

Automation happens when one person meets a problem they never want to solve again

# Today's IT Challenges



## **LINE OF BUSINESS**

Challenged to deliver services faster, at scale, and more efficiently



## **DEVELOPERS**

Need to develop applications faster with greater productivity



## **IT OPERATIONS**

Must provide infrastructure on-demand that scales as needed

# What is needed?



## **EFFICIENCY AND OPTIMIZATION**

Improve resource utilization and operational efficiency.



## **COMPLIANCE AND GOVERNANCE**

Responsibly enabling users and developers, without being in the way.

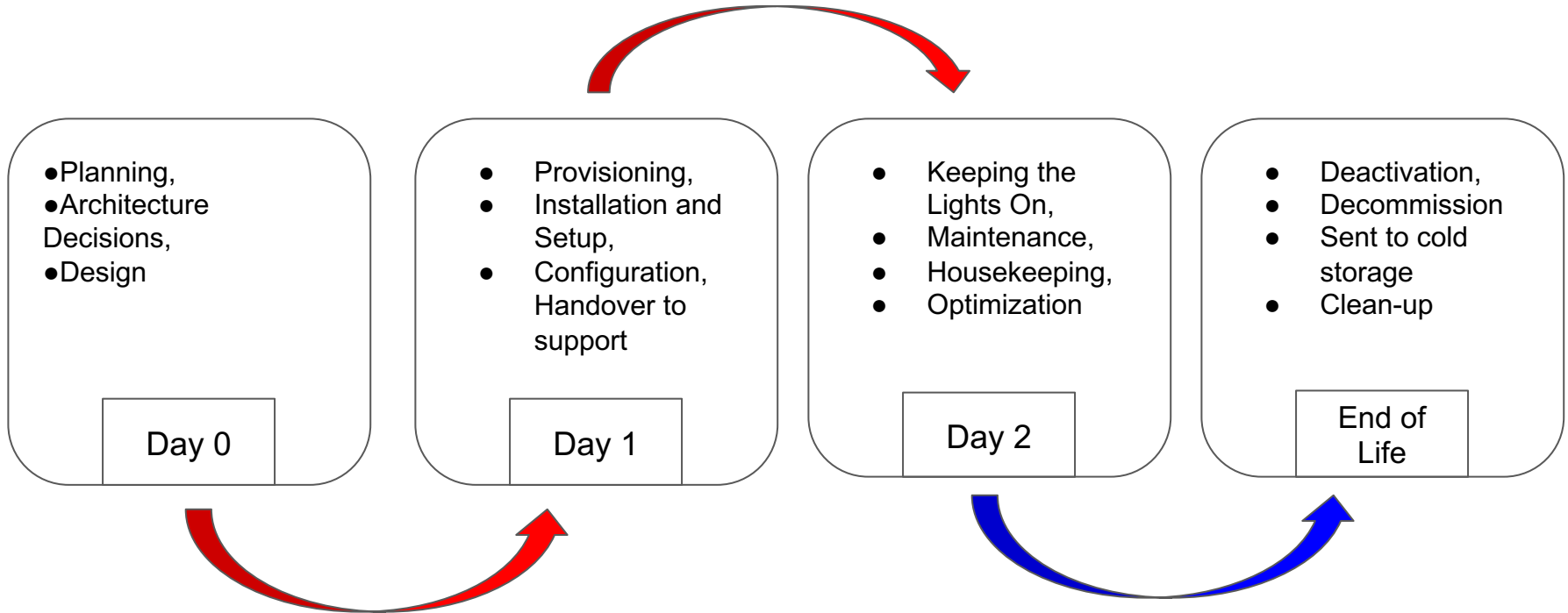


## **SERVICE MANAGEMENT AND SELF SERVICE**

Automate and delegate service delivery processes, saving time and money.

