

Ansible Automation Platform 360 Degrees View

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Senior Solution Architect
| Red Hat



Karoly "Charlie" Vegh

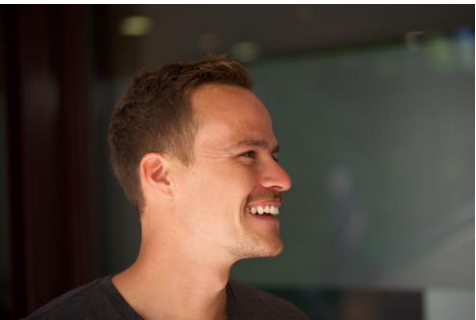
Solution Architect, Linux and
Automation | Red Hat



About



apiVersion: redhat.io/v30
kind: **SolutionArchitect**
metadata:
 name: **dominik-hahn**
 namespace: switzerland
 annotations:
 specialized: openshift, ansible, rhel
 labels:
 sport: kitesurf,wakeboard,motorcycle
spec:
 replicas: 1
 containers:
 - image: kubeadm.ch/dominik:latest



apiVersion: redhat.io/v42
kind: **SolutionArchitect**
metadata:
 name: **karoly-charlie-vegh**
 namespace: austria
 annotations:
 specialized: ansible, rhel, insight
 labels:
 freetime: gaining and losing weight,e- bass
spec:
 replicas: 1
 containers:
 - execution_environment:
 github.com/kvegh



What we will discuss today:

Automation:

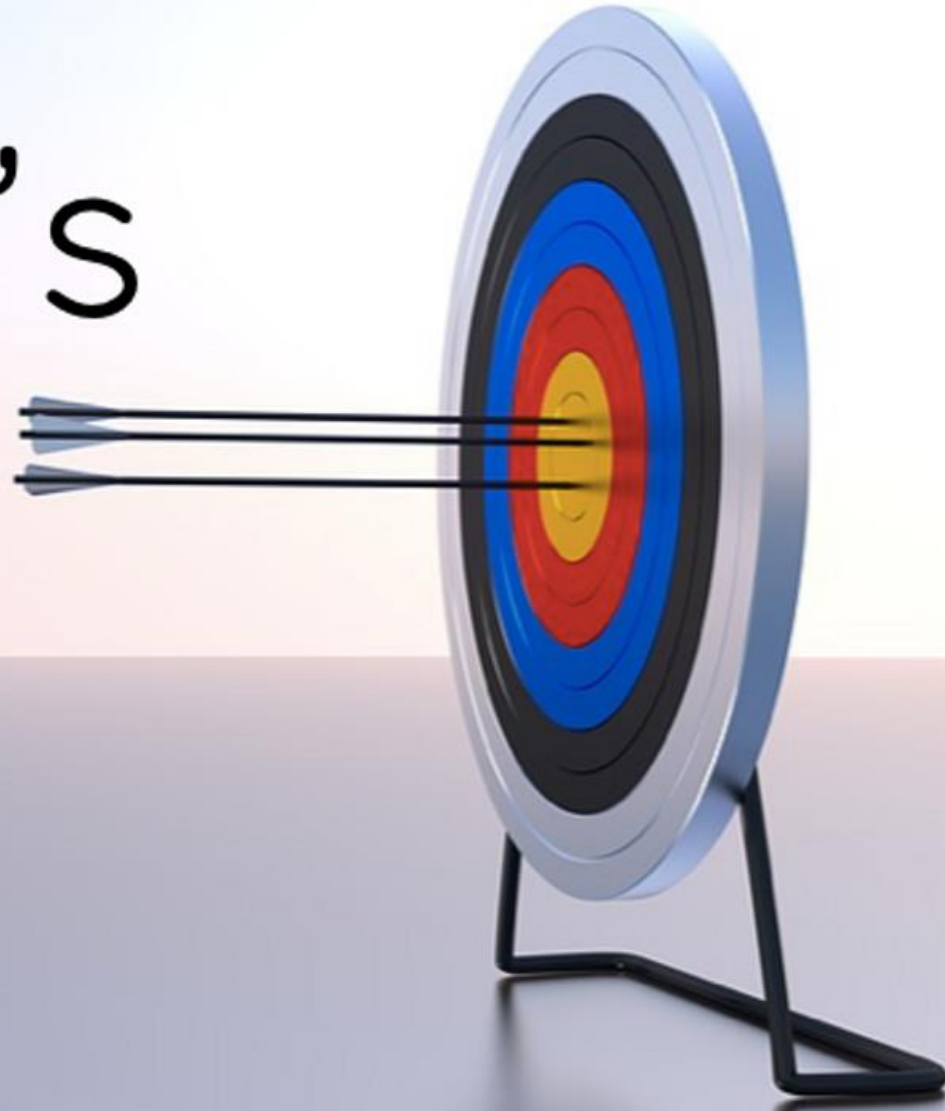
- ▶ The WHY
- ▶ The HOW
- ▶ The WHAT

About the **WHY**

...we automate, sure!



What's
the
Goal?



The goals we can aim for

What are we trying to achieve?

- Efficiency - a boring, but absolutely relevant goal
- Infrastructure as Code

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- **Validation of Running Configurations**

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- **Integration with ITSM**

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 - **Security Compliance automation**

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-
- **Integration with ITSM**
 - **Security Compliance automation**
 - **AIOps**

