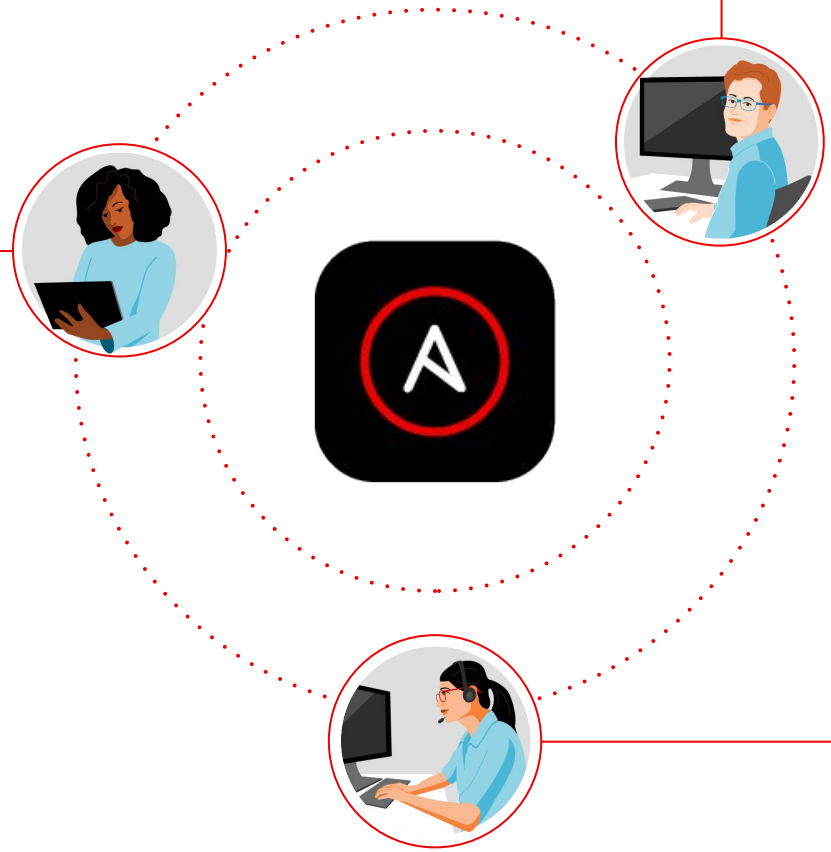
A platform for the entire automation team.

Architecture

Flexible container-native architecture

Real-time analytics and reporting

Scale globally with distributed execution across regions



Content creation

Content creation tooling

Portable distribution and reliable execution

Large ecosystem of certified automation

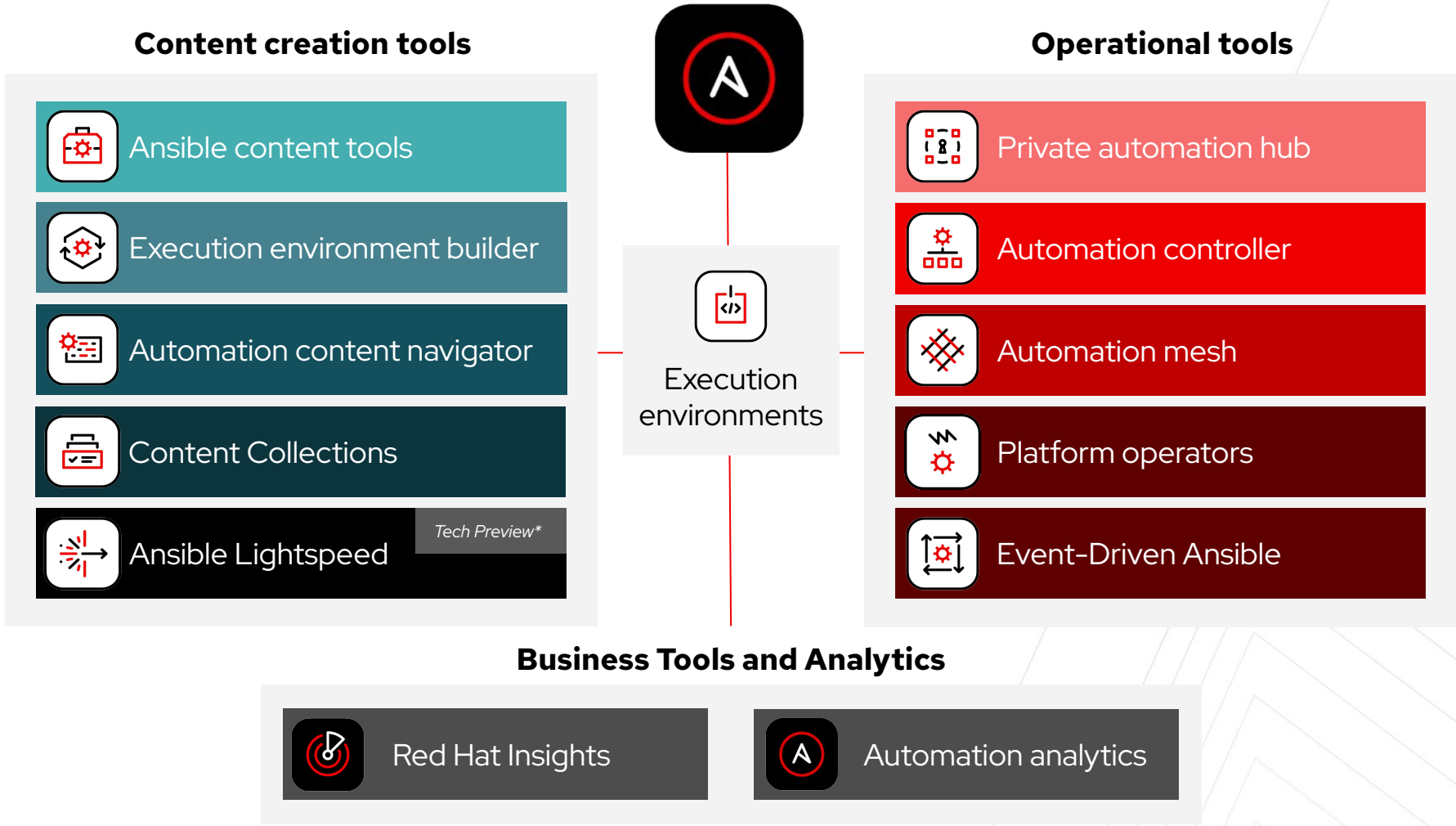
Operations

Enterprise features: WebUI, API, role-based access control (RBAC), auditing and workflows for managing at scale

Hosted and private content management solutions

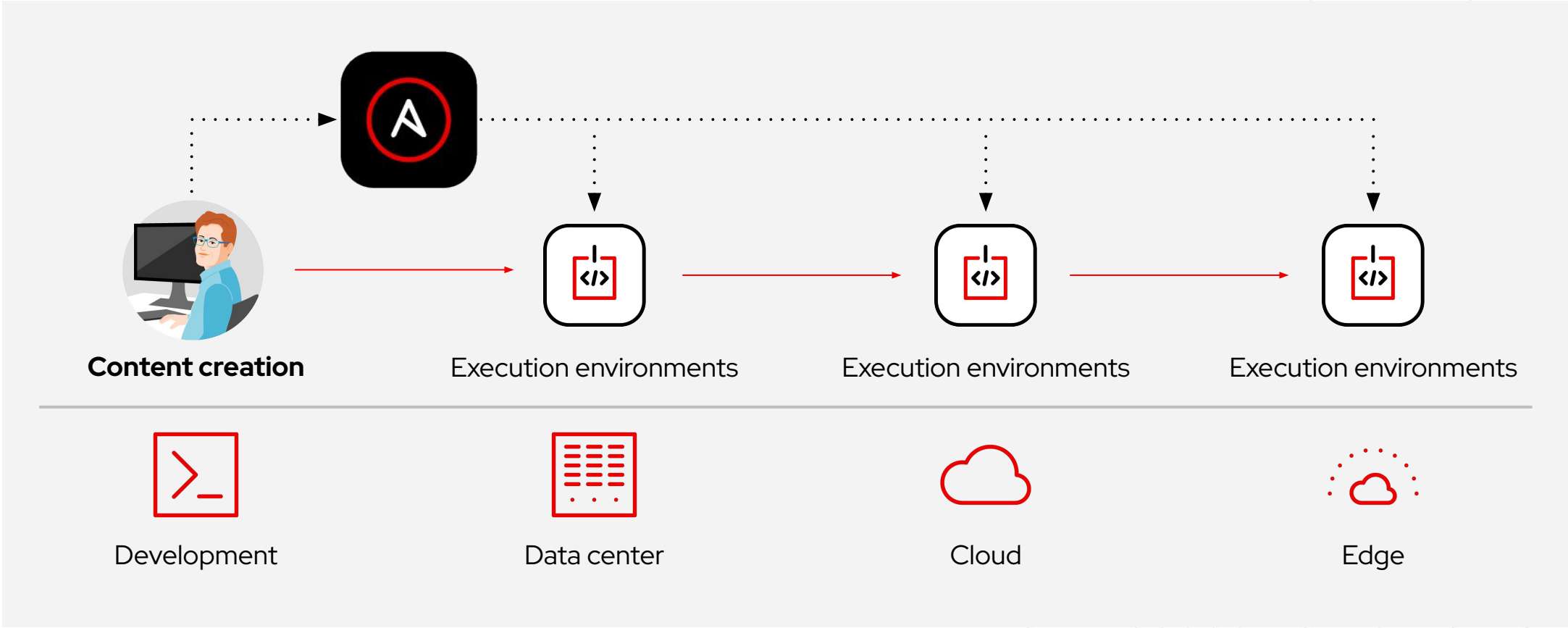
Integrates with your environment

An integrated solution for the enterprise.

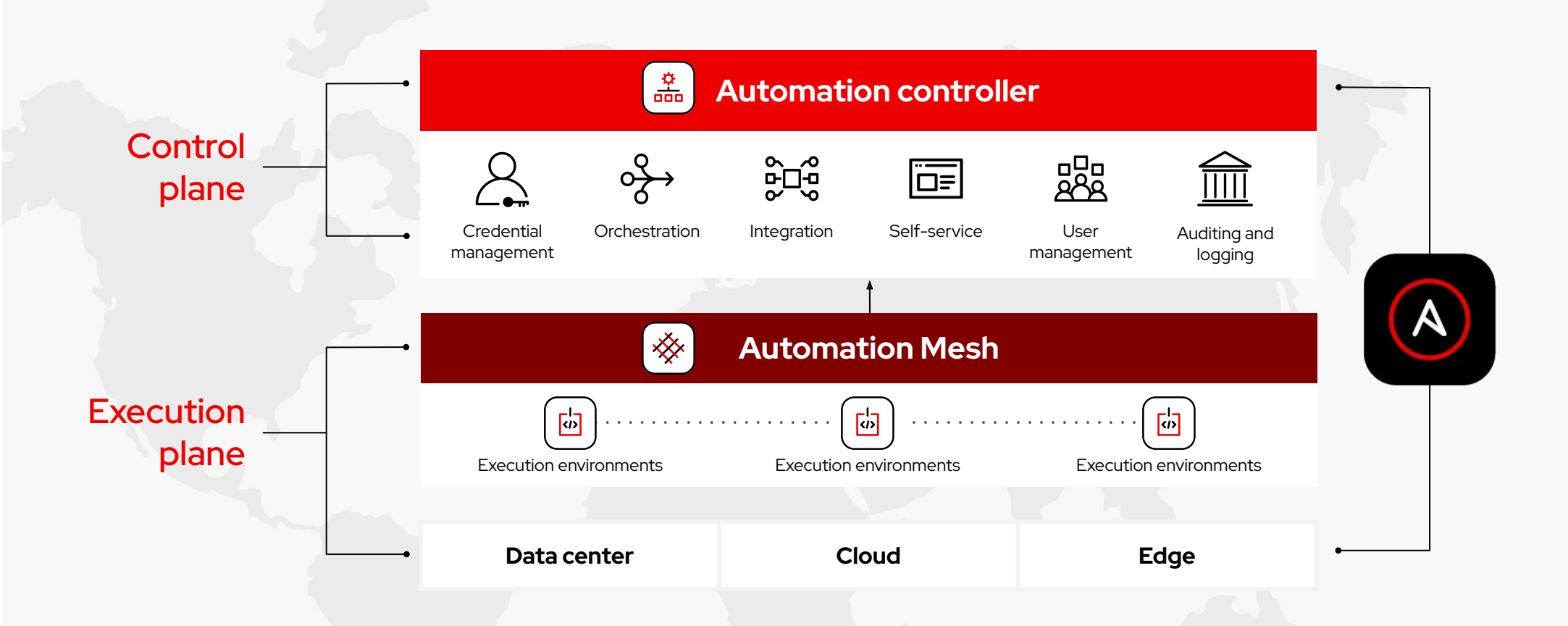


** Ansible Lightspeed with IBM Watson Code Assistant is available as non-supported technical preview.*
https://access.redhat.com/articles/7016058

Built for consistency. Portability is reliability.



A distributed architecture built for scale.



The capabilities you need across your IT footprint.

Applications	Network	Cloud	Security	Infrastructure	Edge
▸ DevOps ▸ CI/CD ▸ GitOps	▸ Configuration management ▸ Infrastructure awareness ▸ Network validation	▸ Orchestration ▸ Operationalisation ▸ Governance	▸ Investigation enrichment ▸ Threat hunting ▸ Incident response	▸ Deployment ▸ Provisioning ▸ Management	▸ Extend security ▸ Scalability ▸ Interoperability

Ansible Automation Platform hosting options.

Red Hat Enterprise Linux

Red Hat Enterprise Linux 8.6+ x86_64 (physical, virtual)

Red Hat OpenShift

Red Hat OpenShift via dedicated Ansible Automation Platform operator (physical, virtual)

Self Managed (on-premises or cloud)

Azure

On Microsoft Azure marketplace

Customer deployed Managed by Red Hat*

aws

On AWS marketplace

Google Cloud

On Google Cloud marketplace

Customer deployed, Self-managed

Red Hat Ansible Automation Platform

** Red Hat Ansible Automation Platform on Azure is now available to all customers in North America and EMEA, with global availability coming soon.*

Ansible Automation Platform across architectures.

intel	AMD	arm	IBM Power	IBM Z
Red Hat Enterprise Linux 8.6+ Red Hat Enterprise Linux 9.0+	Red Hat Enterprise Linux 8.6+ Red Hat Enterprise Linux 9.0+	Red Hat Enterprise Linux 8.6+ Red Hat Enterprise Linux 9.0+	* Red Hat Enterprise Linux 8.6+ * Red Hat Enterprise Linux 9.0+ ppc64le	* Red Hat Enterprise Linux 8.6+ * Red Hat Enterprise Linux 9.0+ s390x

IBM Power and IBM Z support is available as technology and developer preview for certain Ansible Automation Platform components. Please refer to the official documentation for more information.

Enabling your automation team to consistently...

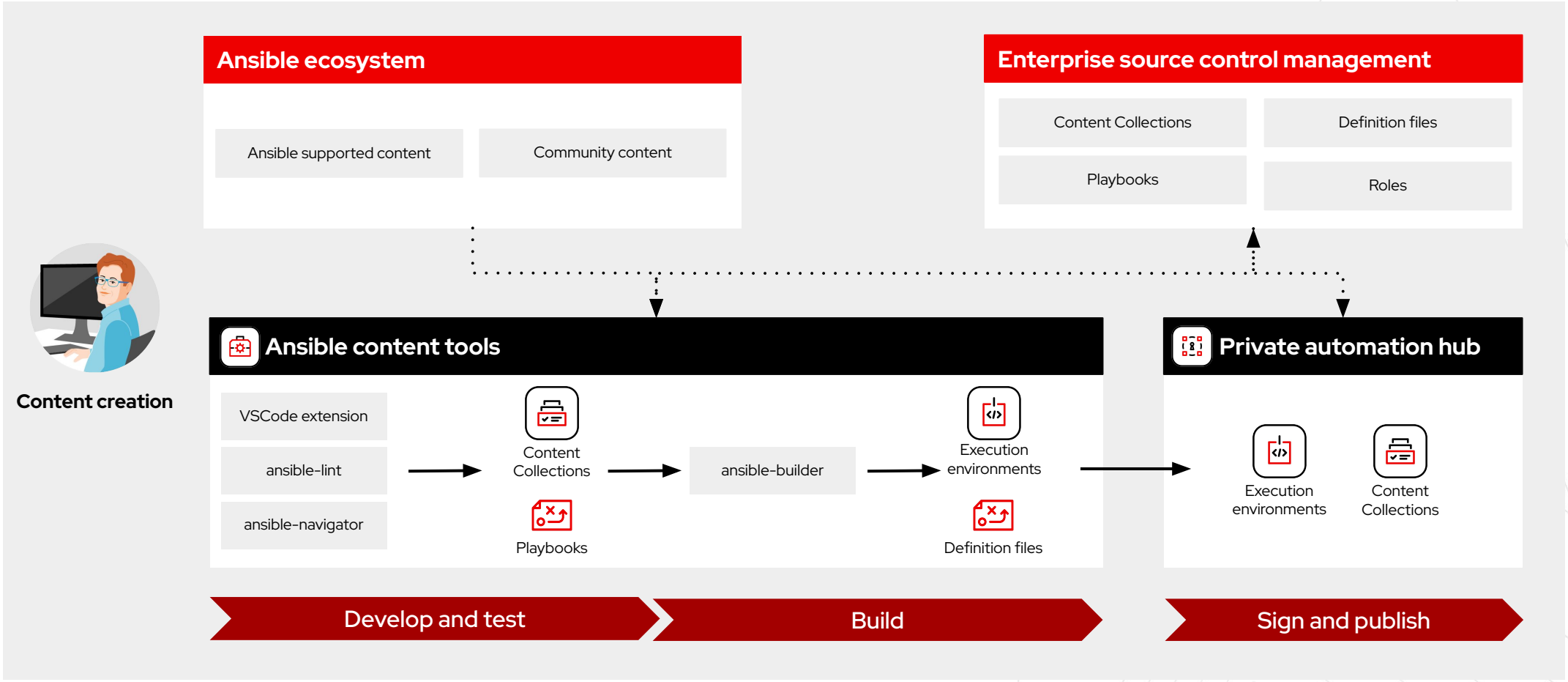
Create

Manage

Scale

Create

The automation content life cycle. Create.



Red Hat
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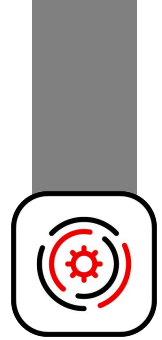
Ansible Core (ansible-core)



What is it?

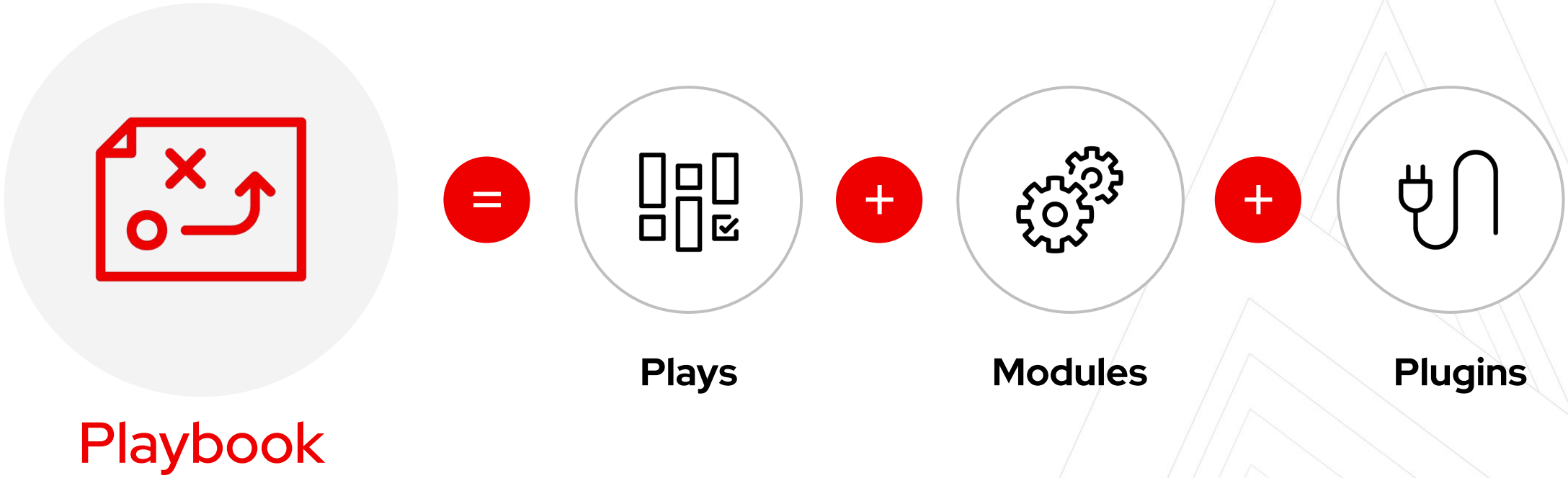
- The main building block for Ansible
- Simple YAML syntax to develop Ansible Playbooks
- Provides CLI tools to develop, test and run playbooks
- Pluggable architecture that allows extensions through Content Collections

```
---
- name: Shutdown VM guest
  hosts: localhost
  gather_facts: false
  tasks:
    - name: Turn off specified VM guest
      vmware.vmware_rest.vcenter_vm_guest_power:
        state: shutdown
        vm: 1021343
        vcenter_hostname: vcenter.demoredhat.com
        vcenter_username: admin
        vcenter_password: tedlasso
```

Ansible playbooks

```
---
- name: Install and start apache
  hosts: web
  become: true

  tasks:
    - name: Ensure the httpd package is installed
       ansible.builtin.package:
         name: httpd
         state: present

    - name: Create the index.html file
      ansible.builtin.template:
        src: files/index.html
        dest: /var/www/html/

    - name: Start the httpd service if needed
      ansible.builtin.service:
        name: httpd
        state: started
```

What makes up an Ansible playbook?



Ansible plays. What am I automating?

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

```
---
- name: Ensure the httpd package is installed
  hosts: web
  become: true
```

Ansible modules. The “tools in the toolkit”.

What are they?

- Parameterized components with internal logic, representing a single step to be done
- The modules “do” things in Ansible

Language

- Usually created in Python, or Powershell for Windows setups, but can be developed in any language

```
- name: Create the index.html file
  ansible.builtin.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

Example become plugin:

```
---
- name: Install and start apache
  hosts: web
  become: true
```

Example filter plugins:

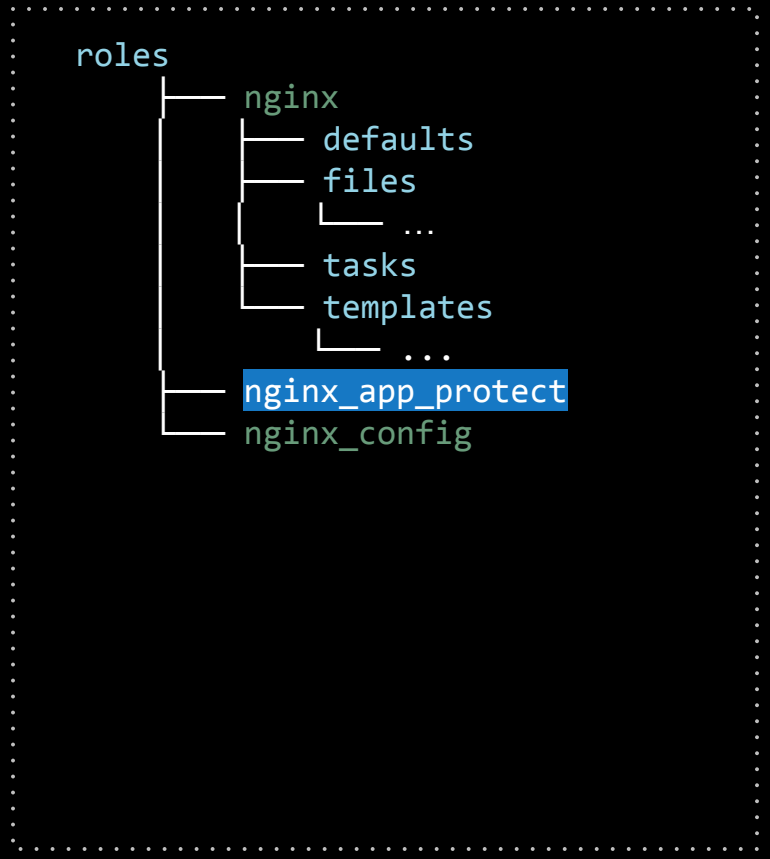
```
{{ some_variable | to_nice_json }}
{{ some_variable | to_nice_yaml }}
```

Ansible Roles. Reusable automation actions.

What are they?

- Group 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