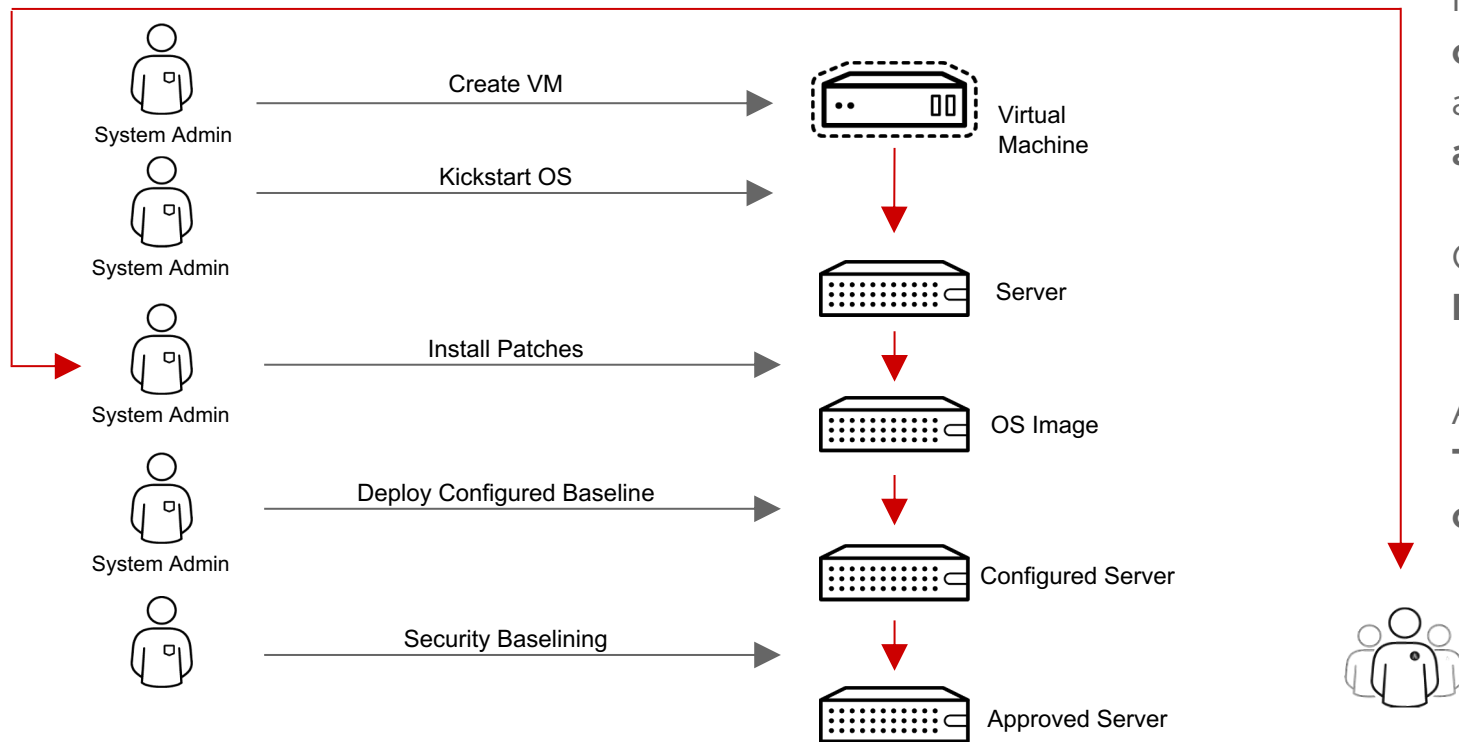
# (SAP) Workloads lifecycle

# Day n Operations Concept



# Ansible Automation

# The good old days



It's hard to **run IT operations** this way and **deliver flexible and agile IT services**.

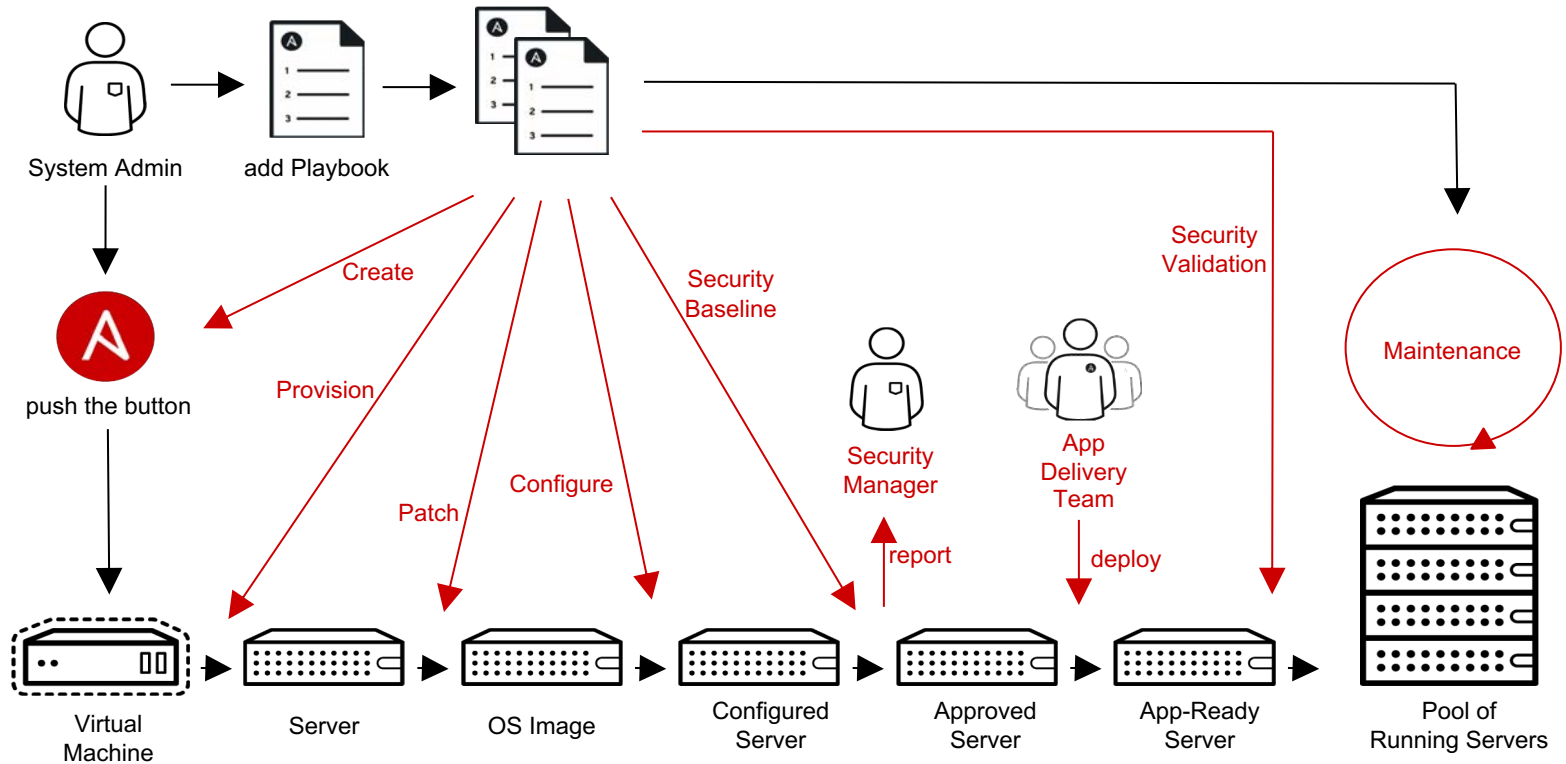
Or being the **Ops** in **DevOps**.

