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Innovate Together: Solving IT Challenges in Barcelona

3 de junio de 2025

Innovate Together | Solving IT Challenges

Automated Resilience

OpenShift Meets Event-Driven Ansible

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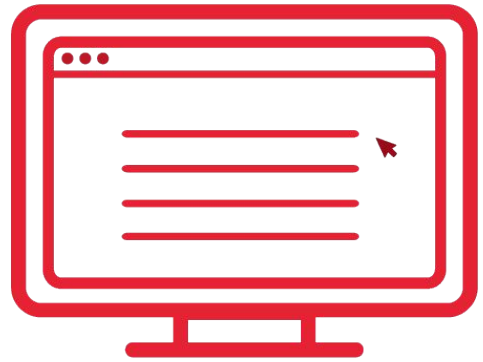
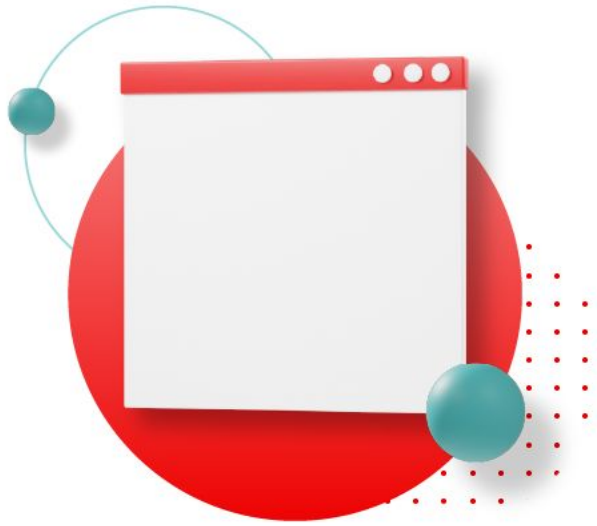
What we'll discuss today

- Configuration Drift and Problem Remediation
- Event-Driven Ansible
- OpenShift Gitops
- Demo Time



Event-Driven Ansible:
Real-Time Automation In Action



Event-Driven Ansible provides the event-handling capability needed to automate time-consuming tasks and respond to changing conditions in any IT domain.

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Event-Driven Ansible Use Cases

What if your infrastructure / configuration could fix itself.... automatically?