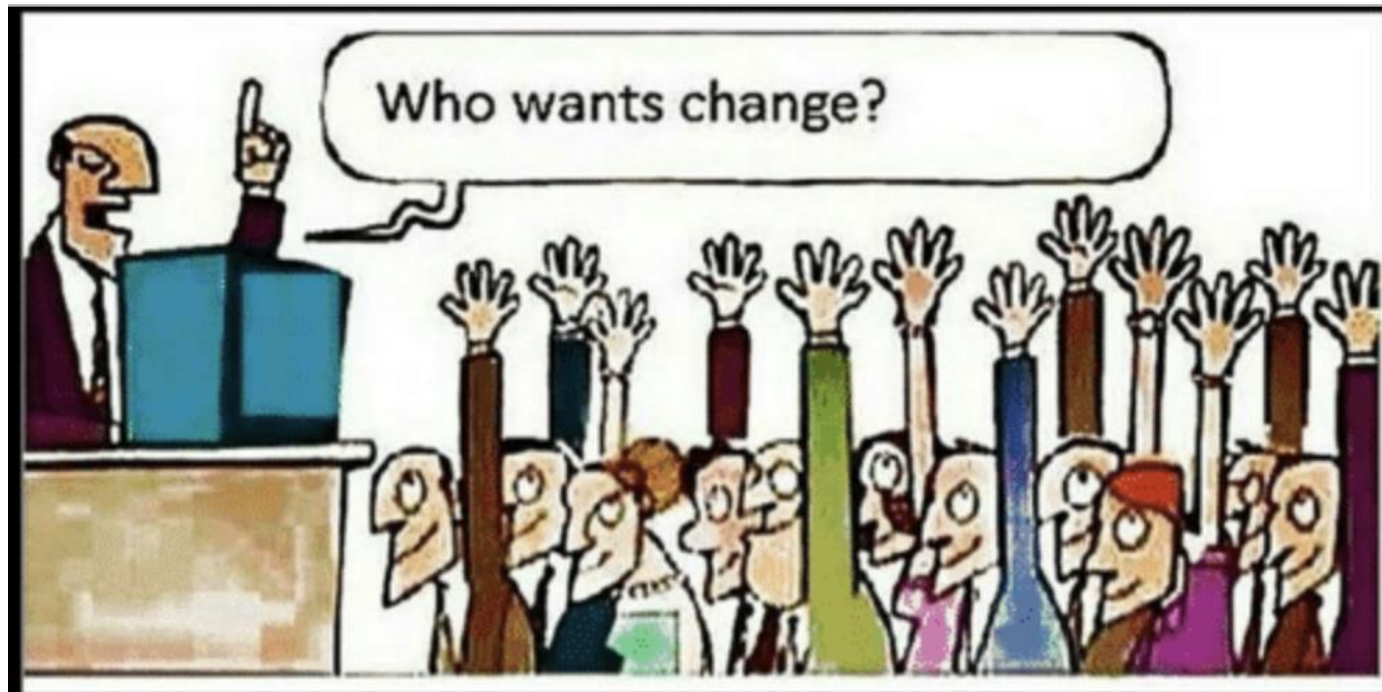
The goals we can aim for

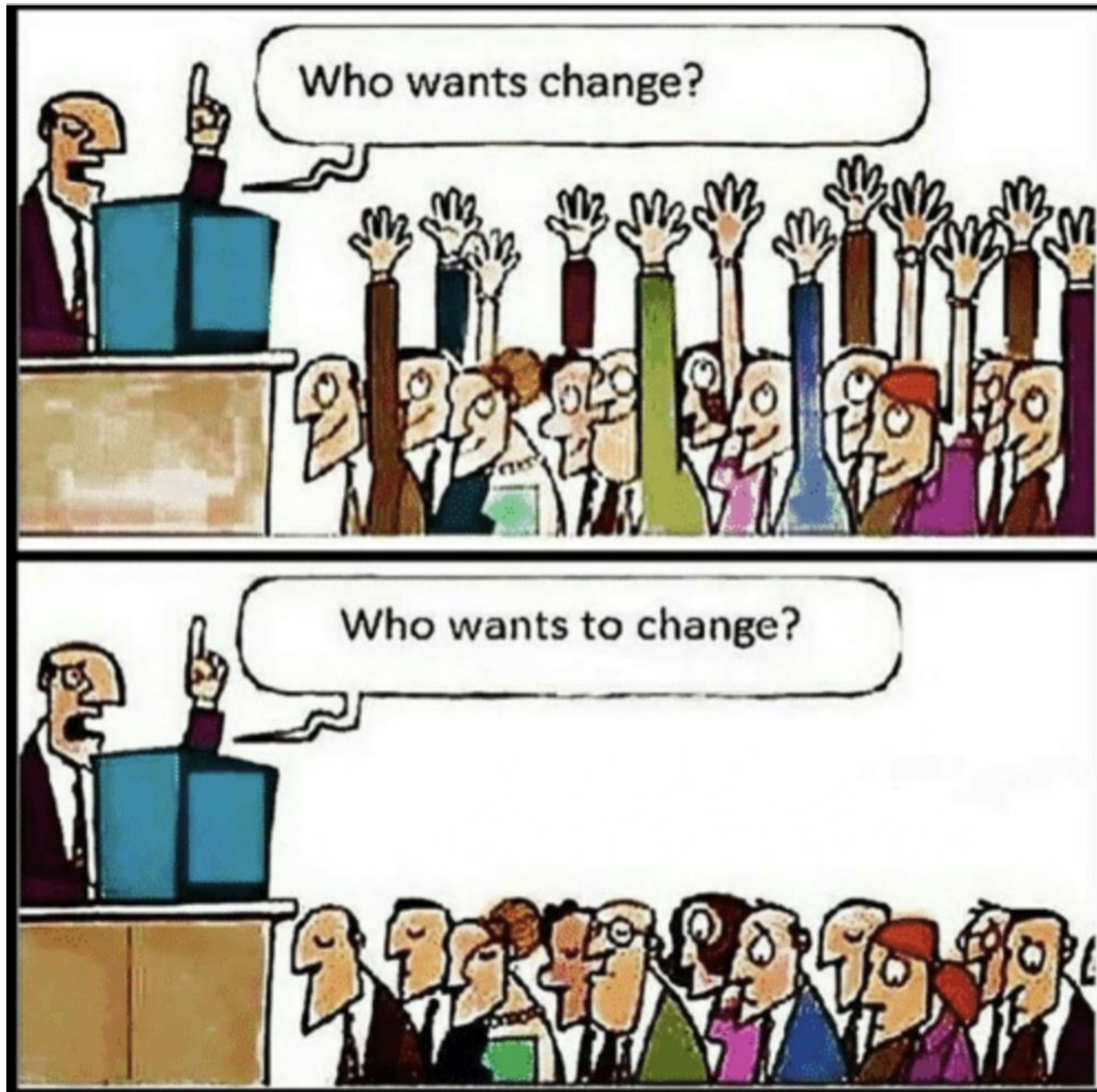
What are we trying to achieve?

- Efficiency - a boring, but absolutely relevant goal
- Infrastructure as Code
- **Validation of Running Configurations**
- **Services of Teams provided for self-service consumption**
- **Cross-Team Workflows**
- Collaboration
- Reduce Human Errors, Increase Reliability and Reproducibility
- Automatic documentation of the infrastructure
- **Integration with ITSM**
- **Security Compliance automation**
- **AIOps**
- Auto remediation
- Ansible as a Service for SW deployment (SPUDS)
- Ansible on Z

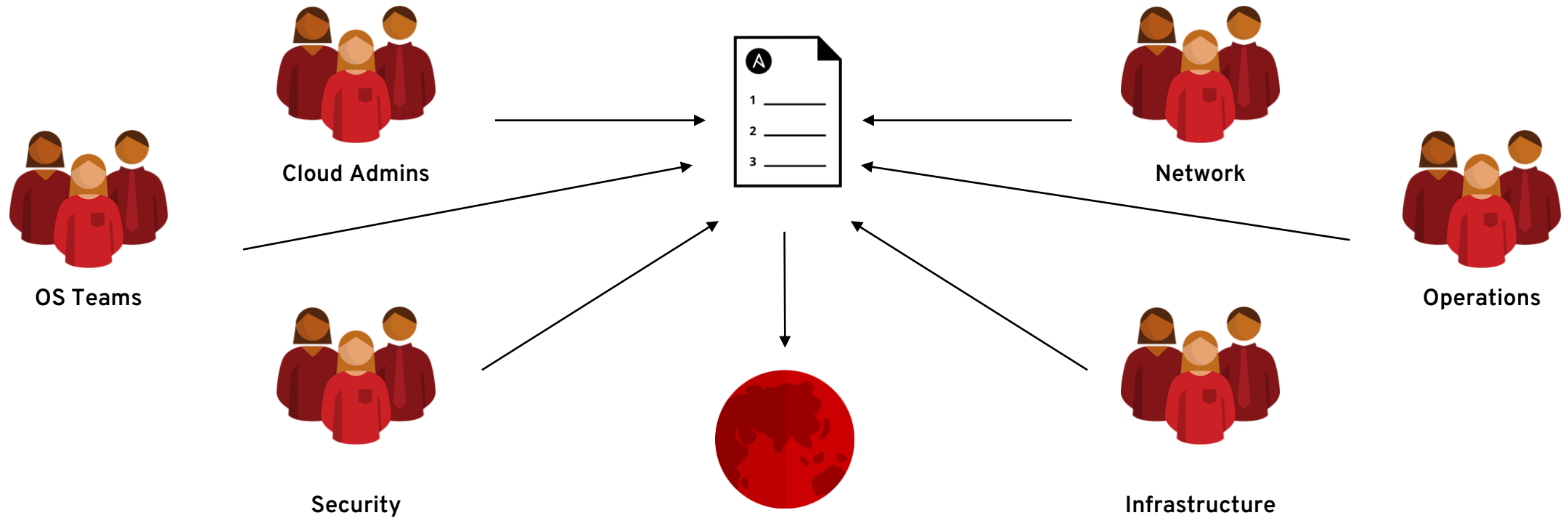
About the **HOW**

Automation is a CHANGE





When automation crosses teams, you need an automation platform



So, **HOW** shall we automate?

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- As a **standard approach** for every IT Task

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- Across Teams

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- With everyone **involved**

So, **HOW** shall we automate?