And yes, you can work **The Cloud** in the **same old way...**



~~INSTALL; CONFIGURE - REPEAT~~  
**AUTOMATE**

# Nothing routinary should be done manually



# Why Ansible ?



## **SIMPLE**

Human readable automation  
No special coding skills needed  
Tasks executed in order  
Usable by every team  
**Get productive quickly**



## **POWERFUL**

App deployment  
Configuration management  
Workflow orchestration  
Network automation  
**Orchestrate the app lifecycle**



## **AGENTLESS**

Agentless architecture  
Uses OpenSSH & WinRM  
No agents to exploit or update  
Get started immediately  
**More efficient & more secure**

# What can I do with ansible

Automate the deployment and management of your entire IT footprint.

## Do this...

Configuration  
Management

Orchestration

Application  
Deployment

Provisioning

Continuous  
Delivery

Security and  
Compliance

## On these...

Firewalls

Load Balancers

Applications

Containers

Clouds

Servers

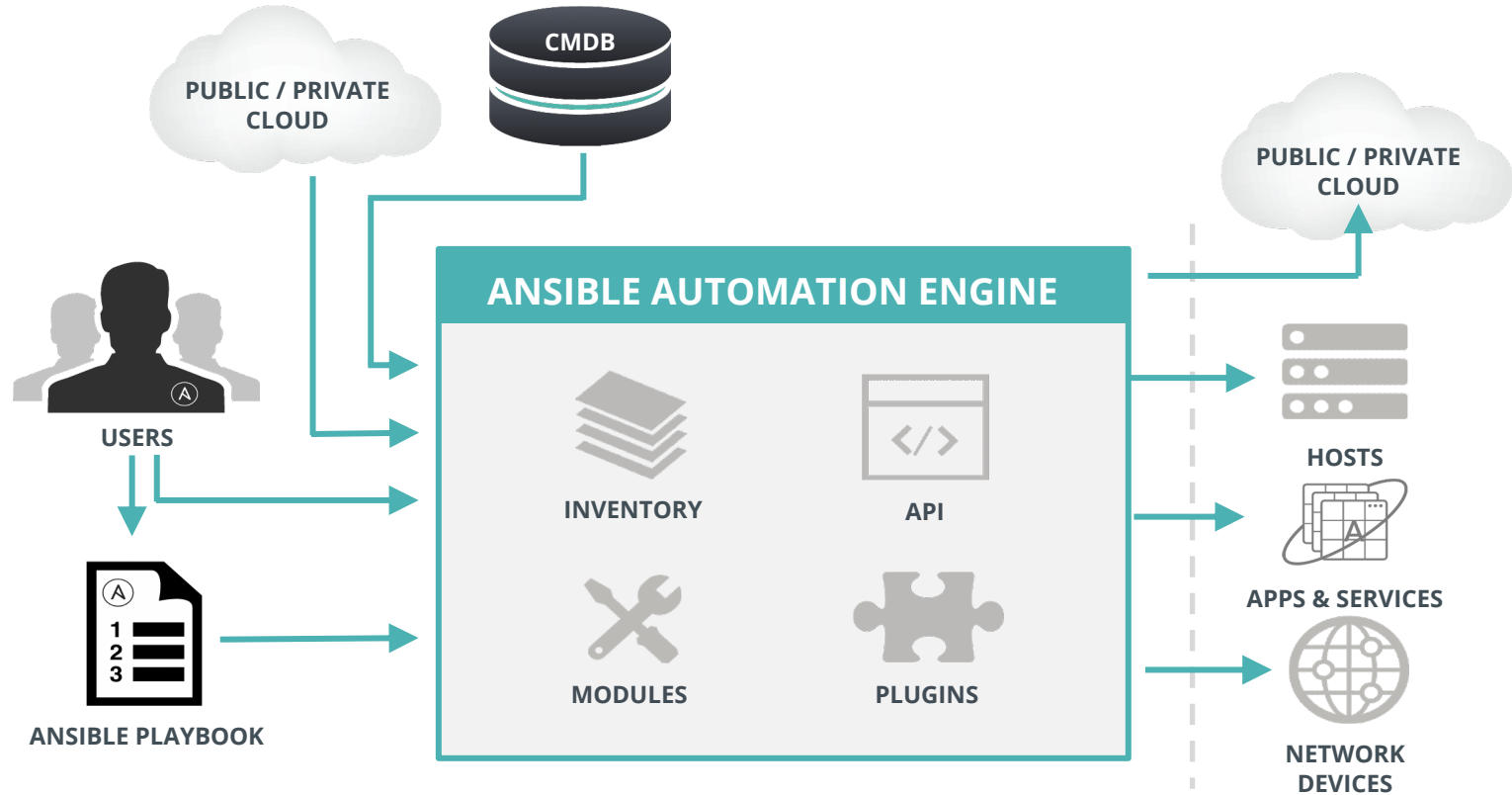
Infrastructure

Storage

Network Devices

**And more...**

# How Ansible works



# Red Hat Ansible Automation Platform



Network

Lines of  
business

Security

Operations

Infrastructure

Developers

Engage

**Ansible SaaS:** Engage users with an automation focused experience

Scale

**Ansible Automation Platform:** Operate & control at scale

Create

**Ansible Engine:** Universal language of automation

Fueled by an open source community

# ANSIBLE AUTOMATION PLATFORM

## TECHNOLOGIES YOU CAN USE

### CLOUD

[AWS](#)  
[Azure](#)  
Digital Ocean  
[Google](#)  
OpenStack  
Rackspace  
**+more**