```
---
- name: Install and start apache
  hosts: web
  ansible.builtin.roles:
    - common
    - webservers
```



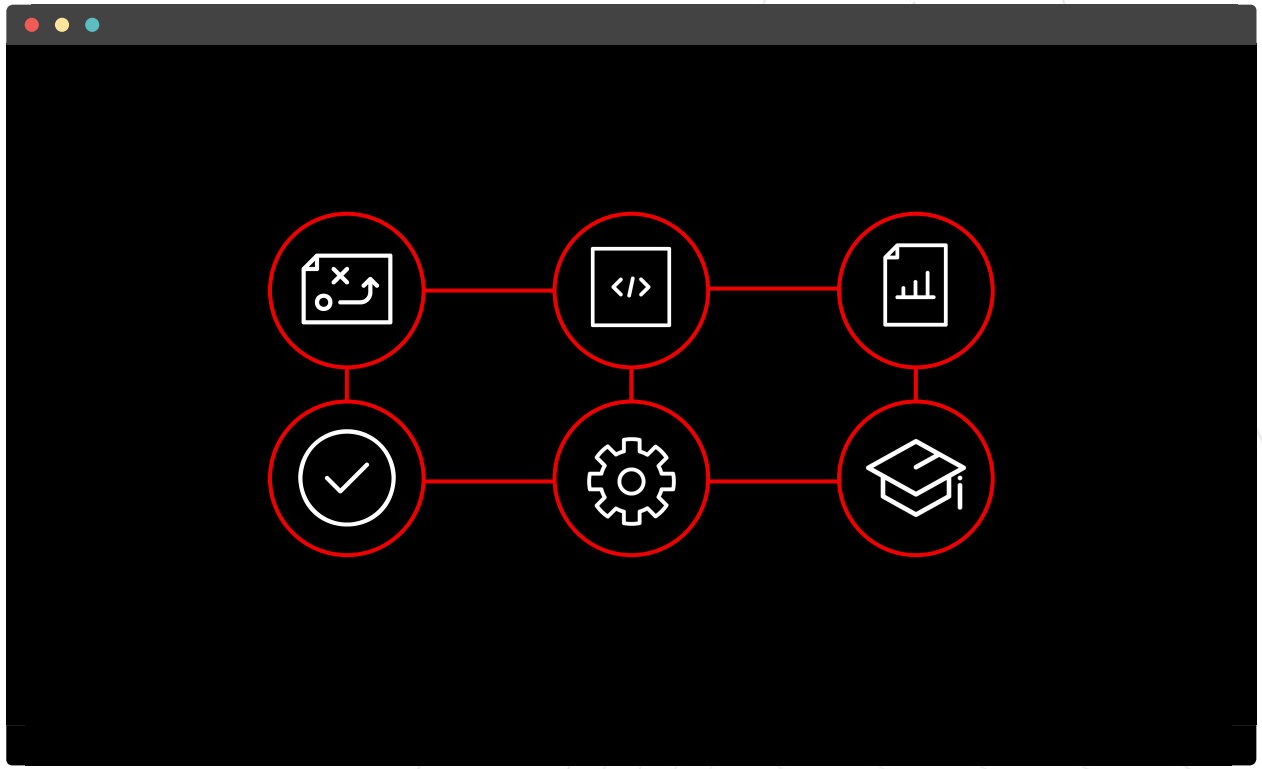
deploy-nginx.yml

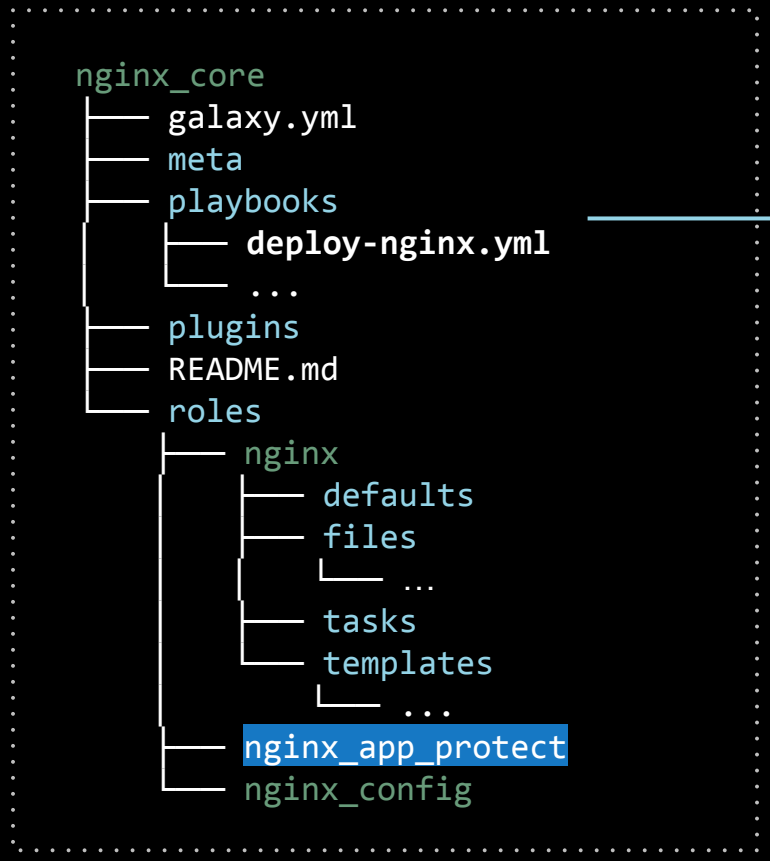
```
---
- name: Install NGINX Plus
  hosts: all
  tasks:

    - name: Install NGINX App Protect
      ansible.builtin.include_role:
        name: nginx_app_protect
      vars:
        nginx_app_protect_setup_license: false
        nginx_app_protect_remove_license: false
        nginx_app_protect_install_signatures: false
```

Content Collections.
Simplified, consistent content delivery.

What are they?

- Contains automation content, including modules, multiple roles ,and playbooks
- Portable, reusable, and versioned enabling better collaboration





deploy-nginx.yml

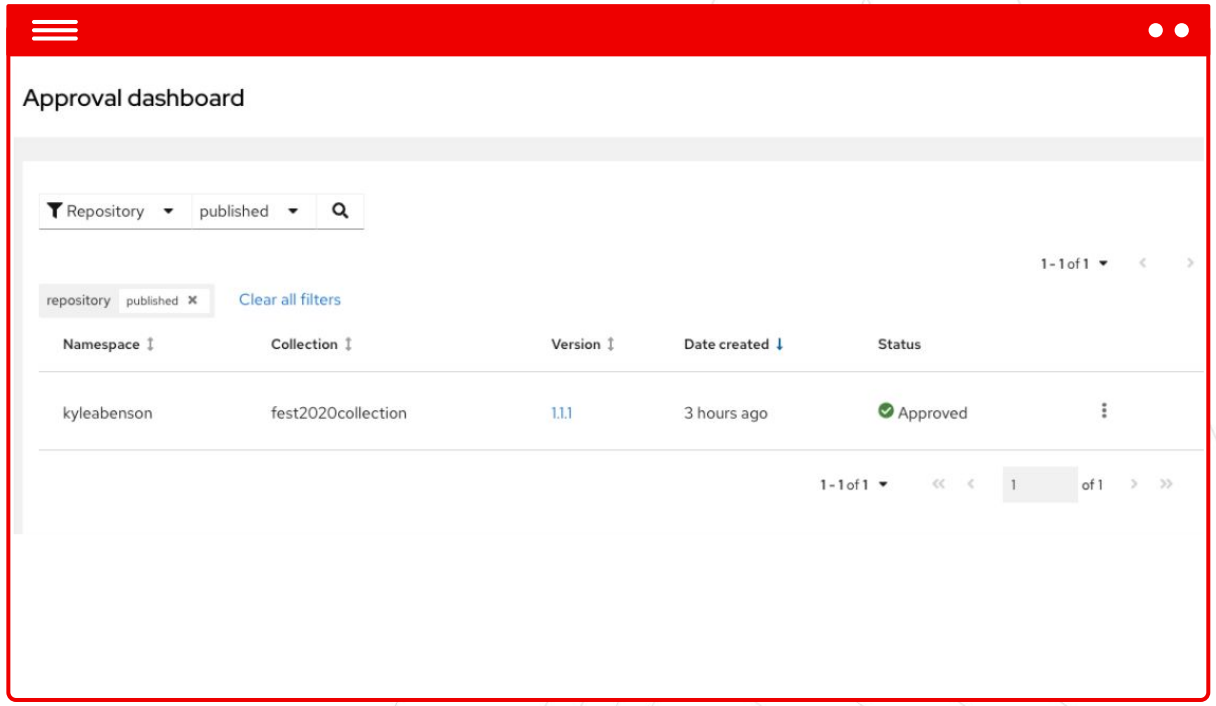
```yaml
---
- name: Install NGINX Plus
  hosts: all
  tasks:
    - name: Install NGINX
      ansible.builtin.include_role:
        name: nginxinc.nginx
      vars:
        nginx_type: plus

    - name: Install NGINX App Protect
      ansible.builtin.include_role:
        name: nginxinc.nginx_app_protect
      vars:
        nginx_app_protect_setup_license: false
        nginx_app_protect_remove_license: false
        nginx_app_protect_install_signatures: false
```

Automation hub. Trusted automation content.

console.redhat.com

What is it?

- Hosted source of trusted Red Hat and Certified Partner Content Collections
- Integrated documentation and examples
- Configurable as primary content collection source for your automation environment
- Access to hosted automation hub and content Included in subscription

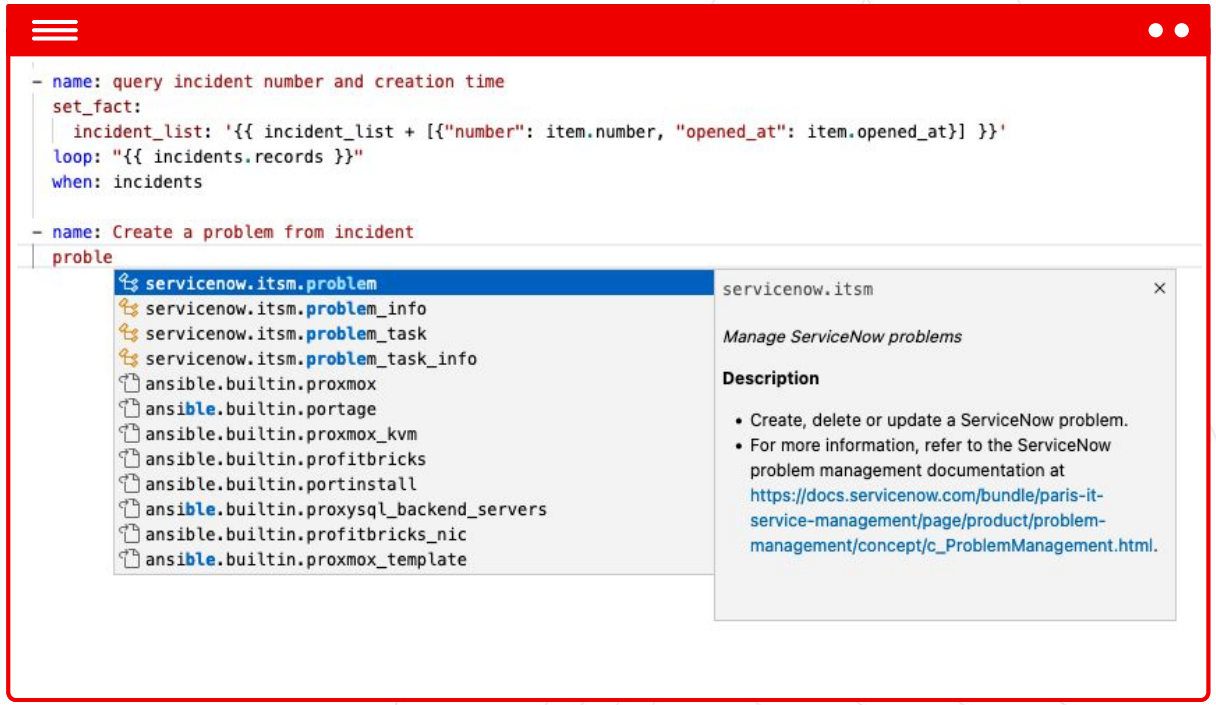


Red Hat
Ansible Automation
Platform

Ansible VS Code extension. Simplifying content creation

What is it?

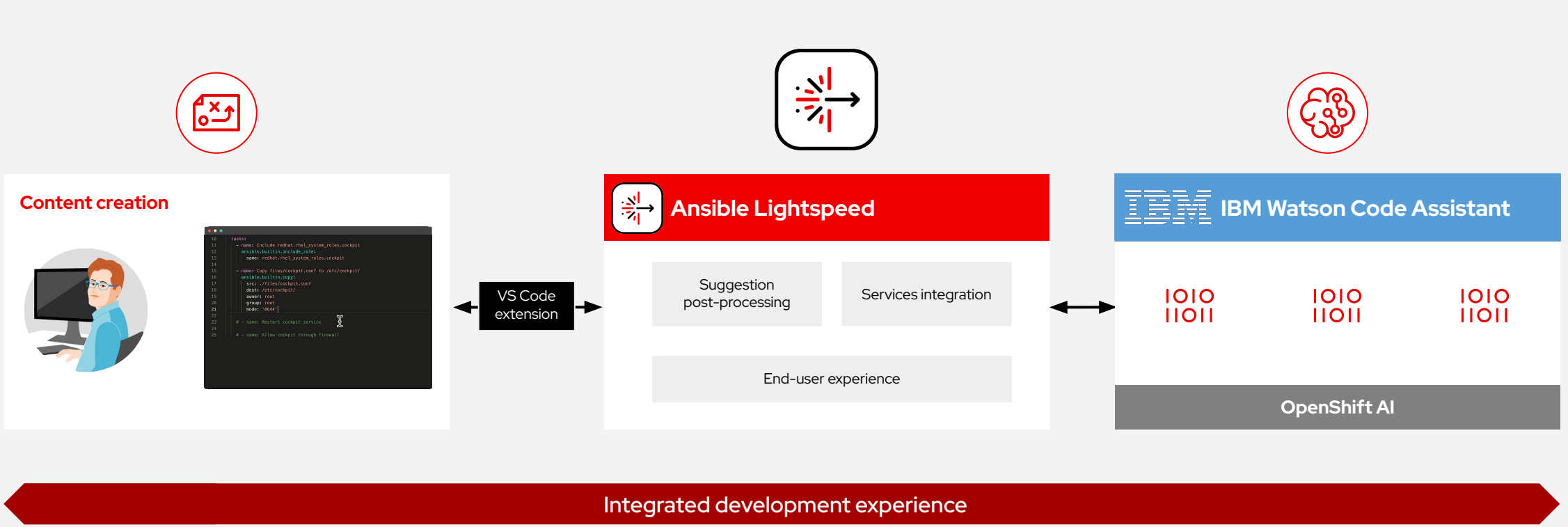
- Syntax highlighting of keywords such as module names
- Live validation of your code while you type
- Integration with ansible-lint*
- Autocompletion on play, block or task contents etc
- Documentation references as you code



* ansible-lint is fully supported in Ansible Automation Platform version 2.3

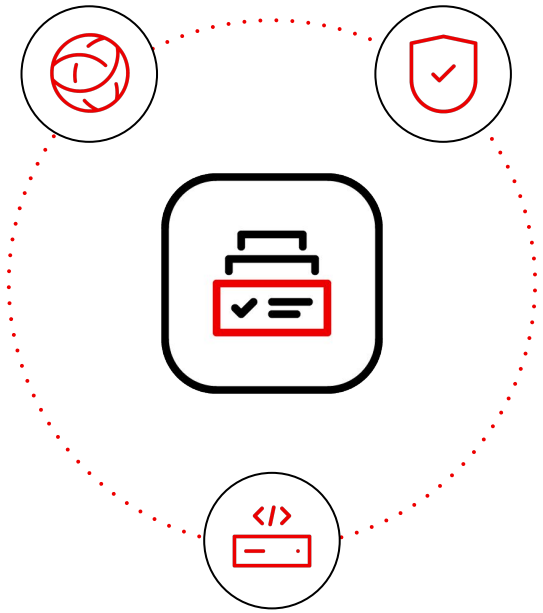
Ansible Lightspeed. Generative AI the Ansible way.

Technical Preview *

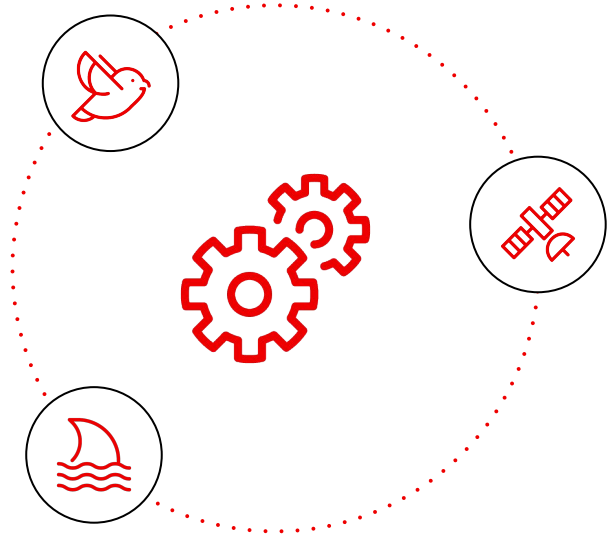


** Ansible Lightspeed with IBM Watson Code Assistant is available as non-supported technical preview.*
https://access.redhat.com/articles/7016058

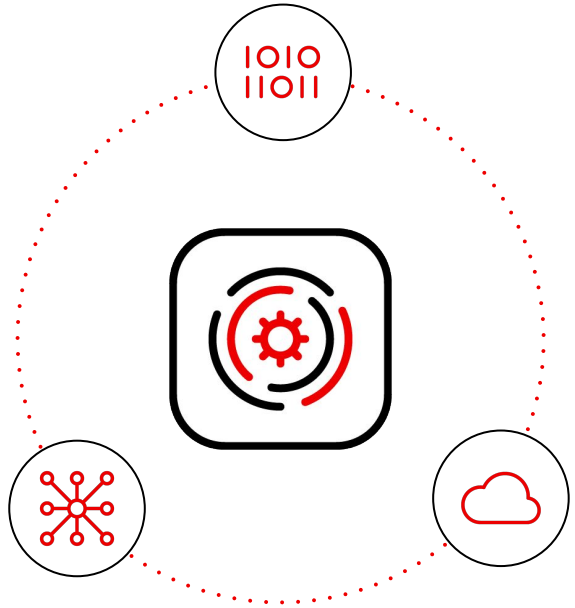
Many technologies, different life cycles.
How do I keep it all aligned?



Collections

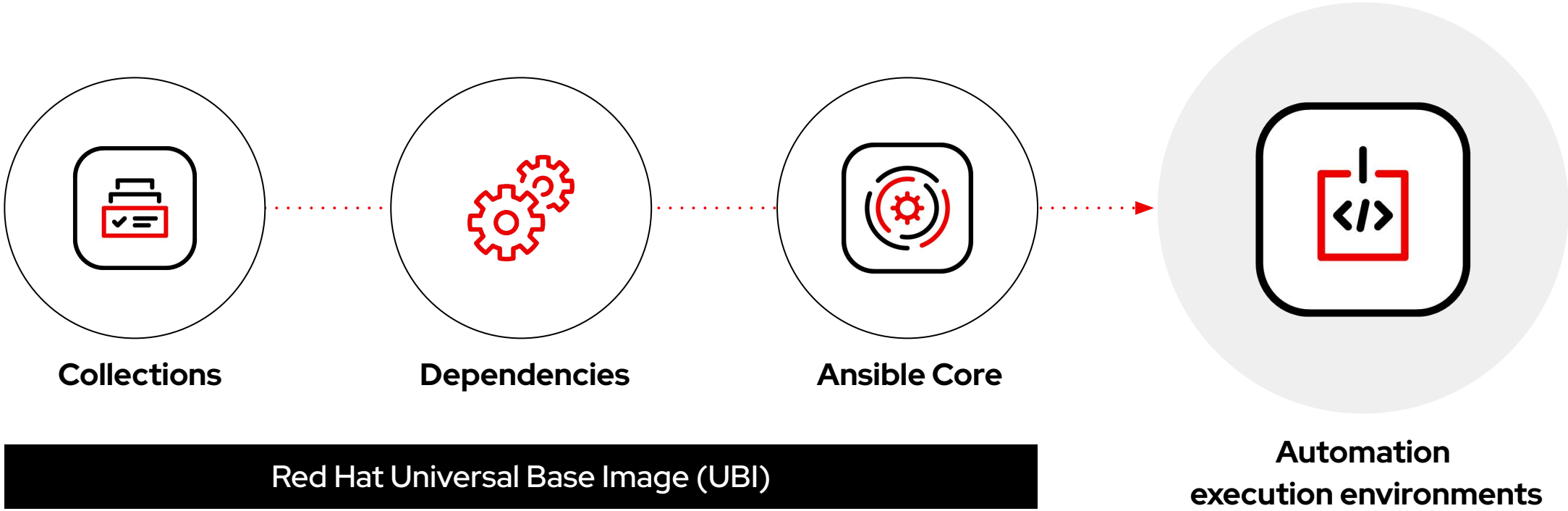


Dependencies

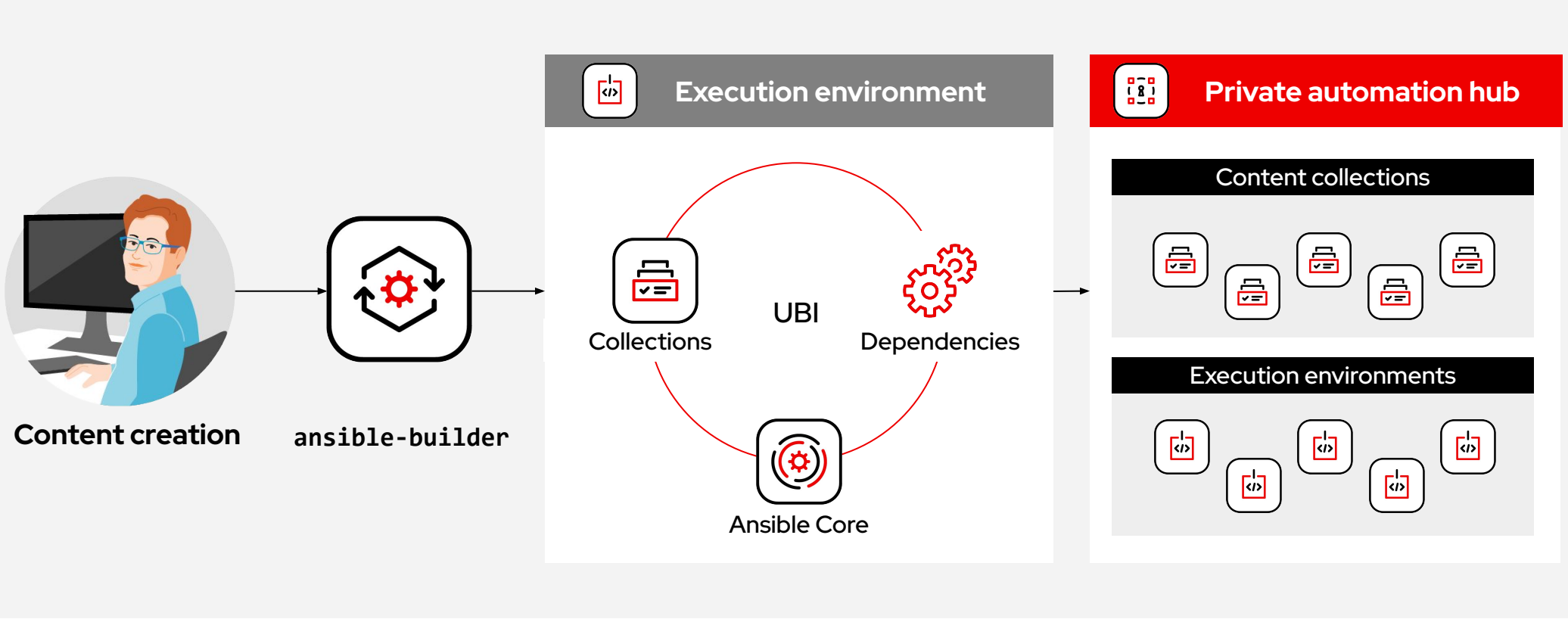


Runtime

Automation execution environments.
Reuse and scale automation content.



Execution environment development.
Build, collaborate, sign, publish.



Execution environment builder. Build.

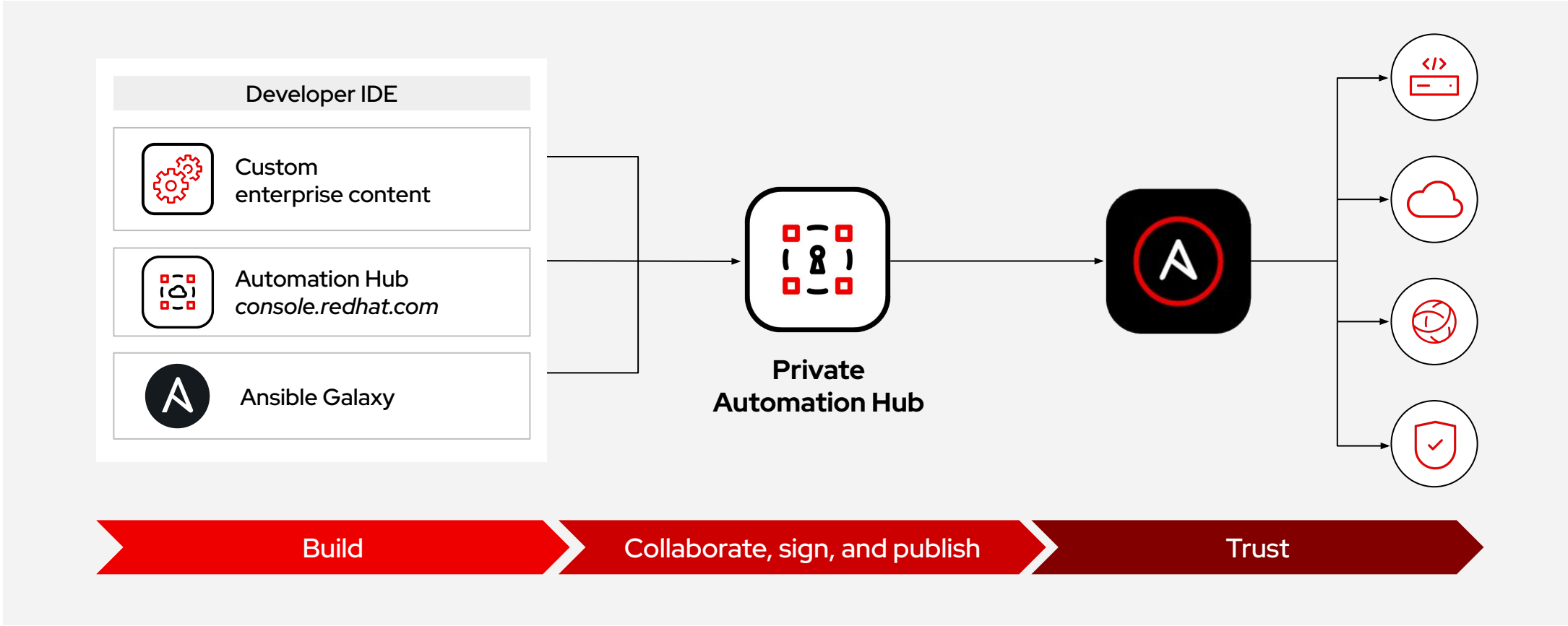
ansible-builder

What is it?

- Easily build custom execution environments with the exact Ansible content needed
- Manage, track and version execution environments
- Share execution environment build artifacts with other teams

