COHESITY

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Enable Infrastructure Automation with Cohesity and Ansible

Reduce Complexity with Seamless Infrastructure Automation

ABSTRACT

Ansible facilitates IT infrastructure automation in many modern organizations, providing an agentless mechanism for configuration management, resource provisioning, and application deployment. Cohesity integrates seamlessly with Ansible, allowing organizations to automate critical data protection workflows. Built with an API-first architecture, Cohesity supports a gamut of orchestration and integration needs, including physical host management and bulk protection job management.

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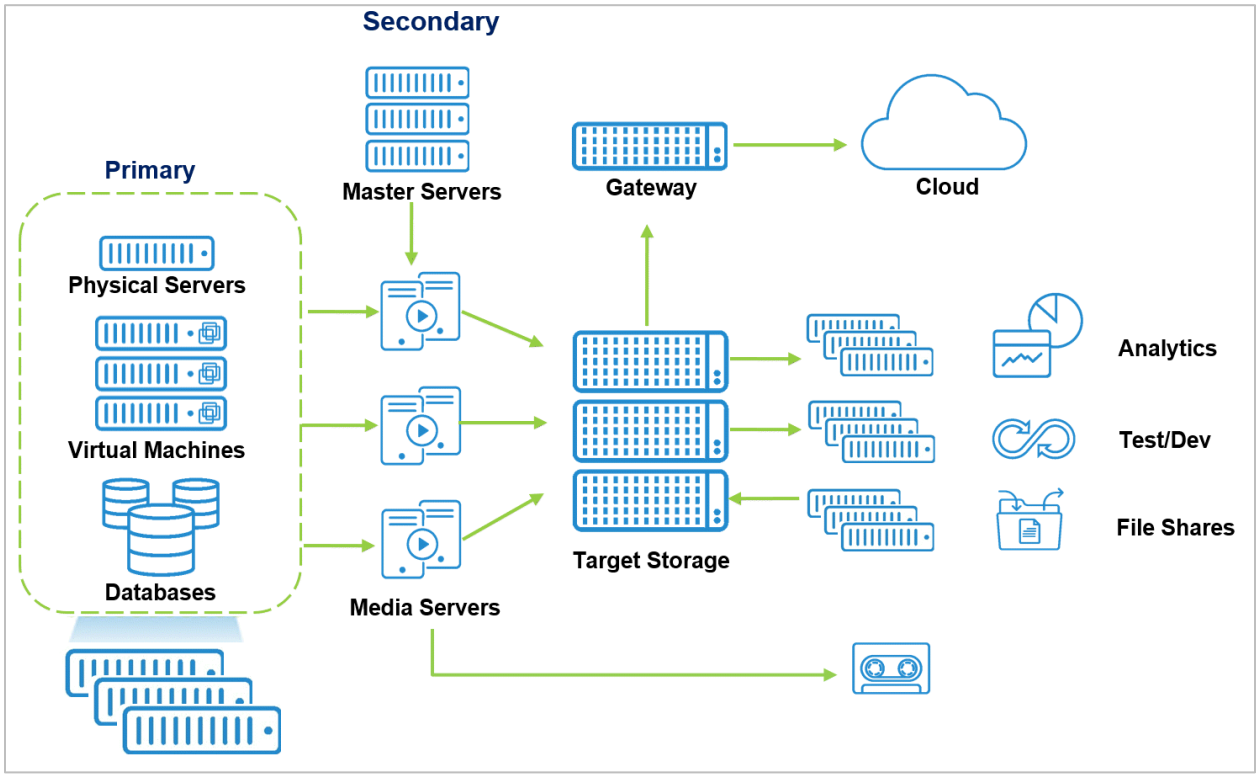
Complexity in the Modern Data Center

The modern data center is complex, with a gamut of undesirable effects, including increased costs, reduced agility, and even downtime. Virtualization and hyperconvergence have addressed many of those challenges, reducing complexity and increasing efficiency. Efficiency can be taken a step further by integrating key workflows in your infrastructure, not just its physical components.

Figure 1: The Modern Data Center, with a Spectrum of Siloes, Layers, and Tools



In the typical modern data center, different tools orchestrate workflows to and from servers, storage, backups, and applications. The result: fragmentation, in every sense of the word. Not only is data siloed, but the workflows—and the tools to manage them—are fragmented, as well.

Among other factors, management complexity arises from:

- A plethora of management tools and applications for unstructured data.
- SLAs that are not updated to suit the needs of your organization.
- A lack of self-service capabilities for common, frequent IT workflows.
- A steep learning curve in managing key elements of infrastructure.