### OPERATING SYSTEMS

RHEL and Linux  
UNIX  
Windows  
**+more**

### VIRT & CONTAINER

Docker  
VMware  
RHV  
OpenStack  
OpenShift  
**+more**

### STORAGE

NetApp  
Red Hat Storage  
Infinidat  
**+more**

### WINDOWS

ACLs  
Files  
Packages  
IIS  
Regedits  
Shares  
Services  
Configs  
Users  
Domains  
**+more**

### NETWORK

Arista  
A10  
Cumulus  
Bigswitch  
Cisco  
Cumulus  
Dell  
F5  
Juniper  
Palo Alto  
OpenSwitch  
**+more**

### DEVOPS

Jira  
GitHub  
Vagrant  
Jenkins  
Bamboo  
Atlassian  
Subversion  
Slack  
Hipchat  
**+more**

### MONITORING

Dynatrace  
Airbrake  
BigPanda  
Datadog  
LogicMonitor  
Nagios  
New Relic  
PagerDuty  
Sensu  
StackDriver  
Zabbix  
**+more**

# Automating Day 0 and Day 1 operations for SAP workloads



# SAP HANA AND SAP S/4HANA DEPLOYMENT

Automation for the whole environment

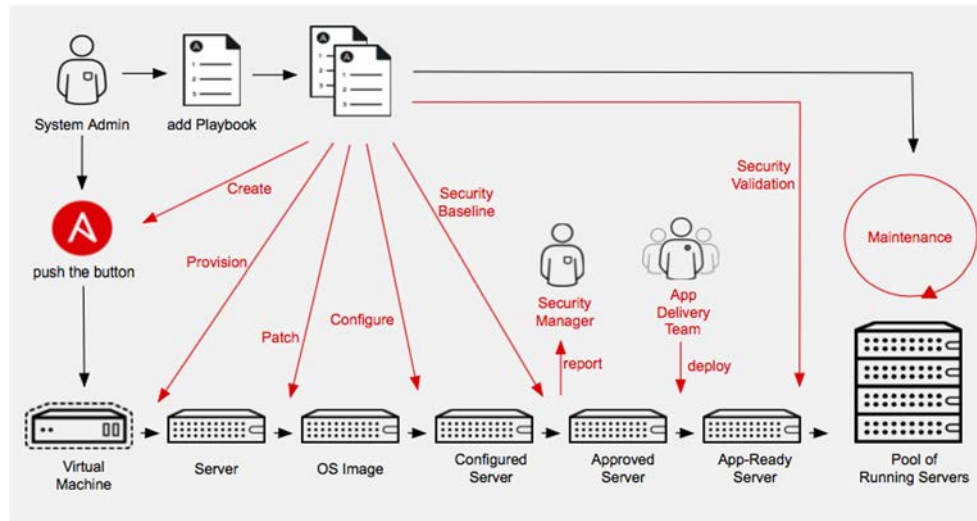
LINUX (OS) > SAPHANA > SAP S/4HANA > VALIDATION

INFRASTRUCTURE >

> MAINTENANCE

► On Premise or cloud

► Maintenance & Updates



# Currently Available Ansible Roles for SAP

## **redhat\_sap.sap\_hana\_ha\_pacemaker**

- Configures pacemaker to provide for a highly available SAP HANA instance

## **redhat\_sap.sap\_hana\_deployment**

- Deploys SAP HANA on the server

## **redhat\_sap.sap\_hana\_mediacheck**

- Checks SAP HANA installation media

## **sap-netweaver-preconfigure**

- Installs & activates tuned-profiles-sap-netweaver

## **redhat\_sap.sap\_rhsm**

- Registers and subscribes a server to RHEL for SAP related repositories

## **redhat\_sap.sap-s4hana-deployment**

- Runs the fully automated installation of SAP S/4HANA with an existing SAP HANA installation on the same server or on a separate server

## **redhat\_sap.sap\_hana\_hsr**

- Configures SAP HANA System Replication (HSR) on 2 existing SAP HANA deployments

## **redhat\_sap.sap\_hostagent**

- Deploys SAPHOSTAGENT on the server

## **sap-hana-preconfigure**

- Installs & activates tuned-profiles-sap-hana
- Configures server for SAP HANA according to Best Practices in SAP OSS Notes

## **sap-preconfigure**

- Installs required packages and configures server based on Best Practices in SAP OSS Notes
- Prerequisite for all SAP deployments

**other linux system roles for network, ntp, subscription mgmt, etc.**

**RHEL System Roles for SAP** -- currently in Tech Preview status; GA in RHEL 8.3

**Community-driven Ansible roles** maintained by Red Hat's SAP Community of Practice (CoP)



# Automating Day 2 operations for SAP workloads

# Automating Day 2 Operations for SAP landscapes with Ansible

In addition to using Ansible Automation to provision SAP and SAP Related instances on on-premise, public and private platforms, customers and system management partners can use the platform for what we call Day-2 operations such as:

- SAP instance system copies,
- instance refreshes,
- database operations,
- database and operating system patching

across the whole infrastructure and operating system layer of the landscape. Using Ansible provides customers with the ability to perform those repetitive tasks economically but thru error-free and security compliant operations in the same time.