Cloud Infra & Config Drift

- Storage config
- RBAC rules
- ZTP

Network Enforcement

- Network policies
- Firewall configuration
- DNS configurations

Application Resilience

- Containerized app
- Legacy app

Compliance & Security Enforcement

- OS configuration drift
- Certificate renewal
- Secret management

Event-Driven Ansible

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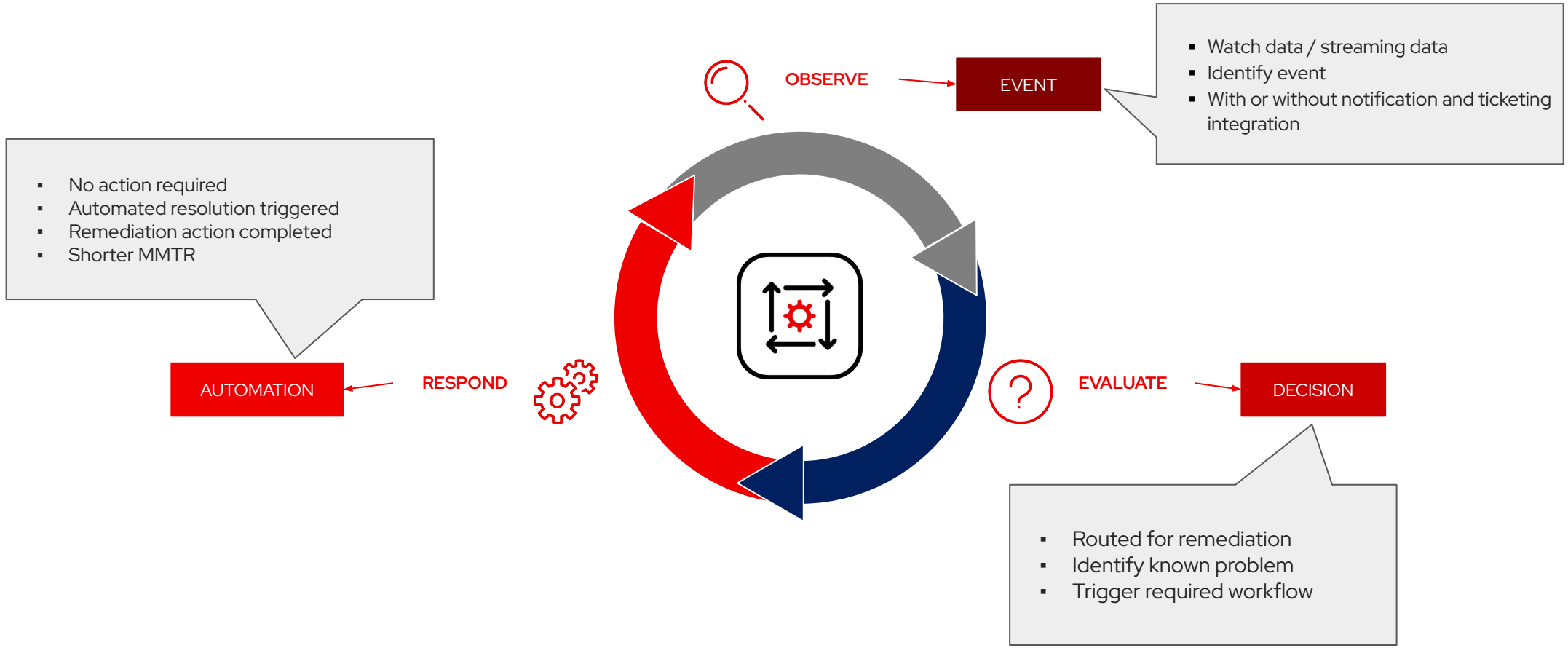
Event-Driven Ansible

Automation Supporting Mission Critical Workloads



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Ansible Rulebooks

Simple declarative decisions through rules

- **Events are processed by a rules engine**
  - Rules trigger based on conditions and actions can be carried out by the rules engine
  - Rules are organized into Ansible Rulebooks
  - Ansible rules can apply to events occurring on specific hosts or groups
- **Conditional management of actions to events**
  - Simple YAML structure for logical conditions
  - Events can trigger different types of actions:
    - Run Ansible Playbooks
    - Run Modules
    - Post new events to the event handler
- **YAML-like format familiarity**
  - Current Ansible users quickly learn and use Rulebook writing

```yaml
- name: Automatic Remediation of a web server
  hosts: all
  sources:
    - name: listen for alerts
      ansible.eda.alertmanager:
        host: 0.0.0.0
        port: 8000
  rules:
    - name: restart web server
      condition: event.alert.labels.job == "fastapi" and
event.alert.status == "firing"
      action:
        run_job_template:
            name: "[JT] Restart Web Server"
```

OpenShift GitOps

OpenShift GitOps enables customers to build and integrate declarative git driven CD workflows directly into their application development platform.

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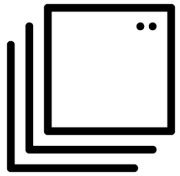
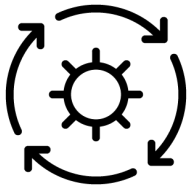
GitOps Principles