- As a **standard approach** for every IT Task
- Across Teams
- With everyone **involved**
- With **clear goals** to pursue

About the **WHAT**

WHAT are the right **Use Cases** to start with?

Technologies well supported
by Ansible

Technologies implemented in
the corporate platform



The SWEET SPOT
The LOW HANGING FRUITS
The QUICK WINS

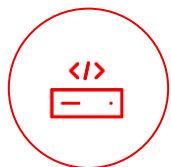
Supported and certified **content you can trust.**

130+

Certified Content Collections

55+

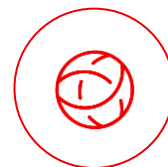
Certified technology partners



Infrastructure



Cloud



Network



Security



Edge



Activities Firefox Do, 27. Okt 14:46 85%

















Automation Hub | console x +

https://console.redhat.com/ansible/automation-hub/partners

Red Hat Hybrid Cloud Console All apps and services Karoly Vegh

Ansible Automation Platform

- Overview
- Automation Hub
 - Collections
 - Partners**
 - Repo Management
 - Task Management
 - Connect to Hub
- Automation Analytics
- Documentation
- Red Hat Insights
- Inventory
- Advisor
- Drift
- Policies
- Register Systems
- Remediations

 A10 Networks a10 View collections	 Amazon amazon View collections	 Red Hat Ansible ansible View collections	 ARISTA Arista arista View collections
 Aruba arubanetworks View collections	 Microsoft azure View collections	 Check Point check_point View collections	 chocolatey chocolatey View collections
 Cisco cisco View collections	 Citrix citrix View collections	 cloud cloud View collections	 COHESITY Cohesity cohesity View collections
 Confluent confluent	 CrowdStrike Inc. crowdstrike	 cumulusnetworks cumulusnetworks	 CyberArk cyberark

Feedback

Supported and certified content you can trust.

Find the list of certified Ansible Collections on the Customer Portal:

<https://access.redhat.com/articles/3642632>



10



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Ansible Automation Platform Certified Content

Updated October 11 2022 at 12:16 PM - English

Beginning with Ansible 2.9, the Ansible Content Collection subsystem was included as fully supported by Red Hat, and the following certified content should be using this packaging format and distributed via Ansible Automation Hub.

Certified content may be downloaded and installed from two different delivery locations:

- [Ansible Automation Hub](#)
 - Ansible 2.9 and newer, contains Collections
- The legacy Ansible distribution
 - Ansible 2.9 and older, contains Modules only

NOTES:

- Ansible Automation Hub requires a valid Red Hat Ansible subscription for access.
- A subset of the certified collections below are developed, tested, built, delivered, and supported by Red Hat. Additional supportability claims for these collections may be provided under the "Maintained and Supported By" column below for more information.
- For issues that involve **both** Red Hat, and a third party (see the "Maintained and Supported By" column below), when opening a case with Red Hat, it is require to have a ticket with said third party as well, as that is a requirement for Red Hat to collaborate with partner through [TSANet](#). For more information consult the "Collaboration between partners" section of [Best practices for engaging with Red Hat Support](#).

Certified Content in Ansible Automation Hub

Entity	Collection Name	Description	Maintained and Supported By	2.9 Certified	2.11 Certified
Amazon	amazon.aws	Amazon AWS	Red Hat Ansible	✓	✓
Ansible	ansible.netcommon	Ansible Netcommon	Red Hat Ansible	✓	✓
Ansible	ansible.network	Ansible Network	Red Hat Ansible	✓	✓
Ansible	ansible.posix	Ansible Posix	Red Hat Ansible	✓	✓
Ansible	ansible.security	Ansible Security	Red Hat Ansible	✓	✓
Ansible	ansible.controller	Ansible Controller	Red Hat Ansible	✓	✓

Couple of examples.

Example I:

Use Case: Virtualization with VMWare

Goal: Consumable VM Deployment Service

Step 1: Find the certified VMWare Ansible Collection on the Automation Hub:



Certified



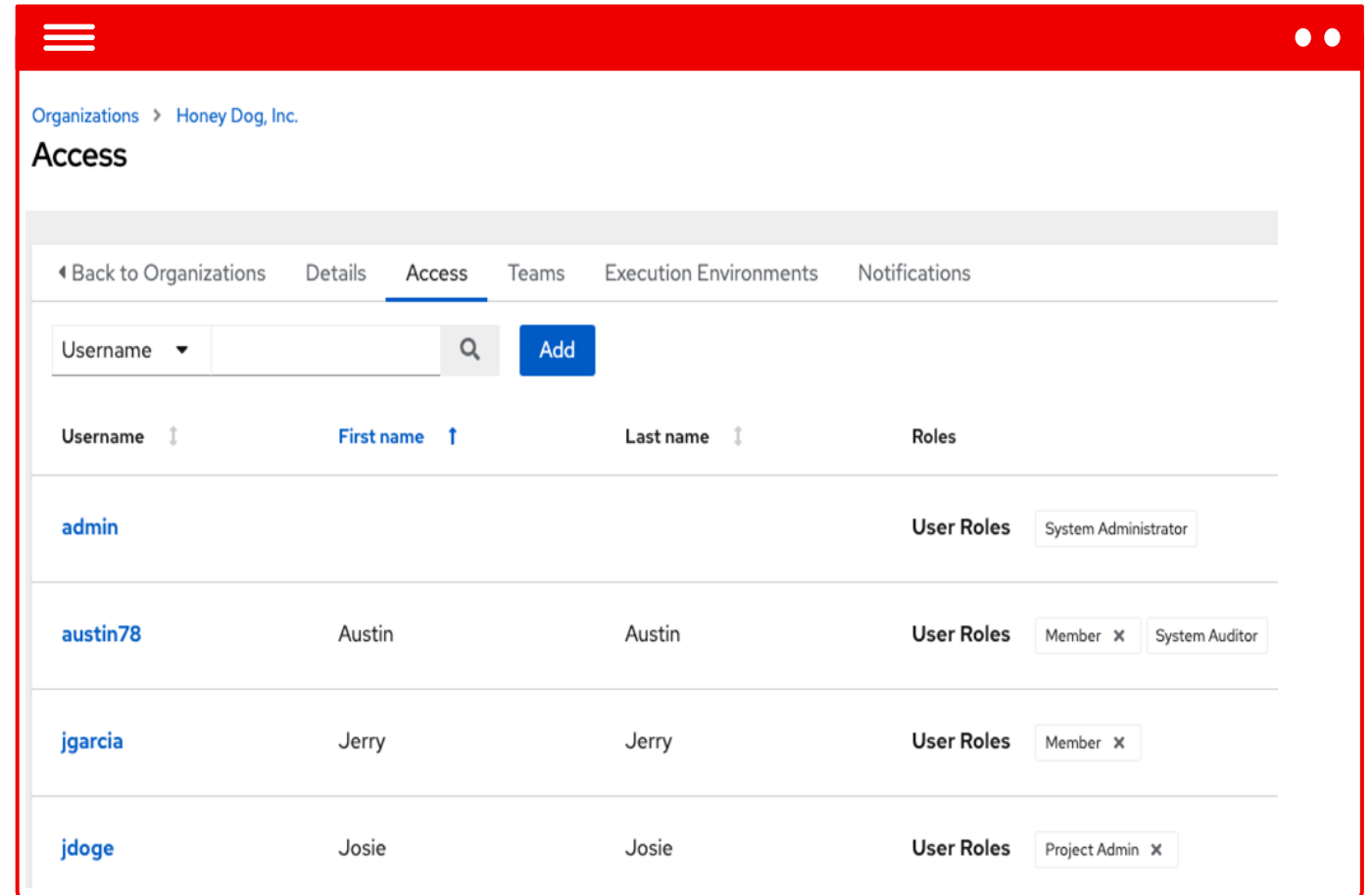
vmware_rest

Provided by vmware

vcenter_vm	module	Creates a virtual machine.
vcenter_vm_guest_customization	module	Applies a customization specification on the virtual machine
vcenter_vm_guest_filesystem_directories	module	Creates a directory in the guest operating system
vcenter_vm_guest_identity_info	module	Return information about the guest.
vcenter_vm_guest_localfilesystem_info	module	Returns details of the local file systems in the guest operating system.
vcenter_vm_guest_power	module	Issues a request to the guest operating system asking it to perform a soft shutdown, standby (suspend) or soft reboot
vcenter_vm_guest_networking_info	module	Returns information about the network configuration in the guest operating system.
vcenter_vm_guest_networking_interfaces_info	module	Returns information about the networking interfaces in the guest operating system.
vcenter_vm_guest_networking_routes_info	module	Returns information about network routing in the guest operating system.
vcenter_vm_guest_operations_info	module	Get information about the guest operation status.
vcenter_vm_guest_power_info	module	Returns information about the guest operating system power state.