Also, as per requirements:

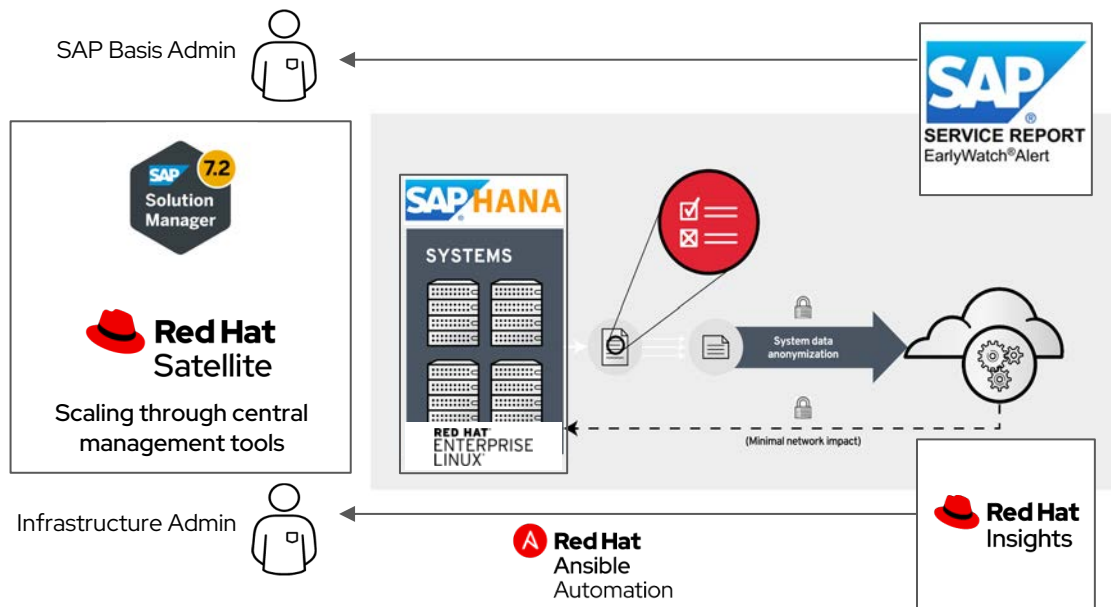
- Stop/Start of the SAP Instances,
- Statically creation or deletion of SAP Application Servers per demand,
- Shutting down of Sandbox/Pre-Prod systems to cold storage and pulling them out of storage

processes can be achieved via automation.

# Automating Day 2 Operations for SAP landscapes with Ansible (further examples)

- OS patching with Satellite orchestrated by Ansible,
- Resource addition (disk, CPU, memory),
- Kernel parameter changes,
- DB patching,
- Cluster management,
- Configuration and management of DB HA/replication,
- DB backup/restore,
- ...

# Smart Management and proactive Resolution for SAP



## SAP Early Watch

- Proactive Application Monitoring
- Top down view
- Insights from SAP Solution Manager

## Red Hat Insights

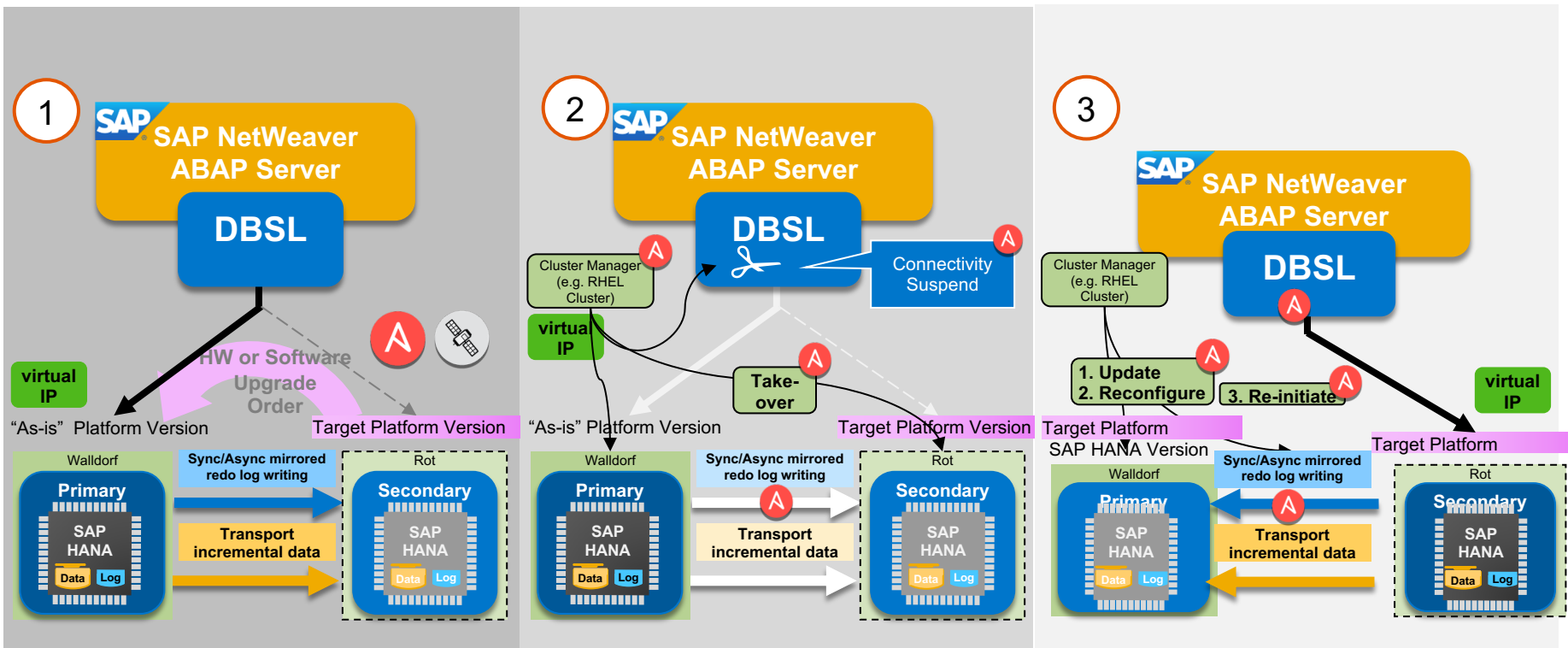
- Proactive Infrastructure Monitoring
- Bottom up view
- ML in Red Hat Datacenter

