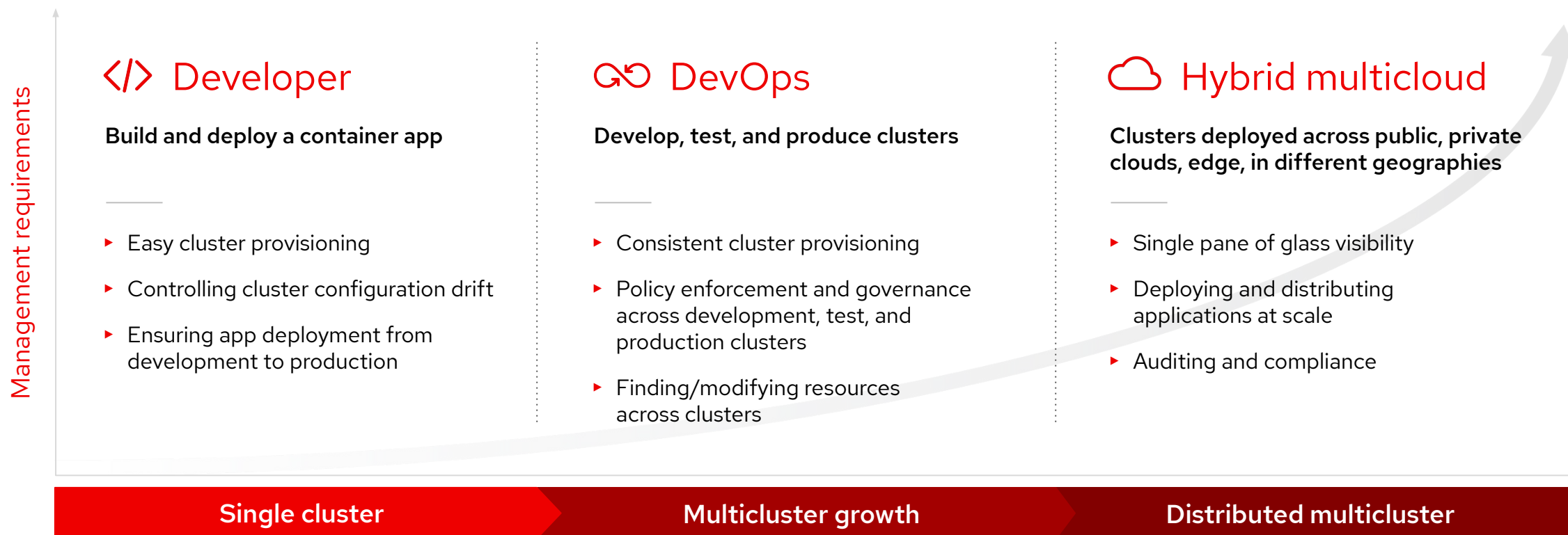**Red Hat**
Advanced Cluster Management
for Kubernetes

Red Hat Advanced Cluster Management for Kubernetes

Multicluster management challenges

How do I normalize and centralize key functions across environments?

Management requirements

</> Developer

Build and deploy a container app

▸ Easy cluster provisioning

▸ Controlling cluster configuration drift

▸ Ensuring app deployment from development to production

⟲ DevOps

Develop, test, and produce clusters

▸ Consistent cluster provisioning

▸ Policy enforcement and governance across development, test, and production clusters

▸ Finding/modifying resources across clusters

☁ Hybrid multicloud

Clusters deployed across public, private clouds, edge, in different geographies

▸ Single pane of glass visibility

▸ Deploying and distributing applications at scale

▸ Auditing and compliance

| Single cluster | Multicluster growth | Distributed multicluster |

Red Hat

Robust. Proven. Award winning.

