

How to use this deck

Name:

Ansible security automation workshop deck

Purpose:

This slide deck is part of a training course designed as an introduction to Ansible for security teams. The slides are meant to be taught in conjunction with hands-on exercises with the preconfigured [lab topology](#)

Last updated:

Sep 27, 2021 (check history for older versions)

What this deck is for?

This deck corresponds to the prescriptive exercises available on https://ansible.github.io/workshops/exercises/ansible_security/

The upstream source for exercises and provisioner are provided on <https://github.com/ansible/workshops>

What this deck is not for?

This is not a replacement for Red Hat training. This is a small “taste” of Ansible Automation Platform and meant to help people understand what is possible for security personas. Please refer to <https://www.redhat.com/en/services/training-and-certification> for official training

Google Slides source link (Red Hat internal):

https://docs.google.com/presentation/d/19gVCBz1BmxC15tDDj-FUiUd_jUUUKay81E8F24cyUjk/edit?usp=sharing

A note to the instructors

How to improve this deck

The workshop is a collaborative effort. Help us to improve it! You can leave comments, and the BU will make sure to work on this. Tag Craig Brandt or Sean Cavanaugh, or anyone in the Ansible BU technical marketing management team.

Who is the target audience for the workshop?

The workshop is intended for people who want to learn how Ansible can be leveraged in security environments. The workshop is intended for technical professionals in automation [supporting horizontally other teams in their company], security operations and vulnerability management.

There is no previous knowledge about Ansible required to access this workshop, though it certainly helps.

Reporting workshop issues

The workshops are a collaborative effort and we need your help to continually improve the content. Please report any bugs or feature requests on the [GitHub workshop repository](#).



Ansible Security automation workshop

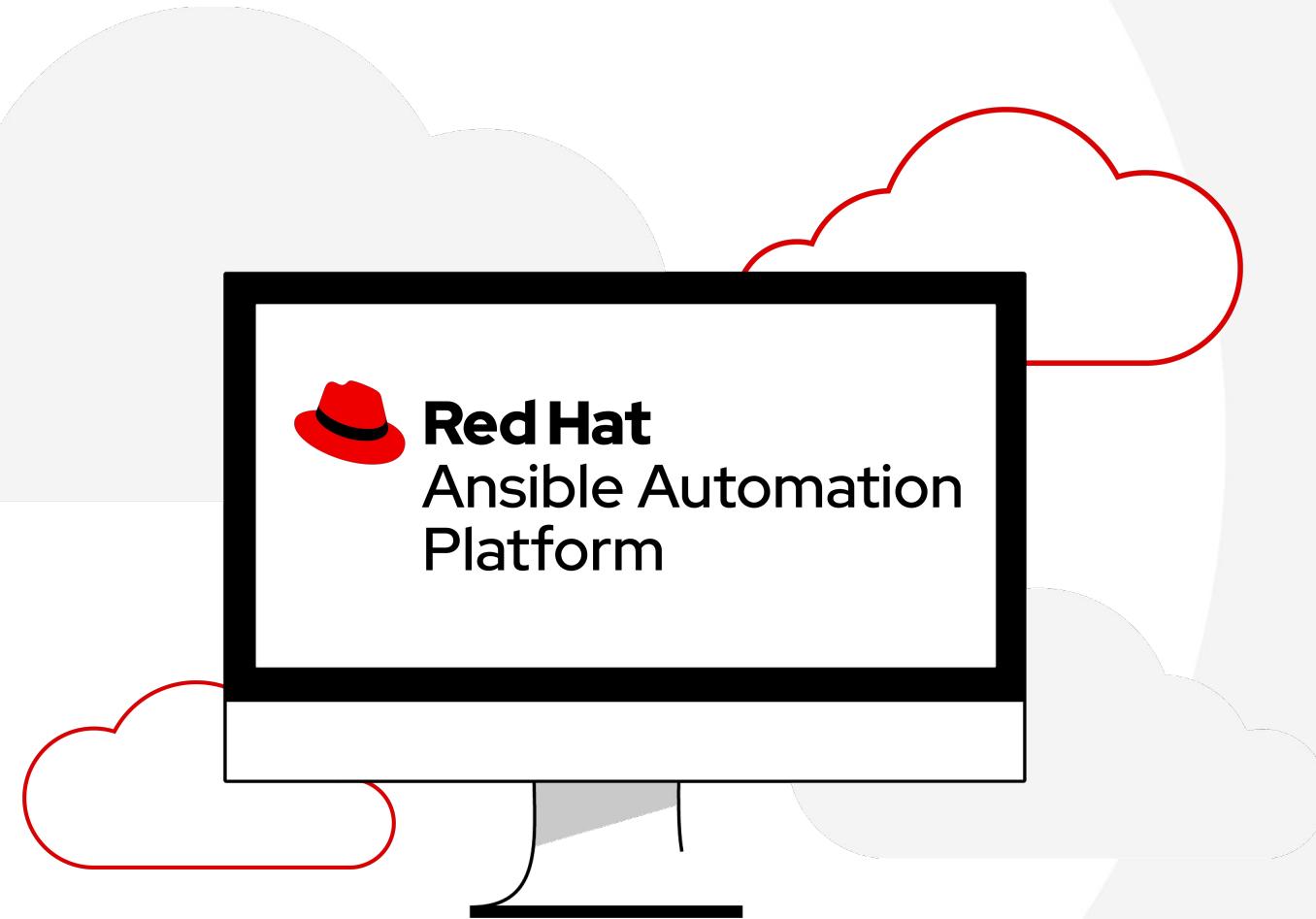
Introduction to Ansible security automation for security teams