**DISCOVER**  
1,000,000+  
solved cases

**VALIDATE**  
100,000+  
unique solutions

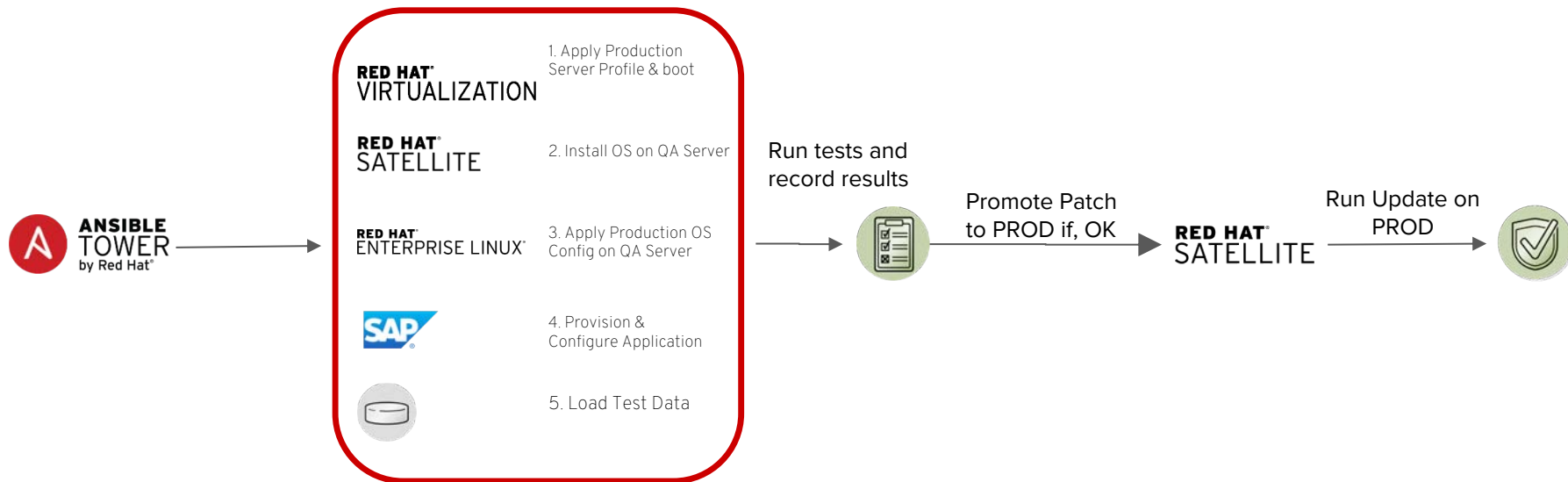
# Near Zero Downtime Maintenance for SAP HANA and SAP Netweaver