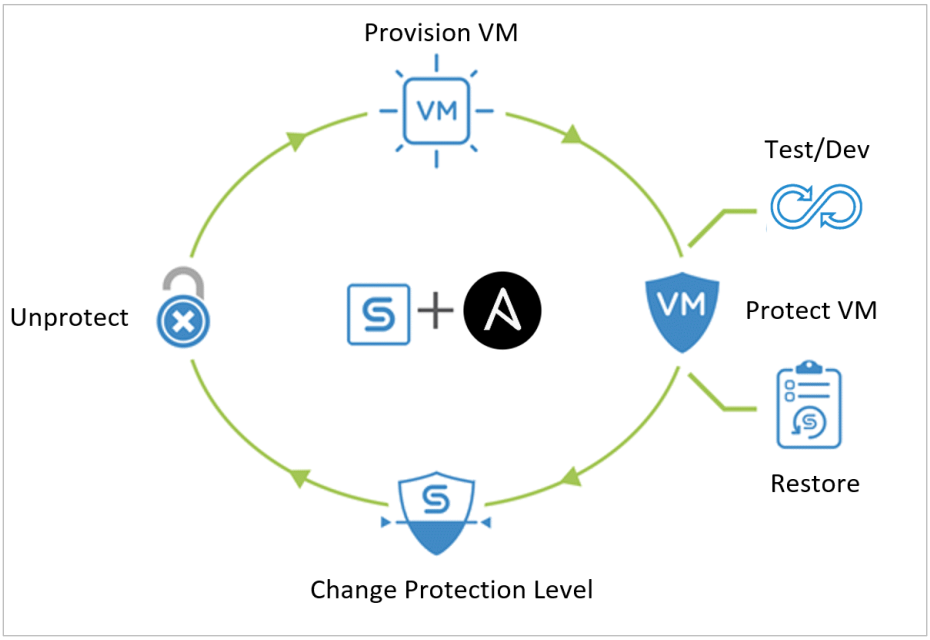
Without a single workflow-management interface, complexity in the data center grows exponentially, rather than incrementally. With every additional application or workflow, the overhead goes beyond direct application management—training and standardization challenges also arise. In other words, every application is a new application to manage, and a new dialect to learn.

Cohesity Addresses Management Complexity

Cohesity is based on an API-first architecture, valuing automation, consumable-APIs, and self-service capabilities from the get-go. The businesses of today rely on automation and APIs to speed IT delivery and Cohesity understands this. Users can enjoy error-free consistency and self-service manageability that extends the capabilities of individual applications and enables IT to spend less time with management, and more time with ambitious, value-oriented projects.

As illustrated in Figure 2 below, using Cohesity integration with Ansible simplifies data protection, workflow automation, and self-service data management for your VMs, applications, and more.

Figure 2: Cohesity's Integration with Ansible Enables Workflow Automation



Cohesity simplifies secondary data protection and works in concert with other popular cloud management platforms; Cohesity's API-first architecture exposes functions including backup recovery, test and dev, and file and object services. Cohesity integrates with existing orchestration tools such as VMware vRealize and ServiceNow, and also enables teams to create homegrown custom portals for automation, reporting, and monitoring.