Housekeeping

- Timing
- Breaks
- Takeaways





What you will learn

Introduction

- ▶ Introducing Ansible Automation Platform
- ▶ Ansible security automation overview

Section 1

- ▶ Exploring the lab environment
- ▶ Ansible Automation Platform basics
- ▶ Lab exercises

Section 2

- ▶ Security personas
- ▶ Automation controller basics
- ▶ Lab exercises

Section 3

- ▶ Wrapping up

Introduction

Topics Covered:

- Why Ansible Automation Platform?
- Ansible security automation overview



Why Ansible Automation Platform?

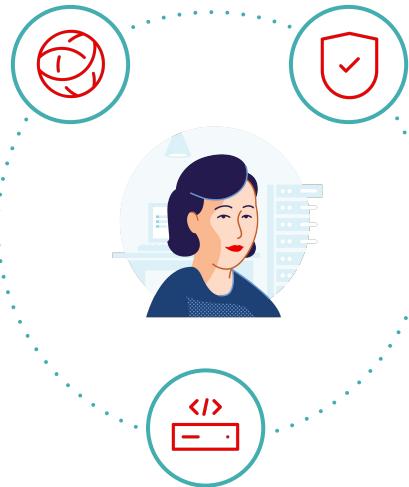




**Automation happens when
one person meets a problem
they never want to solve again**

Many organizations share the same challenge

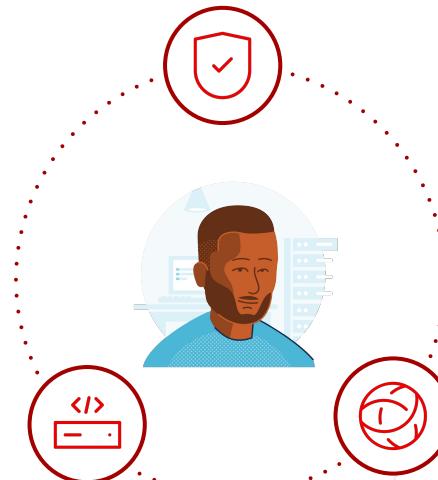
Too many unintegrated, domain-specific tools