```
$ ansible-builder build --tag repo/custom_ee:latest
```

Private automation hub. Collaborate, sign, and publish.



Develop, test and run containerized Ansible content.

Content creation

`ansible-navigator`

Playbook

Execution environments

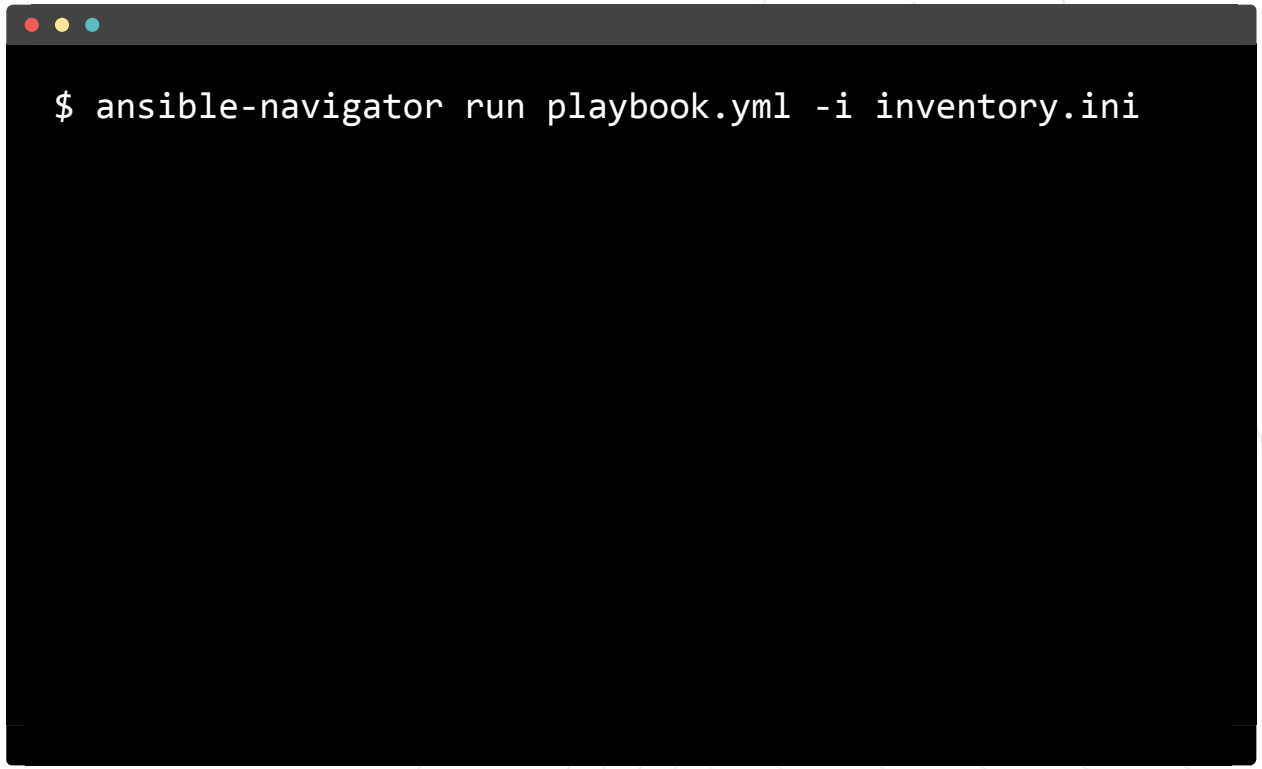
Scalable and supported

Ansible content navigator (ansible-navigator).

What is it?

It is a command line utility and text-based user interface (TUI) for running, testing and developing Ansible automation content

- Review EEs
- Develop collections
- Develop playbooks
- Troubleshoot problems

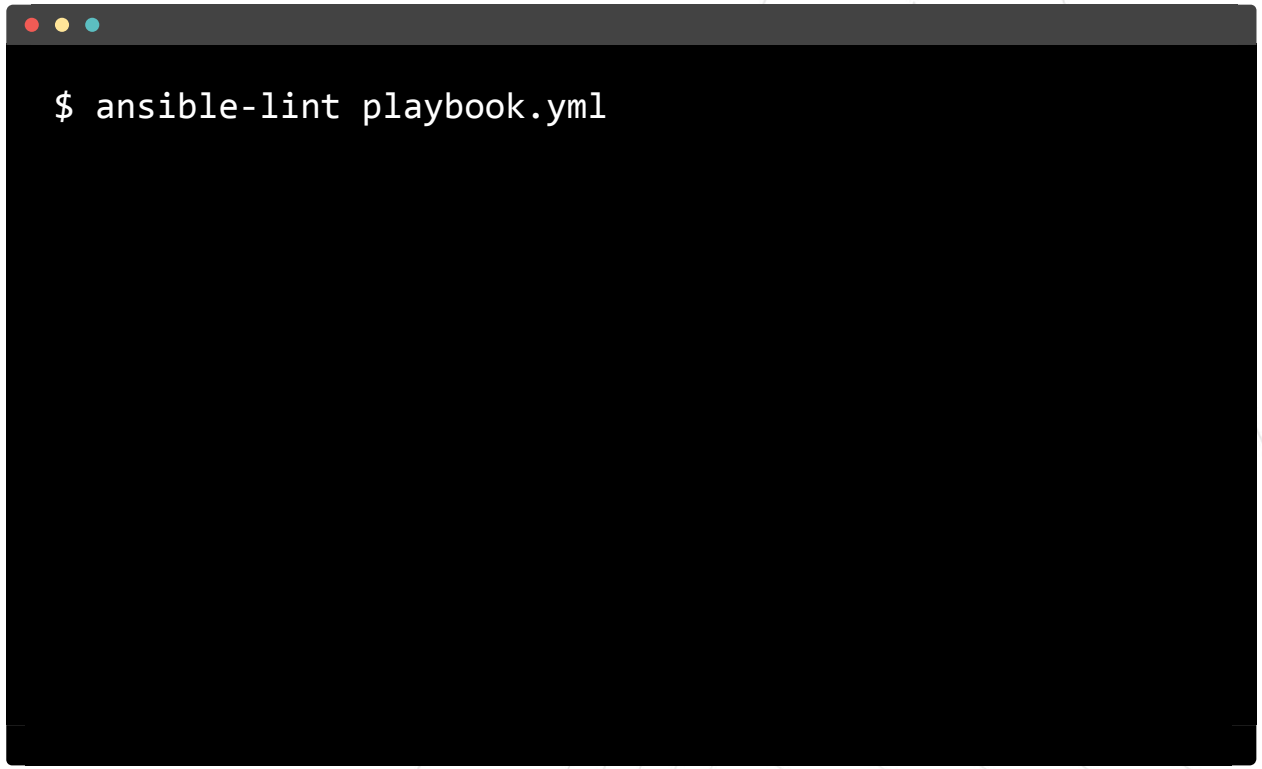


Ansible lint (ansible-lint).

What is it?

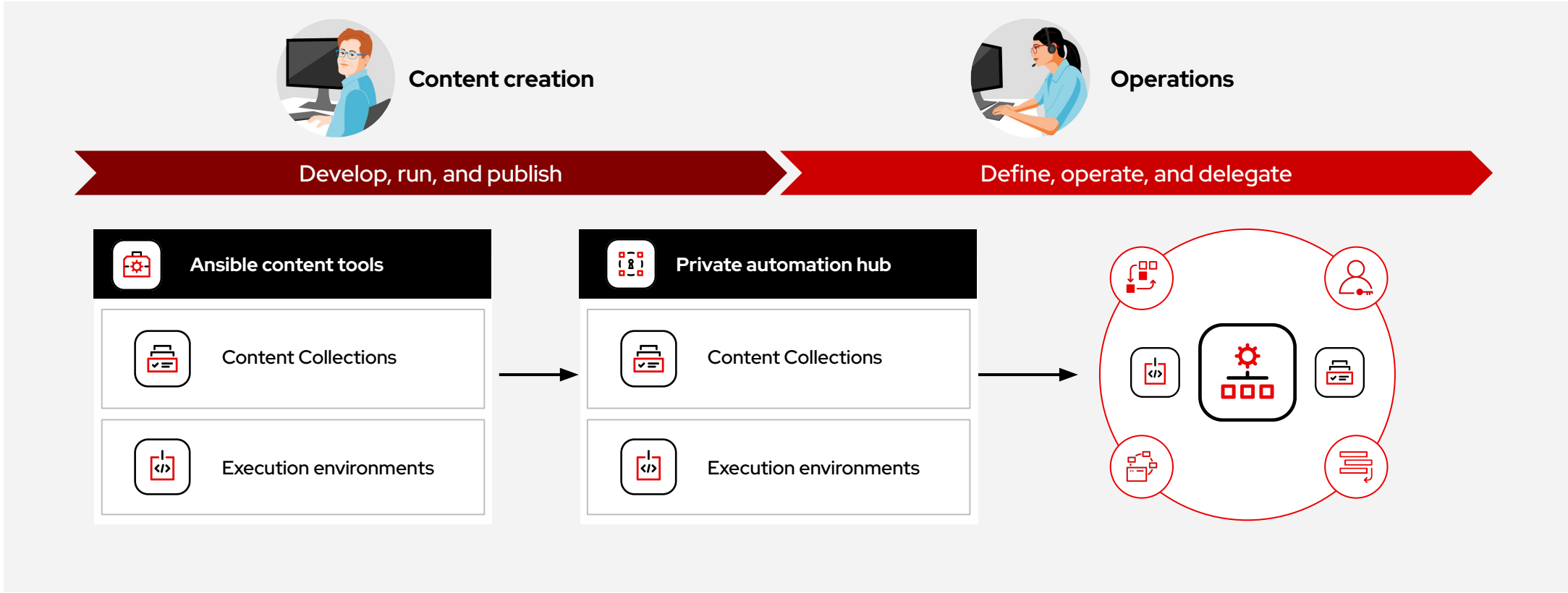
Command-line tool for linting playbooks, roles and collections aimed towards any Ansible users.

- Promote best practices and and patterns.
- Develop consistent code across teams and scale using an opinionated strategy.
- Integrate into larger development workflows and CI tools.
- Helps upgrade playbooks to later Ansible Core versions.

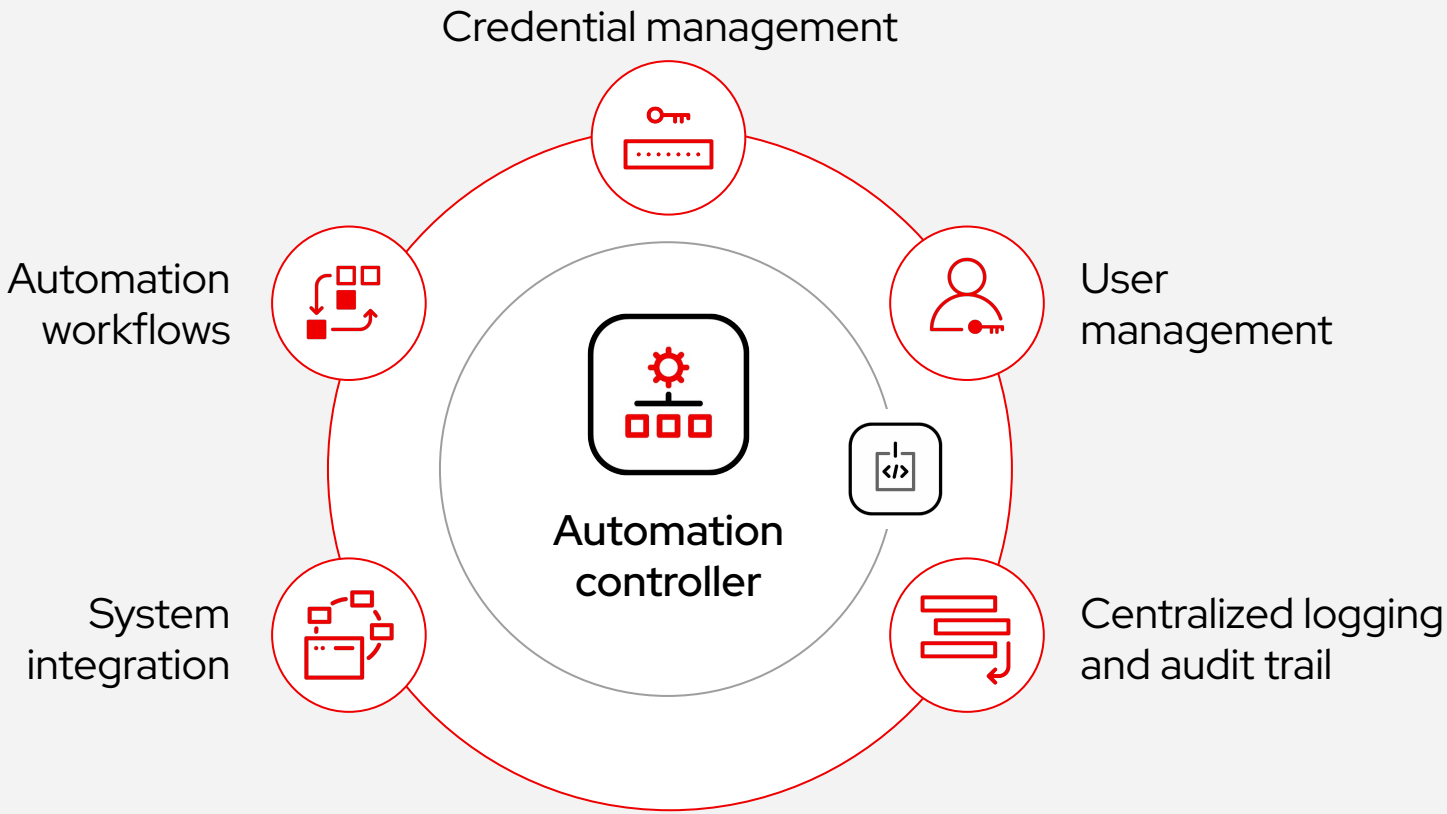


Manage

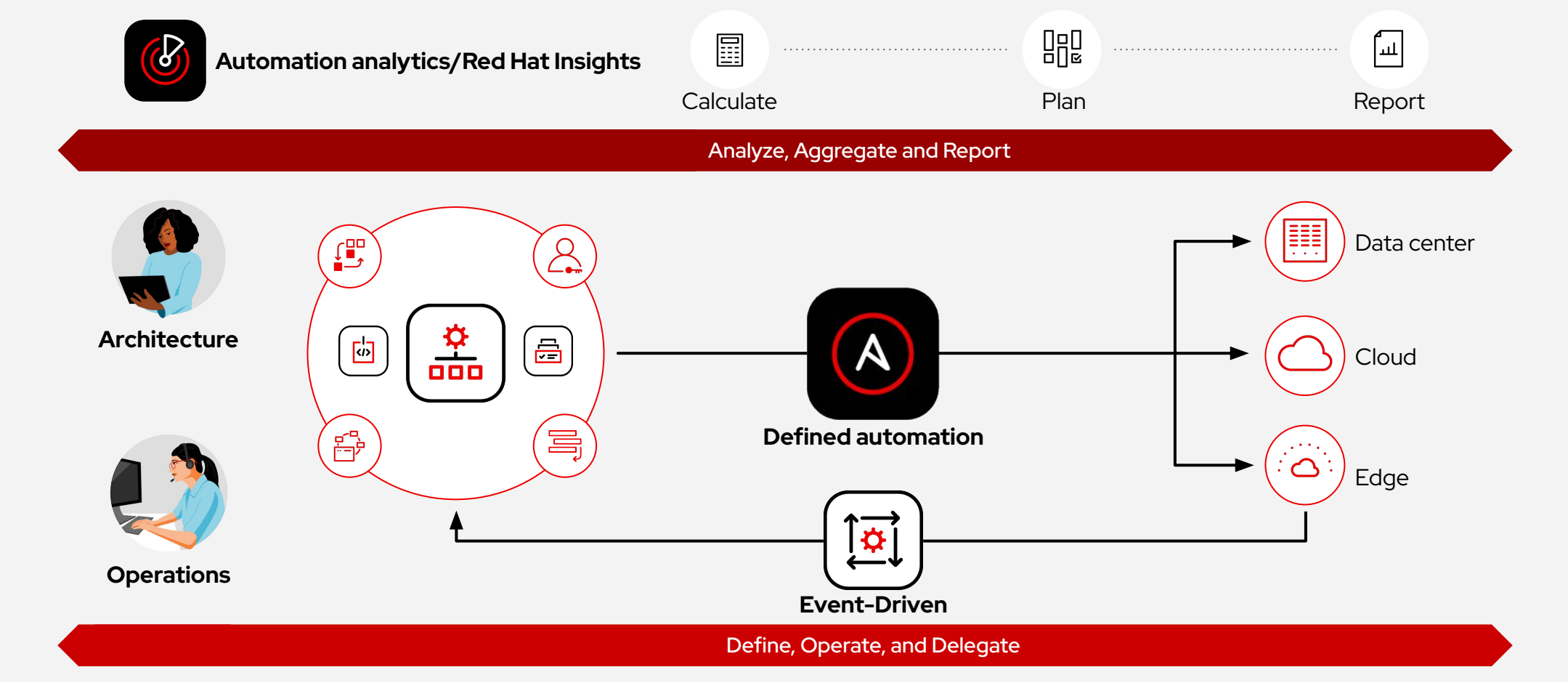
Creation to operations handover. Consistent and portable.



Enterprises need more for their automation.



The automation life cycle. Manage.



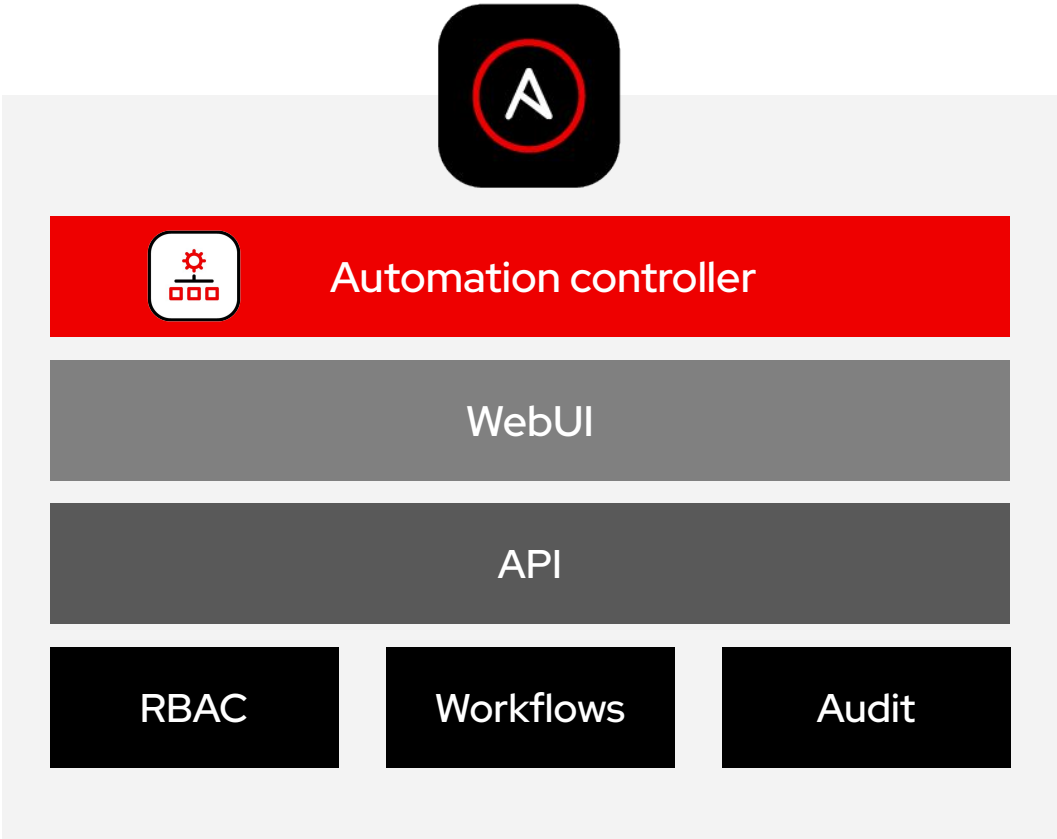
Automation controller. Define, operate, and delegate.

What is it?

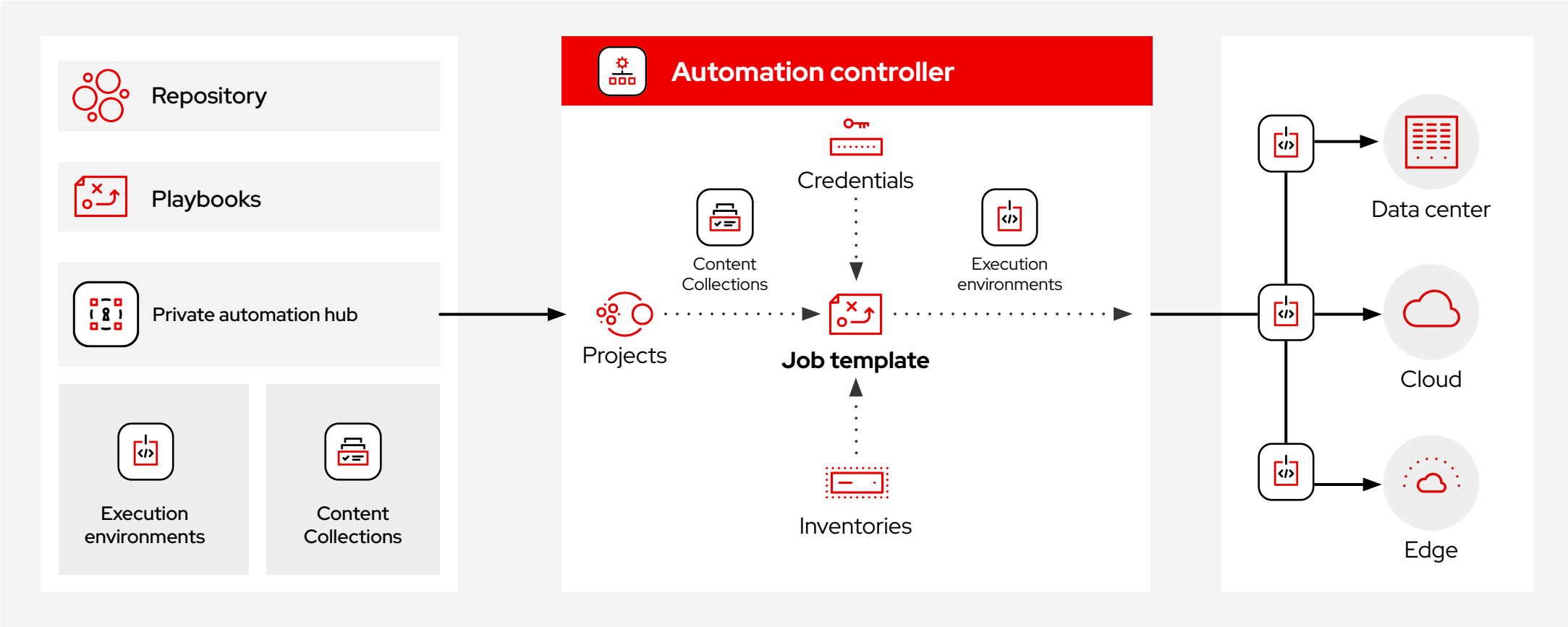
Automation controller is the Ansible Automation Platform control plane which enables users to define, operate, and delegate automation across their enterprise

Automation controller provides:

- WebUI and API
- Role-based access control
- Powerful workflows
- Centralized logging
- Credential management
- Push-button automation



Defining how your content runs in automation controller.



Using execution environments in automation controller.

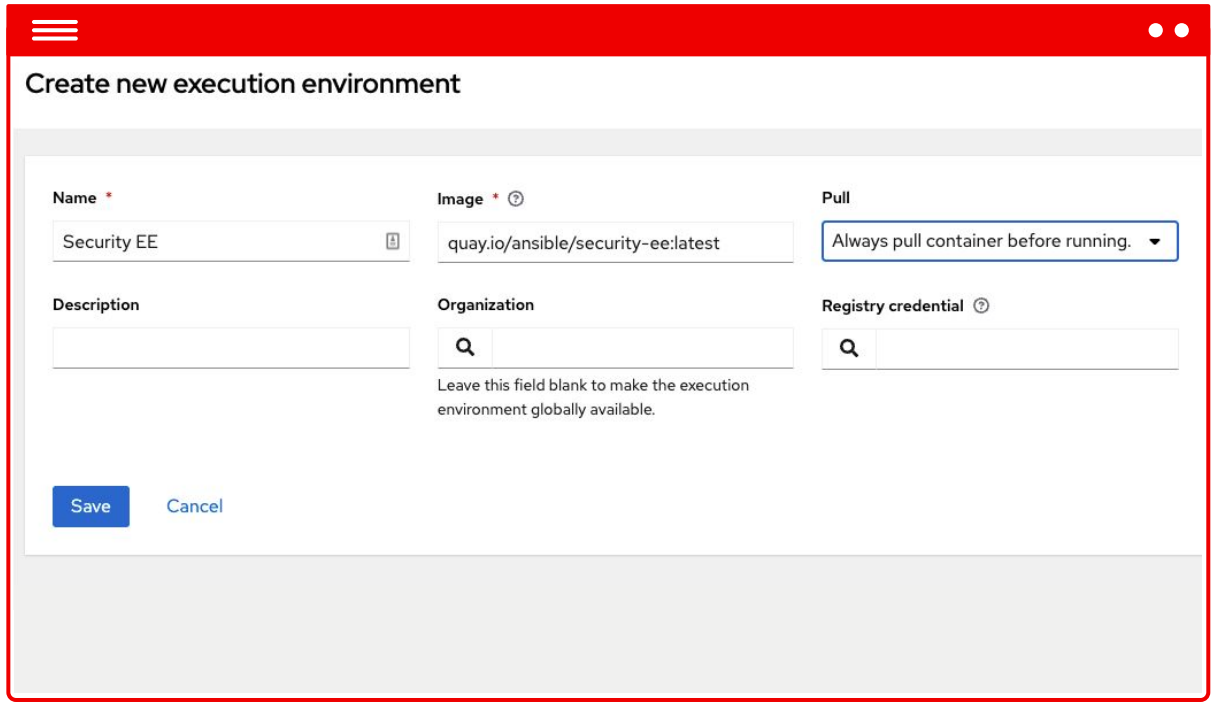
How do I add execution environments (EE)?

EEs can be added via the controller WebUI, API or command line

- Specify the EE image source
- Pull policy determines when and how EEs are downloaded when running automation
- Assign registry credentials to pull the EEs

How do I use execution environments?

- Select the EE you want to use in your automation job
- The default EE is used if none is specified

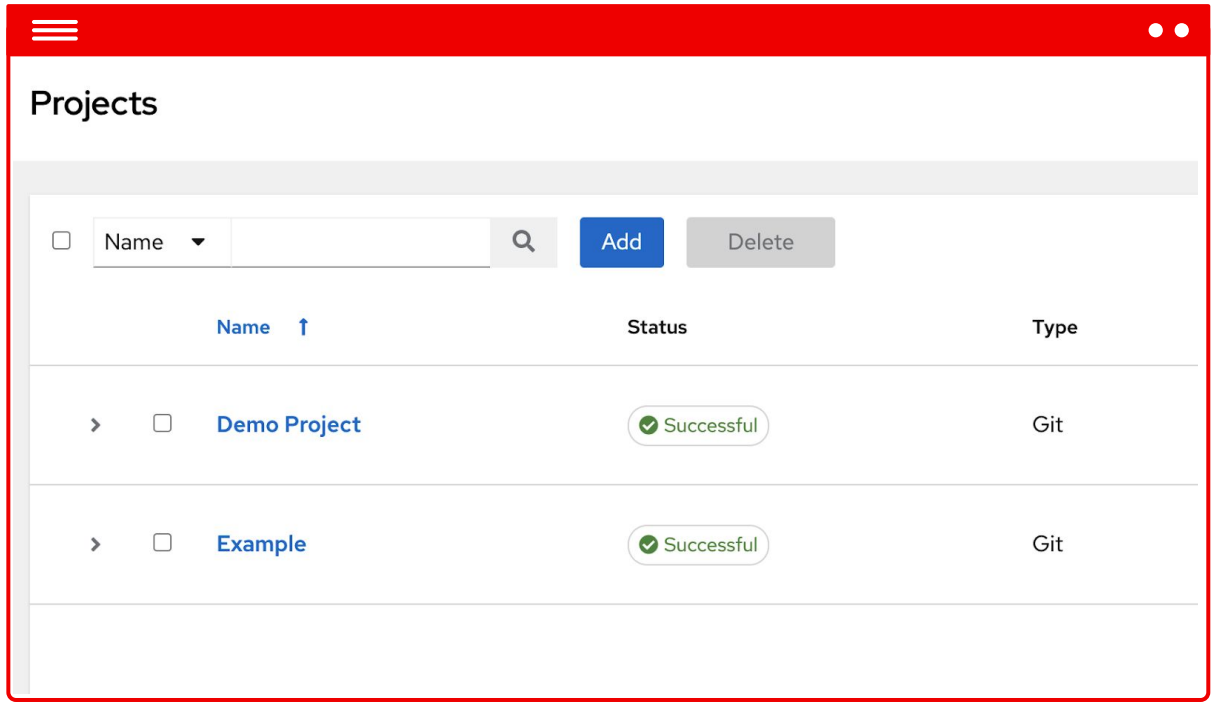


Projects. Adding your automation content to controller.

What is it?

Logical collection of your playbooks:

- Multiple source types supported
- Source Control Management (SCM) integration and update strategies
- Red Hat Insights integration
- Role-based access control (RBAC) and schedules

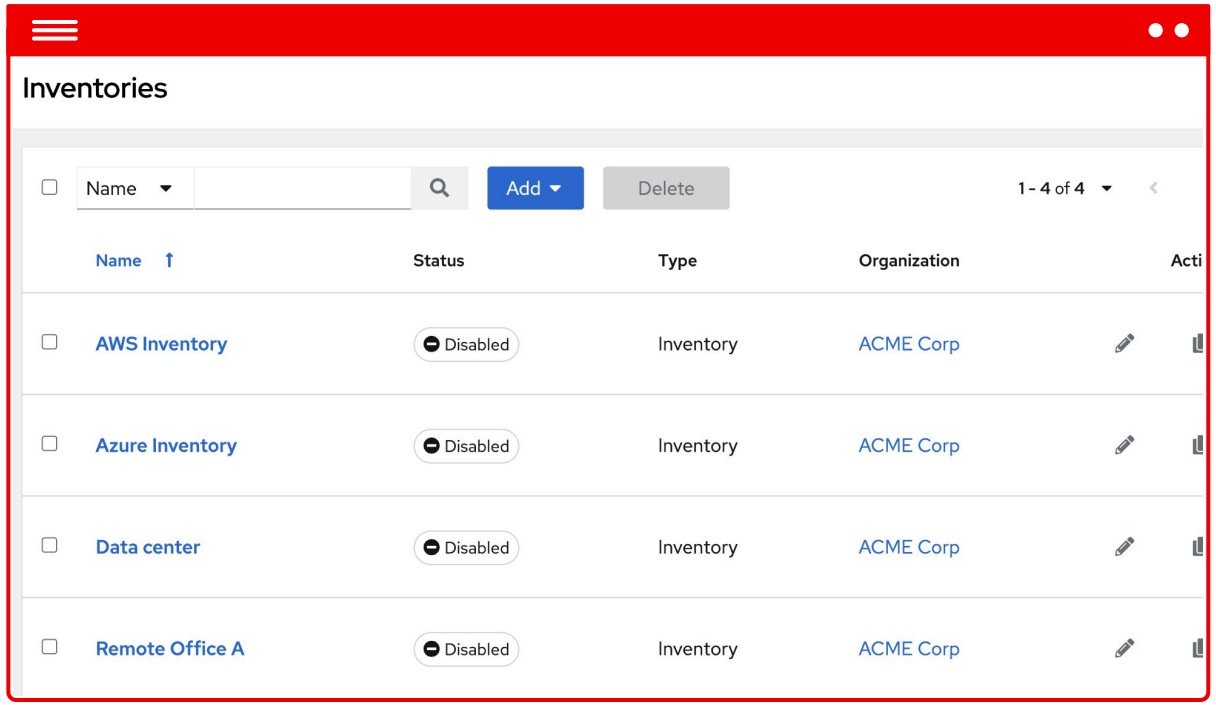


Inventories. What do I want to run my automation on?

What is it?

Collection of endpoints against which jobs may be launched

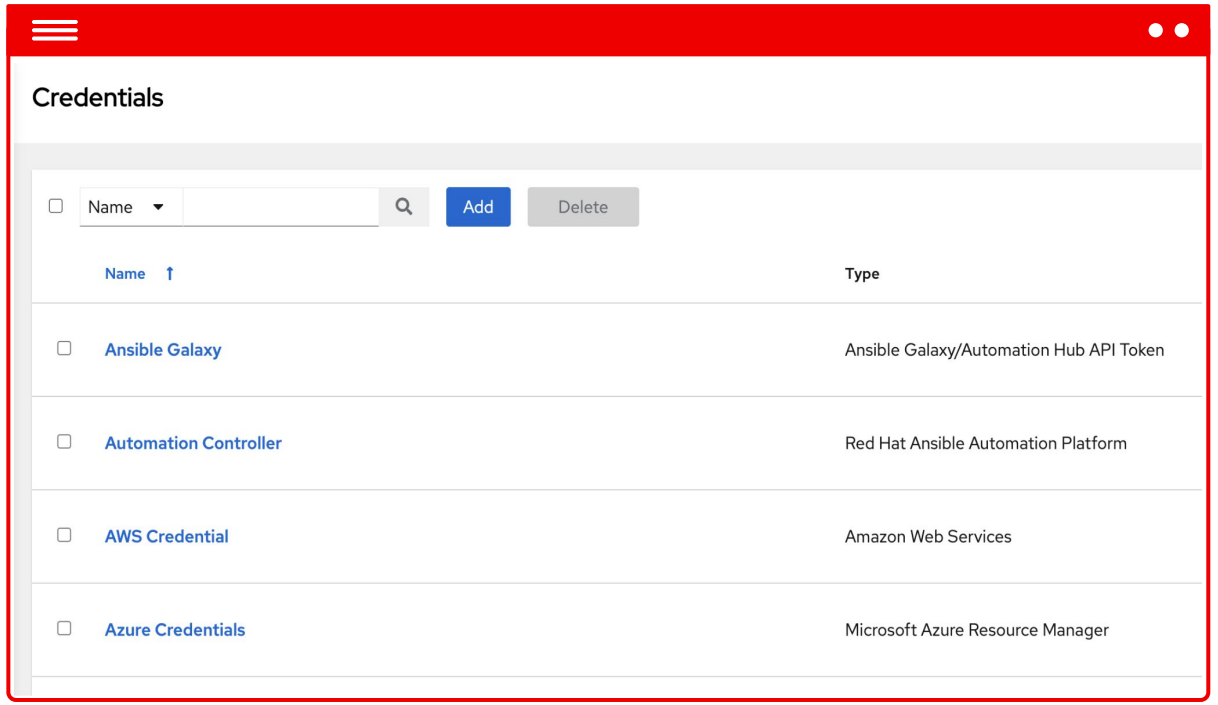
- Multiple inventory sources supported
- Dynamic endpoint discovery
- Logically group endpoints by metadata or user-defined filters
- Granular RBAC permissions



Credentials. Securing resource and endpoint access.