Multicluster lifecycle management

Policy driven governance, risk, and compliance

Advanced application lifecycle management

Multicluster observability for health and optimization

Red Hat Advanced Cluster Management for Kubernetes

Manage OpenShift Everywhere

- OCP cluster provision with Cloud, Bare Metal and vSphere providers

Multi-cluster Observability

- Cluster health monitoring with scalable Thanos based architecture

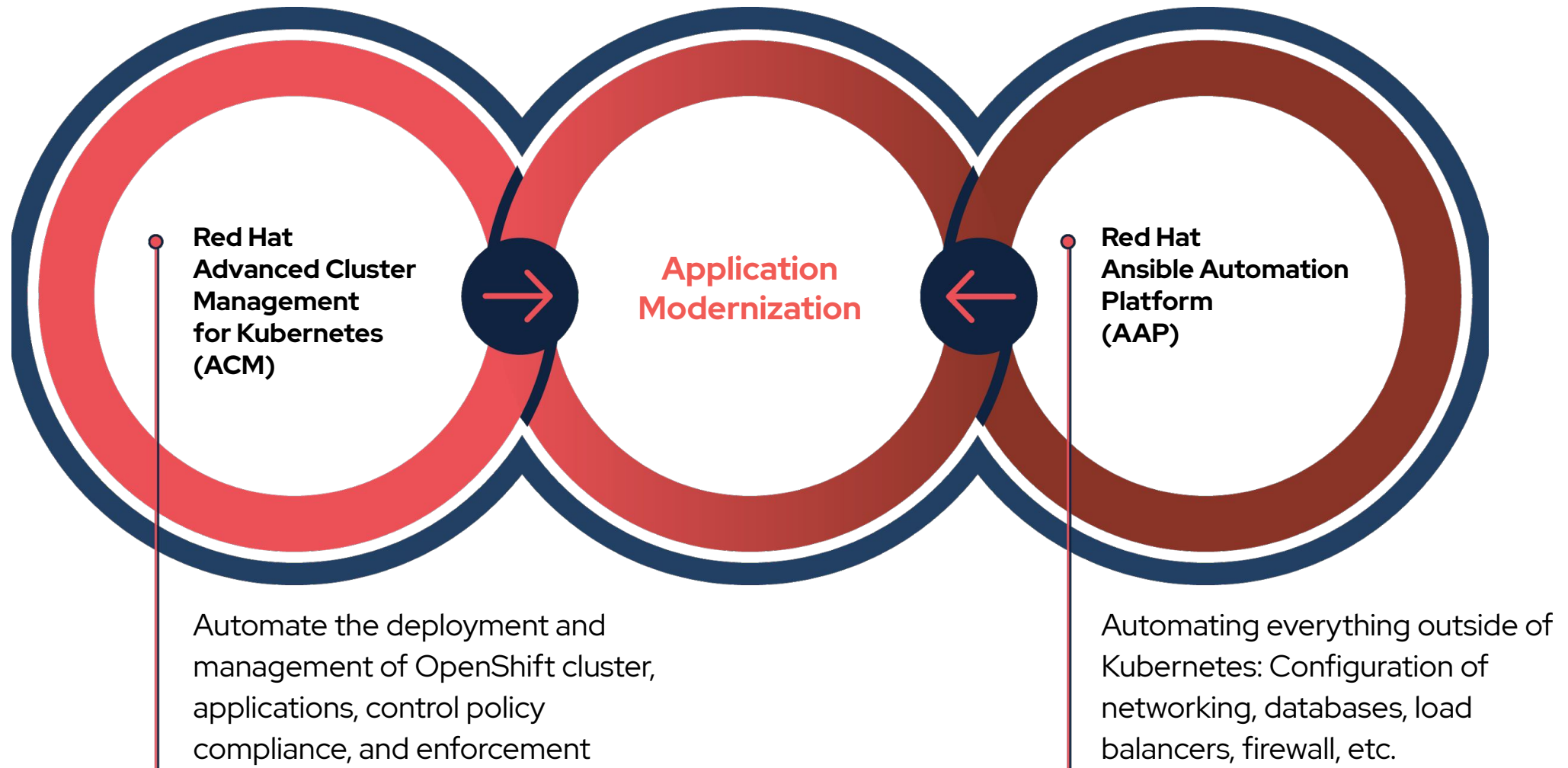**Enhanced Application and Policy Mgmt**

- Simplified App Creation experience
- Open Source Repo for Policies
- More OOTB Security Policies
- Open Policy Agent (OPA) support

Better Together

- Extend Automation with Ansible
- Partner and EcoSystem expansion

Red Hat

Application modernization driven by Automation of Kubernetes and beyond....

Red Hat Advanced Cluster Management for Kubernetes (ACM)

Application Modernization

Red Hat Ansible Automation Platform (AAP)

Automate the deployment and management of OpenShift cluster, applications, control policy compliance, and enforcement

Automating everything outside of Kubernetes: Configuration of networking, databases, load balancers, firewall, etc.
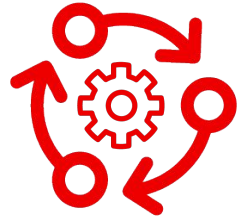
Red Hat

More technical ....