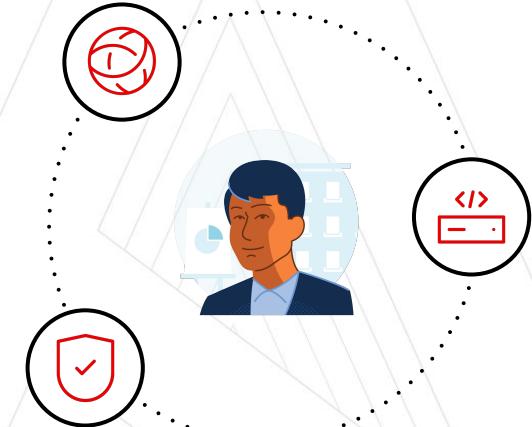
Network ops



SecOps

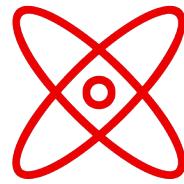


Devs/DevOps



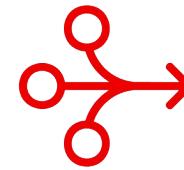
IT ops

Why the Ansible Automation Platform?



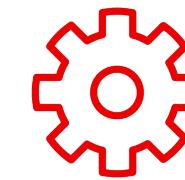
Powerful

Orchestrate complex processes at enterprise scale.



Simple

Simplify automation creation and management across multiple domains.



Agentless

Easily integrate with hybrid environments.

Automate the deployment and management of automation

Your entire IT footprint

Do this...

Orchestrate Manage configurations Deploy applications Provision / deprovision Deliver continuously Secure and comply

On these...