The system is described declaratively



The desired state is versioned in Git

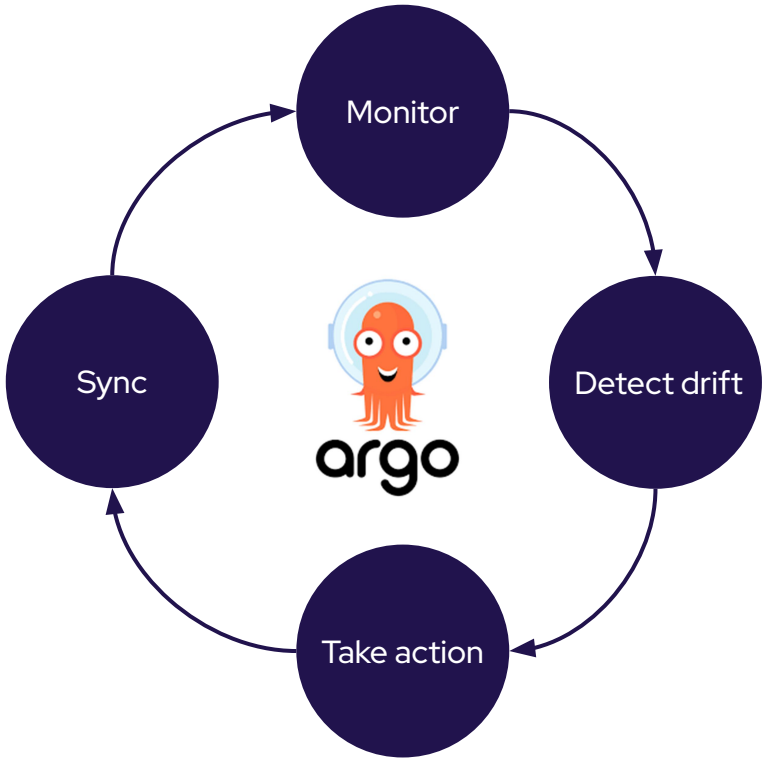


Pulled automatically

A controller exists to detect and act on drift

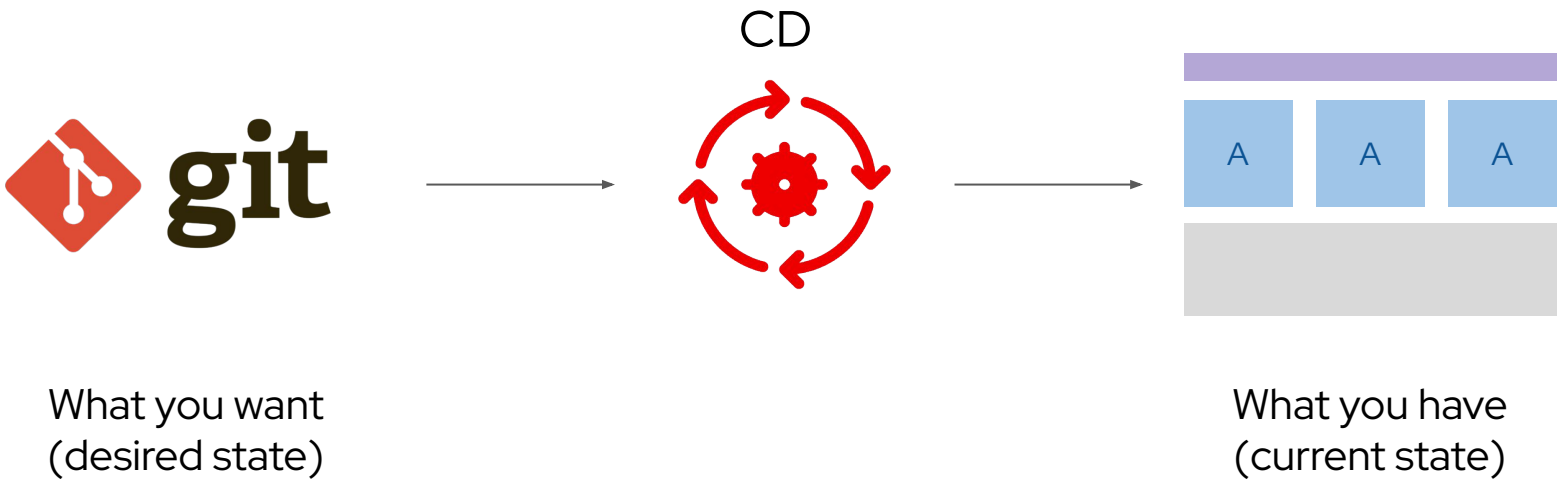
Argo CD

- Cluster and application configuration versioned in **Git**
- Automatically **syncs** configuration from Git to clusters
- **Drift detection**, visualization and correction
- **Granular control** over sync order for complex rollouts
- Rollback and rollforward to any Git commit
- Manifest templating support (Helm, Kustomize, etc)
- Visual insight into sync status and history