Step 2:

- Automate the VM provisioning job
- Use the Automation Controller's **RBAC** to provide access to it for other teams



The screenshot shows the 'Access' page in the Ansible Automation Controller interface for the organization 'Honey Dog, Inc.'. The page has a red header with a hamburger menu icon on the left and window control icons on the right. Below the header, the breadcrumb 'Organizations > Honey Dog, Inc.' is visible, followed by the title 'Access'. A navigation bar contains links for 'Back to Organizations', 'Details', 'Access' (which is underlined), 'Teams', 'Execution Environments', and 'Notifications'. Below the navigation bar is a search bar with a dropdown menu labeled 'Username', a search icon, and an 'Add' button. The main content area is a table with columns for 'Username', 'First name', 'Last name', and 'Roles'. The table lists four users: 'admin' (System Administrator), 'austin78' (Austin Austin, Member and System Auditor), 'jgarcia' (Jerry Jerry, Member), and 'jdoge' (Josie Josie, Project Admin).

Username	First name	Last name	Roles
admin			System Administrator
austin78	Austin	Austin	Member x System Auditor
jgarcia	Jerry	Jerry	Member x
jdoge	Josie	Josie	Project Admin x

Example II:

Use Case: Network: Cisco/Juniper/Arista config

Goal: Configuration Validation

Step 1: Find the certified **Cisco/Juniper/Arista** Ansible Collection on the Automation Hub:



junos

Provided by junipernetworks

Ansible Network Collection for Junipernetworks Junos



Certified



ios

Provided by Cisco

Ansible Network Collection for Cisco IOS devices.

ARISTA

Certified



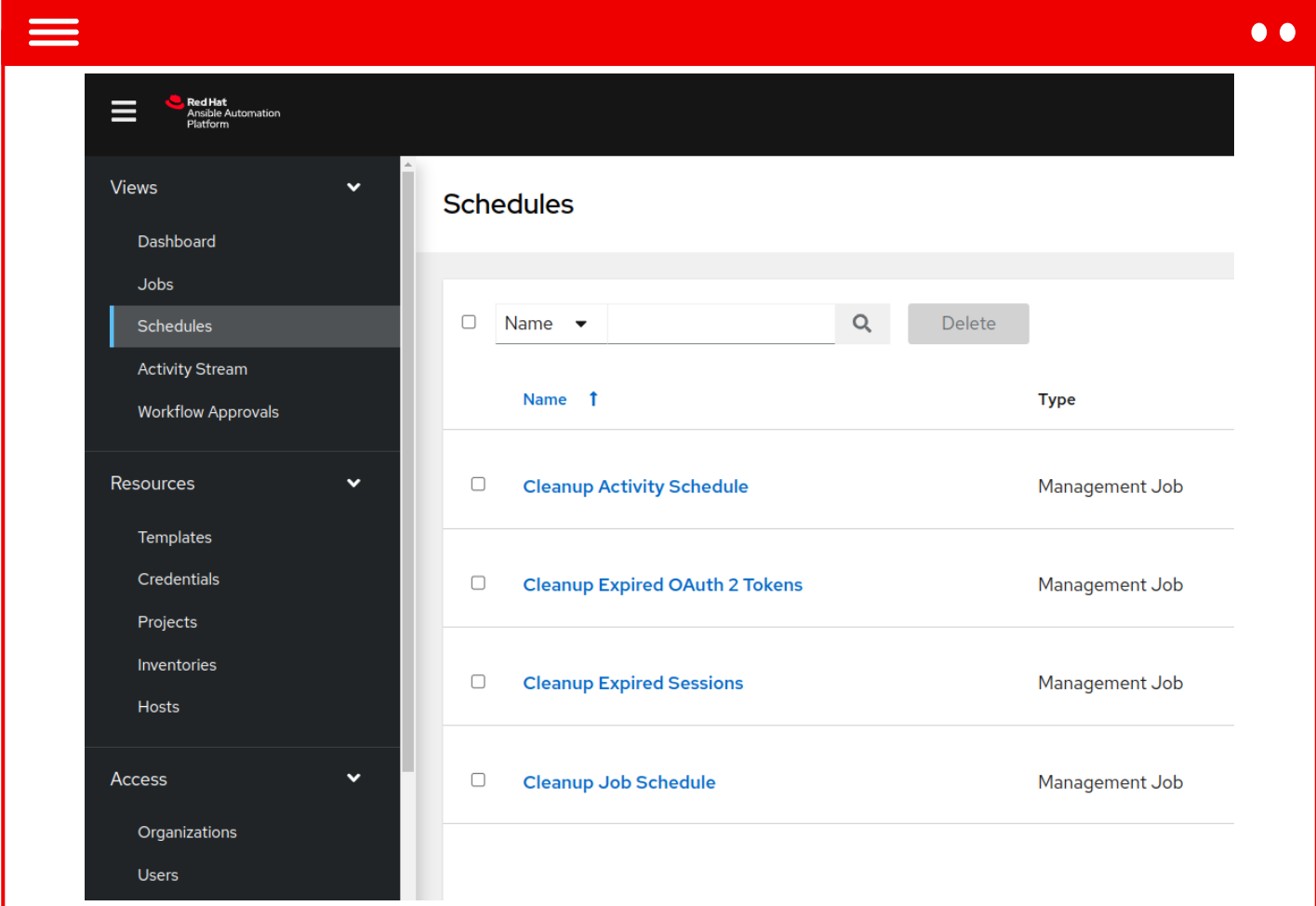
eos

Provided by Arista

Ansible Network Collection for Arista EOS devices.

Step 2:

- Automate the network configuration job
- Use the Automation Controller's **Scheduler** and **Check Mode** to do dry-run checks



The screenshot shows the Red Hat Ansible Automation Platform interface. The left sidebar is dark grey with a menu structure. The main content area is white and displays the 'Schedules' page. At the top of the sidebar, there is a 'Views' section with options: Dashboard, Jobs, Schedules (highlighted), Activity Stream, and Workflow Approvals. Below this is a 'Resources' section with options: Templates, Credentials, Projects, Inventories, and Hosts. At the bottom is an 'Access' section with options: Organizations and Users. The main content area has a search bar with a 'Name' dropdown, a search icon, and a 'Delete' button. Below the search bar is a table with two columns: 'Name' and 'Type'. The table contains four rows of scheduled jobs, each with a checkbox on the left.