Firewalls



Load balancers



Applications



Containers



Virtualization platforms



Servers



Clouds



Storage



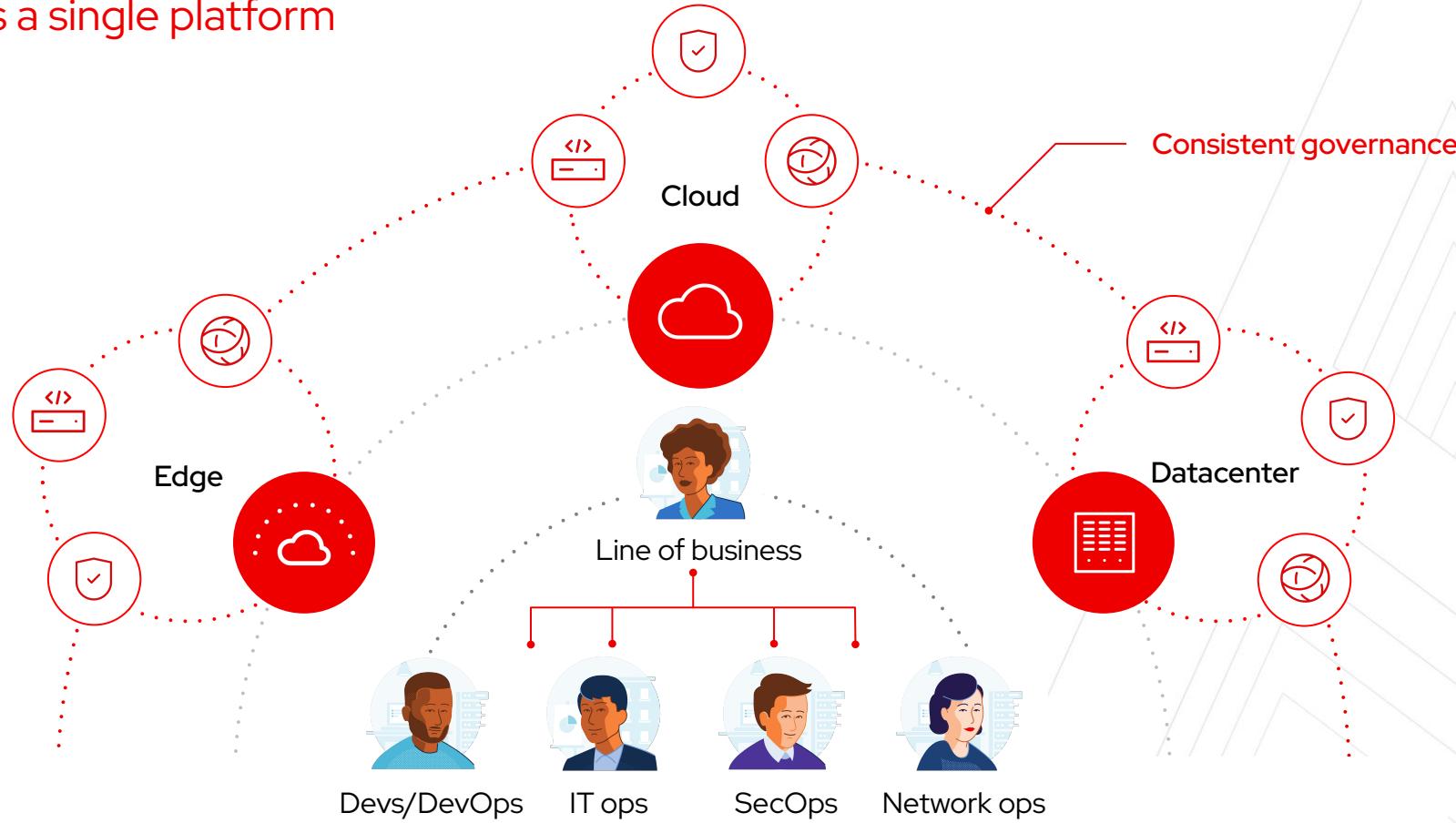
Network devices



And more ...

Break down silos

Different teams a single platform



What is Ansible security automation?



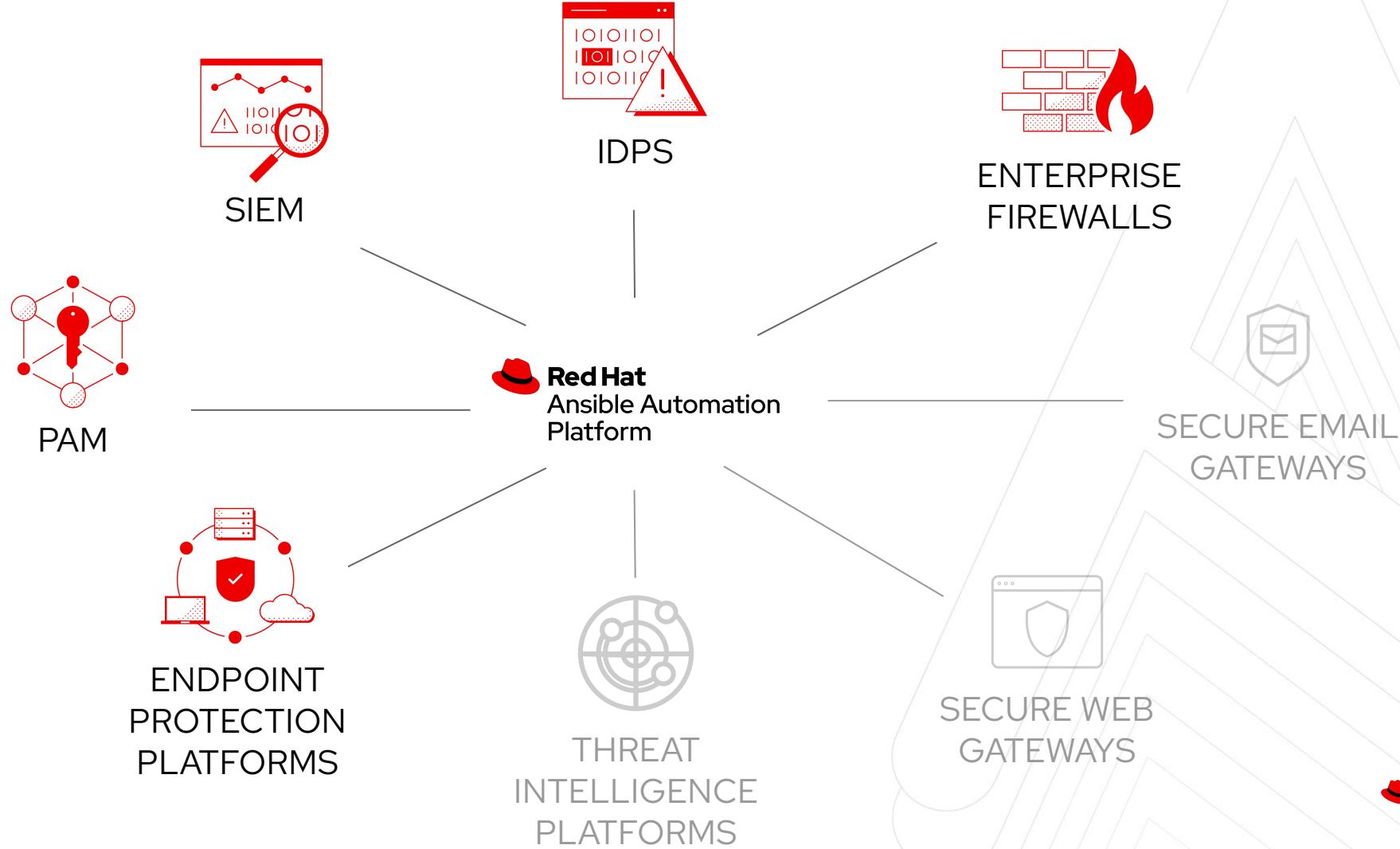
What Is Ansible security automation?