Manage OpenShift Anywhere
Overview

- OCP Cluster Lifecycle Management:
  - Provision new OCP 4.4.x – 4.6.x
  - Manage existing OCP 3.11, 4.4.x – 4.6.x

- Public cloud managed kubernetes: EKS, AKS, GKE, IKS, ROKS
  - Search, find and modify kubernetes resources.
  - Deploy applications, across clusters
  - Define security policy, compliance and violations

- Provision OCP to **Bare Metal** and **vSphere**
  - More opportunity to mix clouds (public / private)
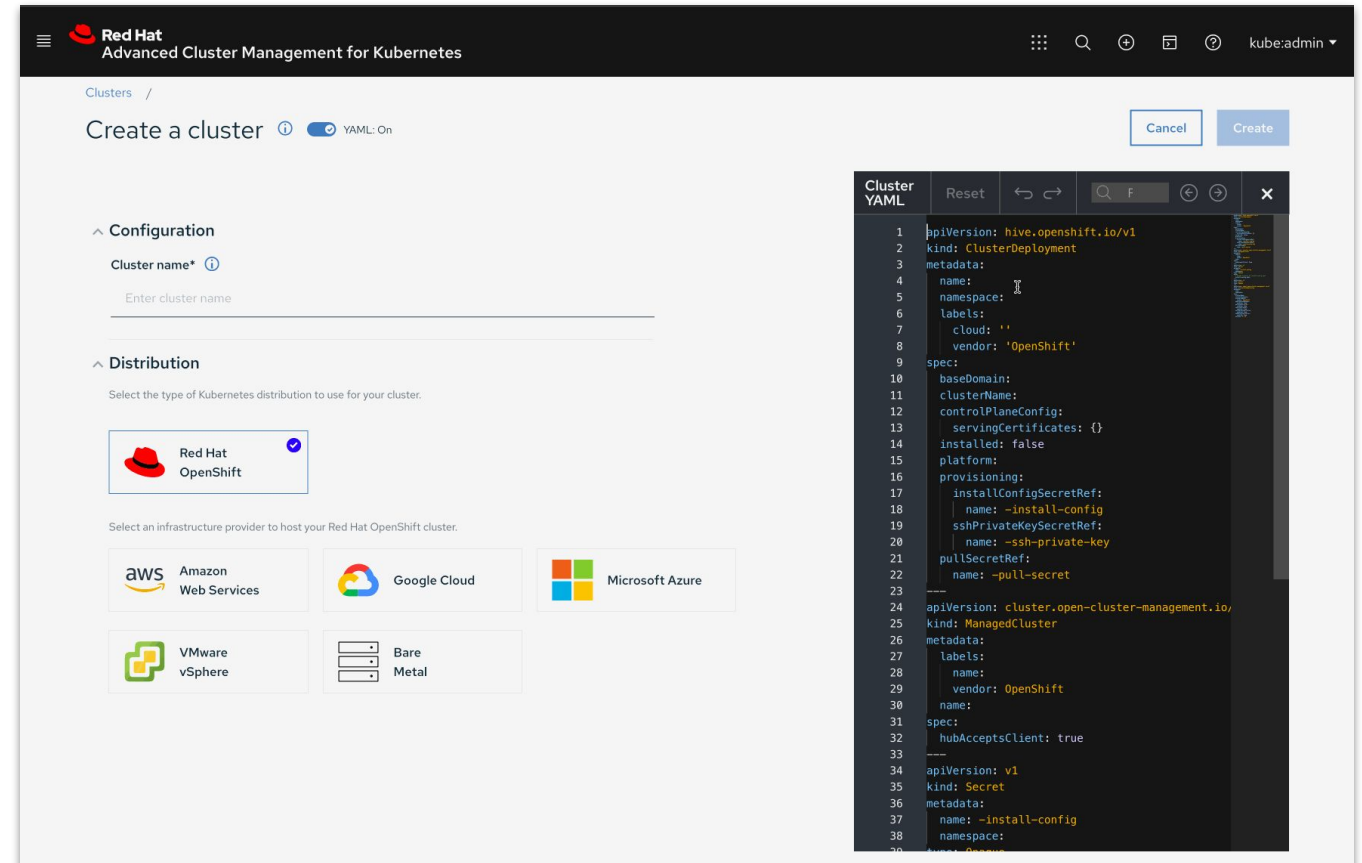
Multi-Cluster Observability
Overview

- Global Query view with **Grafana**
  - Out of the Box multi cluster health monitoring dashboards
  - PromQL compliant – Build your own queries

- Centralized **Database**
  - Optimized set of metrics collected from managed clusters
  - Focused on Cluster Management

- Unlimited **Data Retention**
  - Observe Metric trends
  - Set Alert Patterns
  - Supported Object Storage
    - AWS S3 (and compatible)
    - Ceph for on-premise
    - Google Cloud Storage
    - Azure Storage