What is it?

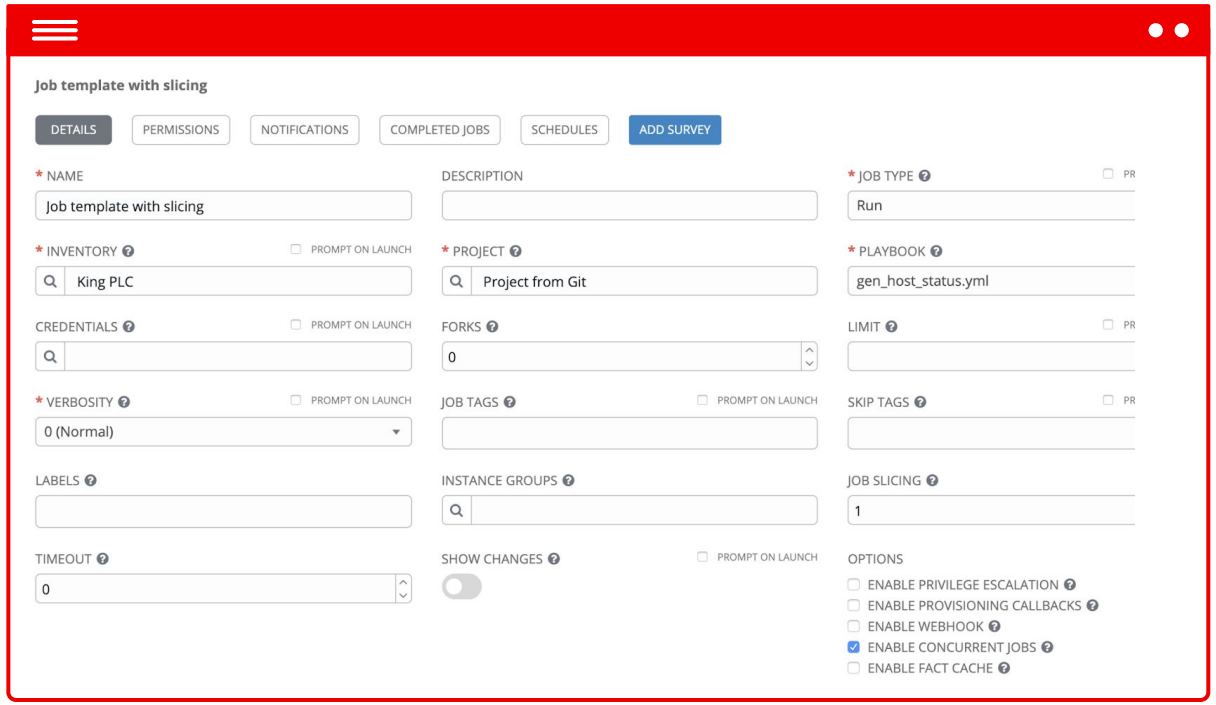
- Securely manage credentials needed for automation resources
- Multiple credential types supported
- Integrate external secret management systems
- Create custom credential types and plugins
- Use RBAC to govern access
- Actual credential never exposed



Job Templates. Bringing it all together.

What is it?

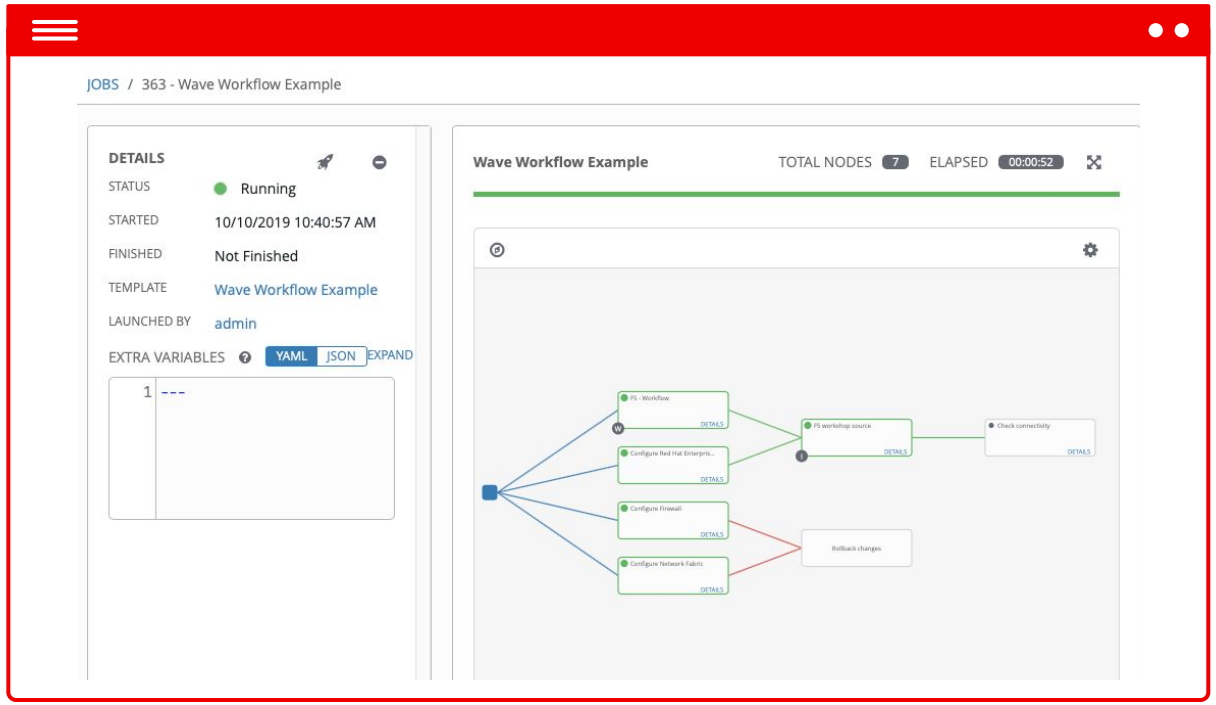
- Define and standardize running automation
- Reusable and shareable
- Leverage agile practices, such as GitOps and event-driven automation



Workflows. Solve complex problems.

What is it?

- 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
- Add approvals to your workflows to enhance governance
- Integrate other systems, such as ITSM to fit with your existing controls and processes



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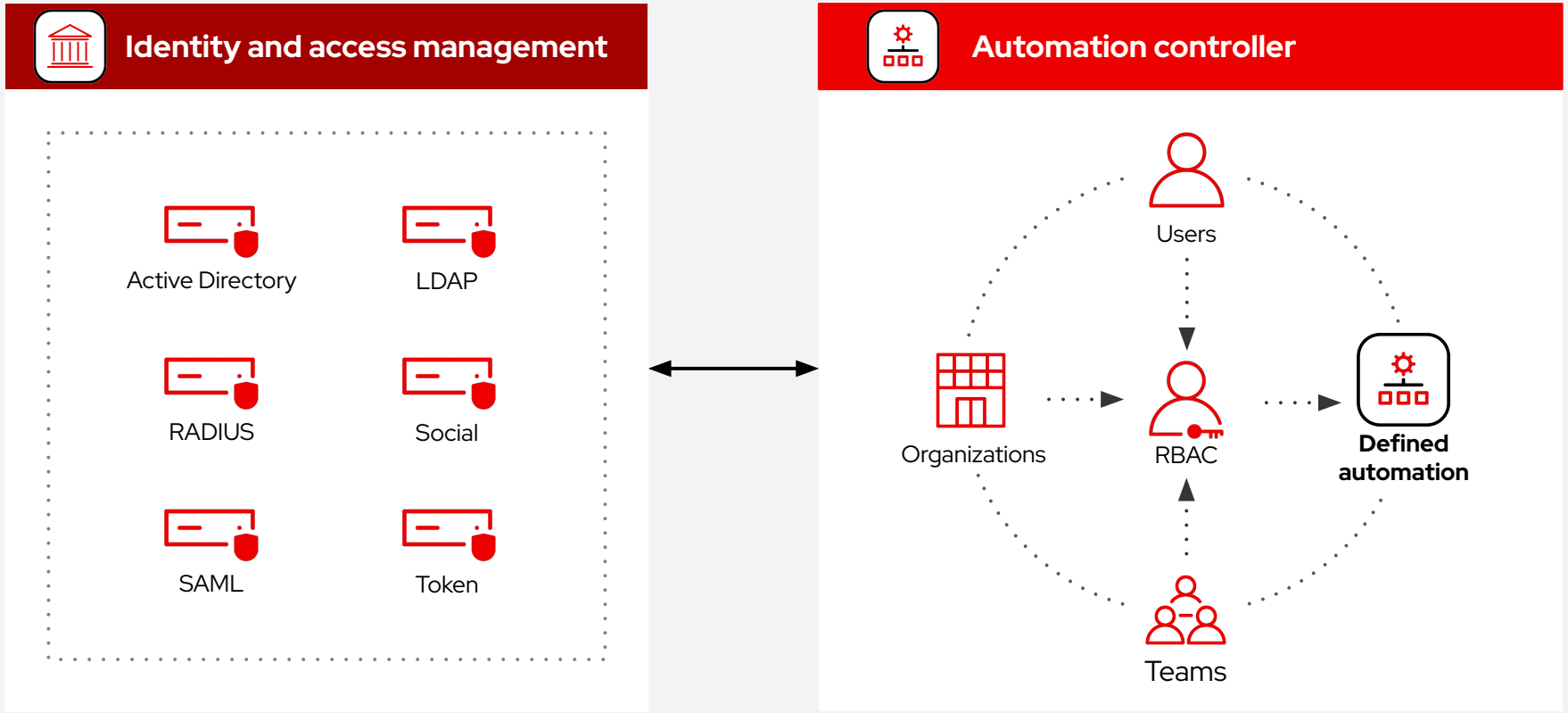
Securing your content in automation controller. Delegate.

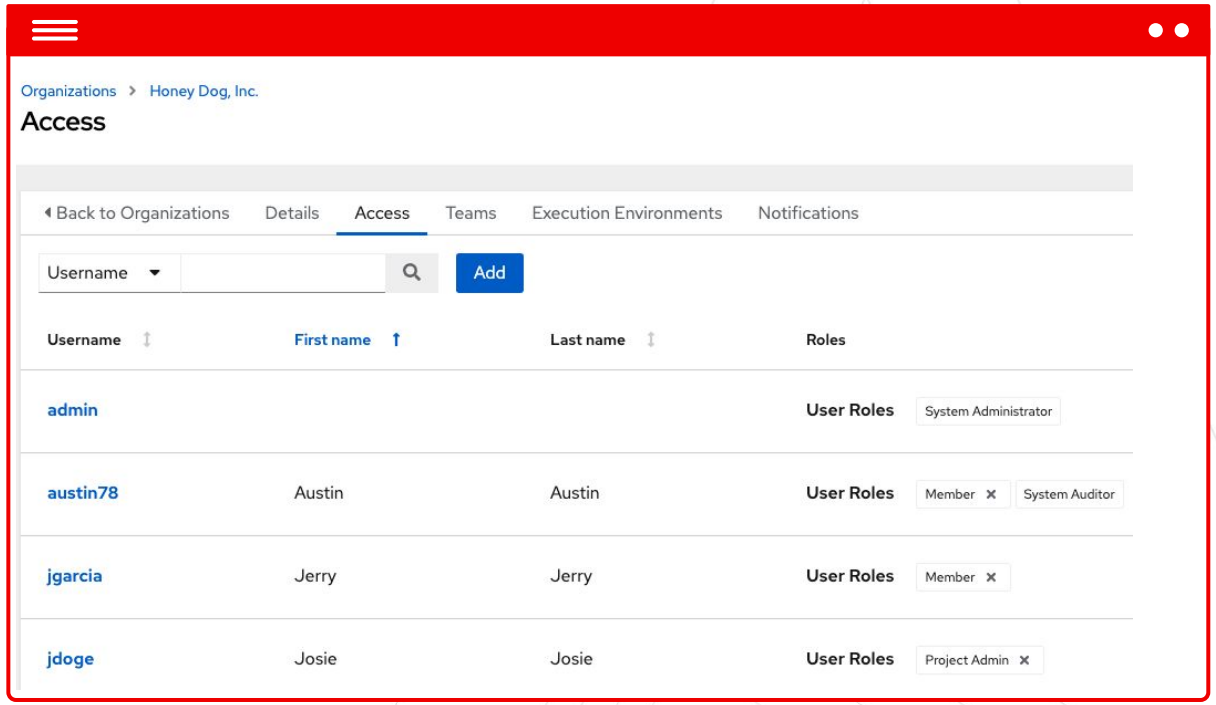


Role-Based Access Control. Who can use my automation?

What is it?

Securely govern access to your automation

- Logically group controller objects and grant users and teams read, execute, edit permissions
- Use predefined roles to grant access
- Integrates with your existing enterprise authentication systems



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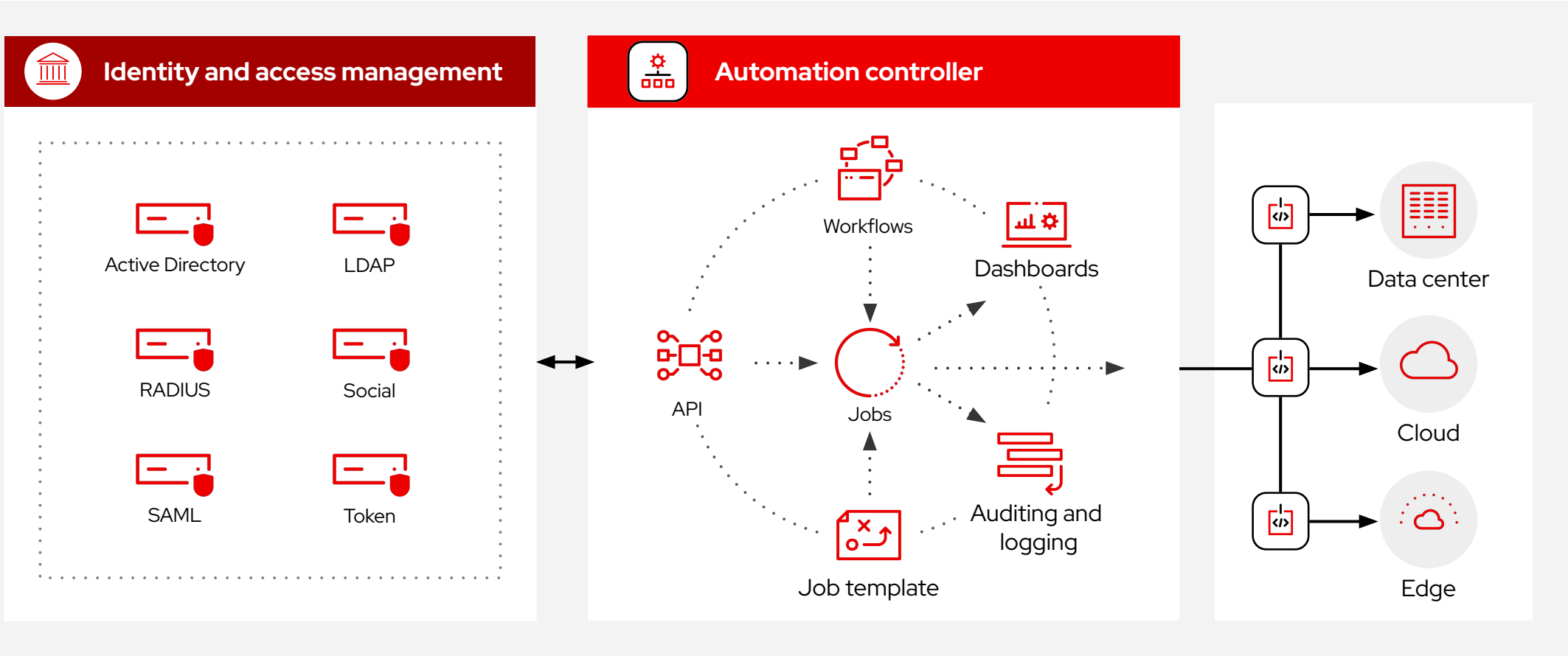
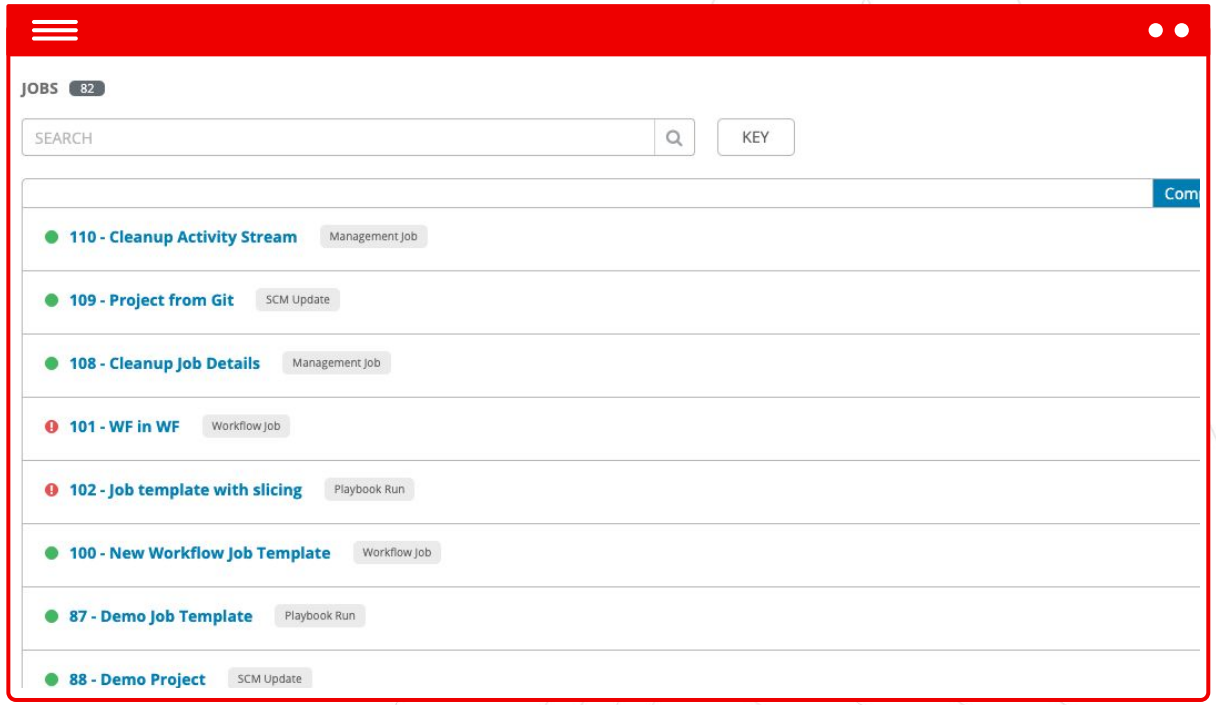
Launching your content from automation controller.



Automation jobs. Executing your defined automation.

What is it?

- Controller launching an instance of defined automation
- Relaunch automation jobs
- Use Job Details to view job outputs
- Troubleshoot automation execution using filtered views



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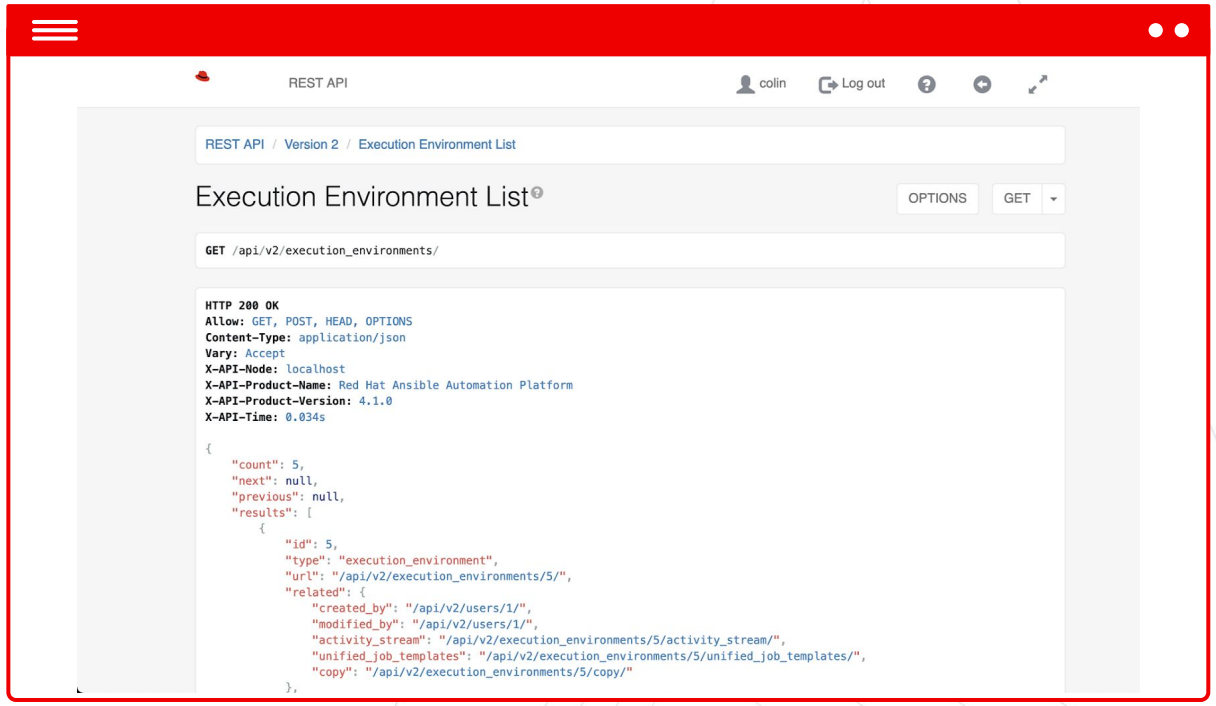
Automation controller API.
Integrate and elevate your automation.

What is it?

- 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



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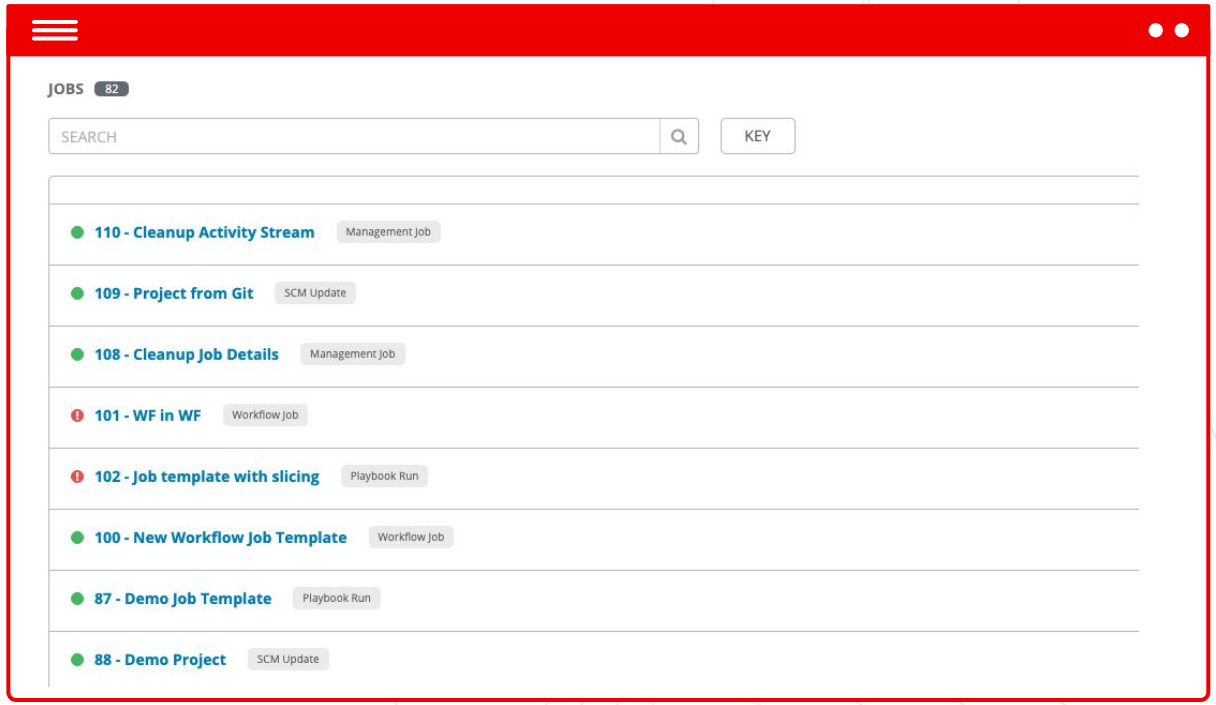
Automation controller logging aggregation.

What is it?

- Provides the capability to send detailed logs to several kinds of 3rd party external log aggregation services
- Use Red Hat Enterprise Linux rsyslog to aggregate and redirect logs
- Native integration exists for multiple 3rd party logging systems
- Multiple detailed logs are gathered for job events, system facts, users, activity streams, and controller features



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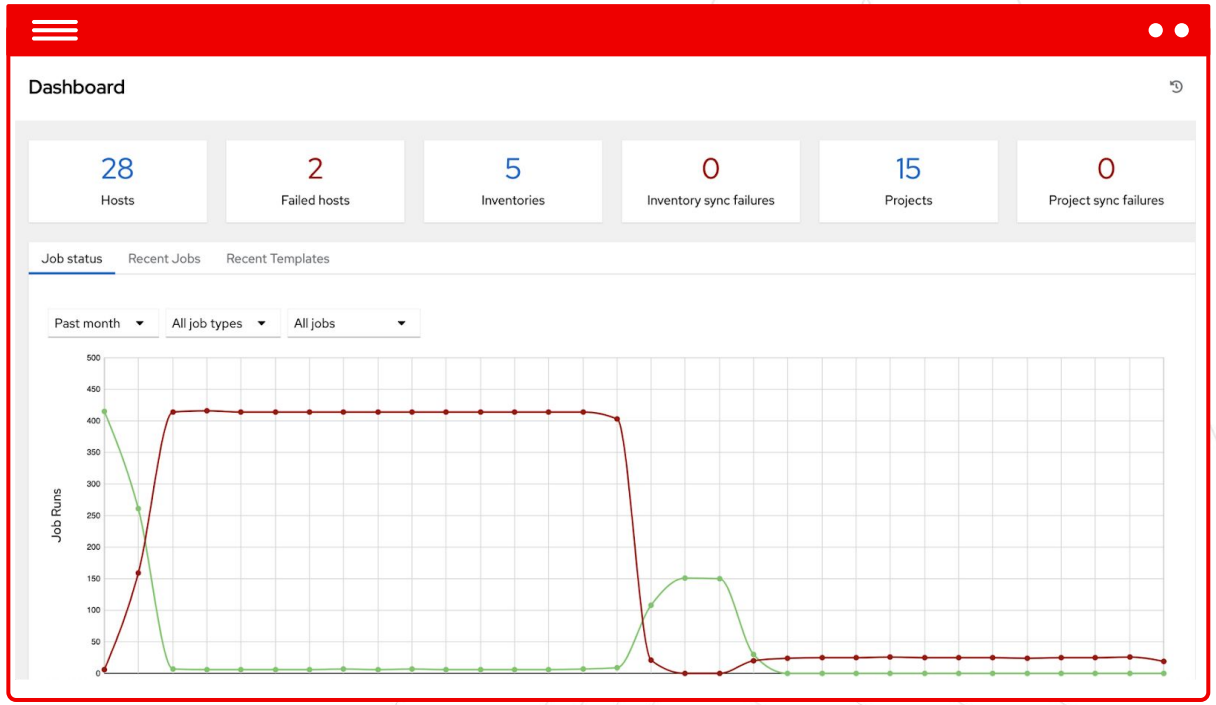
Automation controller dashboard.
View your automation status.

What is it?

- Overview of automation controller, the jobs happening, the nodes connected and what worked and failed
- Provides the ability to quickly spot irregularities and drill into more details



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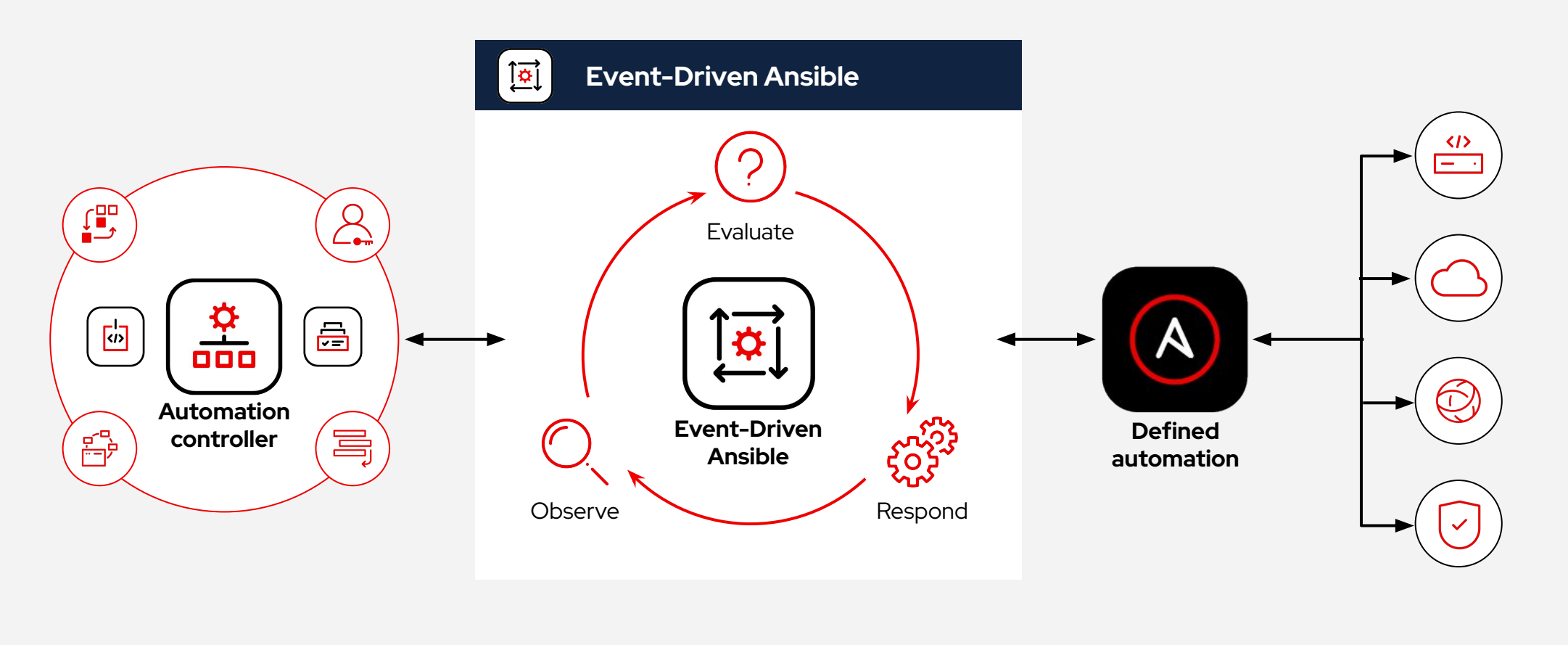
Event-Driven Ansible. Observe, evaluate, respond.

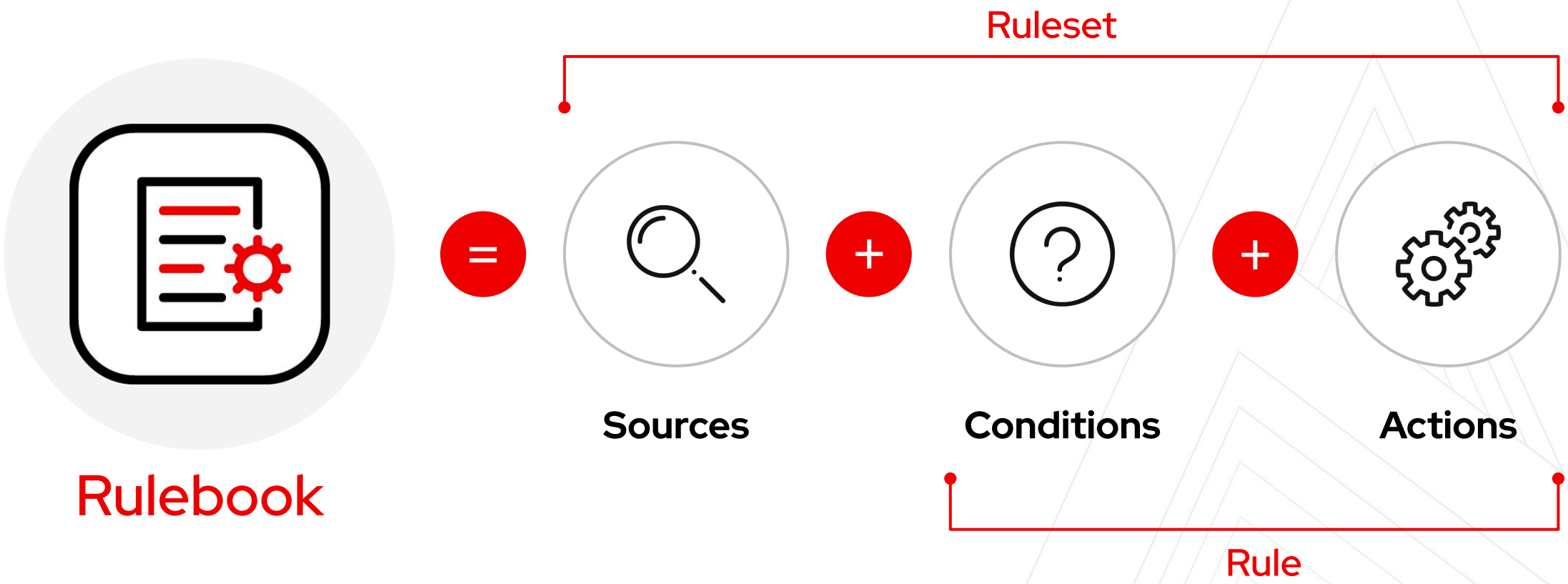


Ansible Rulebooks