Ansible security automation is our expansion deeper into the security use case. The goal is to provide a more efficient, streamlined way for security teams to automate their various processes for the identification, search, and response to security events. This is more complex and higher-value than the application of a security baseline (PCI, STIG, CIS) to a server.



Ansible security automation is a supported set of Ansible modules, roles and playbooks designed to unify the security response to cyberattacks.

What Ansible security automation covers



Is It A Security Solution?

No. Ansible can help Security teams “stitch together” the numerous security solutions and tools already in their IT environment for a more effective cyber defense.

By automating security capabilities, organizations can better unify responses to cyberattacks through the coordination of multiple, disparate security solutions, helping these technologies to act as one in the face of an IT security event.



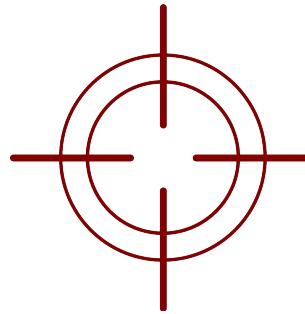
Red Hat will not become a security vendor, we want to be a security enabler.

What Does It Do?



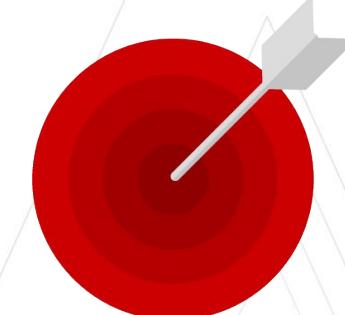
Investigation Enrichment

Enabling programmatic access to log configurations such as destination, verbosity, etc.



Threat Hunting

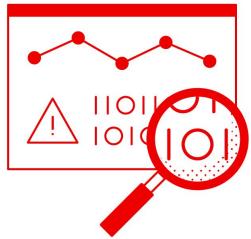
Automate alerts, correlation searches and signature manipulation to preemptively identify threats



Incident Response

Creating new security policies to grant access, block or quarantine a machine

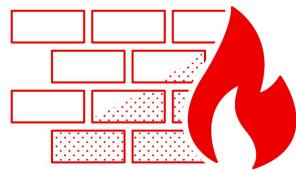
Ansible Security Ecosystem



**Security Information &
Events Management**

splunk®

IBM®



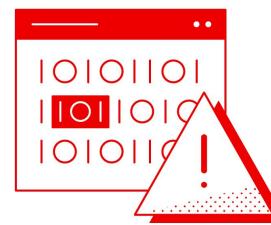
**Enterprise
Firewalls**

Check Point
SOFTWARE TECHNOLOGIES LTD

CISCO™

f5® **FORTINET**®

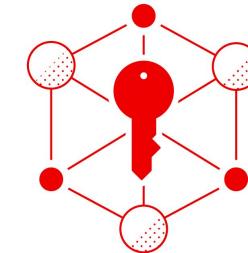
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NETWORKS