GitOps Workflow

A declarative approach to application delivery



Demo Time
Automated Physical Volume Resize

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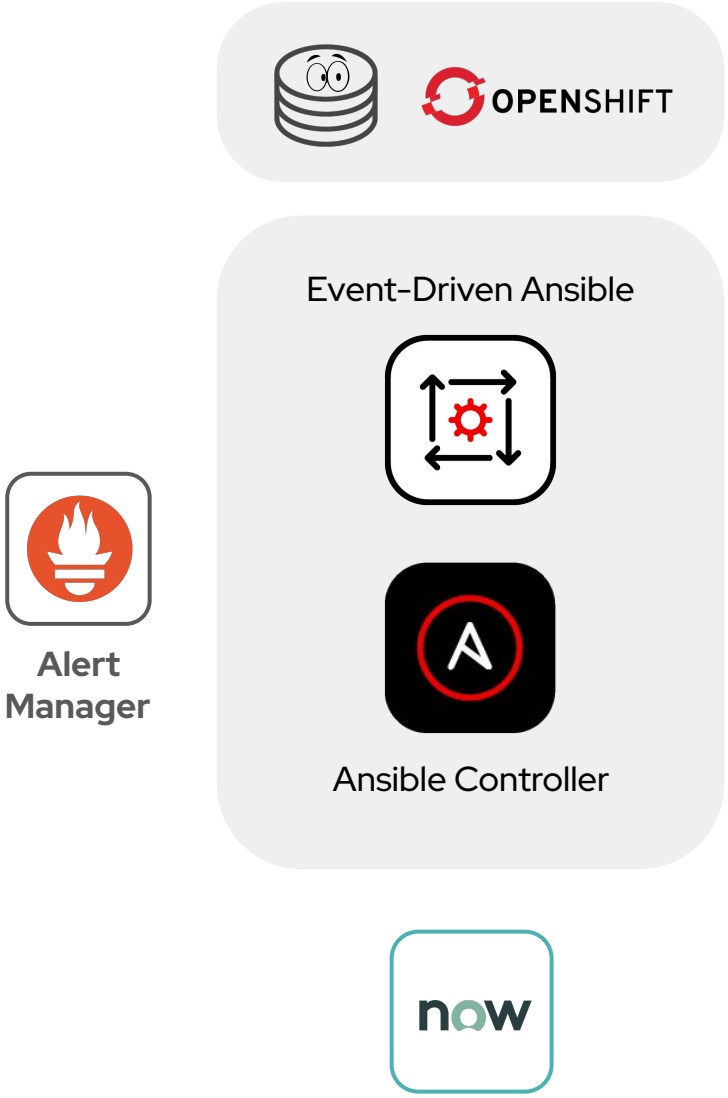
Automated Physical Volume Resize

Using GitOps and Ansible to redefine infrastructure in an automated way



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Automated Physical Volume Resize