```
---
- name: Capture alertmanager alerts
  hosts: all
  sources:
    - ansible.eda.alertmanager:
        host: 0.0.0.0
        port: 5050
        data_alerts_path: alerts
        data_host_path: labels.instance
        data_path_separator: .
        skip_original_data: true

  rules:
    - name: SELinux was disabled
      condition: event.alert.labels.alertname == "selinux disabled" and
                 event.alert.status == "firing"
      action:
        run_job_template:
          name: Apply baseline
          organization: Default
          job_args:
            limit: "{{ event.meta.hosts }}"
```

What makes up an Ansible Rulebook?



Event-Driven Ansible rulesets. Event sources and rules.

What are they?

- Top level specification that defines event sources and rules.
- Defines properties such as Ansible inventory target hosts, gathering facts, and more.

Building blocks for Rulebooks

- Multiple rulesets can exist within an Ansible Rulebook.

```
---
- name: Capture alertmanager alerts
  hosts: all
```

Event-Driven Ansible sources. How are events gathered?

What are they?

- Event data is gathered from multiple sources using source plugins.
- One or multiple event source plugins can be configured in a ruleset.

Source plugins

- Puts events in the queue to be passed to rules engine.

Event filters

- Enables data transformation and clean-up before being passed to rules engine.

```
---
- name: Capture alertmanager alerts
  hosts: all
  sources:
    - ansible.eda.alertmanager:
        host: 0.0.0.0
        port: 5050
        data_alerts_path: alerts
      filters:
        - ansible.eda.json_filter:
            include_keys: ['alert']
```

Event-Driven Ansible rules. Evaluate and automate.

What are they?

- Rules determine actions taken on events based on conditions using simple YAML structure.

Conditions

- Evaluates event data using "If-Then-Else" structure.
- Single condition or multiple conditions supported.

Actions

- Triggered once rule conditions are met
- Processed sequentially once conditions are met.