Application Enhancements
Overview

- Simplified User **Experience**
  - Step by Step allows you to build applications quickly
  - Deploy applications directly from repo leveraging Subscription and Channel
  - Direct Integration with GitHub / Helm / Object Storage

- Pre and Post Tasks with **Ansible** **Tech preview**
  - Interact with 3rd Party Systems and Infrastructure via playbooks
  - Eg, SNOW tickets, F5 load balancers and more

- **Timed** deployments
  - Schedule your application deployment when needed

Governance and Security Enhancements
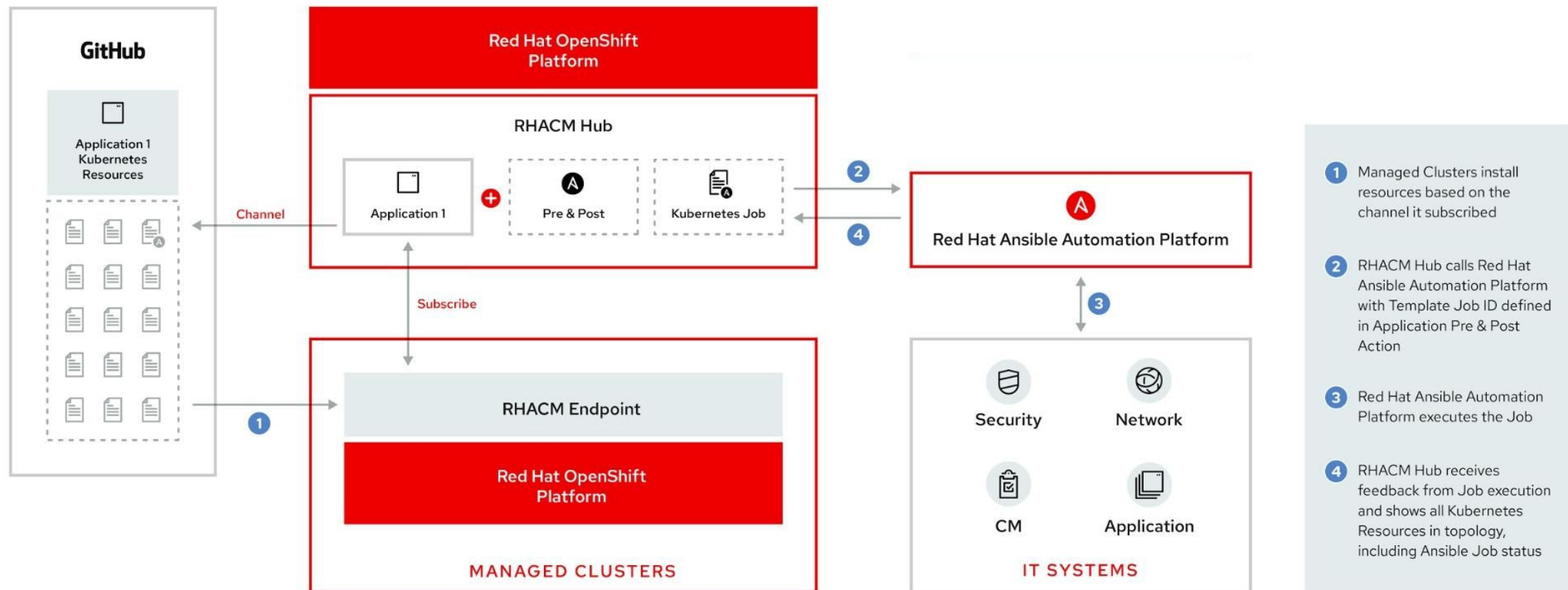## Overview

- Easier to Identify and **Troubleshoot**
  - Enhanced icons highlighting violations
  - RBAC enhancements