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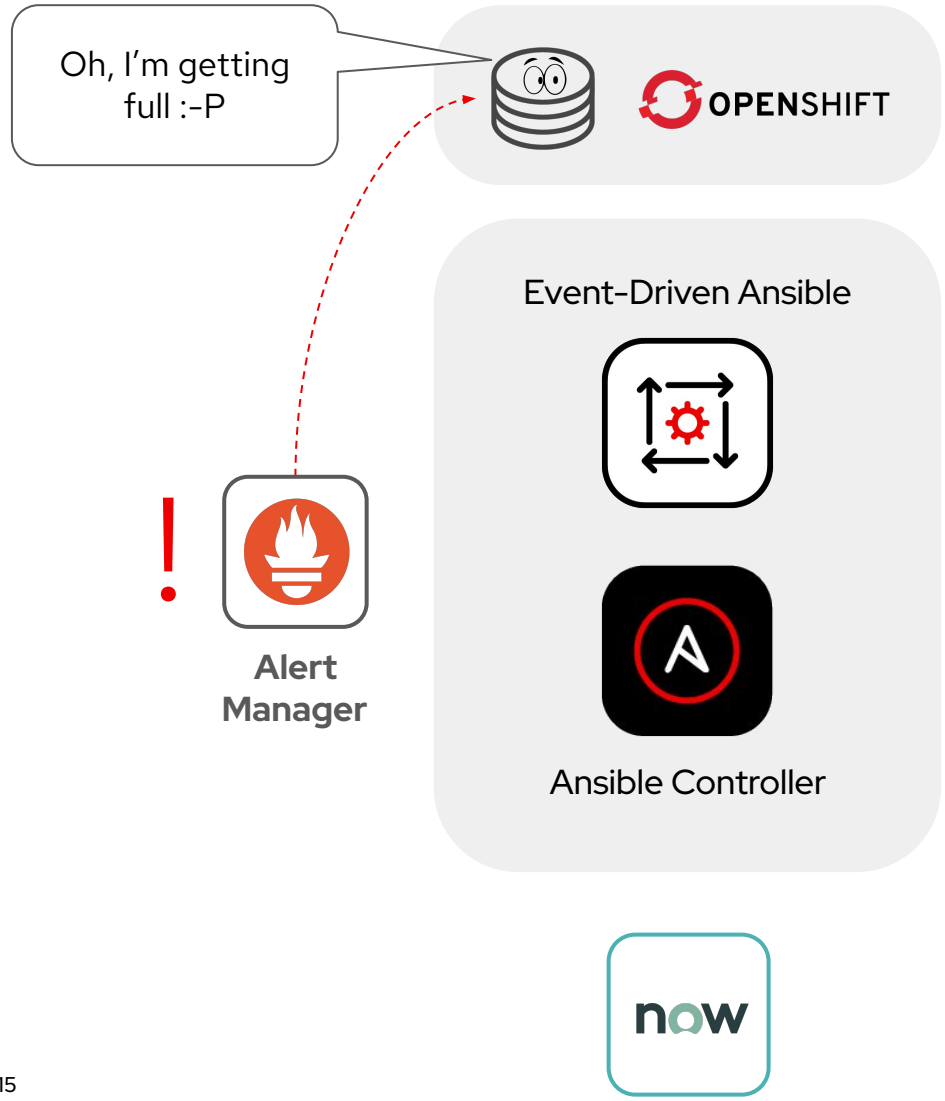

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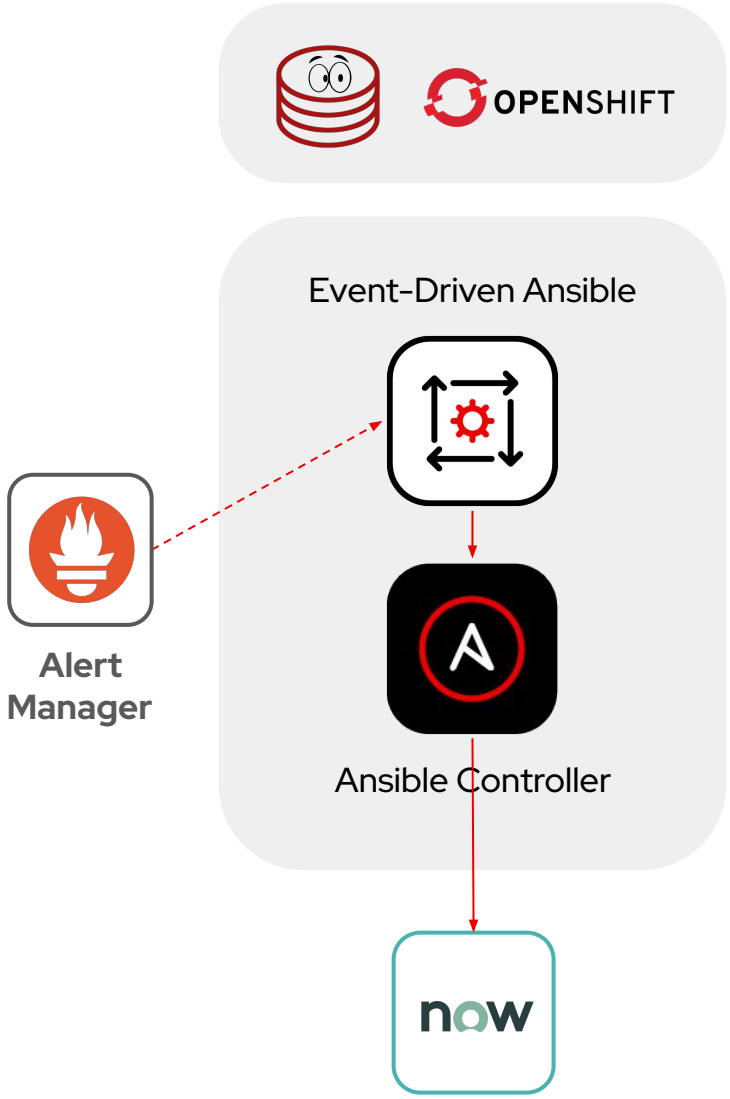