API-first Architecture: Simplicity as a Foundation

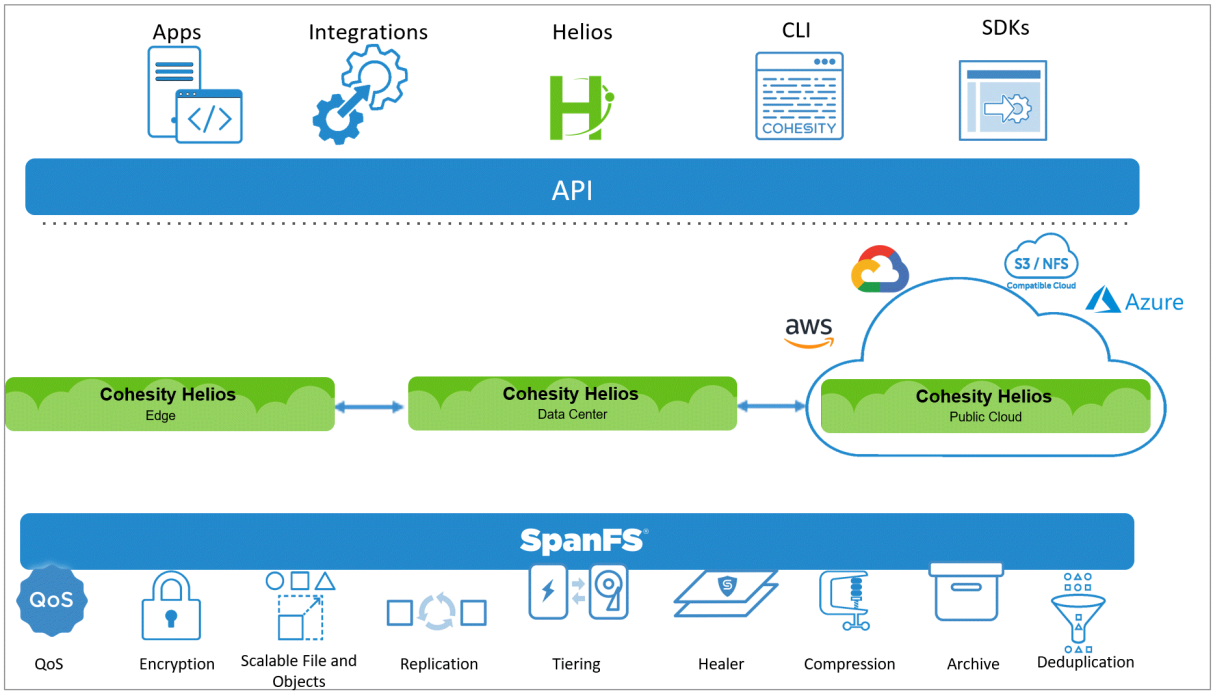
A well-designed platform echoes the notion of simplicity and extensibility. Among other factors, a well-designed and effective platform has these traits:

- Easy to manage
- Easy to extend
- Easy to integrate with

The ethos of API-first architecture and design revolves around the idea of putting the interests of target developers and consumers first. Core functions are viewed as the foundation of the system and can be extended to interface with new services to address new opportunities. A nimble organization starts with the underlying infrastructure; having an API-first approach as an undercurrent allows for rapid and cost-effective application development and deployment.

Cohesity has all three traits of a well-designed platform, keeping manageability, extendibility, and integrability central to the design process throughout, rather than as an afterthought. Adhering to OpenAPI specifications and API-first design principles, every interface, component, and integration is built on top of Cohesity's REST API.

Figure 3: Cohesity's API-first Architecture



Cohesity supports integrations with the tools your team already uses. Support for numerous orchestration and automation tools already includes ServiceNow, Ansible, and the vRealize suite. As a corollary, homegrown, custom tools can be integrated with Cohesity, allowing teams to move infrastructure rapidly to meet their evolving business and IT needs.

Integration with Ansible

Automation in IT operations has moved from an add-on feature to a critical requirement. Ansible facilitates automation in IT organizations. Ansible is a tool that catalyzes IT automation, configuration management, and automatic deployment.

The benefits of Ansible include:

- Agentless management.
- Idempotent operations—operations you can repeat without effect.
- Method is *declarative* (focused on results) instead of *procedural* (focused on steps).
- A low learning curve.

Cohesity provides an Ansible role for interacting with Cohesity. Ansible employs the Cohesity REST API to interact with Cohesity and to enable automation of data protection workflows.