Name	Type
<input type="checkbox"/> Cleanup Activity Schedule	Management Job
<input type="checkbox"/> Cleanup Expired OAuth 2 Tokens	Management Job
<input type="checkbox"/> Cleanup Expired Sessions	Management Job
<input type="checkbox"/> Cleanup Job Schedule	Management Job

Example III:

Use Case: Azure: AD User management

Goal: ITSM Integration

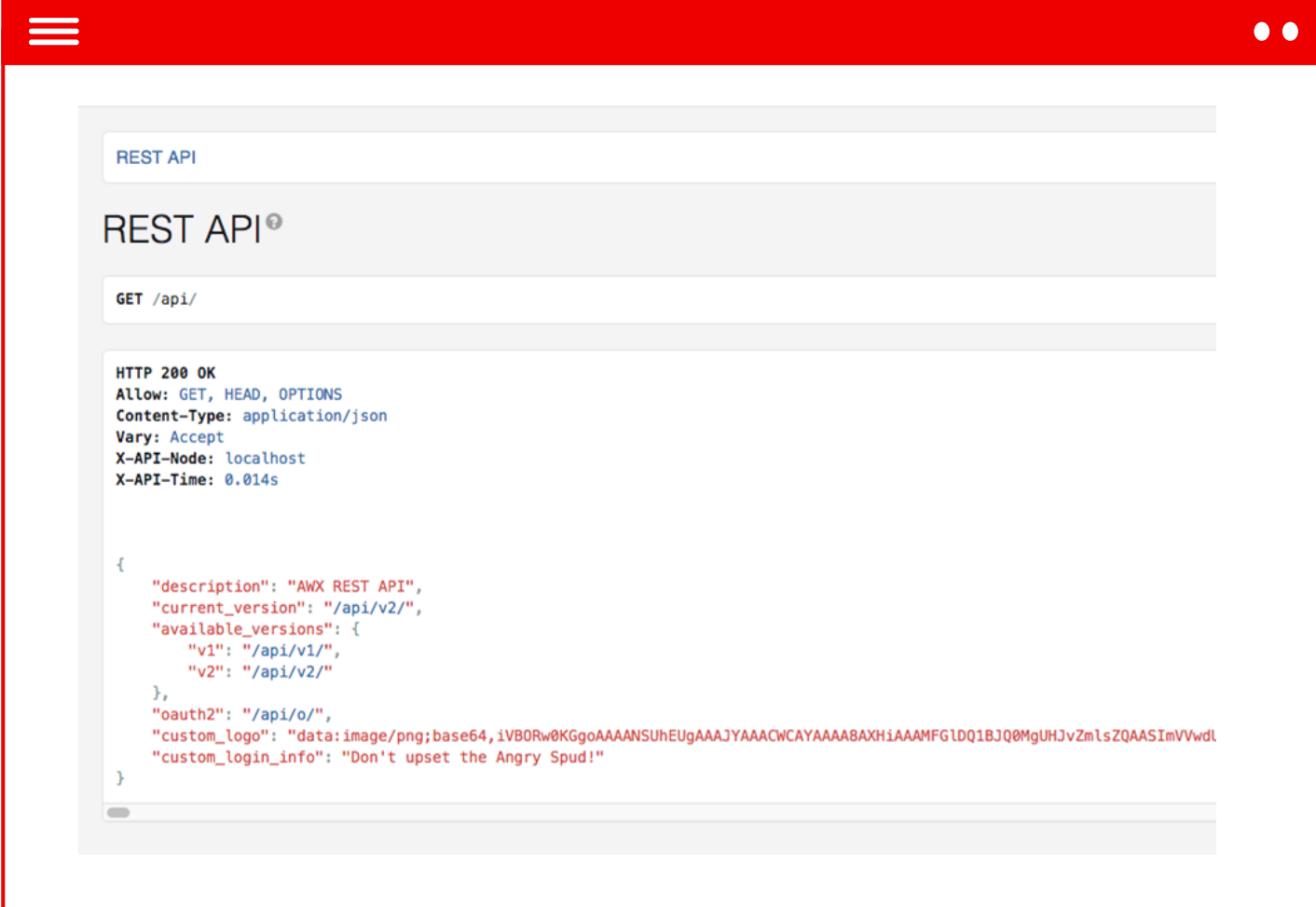
Step 1:

- Use the certified Azure Ansible collection from the Automation HUB to Automate the Azure AD User creation job

azure_rm_sqlserver	module	Manage SQL Server instance
azure_rm_virtualhub	module	Manage Azure VirtualHub instance
azure_rm_galleryimage_info	module	Get Azure SIG Image info
azure_rm_trafficmanagerprofile	module	Manage Azure Traffic Manager profile
azure_rm_devtestlabpolicy_info	module	Get Azure DTL Policy facts
azure_rm_cognitivesearch_info	module	Get Azure Cognitive Search service info
azure_rm_notificationhub	module	Manage Notification Hub
azure_rm_manageddisk_info	module	Get managed disk facts
azure_rm_ddosprotectionplan	module	Manage DDoS protection plan
azure_rm_devtestlabenvironment	module	Manage Azure DevTest Lab Environment instance
azure_rm_devtestlabartifactsource	module	Manage Azure DevTest Labs Artifacts Source instance
azure_rm_webappvnetconnection	module	Manage web app virtual network connection
azure_rm_subnet_info	module	Get Azure Subnet facts

Step 2:

- Use the Automation Controller's **API** to provide the ITSM tool with access to trigger that job



The screenshot shows a REST API client interface with a red header bar. The main content area displays the following information:

```
REST API

REST API ⓘ

GET /api/

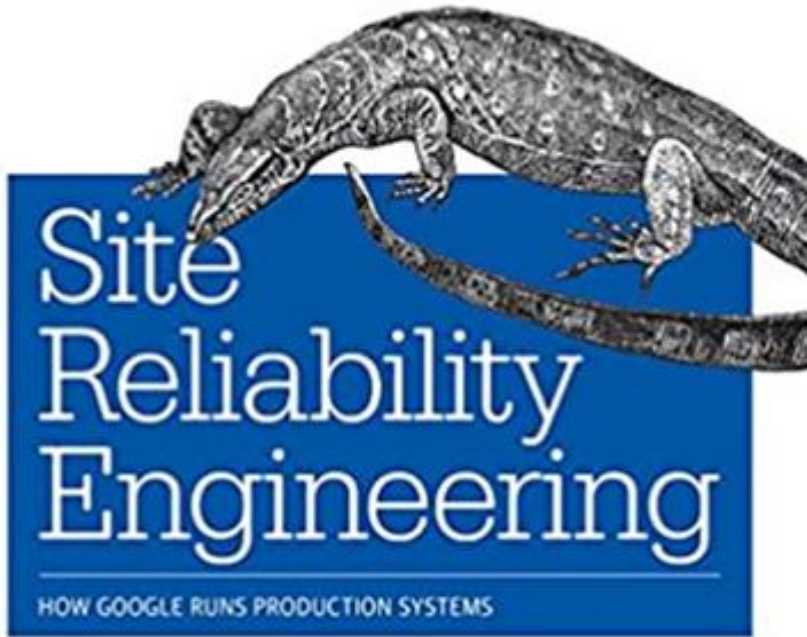
HTTP 200 OK
Allow: GET, HEAD, OPTIONS
Content-Type: application/json
Vary: Accept
X-API-Node: localhost
X-API-Time: 0.014s

{
  "description": "AWX REST API",
  "current_version": "/api/v2/",
  "available_versions": {
    "v1": "/api/v1/",
    "v2": "/api/v2/"
  },
  "oauth2": "/api/o/",
  "custom_logo": "data:image/png;base64,iVBORw0KGgoAAAANSUHEUgAAAJYAAACWCAYAAAA8AXHiAAAMFGLDQ1BJQ0MgUHJvZmlsZQAASImVVwdl
  "custom_login_info": "Don't upset the Angry Spud!"
}
```

Example IV:

Use Case: Security, Compliance & Audit = Toil

Goal: Governance As A Service

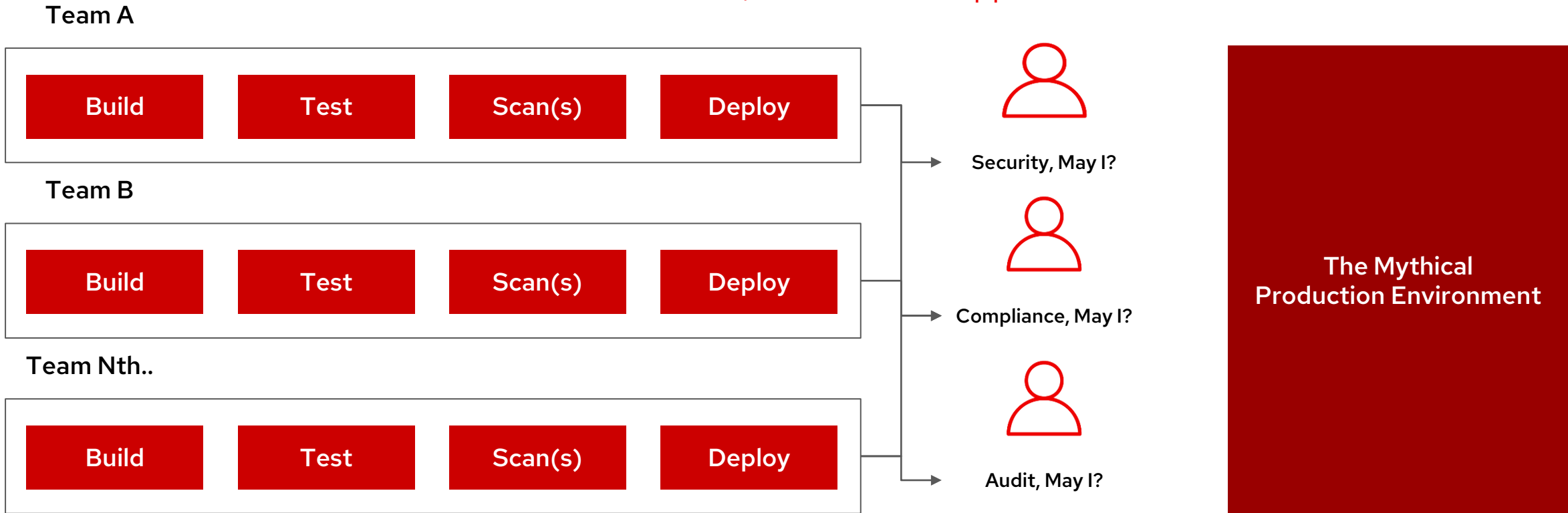


“Toil is the kind of work tied to running a production service that tends to be manual, repetitive, automatable, tactical, devoid of enduring value, and that scales linearly as a service grows.”

Vivek Rau
Site Reliability Engineer, Google

Current State

The "Free For All, File A Ticket" Approach

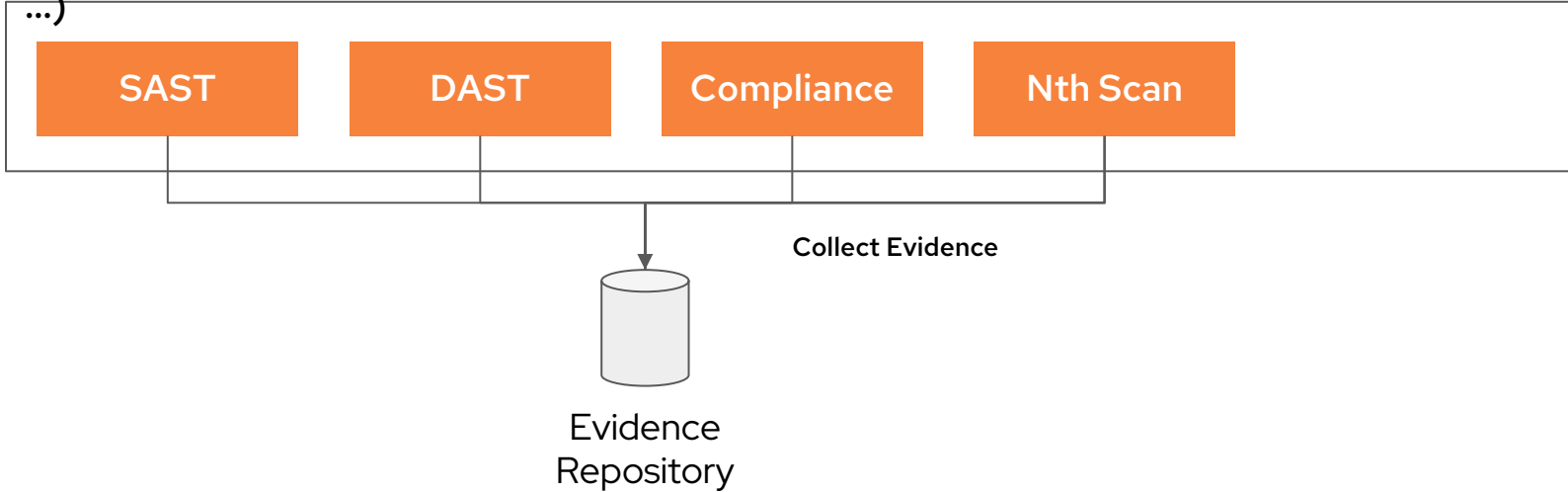


Governance As A Service - With Red Hat

The Automated Approach

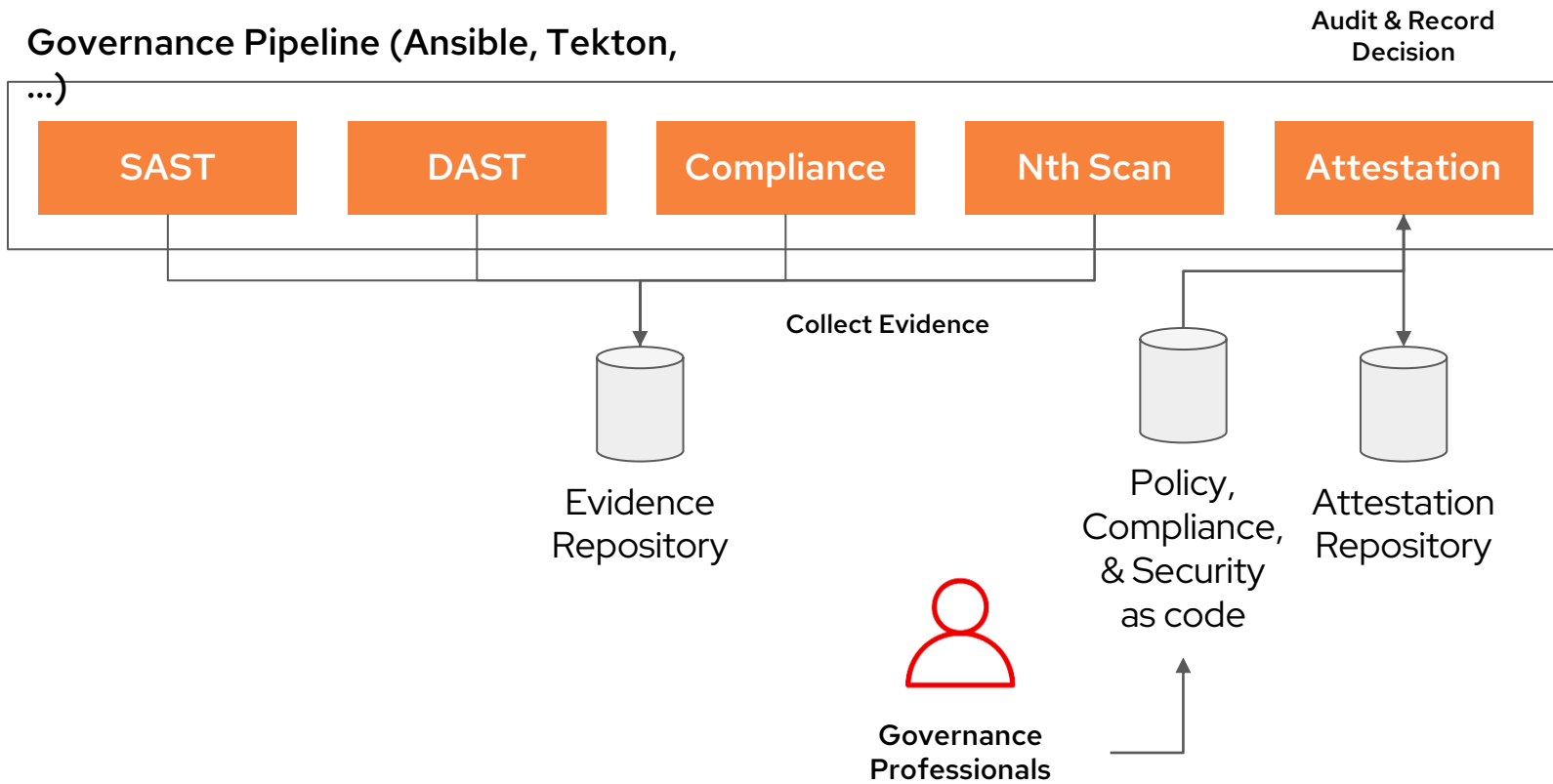
Governance Pipeline (Ansible, Tekton,

...)