- Governance Enhancements
  - **OPA** integration - deploy **Gatekeeper** policies from RHACM, report violations on RHACM Hub for both admissions and audit scenarios
  - **Certificate** policy controller **enhancements** - disallow wildcard certs (SAN pattern matching that can be used for disallowing wild cards or other SAN restrictions), separate expiration time for CA issuers, certificate lifetime and CA lifetime
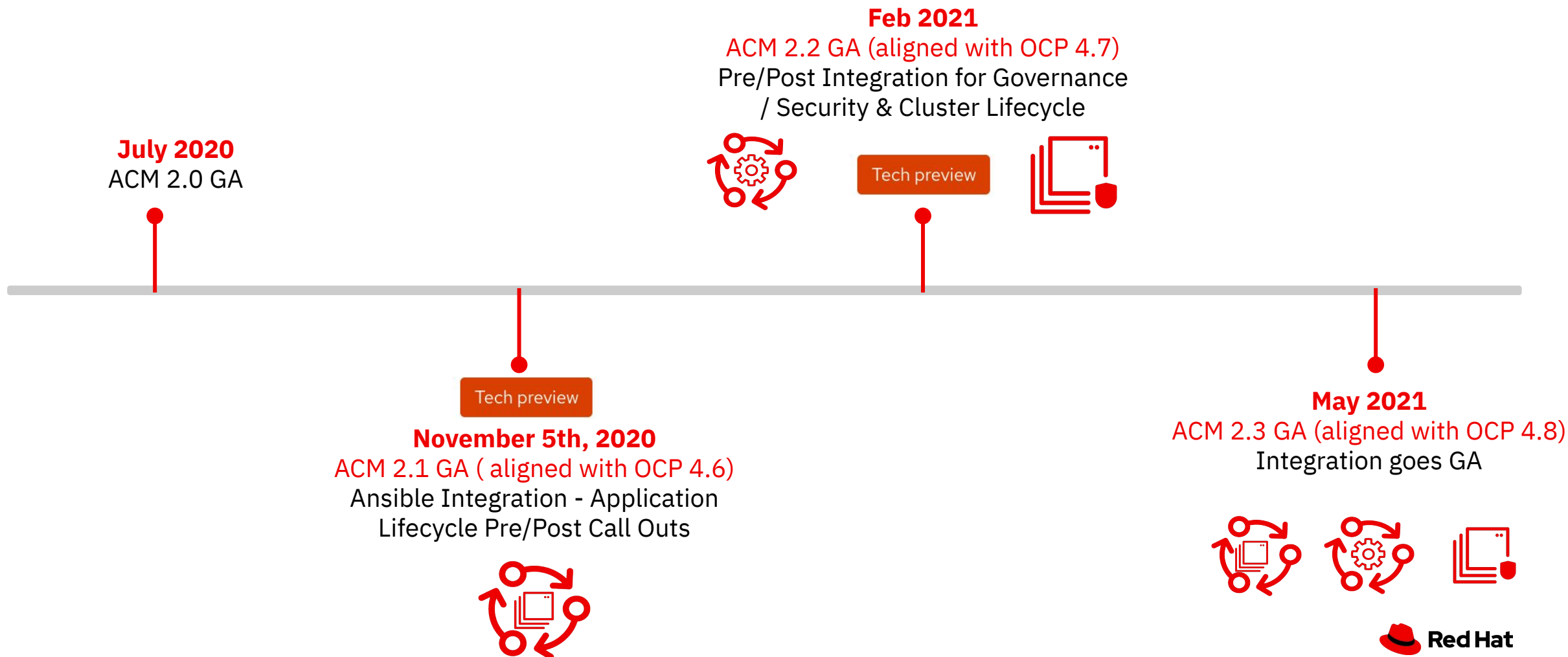 - New **NIST-SP800-53** standards added

Architecture Overview
for Application Lifecycle

Red Hat
Advanced Cluster
Management
for Kubernetes

GitHub

Application 1
Kubernetes
Resources

Channel

Red Hat OpenShift Platform

RHACM Hub

Application 1

Pre & Post

Kubernetes Job

Subscribe

RHACM Endpoint

Red Hat OpenShift Platform

MANAGED CLUSTERS

Red Hat Ansible Automation Platform

Security   Network

CM   Application

IT SYSTEMS

1. Managed Clusters install resources based on the channel it subscribed

2. RHACM Hub calls Red Hat Ansible Automation Platform with Template Job ID defined in Application Pre & Post Action

3. Red Hat Ansible Automation Platform executes the Job

4. RHACM Hub receives feedback from Job execution and shows all Kubernetes Resources in topology, including Ansible Job status

Red Hat

ACM + Ansible Automation Platform
Timeline

Red Hat
Advanced Cluster
Management
for Kubernetes

Feb 2021
ACM 2.2 GA (aligned with OCP 4.7)
Pre/Post Integration for Governance
/ Security & Cluster Lifecycle

Tech preview

July 2020
ACM 2.0 GA

Tech preview

November 5th, 2020
ACM 2.1 GA (aligned with OCP 4.6)
Ansible Integration - Application
Lifecycle Pre/Post Call Outs

May 2021
ACM 2.3 GA (aligned with OCP 4.8)
Integration goes GA

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Thank you

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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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