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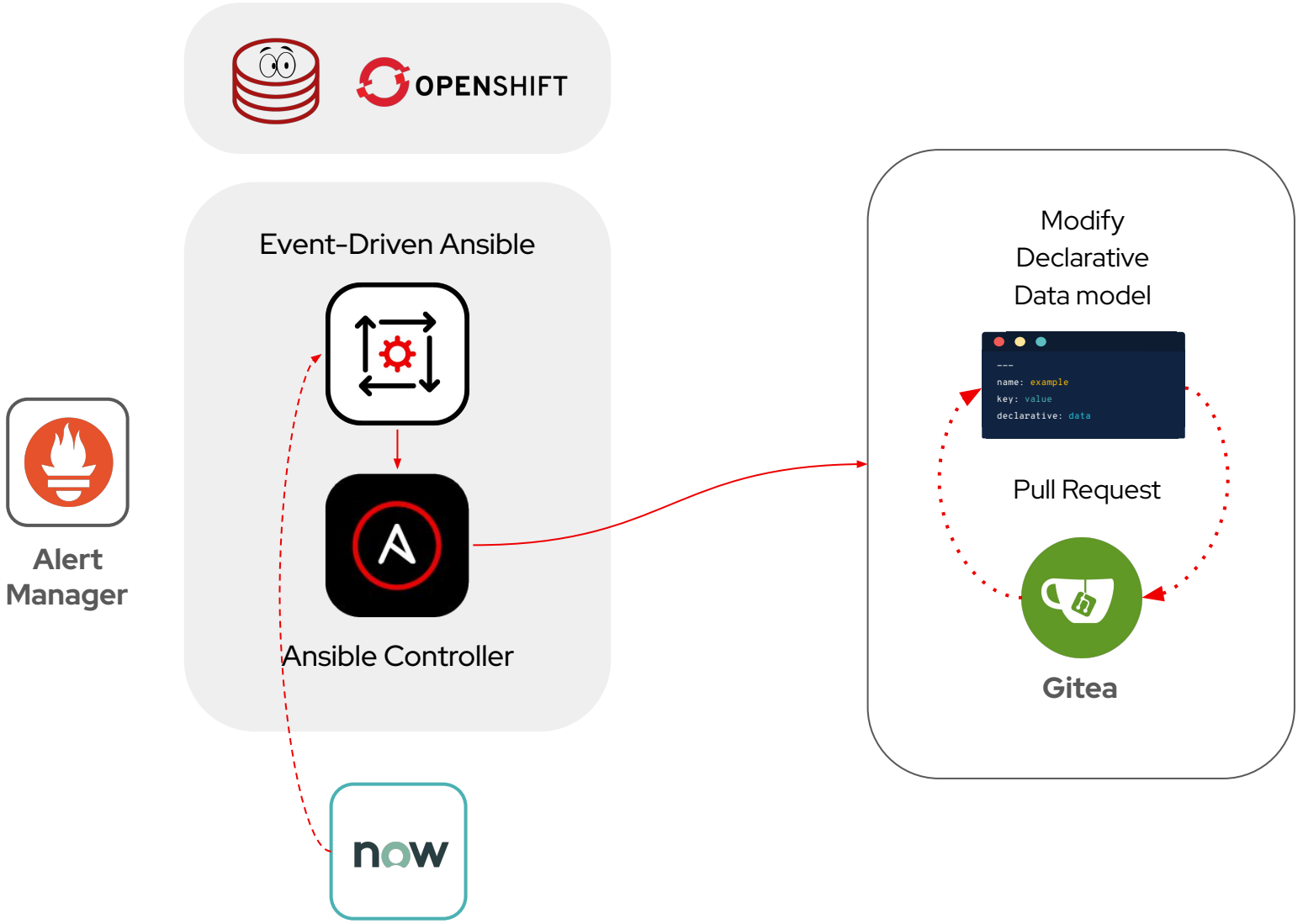