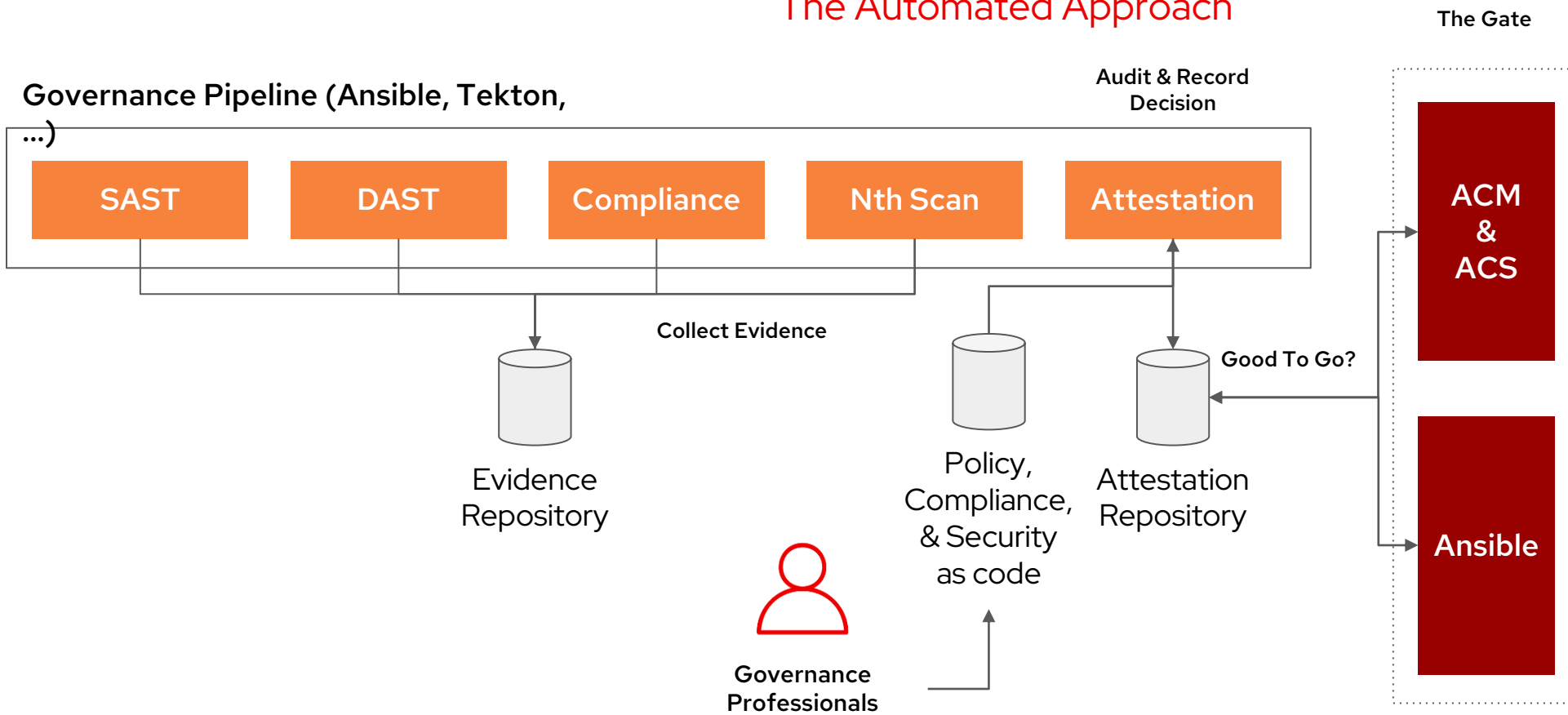
Governance As A Service - With Red Hat

The Automated Approach



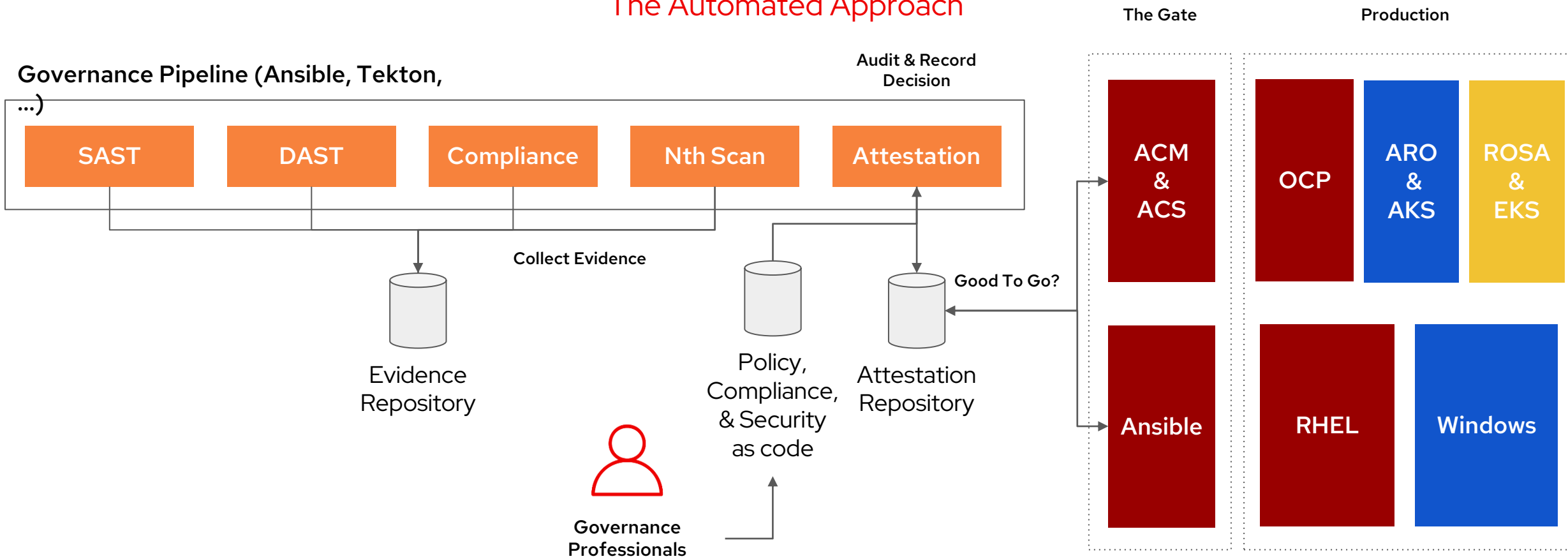
Governance As A Service - With Red Hat

The Automated Approach



Governance As A Service - With Red Hat

The Automated Approach

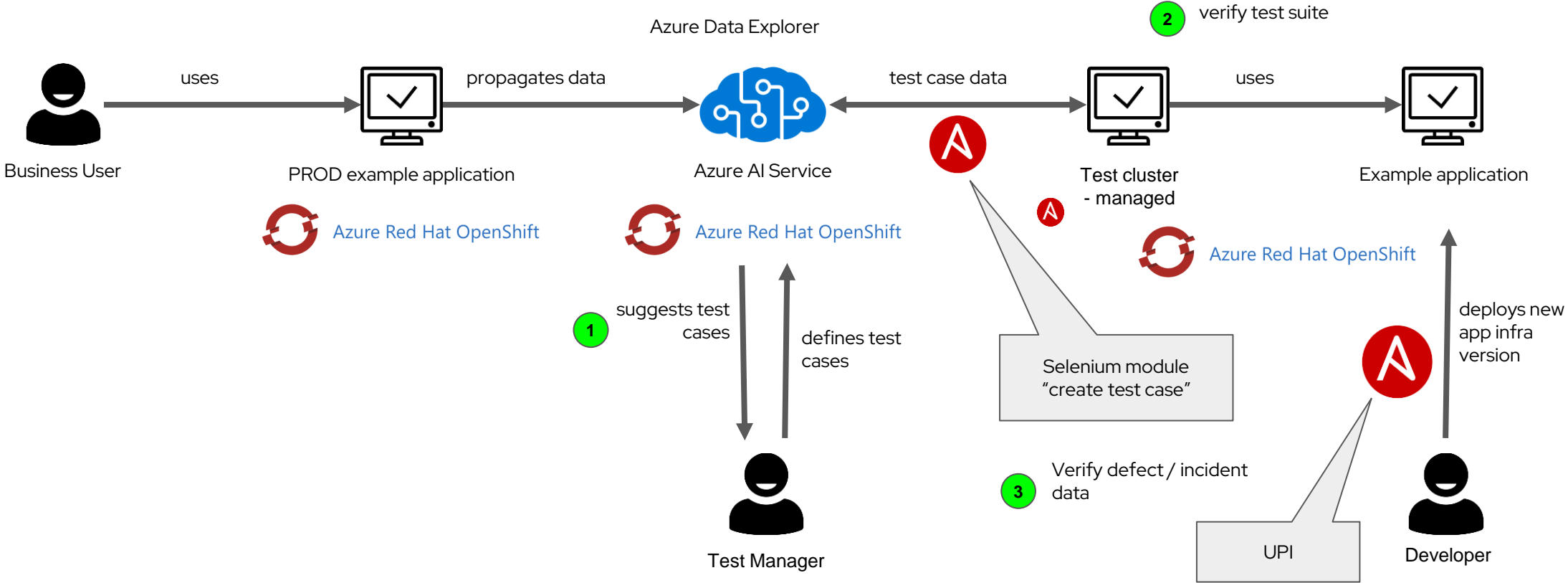


Example V:

Use Case: AI driven testing

Goal: Suggest test case optimization to test manager

AI driven testing



Example VI:

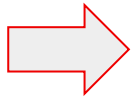
Use Case: End-to-End Windows Server SW+Updates

Goal: Cross-Team Collaboration

Step 1:

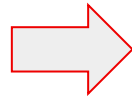
- Define the process, use relevant Ansible collections

Disable Alerting:



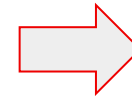
- Zabbix
- Nagios
- Icinga
- Datadog
- Grafana
- Splunk
- ...

Configure LoadBalancing:



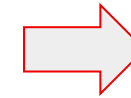
- F5
- Netscaler
- HAProxy
- AWS ELB
- ...

Snapshot VMs:



- VCenter
- NetApp
- Purestorage
- Specttrum Virtualize
- Dell Powerstore
- ...

Deploy Updates:



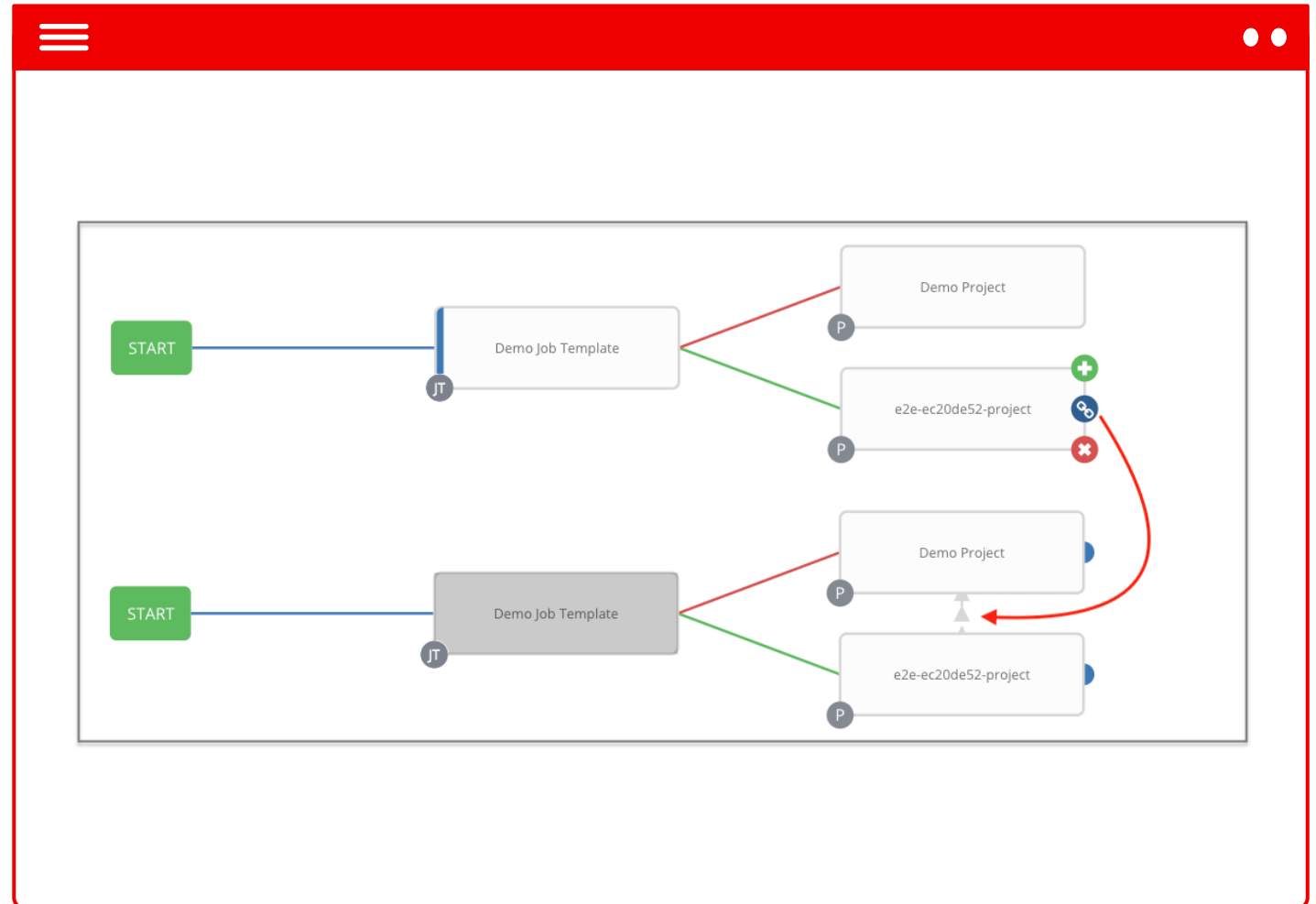
- WSUS
- Chocolatey
- Ansible Windows Collection
- ...

Rollback if necessary

- Ansible Workflows
- ...

Step 2:

- Use the automated **process blocks** provided by the different teams, and **build** the automated **Workflow** on top of them:



What we discussed today:

Automation:

- ▶ The WHY
- ▶ The HOW
- ▶ The WHAT

The key takeaways:

- ▶ Get all the IT Teams involved
- ▶ Clarify and communicate the common goals
- ▶ Find the quick win Use Cases to start with



Thank you

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youtube.com/user/RedHatVideos