Revision Update using Ansible Playbooks, Satellite Provisioning



# Use Case: fast and secure of patching SAP landscapes

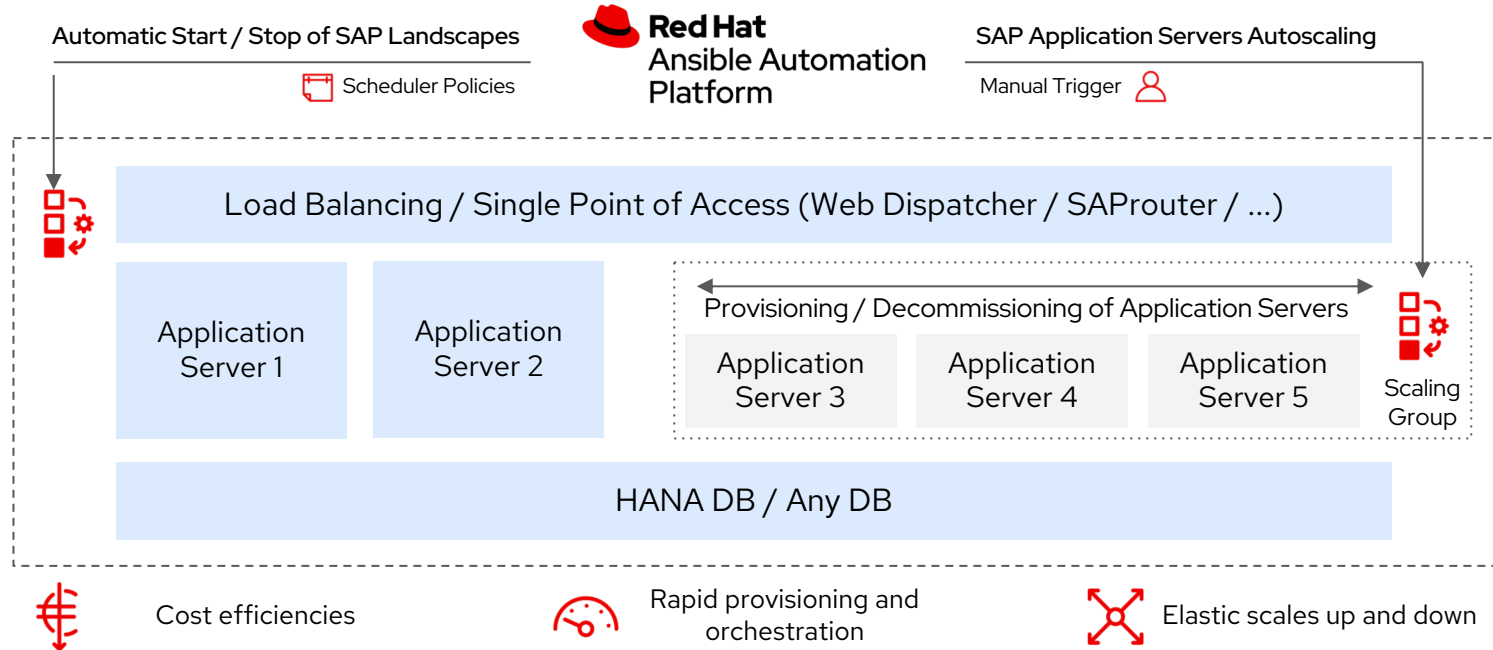
Run Ansible Playbook





# SAP Application Server Autoscaling and resources Optimization (self healing)

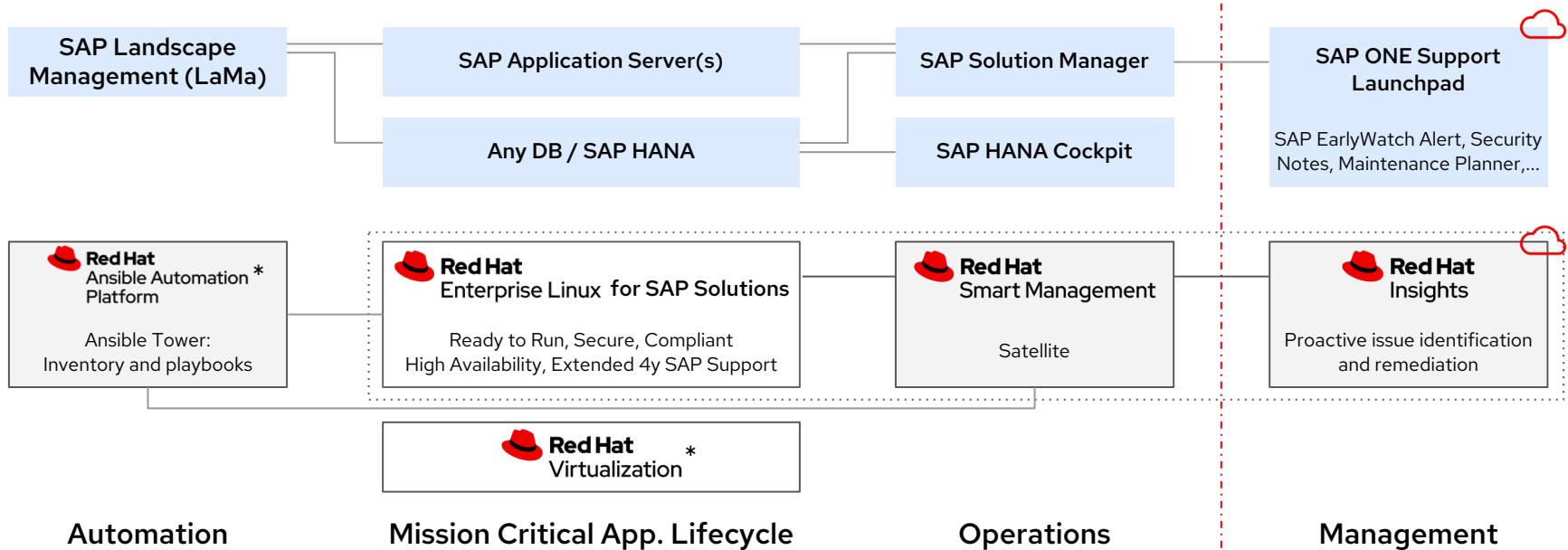
Elastic-scale and resource optimization in a pay-as-you-go subscription model



# Red Hat platform for SAP workloads

# Red Hat Enterprise Linux for SAP Solutions

The Unified and Complementary Platform for SAP Workloads



# Red Smart Management

## Content Management

Satellite provides Content Management features for different content types (RPM, Puppet, Container Images, etc.).

## Patch Management

Satellite provides a central point for Patch management, where it is easy to report, plan and apply patches.

## Provisioning Management

Satellite can be leveraged to provision RHEL systems on a variety of platforms. This includes bare metal, on premise virtualization solutions and public cloud environments.

## Configuration Management

Satellite features integration for configuration management tools such as Ansible and Puppet.

## Red Hat Insights Integration

View the Insight Assessment reports in the Satellite user interface and trigger remediations.

## Subscription Management

Satellite can be used to centrally manage, report and maintain Red Hat subscriptions.

# Red Hat Insights



## Advisor

Availability, performance, stability, and security risk analysis



## Vulnerability

Assess Common Vulnerabilities and Exposures (CVEs) with advisories



## Compliance

Assess and monitor compliance, built on OpenSCAP



## Subscriptions

Track progress of your Red Hat subscription usage efficiently and confidently



## Drift

Create baselines and compare system profiles



## Policies

Define and monitor against your own policies to identify misalignment



## Patch

Analyze for Red Hat product advisory applicability to stay up to date

Red Hat

Search tags Workloads SAP X Clear filters

### Advisor recommendations [Download executive report](#)

Red Hat has proactively disabled certain low risk recommendations  
We want you to focus on the more important risks to your systems. Red Hat disabled recommendations can be found under the Status filter.