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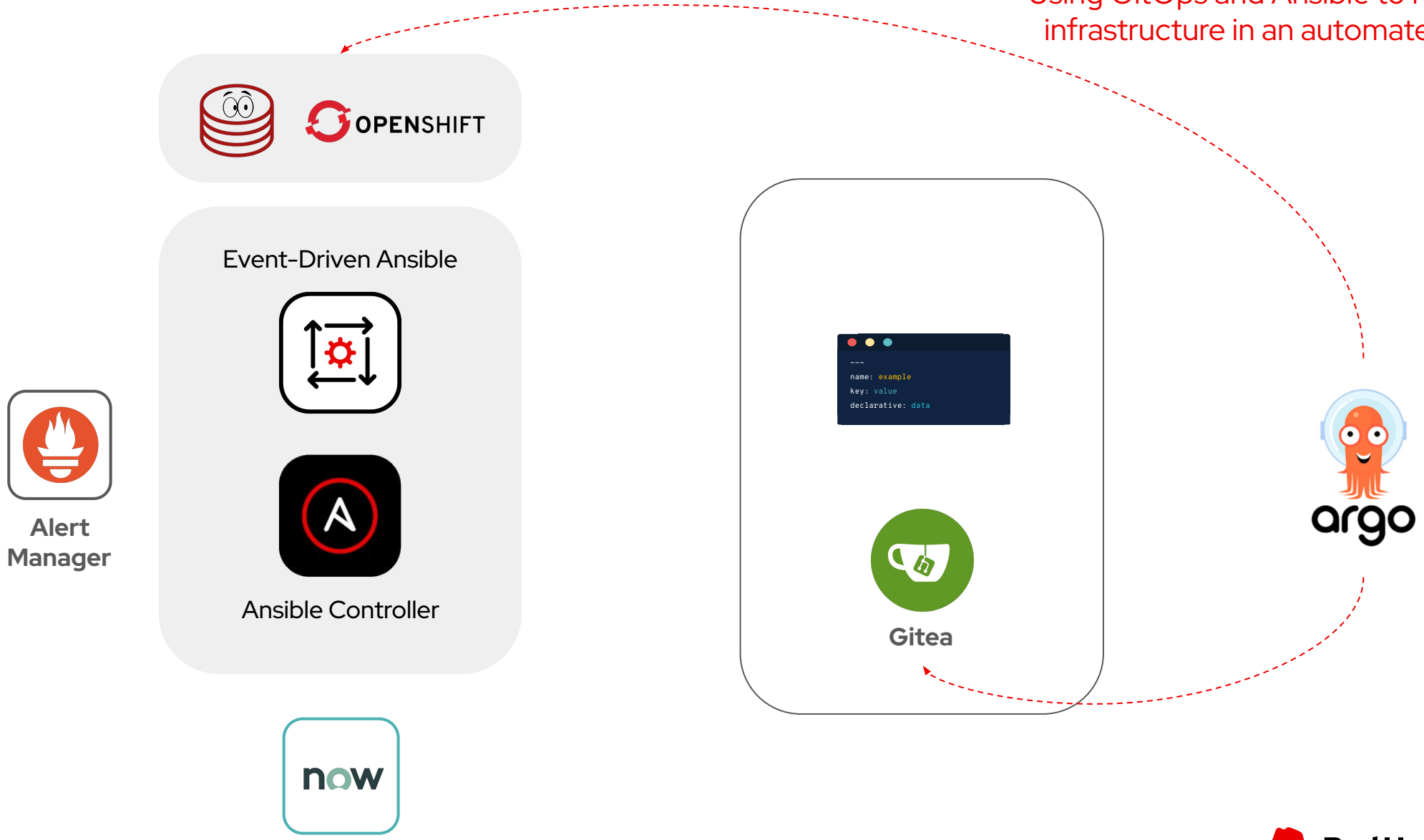