```
rules:
  - name: SELinux was disabled
    condition: event.alert.labels.alertname ==
               "selinux disabled"
    action:
      run_job_template:
        name: Apply baseline
        organization: Default
        job_args:
        limit: "{{ event.meta.hosts }}"
```

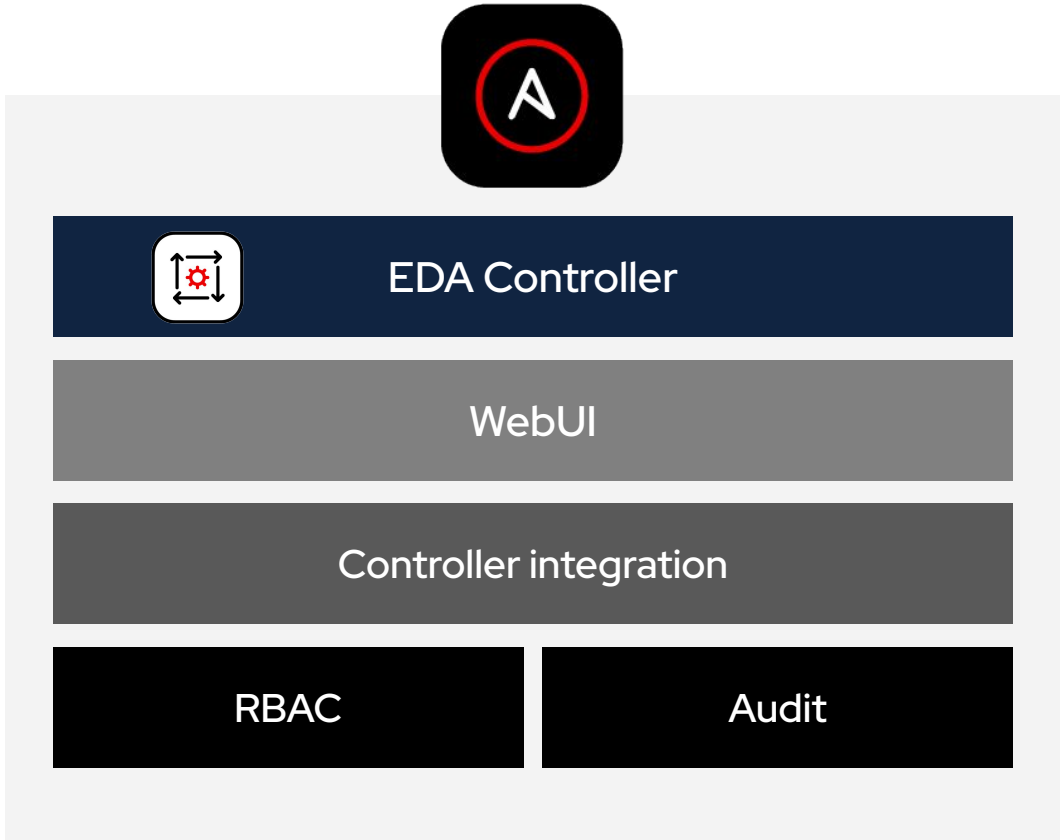
Event-Driven Ansible controller. Define and manage.

What is it?

- EDA Controller enables users to centrally manage Event-Driven Ansible across the enterprise.

EDA controller provides:

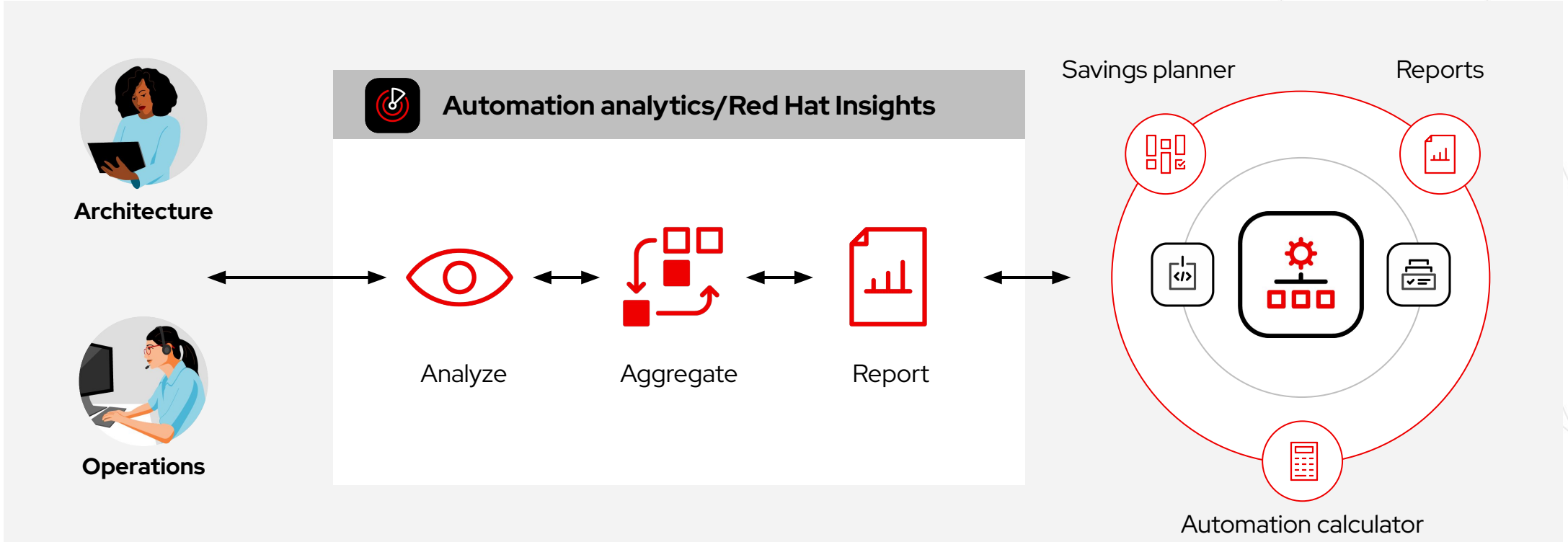
- WebUI.
- Rulebook activation.
- Role-based access control.
- Auditing trail.
- Secure automation controller integration.



Red Hat Insights for Ansible Automation Platform.

Analyze, aggregate and report.

console.redhat.com



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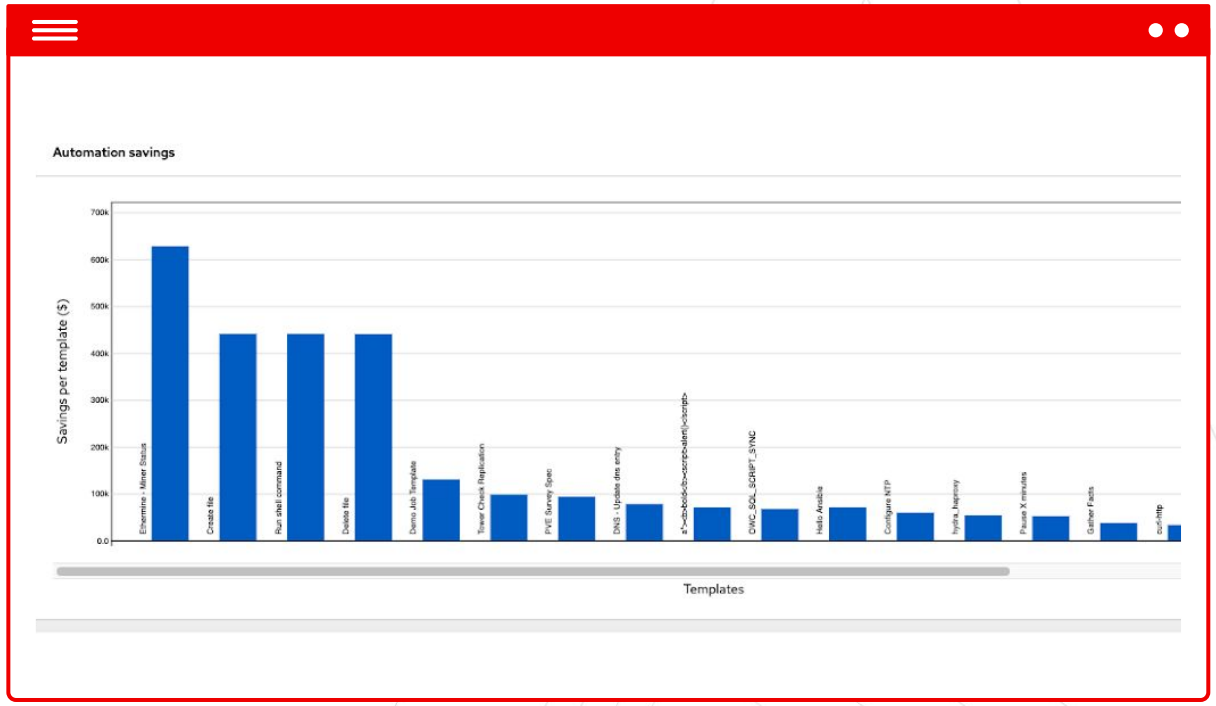
Automation calculator. Analyze and aggregate.

What is it?

Track and measure the total value of automation efforts by time and cost savings

- Automation calculator looks at at the total ROI of your automation
- Calculations are based on automation data across your organization
- Job template savings are compared to costs of performing the tasks manually
- Measure the ROI of your automation investment and identify automation that contributes the most savings



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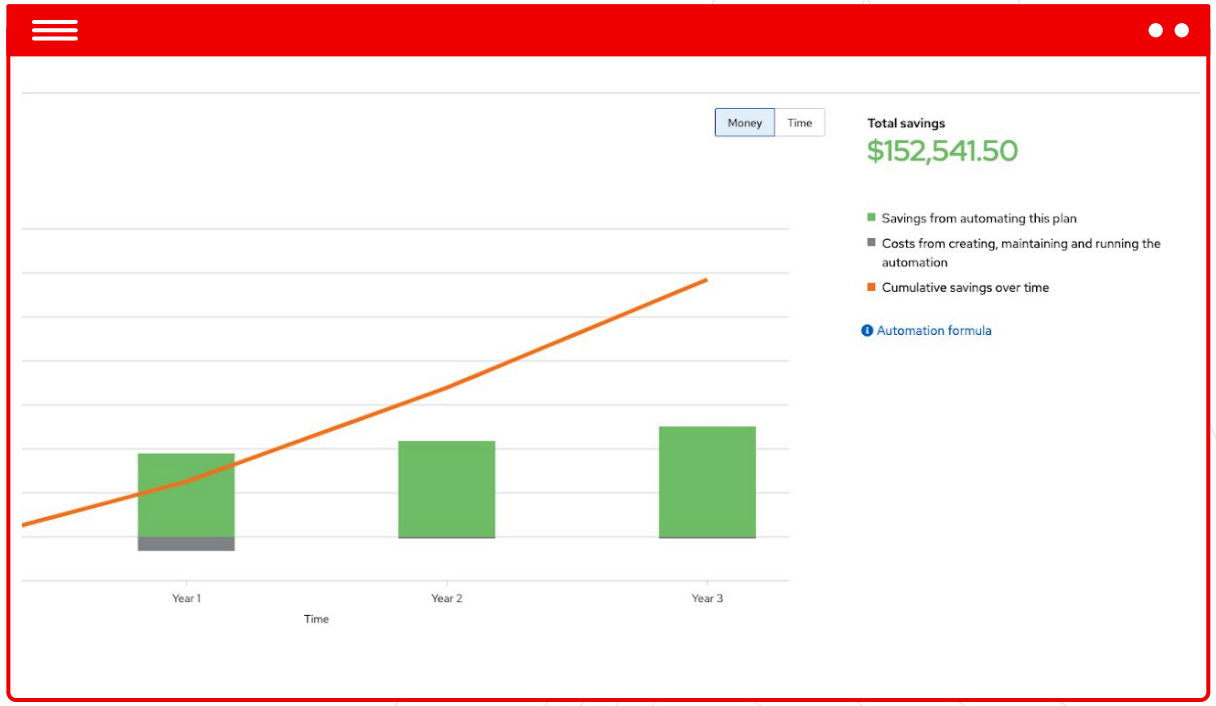
Automation Savings Planner. Analyze and aggregate.

What is it?

Prioritize automation by projecting the 1- to 3-year savings by time and money for each automation task

- Predict ROI and time savings based on a given automation task
- Use your automation data from your organization to prioritize tasks and projects based on business value



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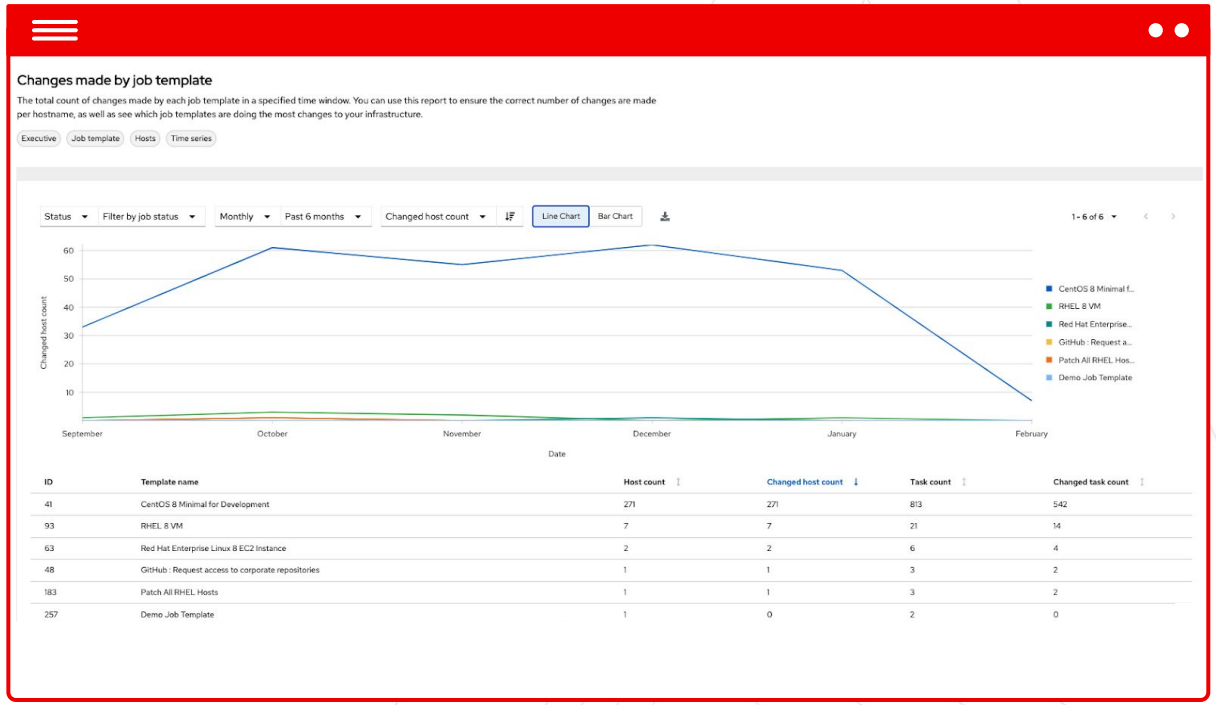
Reports. The holistic view of your automation platform.

What is it?

Unified, visual dashboards of Ansible Automation Platform key metrics across clusters

- Reveal most used Ansible Playbooks, modules, and deployment pass/fail rates
- Filter information based on automation controller clusters in real-time
- Use historical data to predict and improve the automation practice
- Measure the value of your Ansible Automation Platform subscription
- Export reports and share with your organization



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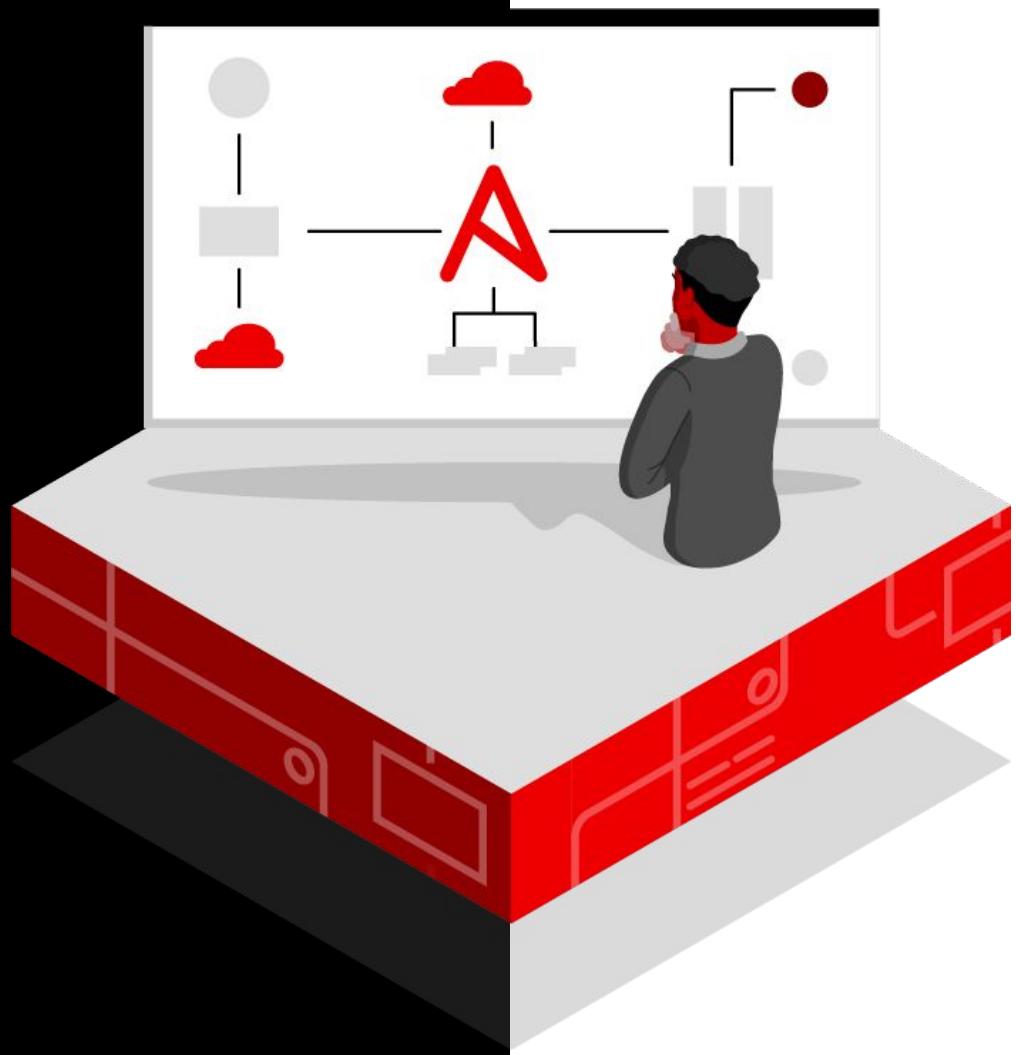
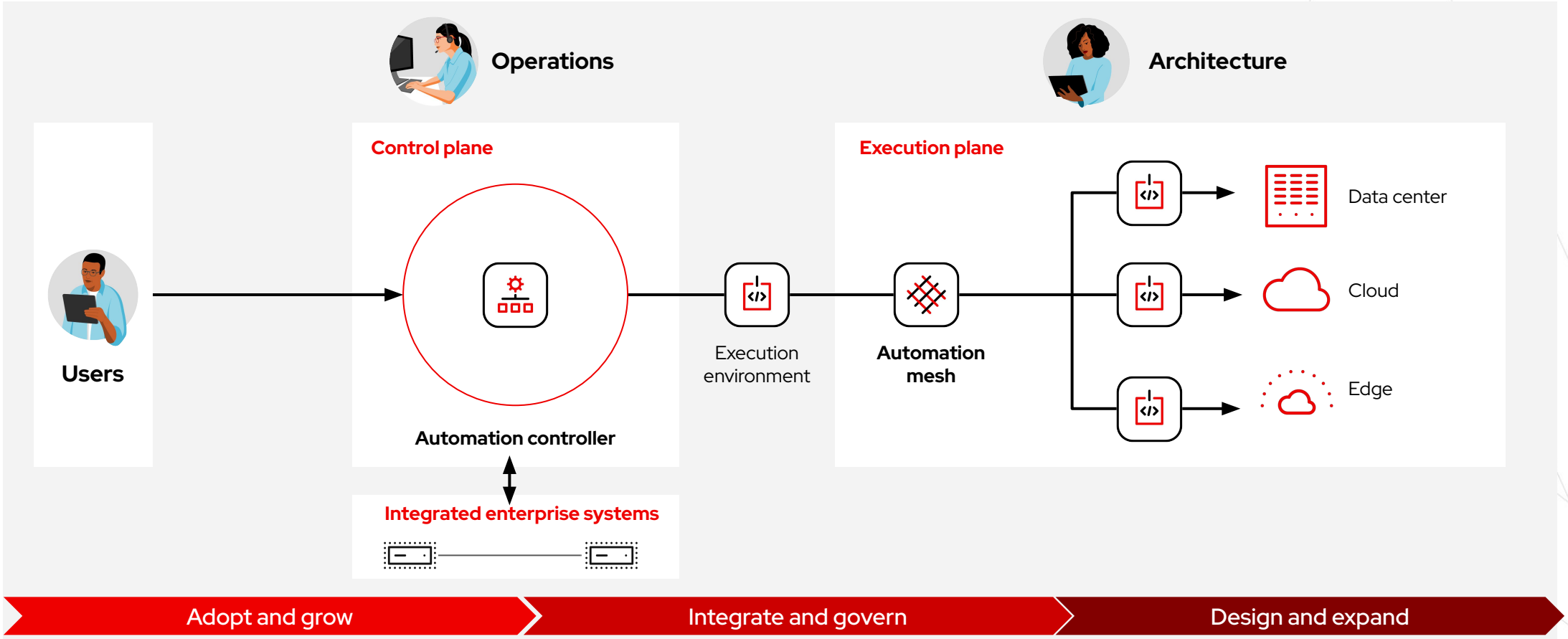
Scale



The automation content life cycle. Scale.



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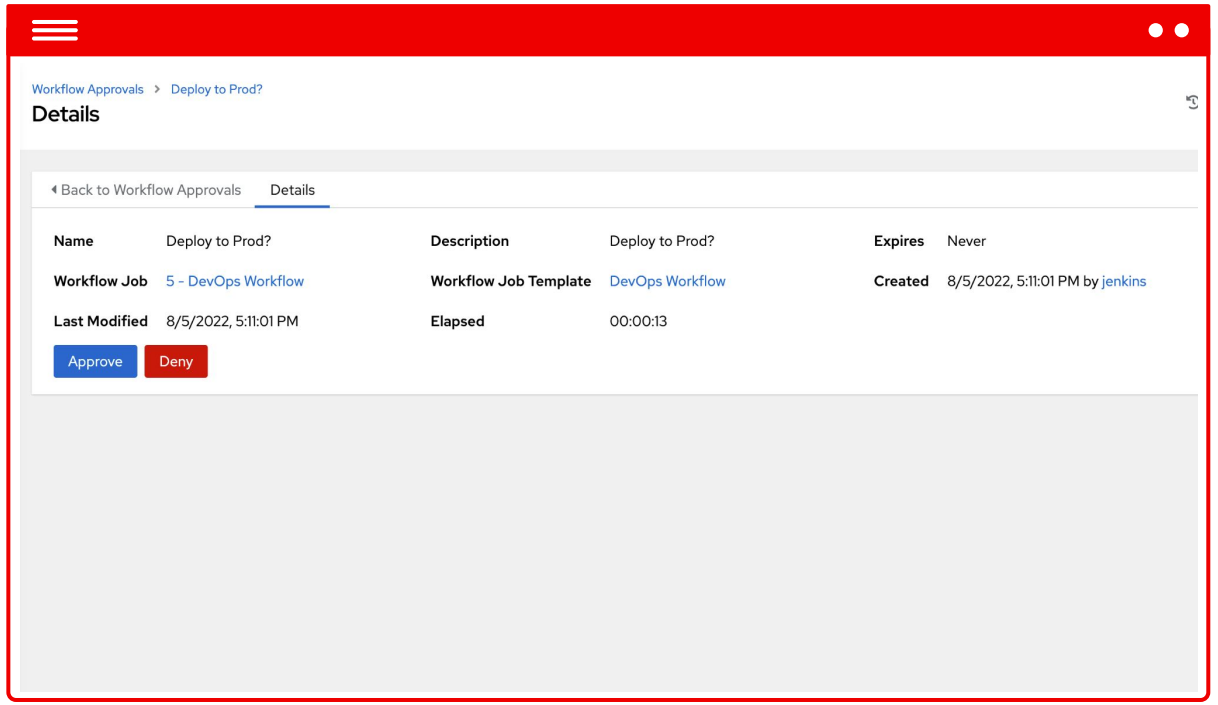
Automation controller approvals. Integrate and govern.

What is it?

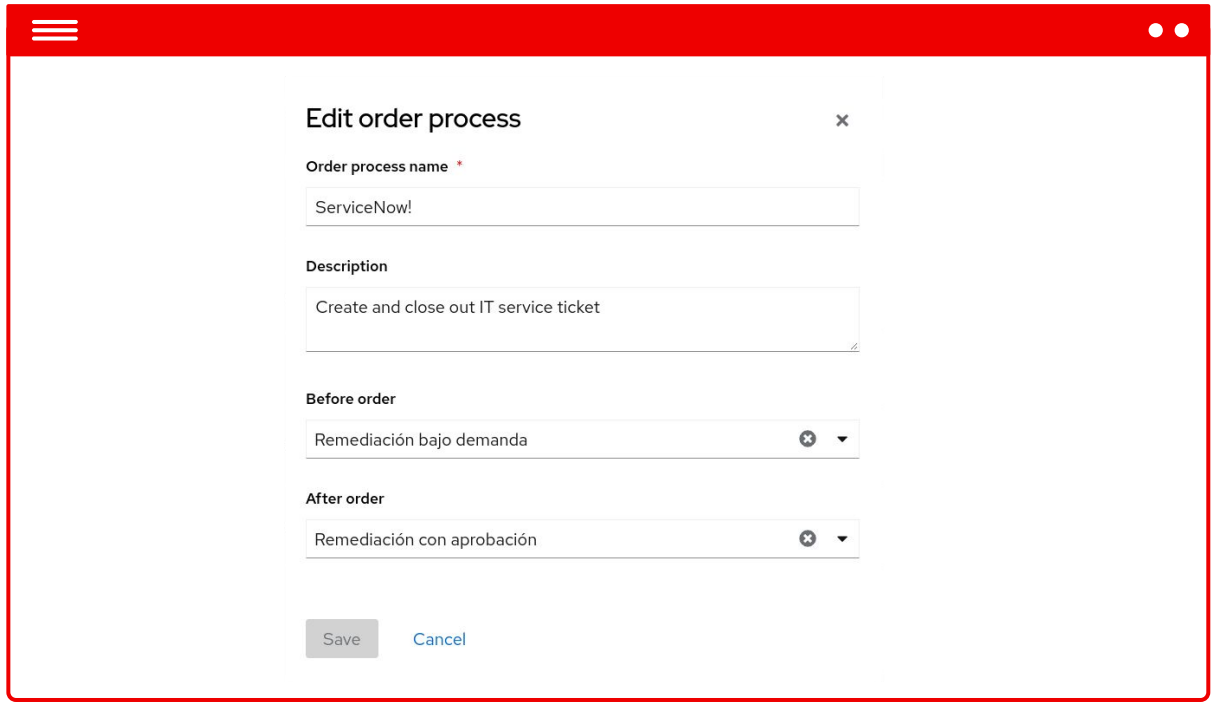
- Adds human interaction to the automation for administration and governance
- Available at the operational level on the Automation controller UI



IT service management integration (ITSM).
Integrate and govern.

Incorporate automation into your ITSM

- Integrate high level workflows in existing ITSM toolsets with the automation platform.
- Apply organization governance and integrate your automation to larger business processes
- Have the automation platform reach out to the ITSM system whenever things are changing, including data transmission between the tools



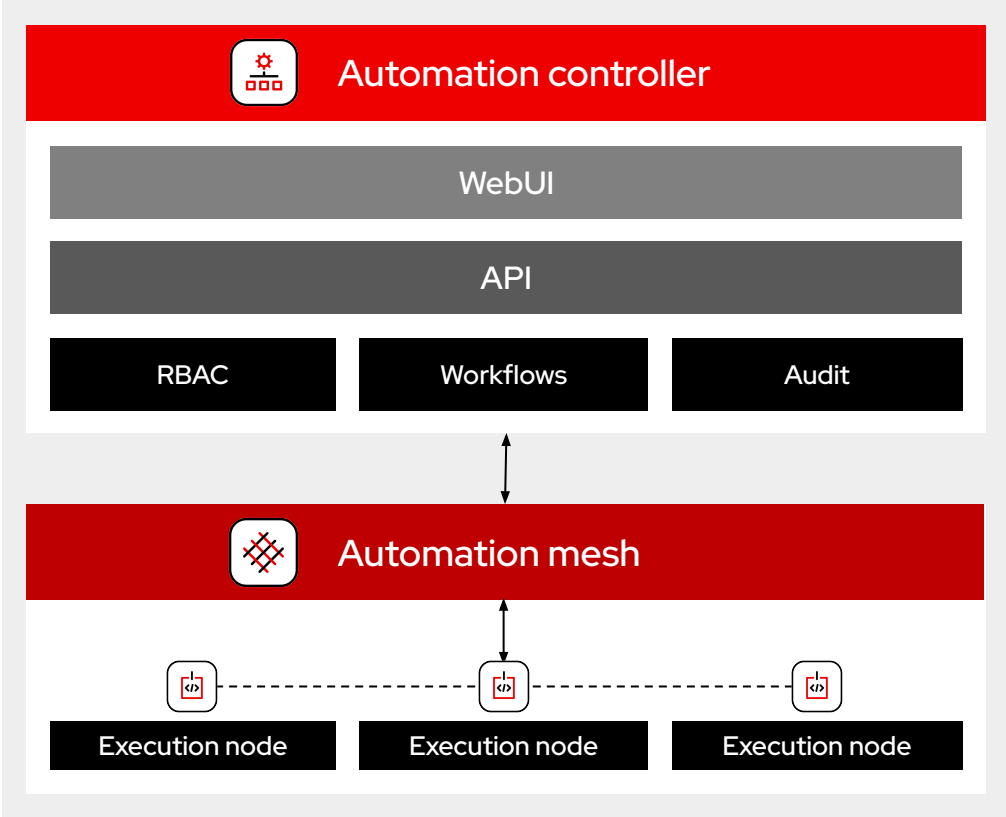
Automation mesh. Design and expand.

What is it?

- Simple, reliable framework to scale automation independently with little or no downtime
- Distributed and localized execution across worker nodes
- Scale across segmented and remote networks with native resiliency
- Flexible design choices to deliver automation across networks and design redundant topologies

Improved communication and security

- Worker node health checks
- Bi-directional, secured (TLS) communication between nodes
- Centralized, secured management with automation controller



Automation mesh node types. The execution plane.

What is it?

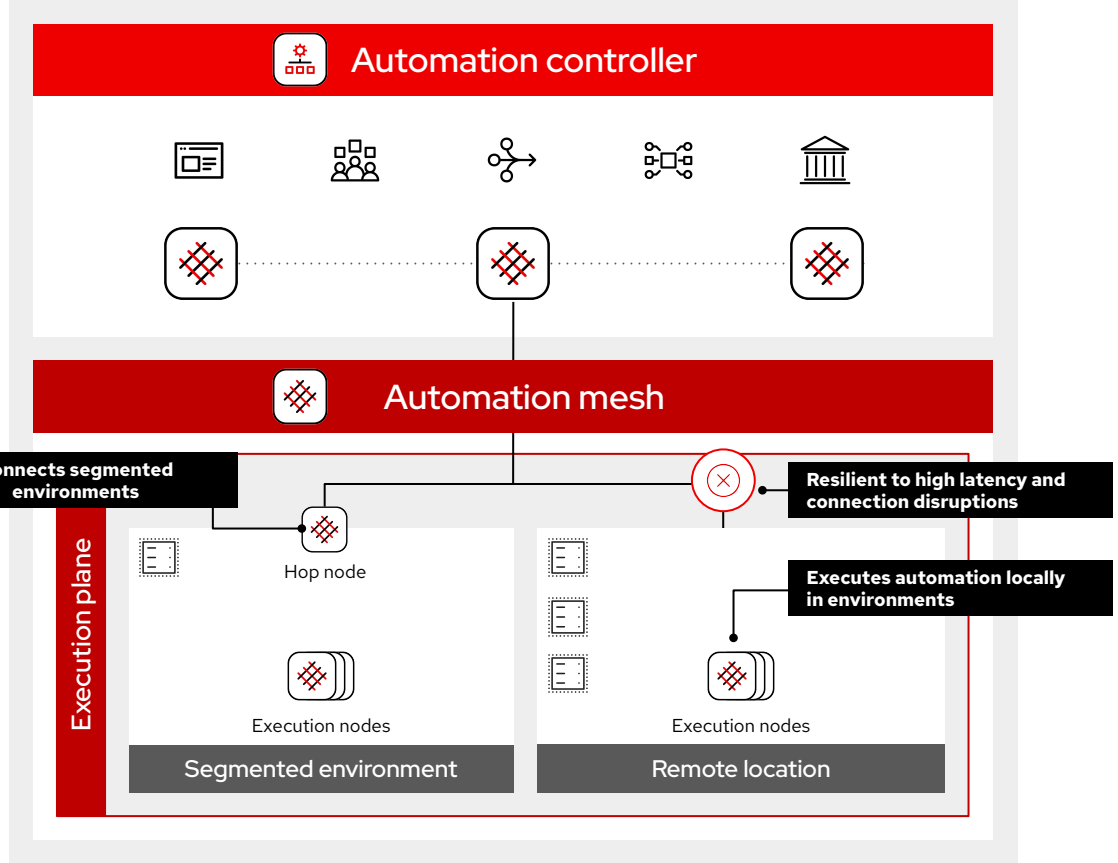
- Dedicated capacity to running playbooks
- Flexible designs possible across geographies and networks
- Resilient to high latency and connection disruptions
- Run automation without direct connection to controller

Execution node

- Dedicated capacity to run automation and no controller runtime functions executed

Hop node

- Dedicated to route traffic across execution nodes not directly connected to controller and cannot run automation



Automation mesh node types. The control plane.

What is it?

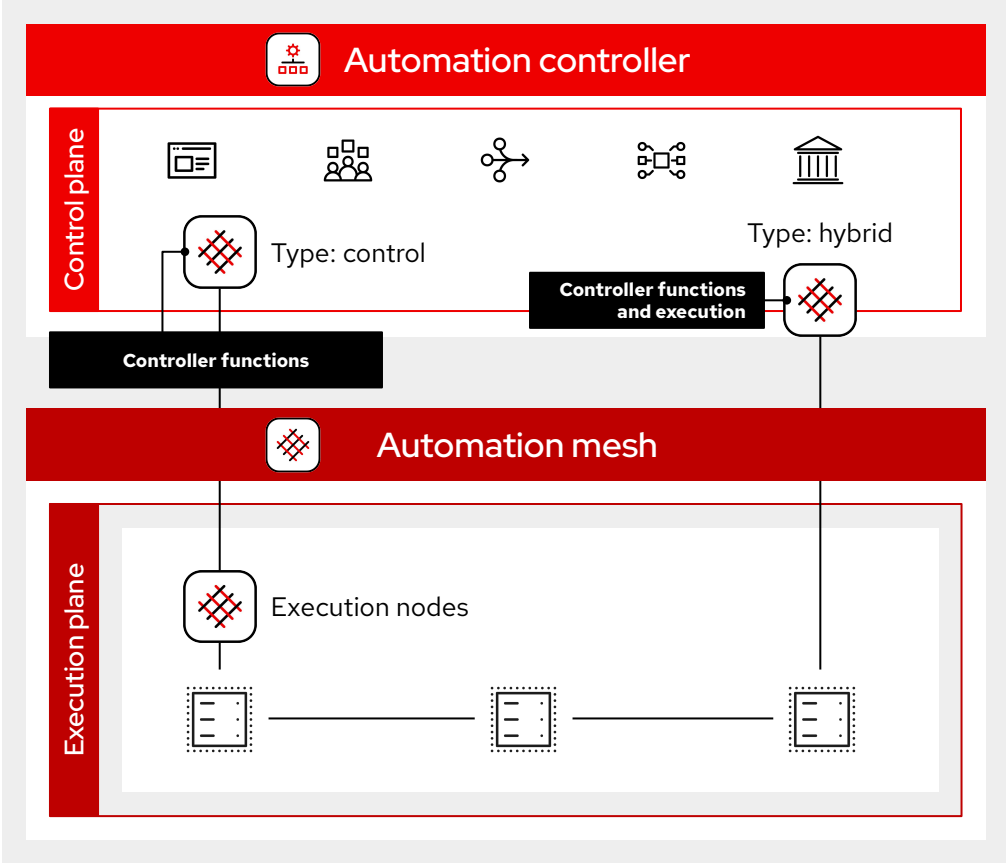
- Dedicated capacity for automation controller runtime functions
- Scale with little or no downtime
- Reduced operational overhead

Hybrid nodes

- Default node type for controller nodes
- Perform controller functions and execute automation

Control nodes

- Capacity is dedicated to controller functions
- Automation execution capability is disabled



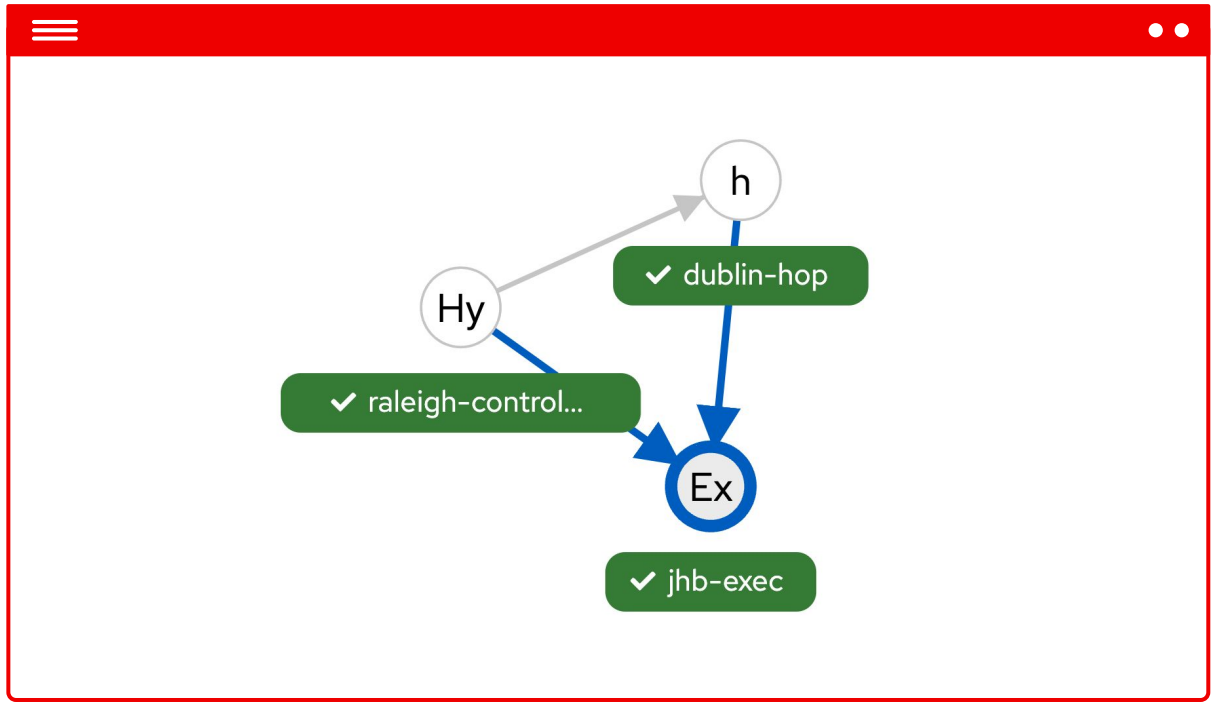
Automation mesh. Management and visibility.

Instance groups

- Logically group and assign mesh execution capacity
- Predefined controlplane and default instance groups
- Configure instance groups via API, WebUI or installer

Topology Viewer

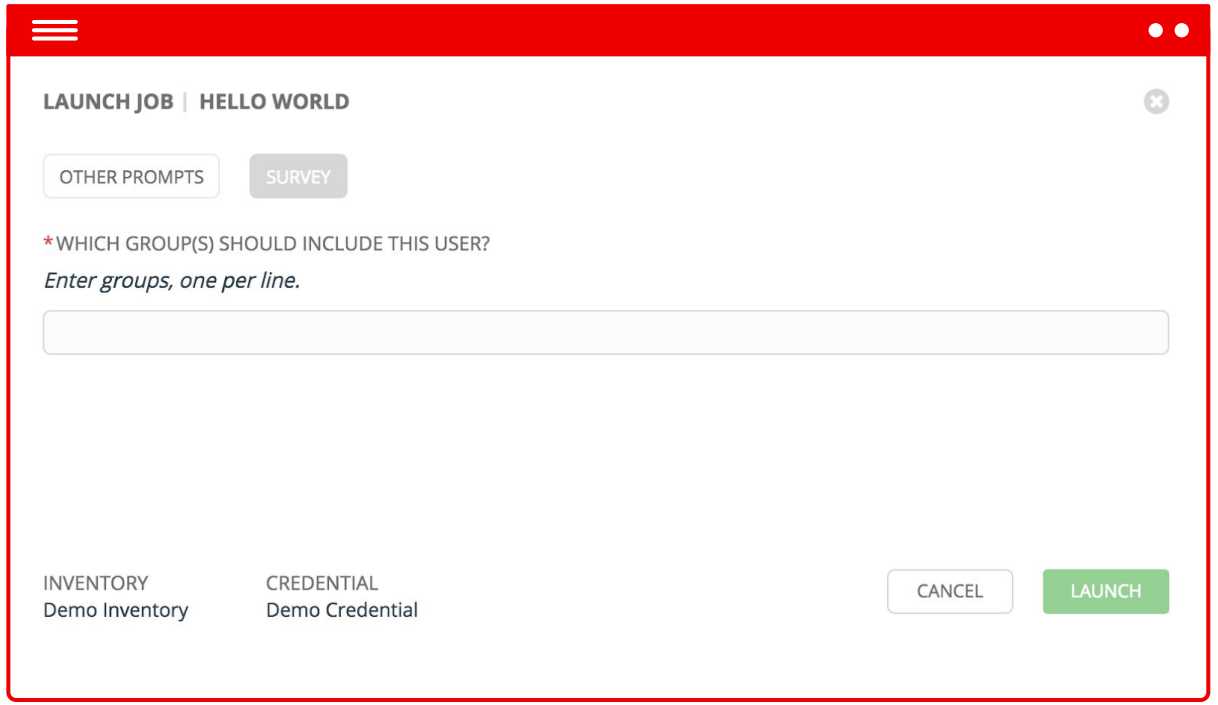
- View existing mesh topologies across environments



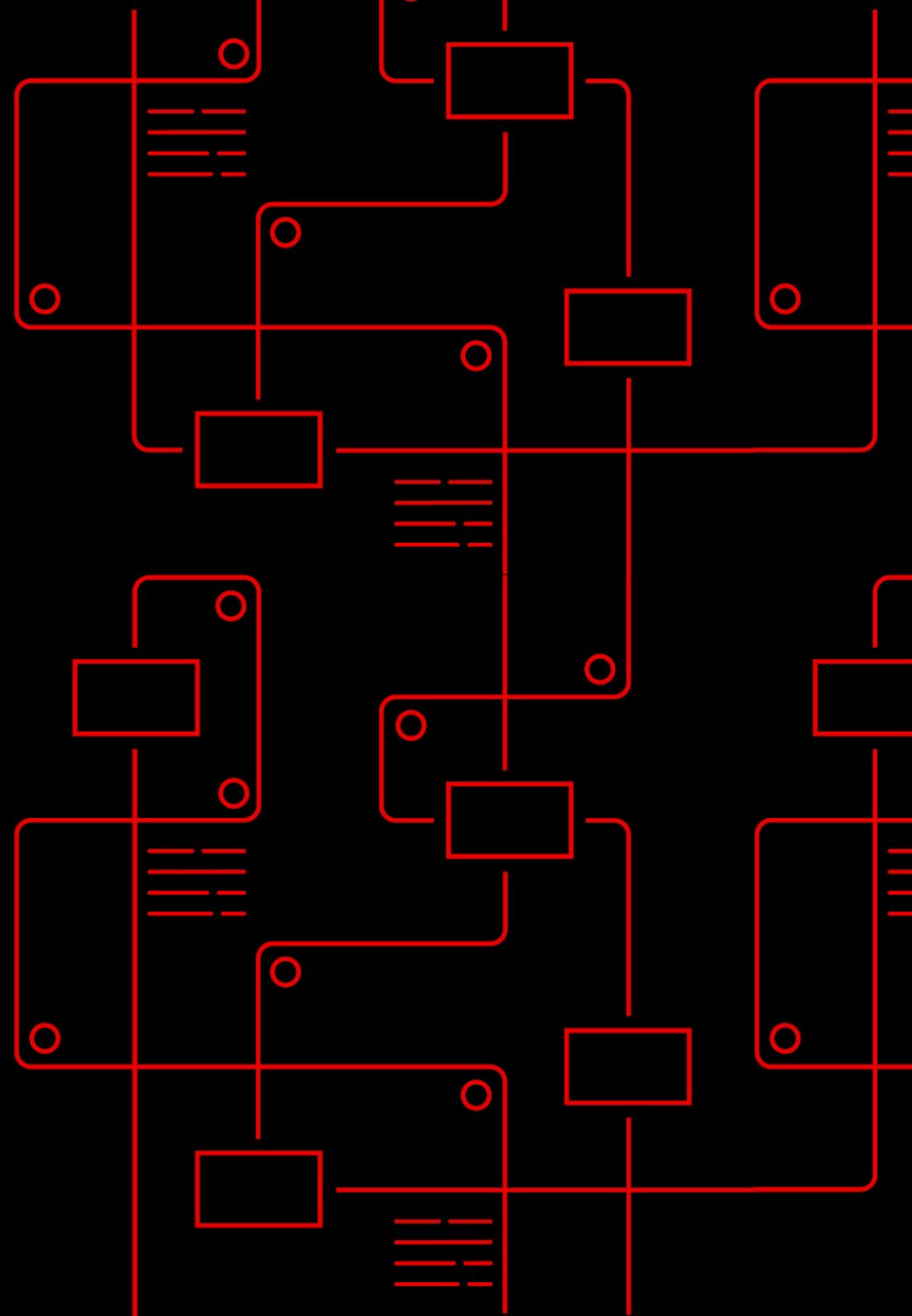
Automation controller surveys. Adopt and grow.

What is it?

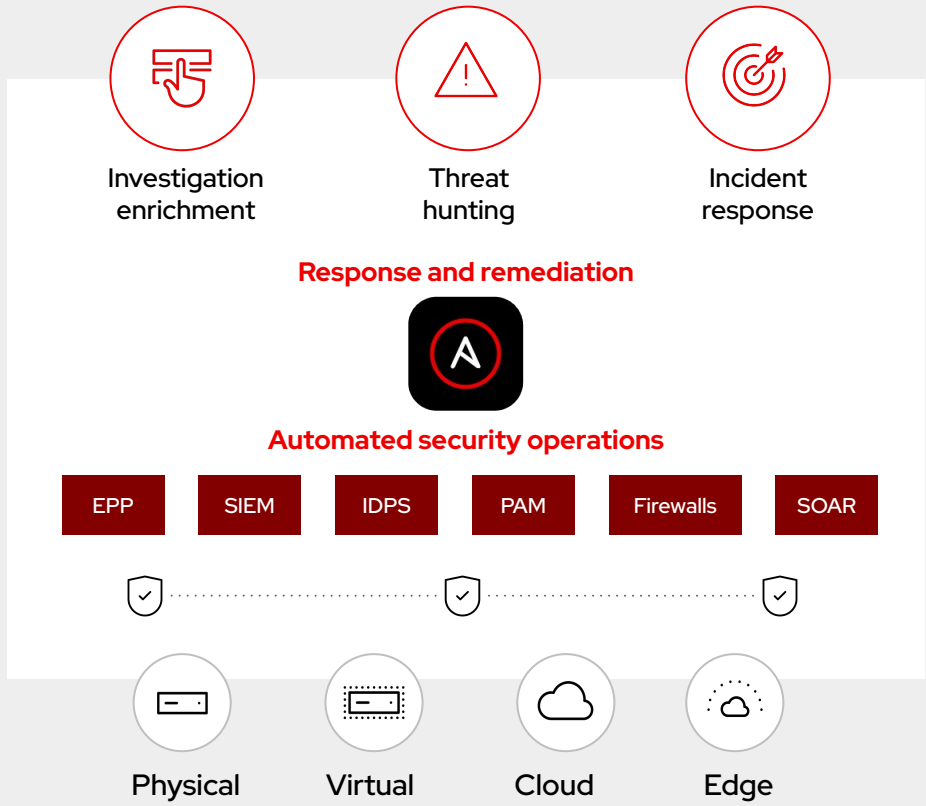
- User-friendly, self-service interface in automation controller
- Abstracts complexity using question and answer format
- Best suited for teams directly accessing automation and close to the automation practice
- Access and execution governed using controller features



Use cases



Ansible security automation. Response and remediation.



Investigation enrichment

Enabling programmatic access to log configurations such as destination, verbosity, etc

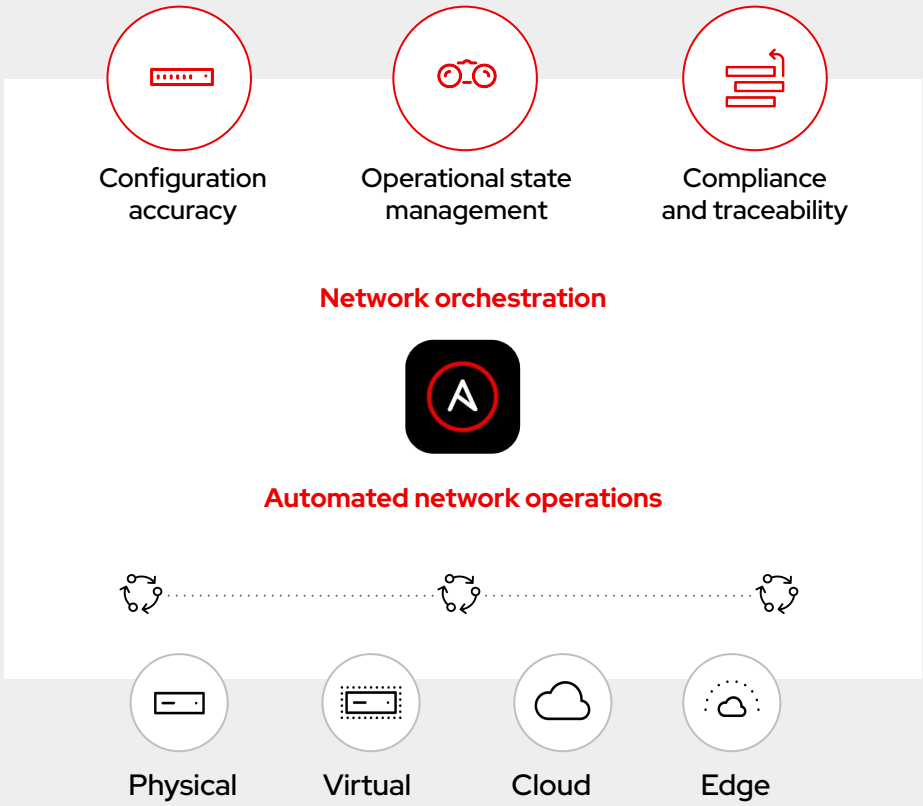
Threat hunting

Automating alerts, correlation searches, and signature manipulation

Incident response

Creating new security policies to whitelist, blacklist, or quarantine a machine

Ansible network automation. Next-gen network operations.



Configuration accuracy