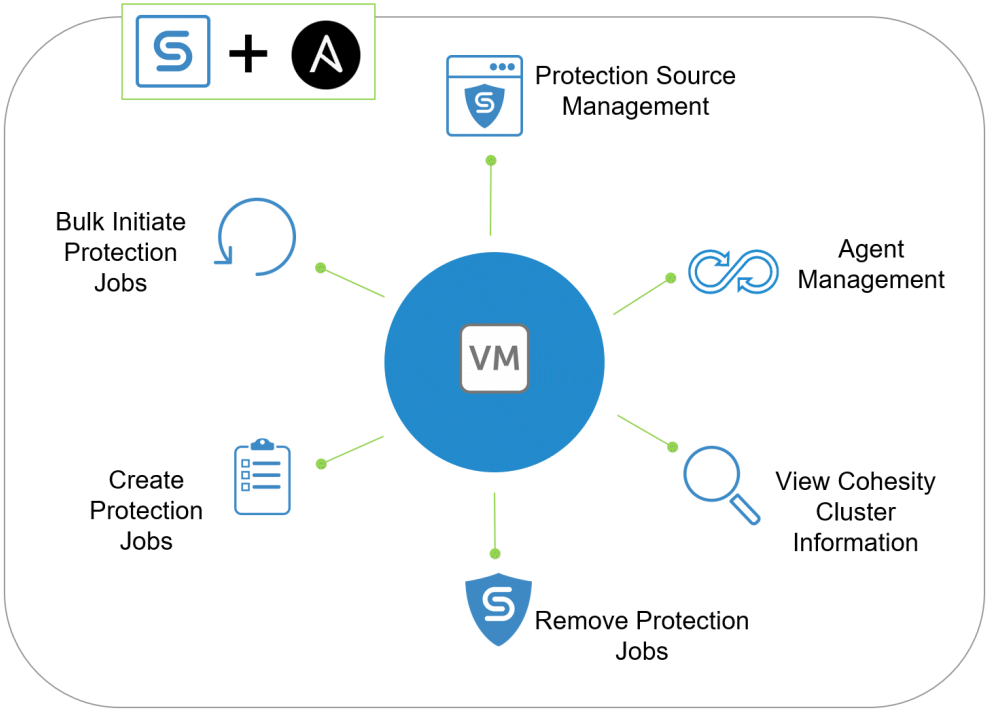
Cohesity Ansible Role Capabilities

With Ansible, you can take this integration to the next level and collate different workflows, and automate them. Critical data management and protection workflows can run smoothly and dynamically, adapting to the needs of your organization.

The Cohesity Ansible role allows you to:

- Deploy physical agents for Linux.
- Deploy physical agents for Windows.
- Manage and configure new Protection sources.
- Register or remove Protection Jobs.
- View and protect all hosts in your inventory.
- Bulk initiate registered Protection Jobs.
- Stop multiple active Protection Jobs simultaneously.

Figure 4: Cohesity's Ansible Role Capabilities



Enabling Automation: Data Protection for Different IT Workflows

Cohesity's integration with Ansible is applicable for different workflows, bringing data protection and IT automation together on a single pane of glass.

Retrieve Information on Your Cohesity Cluster

With the Cohesity Ansible role, you can retrieve facts and details about your Cohesity cluster, including:

- Current Cohesity nodes in your cluster.
- All current registered Protection sources.
- All current Protection Jobs.
- Your Cohesity Protection Policies.
- Configured Storage Domains.
- Job execution history for each Protection Job.

As a result, you can incorporate information on your data protection workflows into other aspects of your infrastructure. Facilitating automation promotes efficiency, and allows your team to focus on strategy and innovation instead of details.

Automating Physical Host Data Protection Management

The Cohesity Ansible role allows you to manage physical host data protection easily. You can deploy or remove agents running on physical hosts, whether it is a Linux or Windows environment.

With other features of Cohesity and the Cohesity role for Ansible, including Protection Source and Protection Job management, you can create and execute automation plans for large-scale data protection workflows. This level of automation and flexibility is unique to Cohesity and the integrations Cohesity supports.

A typical use case in automating a full-cycle data protection workflow is creating Protection Jobs for the whole range of environments in your inventory. An Ansible playbook, leveraging the Cohesity Ansible role, can start by reading all physical servers from your Ansible Inventory and installing respective agents, whether the server is Windows or Linux. Upon completion of the agent installation, each Protection Source is registered based on environment type, including VMware, physical servers, NAS, and a host of other environments supported by Cohesity. You can then configure your Ansible playbook to create a new Protection Job for each of the Protection Sources you registered. After source registration, the first run is automatically executed.

All this—managing agent deployment for physical servers, registering disparate environments as Protection Sources, and creating unique Protection Jobs—can be orchestrated in a single playbook. This level of automation exceeds even the most stringent data protection orchestration use cases.

Get Started with the Cohesity Ansible Role

To get started with Cohesity's Ansible integration, see https://github.com/cohesity/cohesity-ansible-role.

The prerequisites for using the Cohesity Ansible Role are:

- Cohesity version 6.0 or higher
- Ansible version 2.6 or higher
- Python version 2.6 or higher

Learn More About Cohesity Automation and APIs

Cohesity enables agility, speed, and self-service. With deep integrations with numerous infrastructure solutions and an API-first architecture, Cohesity brings flexibility to infrastructure, allowing customers to do more and adapt to changing business needs.

For more information on Cohesity's automation and integration solutions, see https://www.cohesity.com/solution/automation/.

To understand how to work with our API-first architecture and take a closer look at the available APIs, see https://developer.cohesity.com/.

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About the Author

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Document Version History

VERSION	DATE	DOCUMENT HISTORY
1.0	May 2019	First draft
1.1	Nov 2021	Rebranding updates

ABOUT COHESITY

Cohesity radically simplifies data management. We make it easy to protect, manage, and derive value from data -- across the data center, edge, and cloud. We offer a full suite of services consolidated on one multicloud data platform: backup and recovery, disaster recovery, file and object services, dev/test, and data compliance, security, and analytics -- reducing complexity and eliminating mass data fragmentation. Cohesity can be delivered as a service, self-managed, or provided by a Cohesity-powered partner.

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