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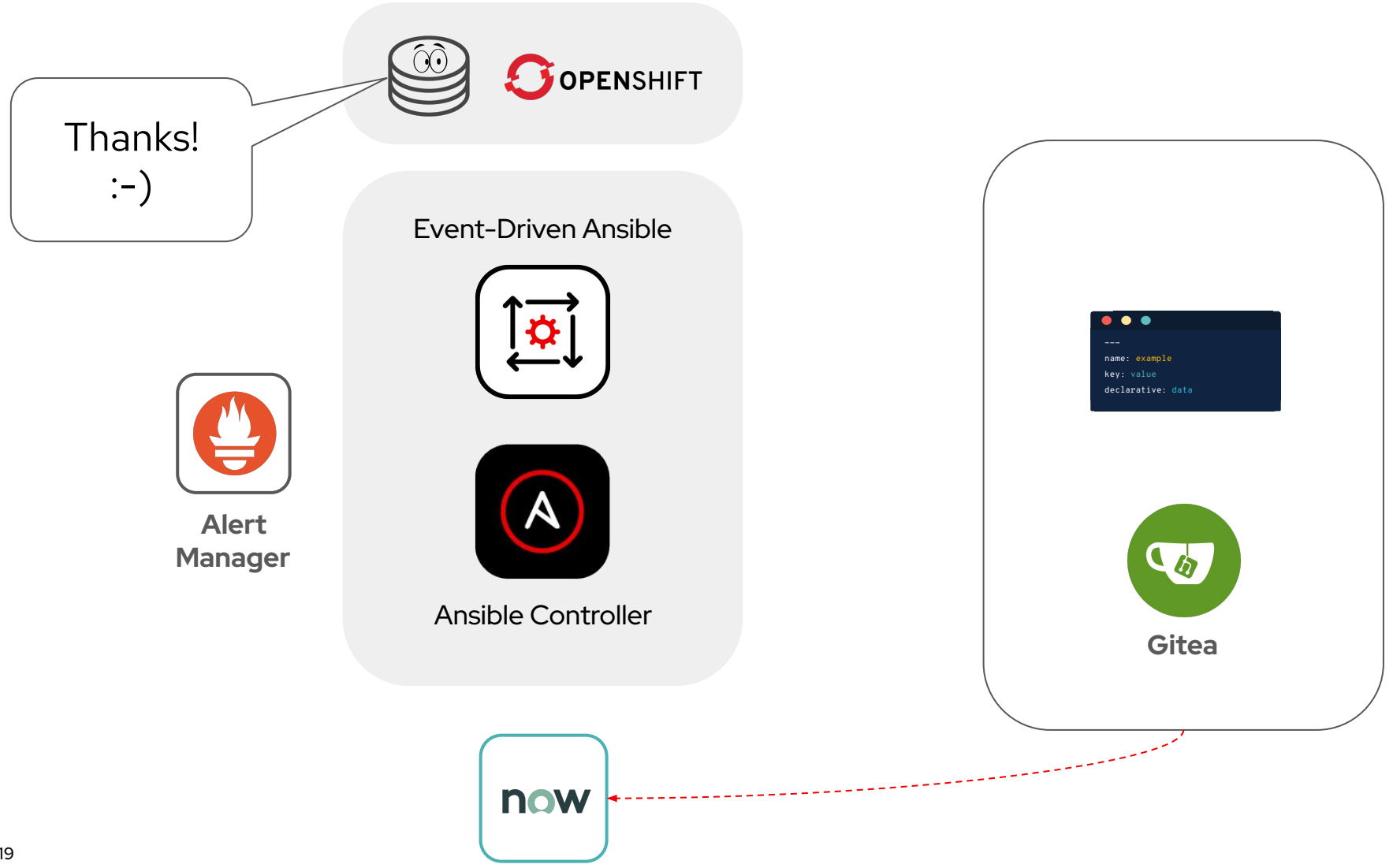

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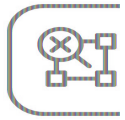
Summary

Automated Resilience: OpenShift Meets Event-Driven Ansible

Event-Driven Ansible

Event-Driven Ansible enables automation to react automatically to events from various sources by defining "if-this-then-that" rules in Ansible Rulebooks.



Tracing and Remediation

Event-Driven Ansible and Openshift Gitops can together, trigger automated remediation playbooks in response to detected problems or configuration drifts.

OpenShift GitOps

OpenShift GitOps continuously synchronizes the desired cluster state, defined in Git, with the actual cluster state.

Event-Driven Ansible and GitOps Synergy

This synergy Mean Time To Resolution (MTTR) by enabling rapid, automated, and consistent responses, improving system reliability and freeing up IT staff.

Thank you

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