- Config backup and restore
- Scoped configuration management

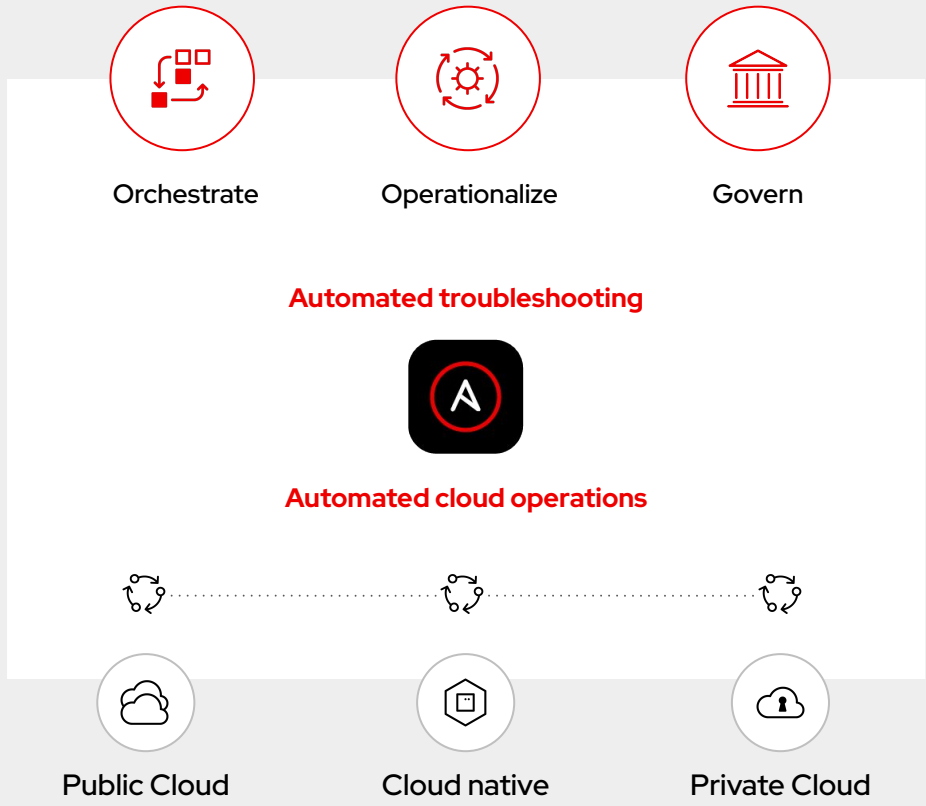
Operational state management

- Dynamic documentation
- Automated NetOps

Compliance and traceability

- Operational state validation
- Network compliance

Ansible hybrid cloud automation. Tame your clouds.



Orchestrate

- Deployment and retirement
- Infrastructure coordination
- Cloud migration

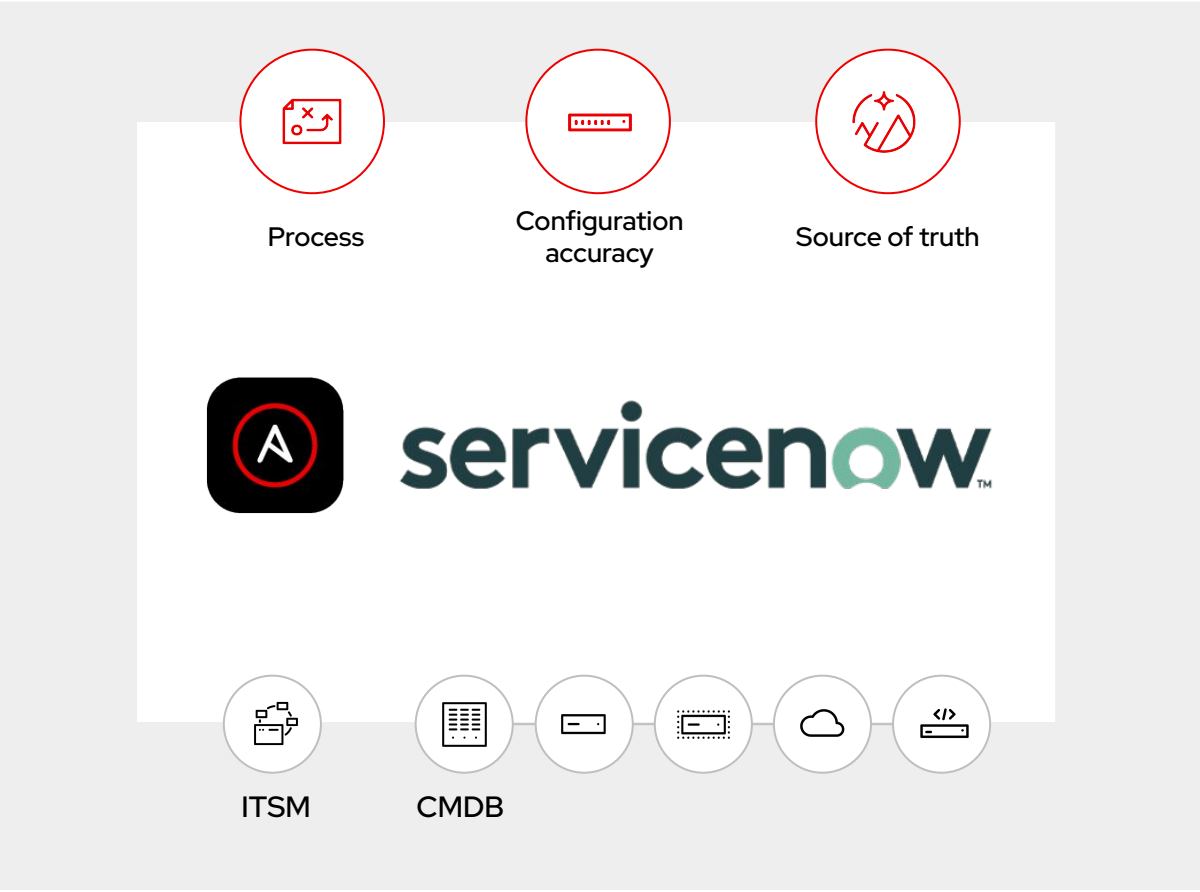
Operationalize

- Infrastructure visibility
- Cloud operations
- Automated troubleshooting

Govern

- Business continuity
- Cost management
- compliance

Ansible Automation Platform for ServiceNow solution.



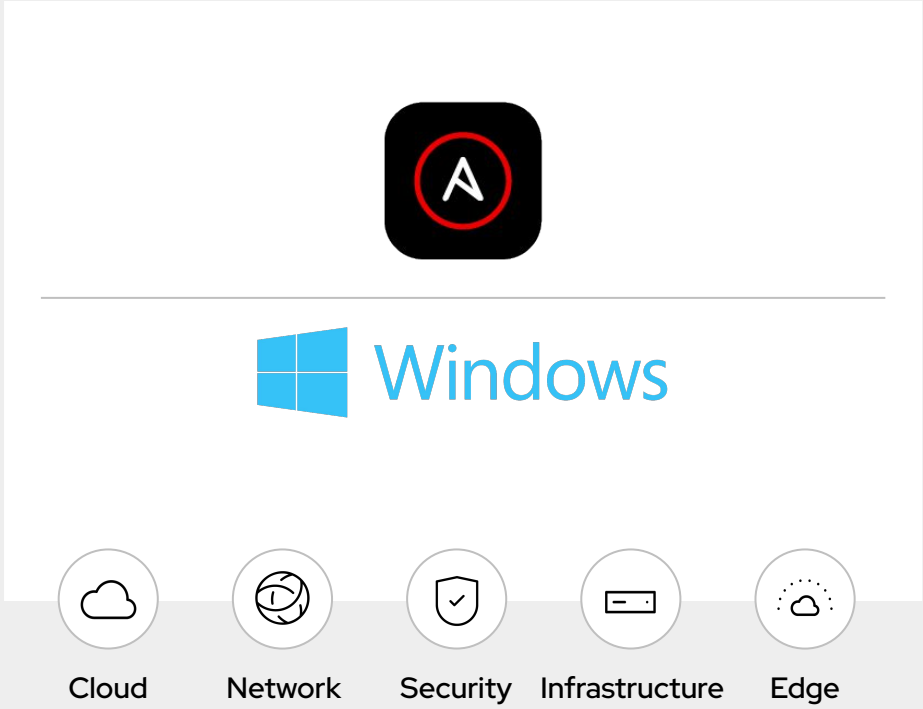
IT Service Management (ITSM)

- Create and update records
  - Incident, problem, problem task, change request
- Assign items to user accounts
- Attach files to records
- Advanced queries of record types
- Support for custom mappings (modified choice lists)

Configuration Management Database (CMDB)

- Advanced queries of configuration items
- Update configuration items after automated changes
- CMDB as inventory source for automation
- Batch modifications of configuration items

Ansible Automation Platform for Windows.



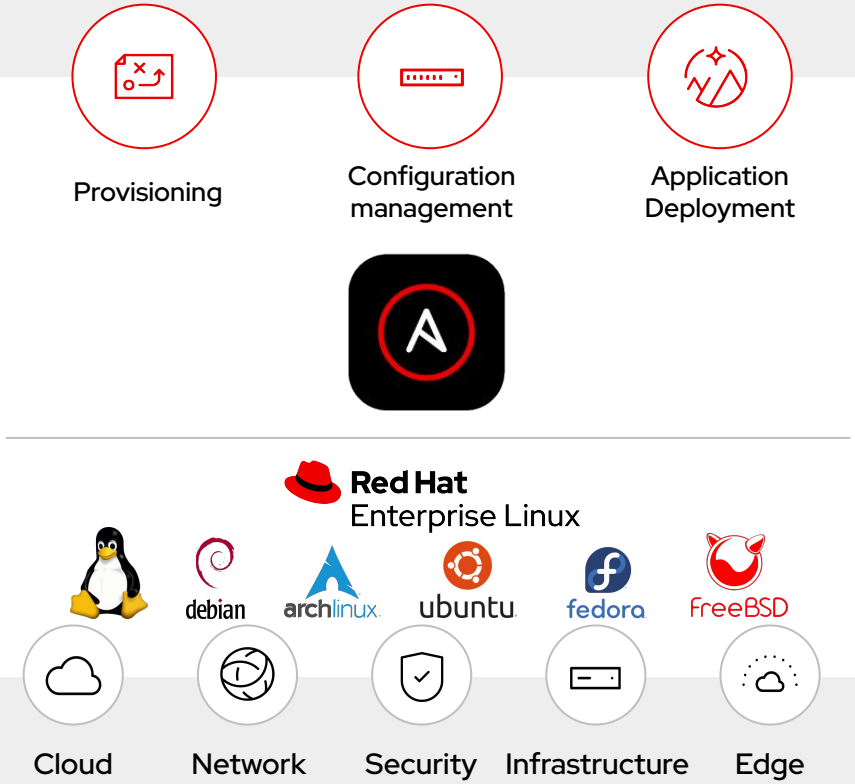
Day 1 configuration

- Install and uninstall MSIs, .exes
- Chocolatey package manager integration
- Start, stop, and manage Windows services
- Template and apply registry updates
- Flexible authentication support

Day 2 operations

- Manage and install Windows updates across reboots
- Create and manage local users
- Create and manage domain controller/member server state
- Manage certificates
- Fetch files from remote hosts
- Push and execute Powershell scripts
- Leverage Powershell DSC resources

Ansible Automation Platform for Linux.



Provisioning

- Work seamlessly with bare metal, virtualized and cloud infrastructure
- Easily patch, upgrade and maintain Linux servers
- Automation can handle reboots and ad-hoc changes

Configuration Management

- Built-in support for Linux file and user management
- Full integration of Jinja2 templating library
- Support for Idempotence across numerous Linux modules

Application Deployment

- Full support of dnf, yum and apt packaging tools
- Start, stop, and manage Linux services
- Check operational state and verify application deployments

Ansible Automation Platform for Red Hat OpenShift.

Infrastructure coordination

- Coordination of existing off-cluster IT infrastructure and services with cloud-native systems

Lifecycle management

- Automation of Red Hat OpenShift infrastructure and applications lifecycle management

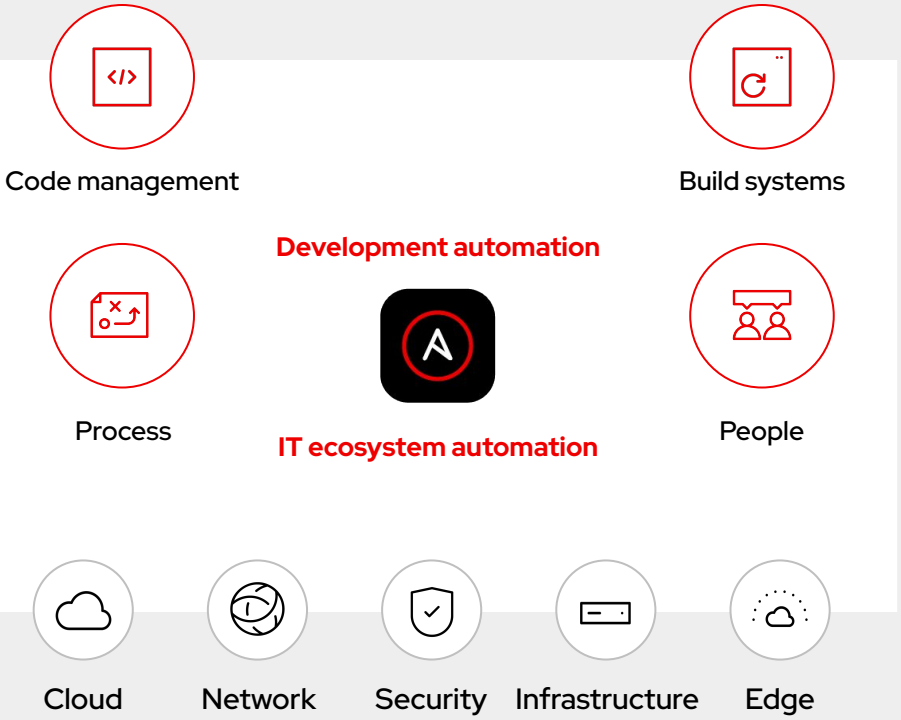
Day 2 configuration

- Repeatable “last mile” automation for Red Hat OpenShift cluster configuration and management

Business continuity

- End-to-end business continuity and disaster recovery (DR) automation of Red Hat OpenShift clusters

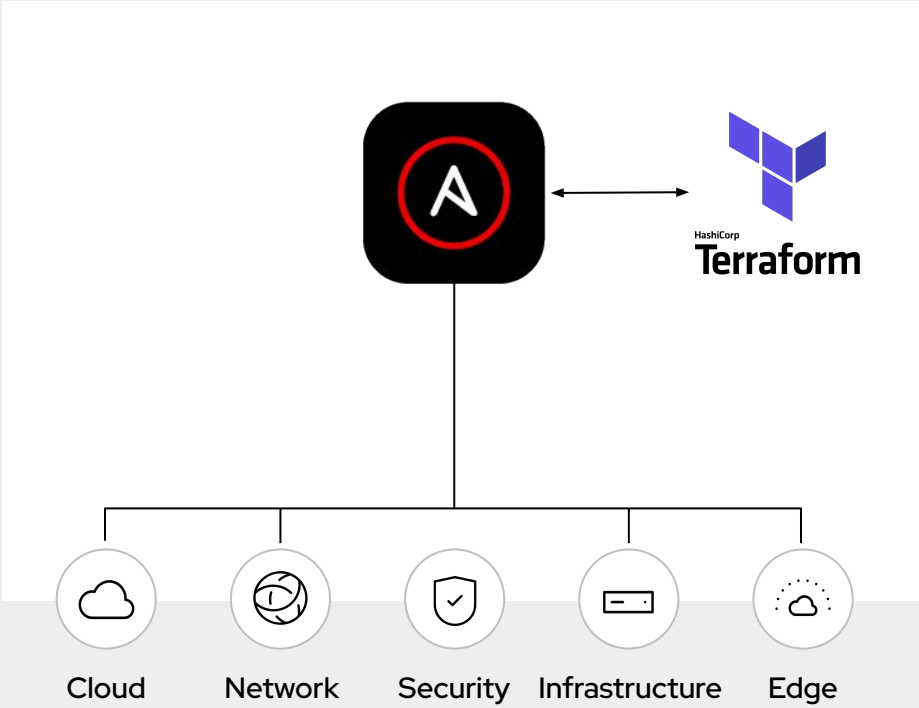
Ansible Automation Platform and DevOps.
Deliver consistently, reliably, and rapidly.



Accelerate DevOps throughout your IT ecosystem

- **Align to business goals** with outcome-based IT process automation.
- **Orchestrate and integrate** using the API and webhooks
- **Simple, pervasive automation language** used across the IT ecosystem.
- **Extend capabilities** using Ansible Content Collections.
- **Improve CI/CD security and governance** with approvals, auditing, and RBAC
- **Speed up development cycles** with consistent dev, test, and prod environments

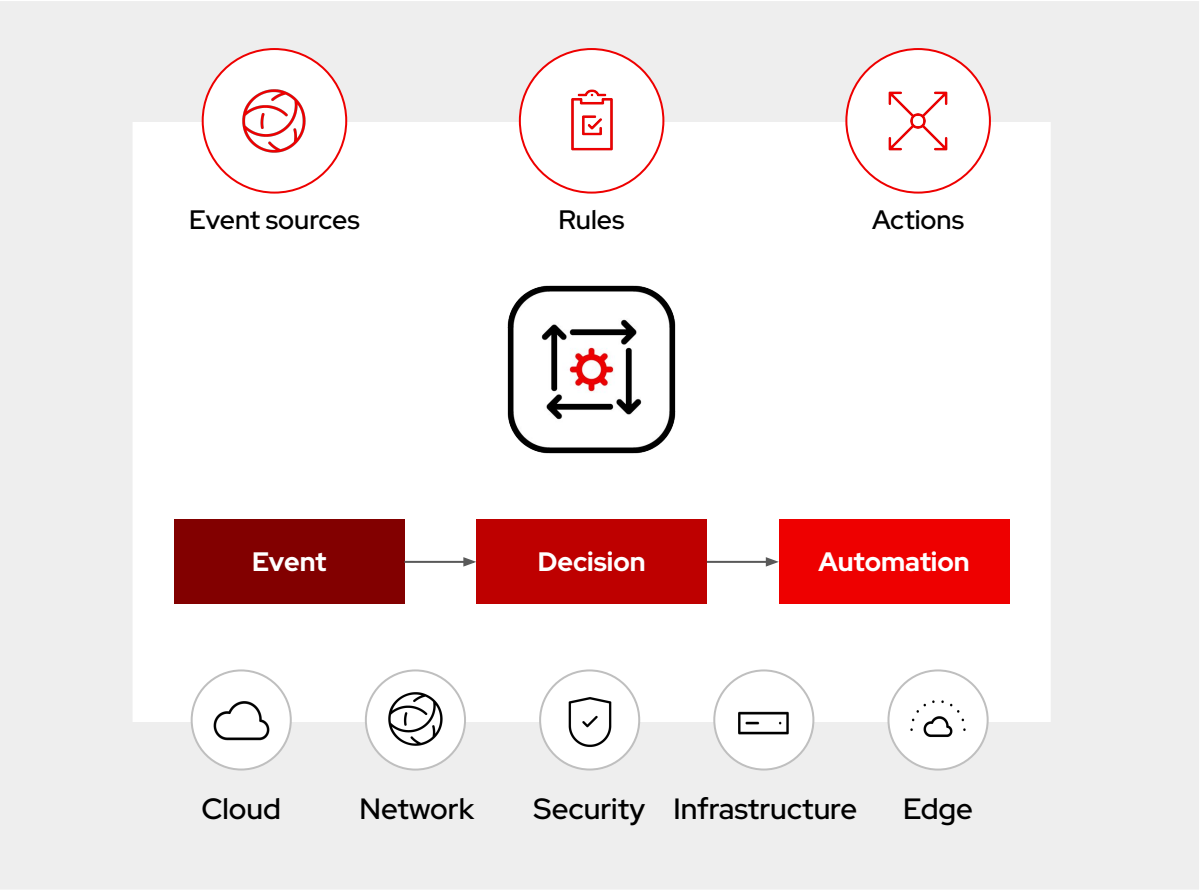
Everything as code. Everything is possible.



Infrastructure and configuration as code

- **Ansible creates** infrastructure manifests and triggers the provisioning and deprovisioning of infrastructure.
- **Dynamic inventory** management provides access to newly provisioned infrastructure without manual intervention.
- **Combine tool chains** to deliver infrastructure as code and configuration as code. Allowing for complete management of infrastructure life cycles with post-provisioning tasks.

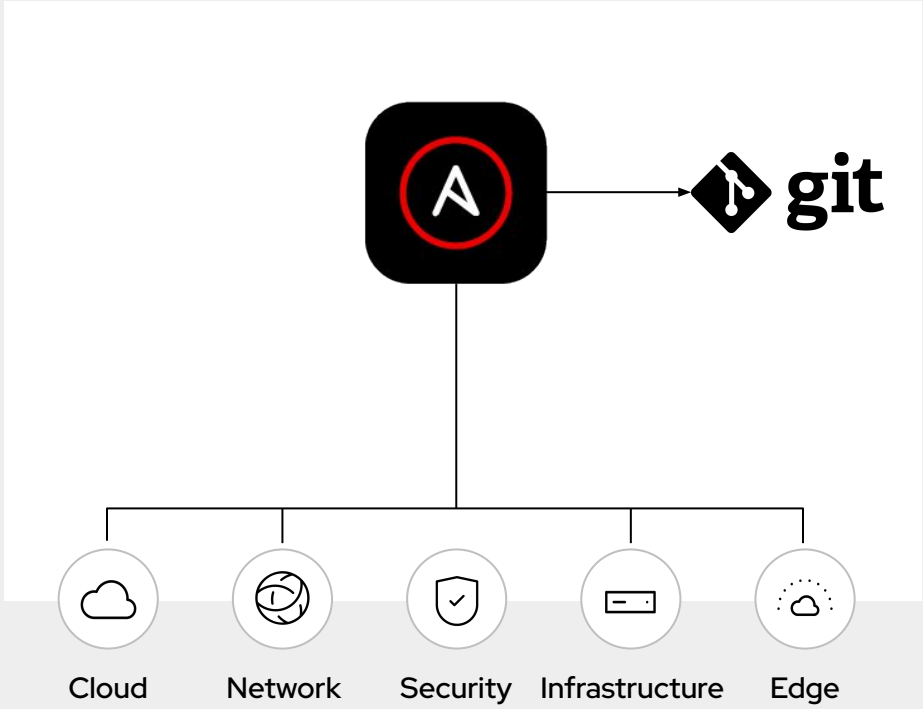
Event-Driven Ansible. Observe Evaluate Automate



Remediation and Observation from events

- **Source** plugins provide Event-Driven Ansible the ability to listen for events which can be processed through rulebooks.
- **Rules** in the form of Rulebooks allow us to create event conditions which once met will trigger an action.
- **Actions** give us the ability to trigger playbooks, modules, notifications and further event triggers based on the conditions that have been met by a specific event.

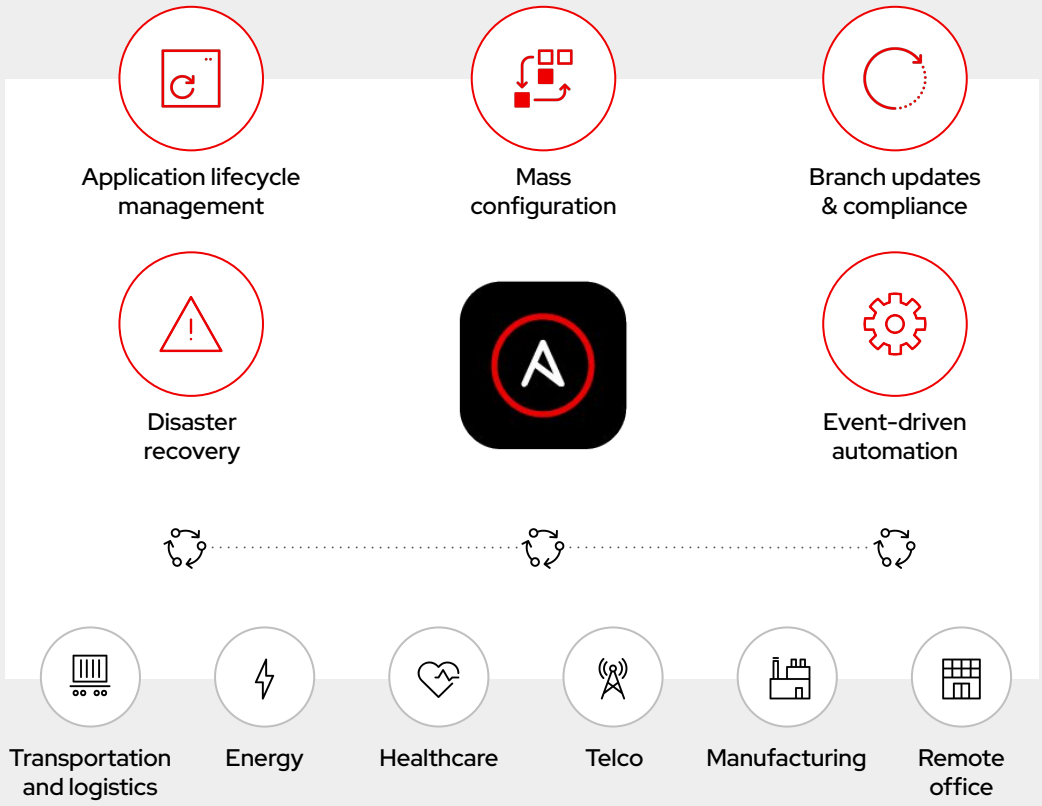
GitOps. IaC, merge requests, and CI/CD.



Ansible Automation Platform and GitOps

- **GitOps** is a framework that uses Git repositories as a single source of truth (SoT) to deliver infrastructure as code.
- **Infrastructure as Code (IaC)** is stored within a Git repositor as the SoT.
- **Merge Requests (MRs)** is the change mechanism for any updates to the infrastructure.
- **Continuous Integration/Continuous Delivery (CI/CD)** automates the infrastructure updates.
- **Ansible triggers and automates** the IaC updates via Ansible workflows while acting as a CI/CD tool and providing complete management of the entire lifecycle day-2 operations.

Automating edge enterprise use cases.



Why Ansible for Automation at the Edge?

- **Automate scale and complexity** with a consistent platform from the datacenter to the edge across heterogeneous estates
- **Facilitates IT/OT convergence**
- **Provides predictability and repeatability** to automate anything with programmatic API or Linux OS

Where to go next

Learn more

- Workshops
- Documents
- Youtube
- Twitter

Get started

- Self-paced labs
- Evals
- console.redhat.com

Get serious

- Red Hat Automation Adoption Journey
- Red Hat Training
- Red Hat Consulting

Thank you

Red Hat is the world's leading provider of enterprise open source software solutions. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500.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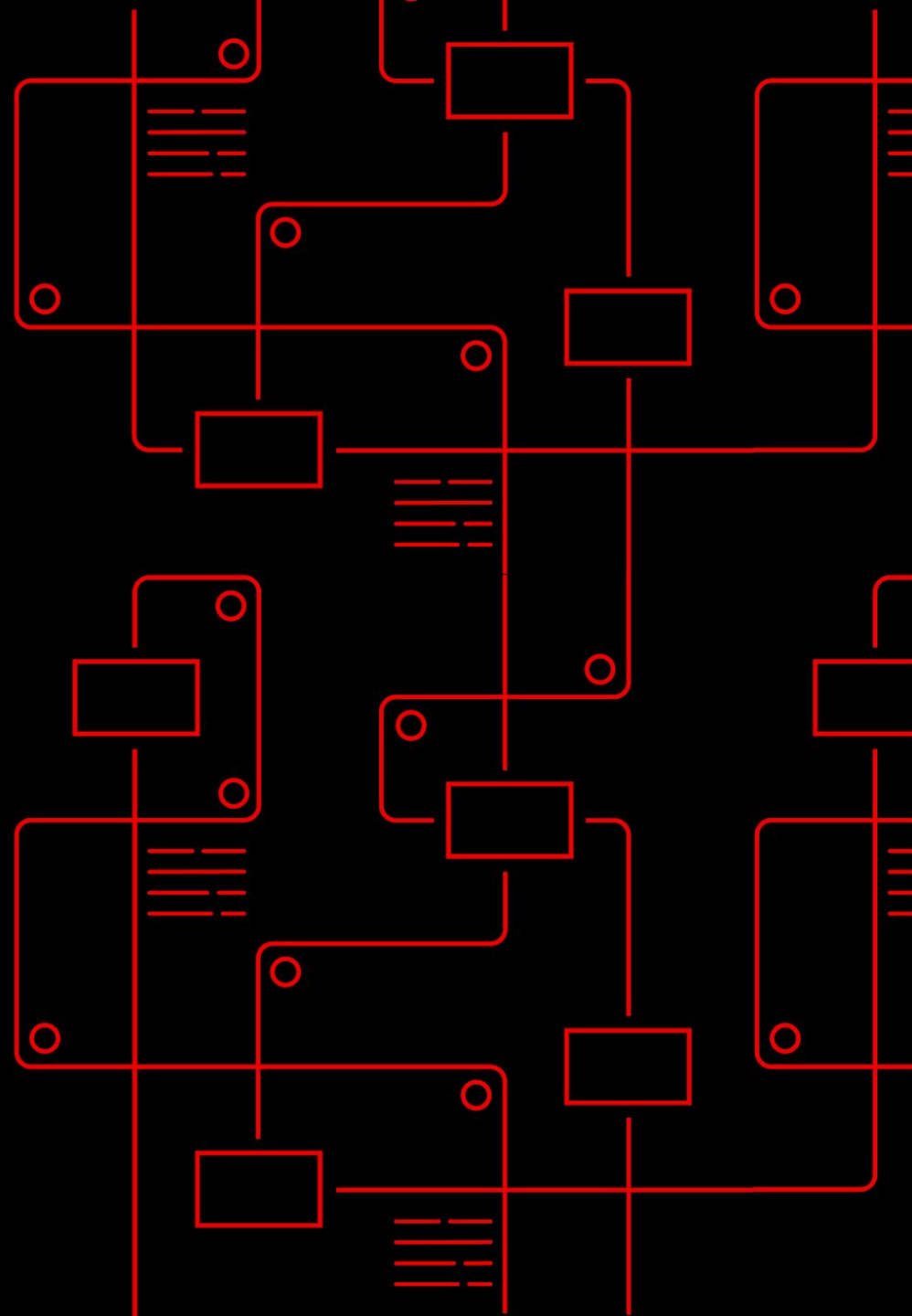
Appendix:

Alternate playbook example slides (colors adjusted for accessibility)



Ansible playbooks