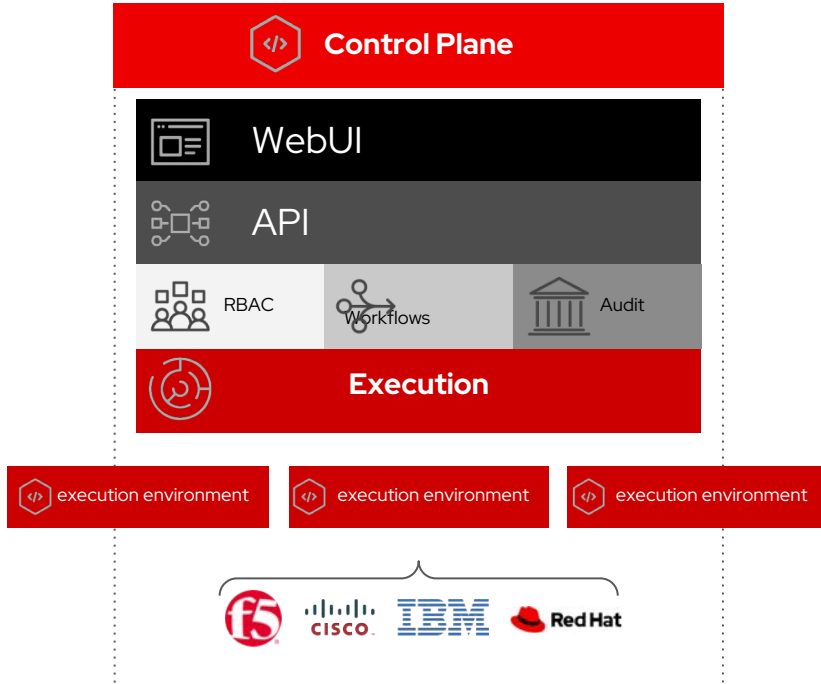
Name Search 1-5 of 5

Status Enabled X Total risk Moderate X Clear filters

Name	Added	Total risk	Risk of change	Systems	Ansible
> Decreased security when unencrypted protocols used	10 days ago	Moderate	Very Low	1	No
> SAP HANA is not supported when running on uncertified kernel	1 year ago	Moderate	Moderate	1	No
> SAP application will fail to run or its performance will degrade when resource limits do not meet SAP requirements	3 years ago	Moderate	Low	3	✓
> SAP will not work well when missing required packages or the version of specific packages does not meet the minimal requirements	6 months ago	Moderate	Very Low	1	✓
> The performance of SAP components related to VMC (Virtual Machine Container) degrades when the size of tmpfs for /dev/shm is insufficient for SAP.	6 months ago	Moderate	High	3	✓

# Ansible Automation Platform 2.0

- ▶ A **simplified automation experience** with a **bare-metal, VM, OR containerized automation platform**.
- ▶ Enhanced management of **certified content** via private automation hub.
- ▶ Added **control, analytics, auditing** and reporting via Red Hat Insights for Ansible Automation Platform
- ▶ Align automation with **governance and business processes** at scale with **automation services catalog and ITSM integration**.



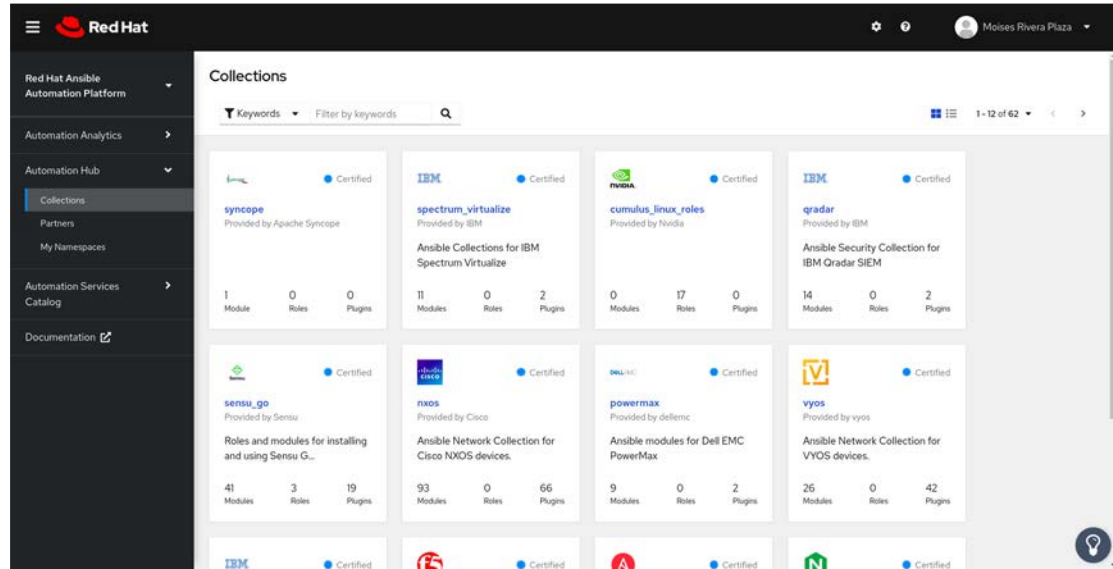
# Automation Hub

## Discover, publish, and manage Collections

Quickly discover available Red Hat and certified content through Collections.

Manage and test your organization's view of available content.\*

Manage your locally available automation via on-premise.\*





# Automation Hub

## Private Automation Hub

Customers can install his own Automation Hub on-prem or in any public cloud.

You can upload your own content to share with your automation community and sync content from [cloud.redhat.com](https://cloud.redhat.com)