```
---
- name: Install and start apache
  hosts: web
  become: true

  tasks:
    - name: Ensure the httpd package is installed
      ansible.builtin.yum:
        name: httpd
        state: present

    - name: Create the index.html file
      ansible.builtin.template:
        src: files/index.html
        dest: /var/www/html/

    - name: Start the httpd service if needed
      ansible.builtin.service:
        name: httpd
        state: started
```

Ansible plays. What am I automating?

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

```
---
- name: Ensure the httpd package is installed
  hosts: web
  become: true
```

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 created in Python, or Powershell for Windows setups, but can be developed in any language

```
- name: Create the index.html file
  ansible.builtin.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

Example become plugin:

```
---
- name: Install and start apache
  hosts: web
  become: true
```

Example filter plugins:

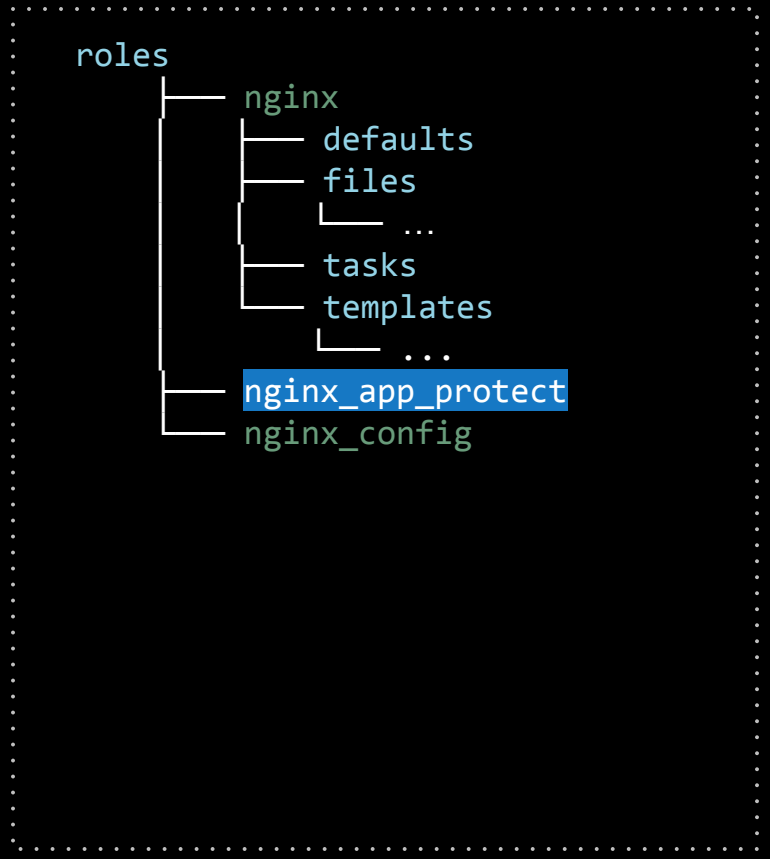
```
{{ some_variable | to_nice_json }}
{{ some_variable | to_nice_yaml }}
```

Ansible Roles. Reusable automation actions.

What are they?

- Group 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

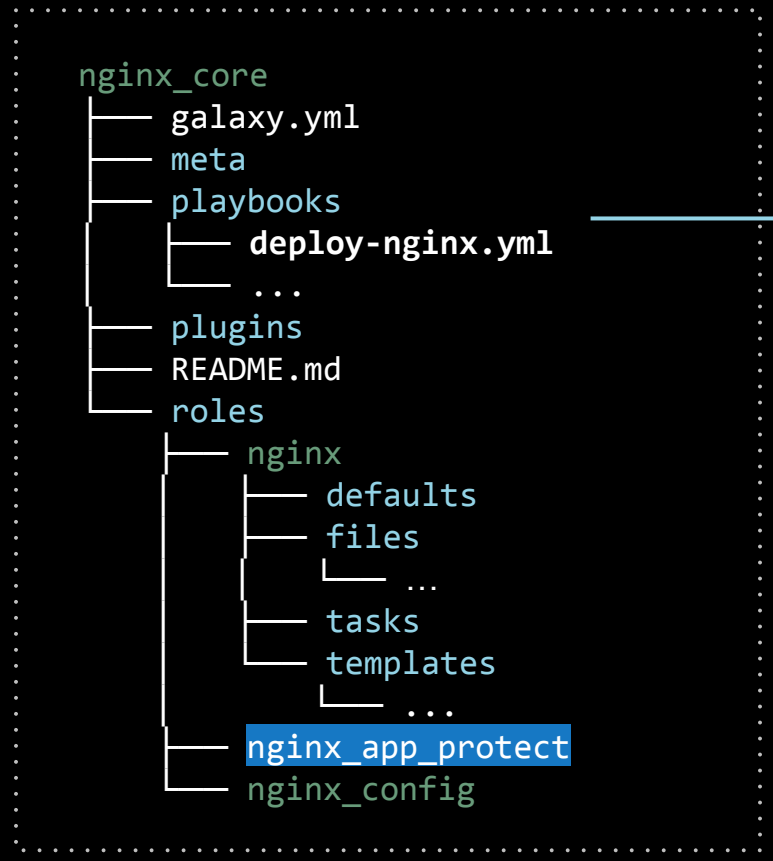
```
---
- name: Install and start apache
  hosts: web
  ansible.builtin.roles:
    - common
    - webservers
```



deploy-nginx.yml

```
---
- name: Install NGINX Plus
  hosts: all
  tasks:

    - name: Install NGINX App Protect
      ansible.builtin.include_role:
        name: nginx_app_protect
      vars:
        nginx_app_protect_setup_license: false
        nginx_app_protect_remove_license: false
        nginx_app_protect_install_signatures: false
```



deploy-nginx.yml

```yaml
---
- name: Install NGINX Plus
  hosts: all
  tasks:
    - name: Install NGINX
      ansible.builtin.include_role:
        name: nginxinc.nginx
      vars:
        nginx_type: plus

    - name: Install NGINX App Protect
      ansible.builtin.include_role:
        name: nginxinc.nginx_app_protect
      vars:
        nginx_app_protect_setup_license: false
        nginx_app_protect_remove_license: false
        nginx_app_protect_install_signatures: false
```