**Intrusion Detection &
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SNORT® **Check Point**
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CYBERARK®

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Endpoint Protection

Symantec™

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Section 1

Introduction to Ansible security automation
basics



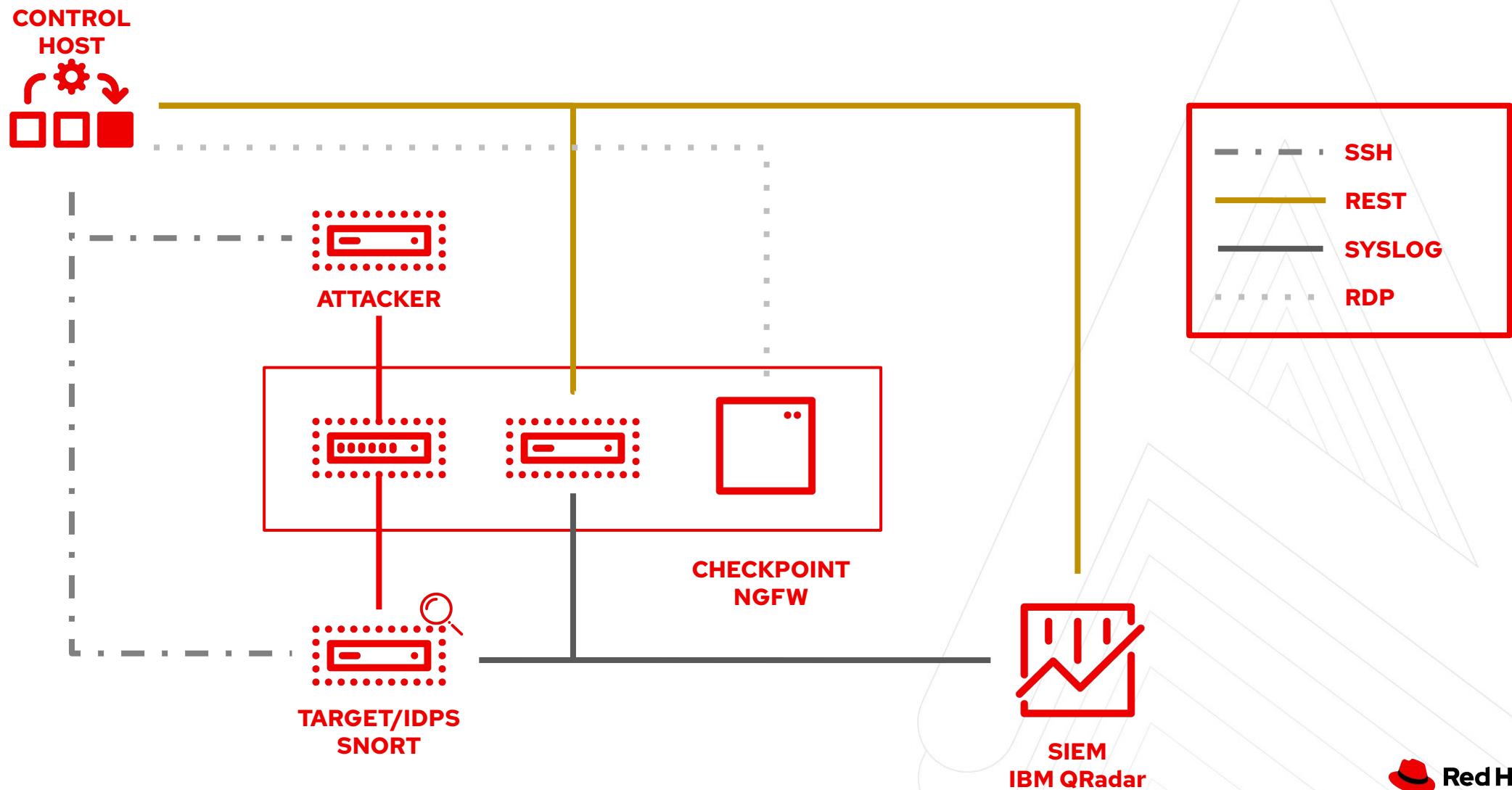
Exercise 1.1



Topics Covered:

- Exploring the lab environment
- What are Automation execution environments?
- Automation content navigator (*ansible-navigator*)
- Workshop inventory overview

Security workshop architecture

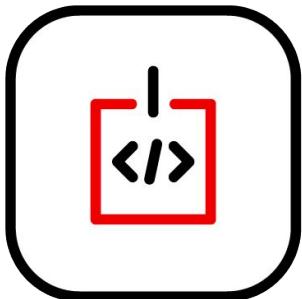


What are Automation execution environments?



Automation execution environments

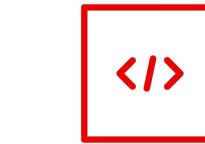
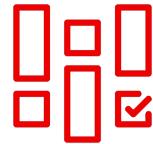
Components needed for automation, packaged in a cloud-native way



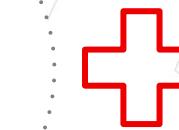
Execution
Environments



Collections



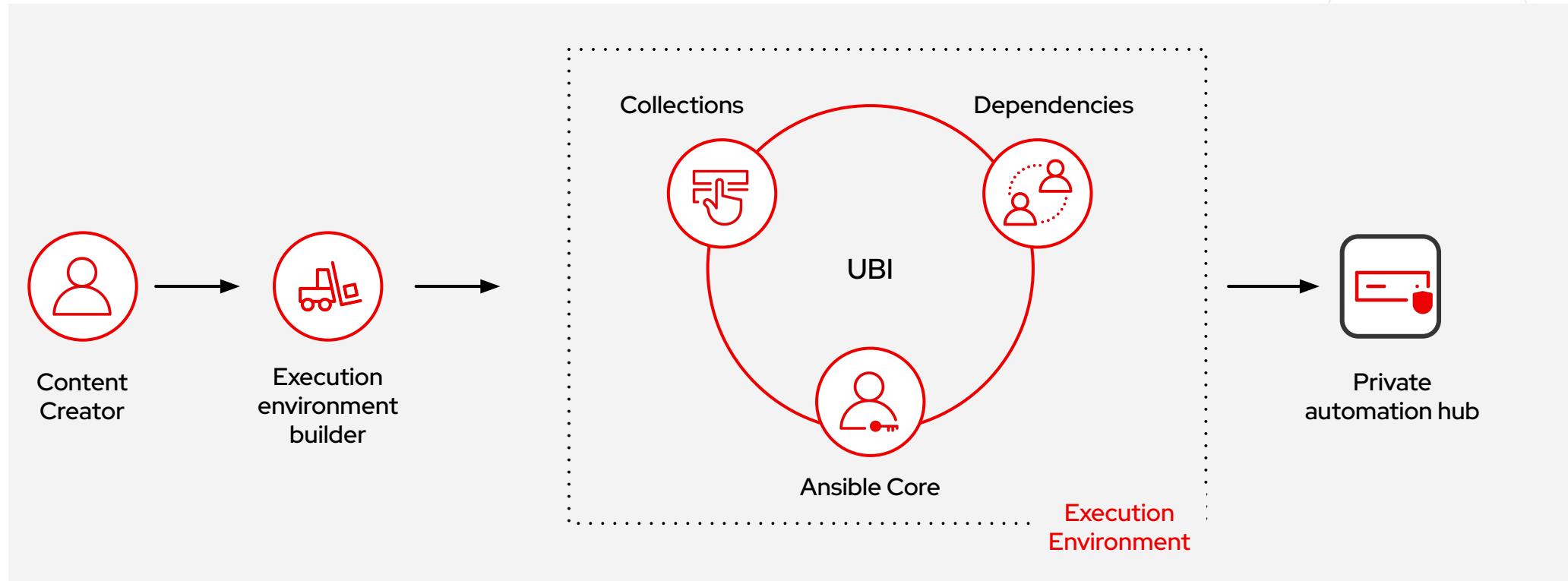
Libraries



Ansible Core

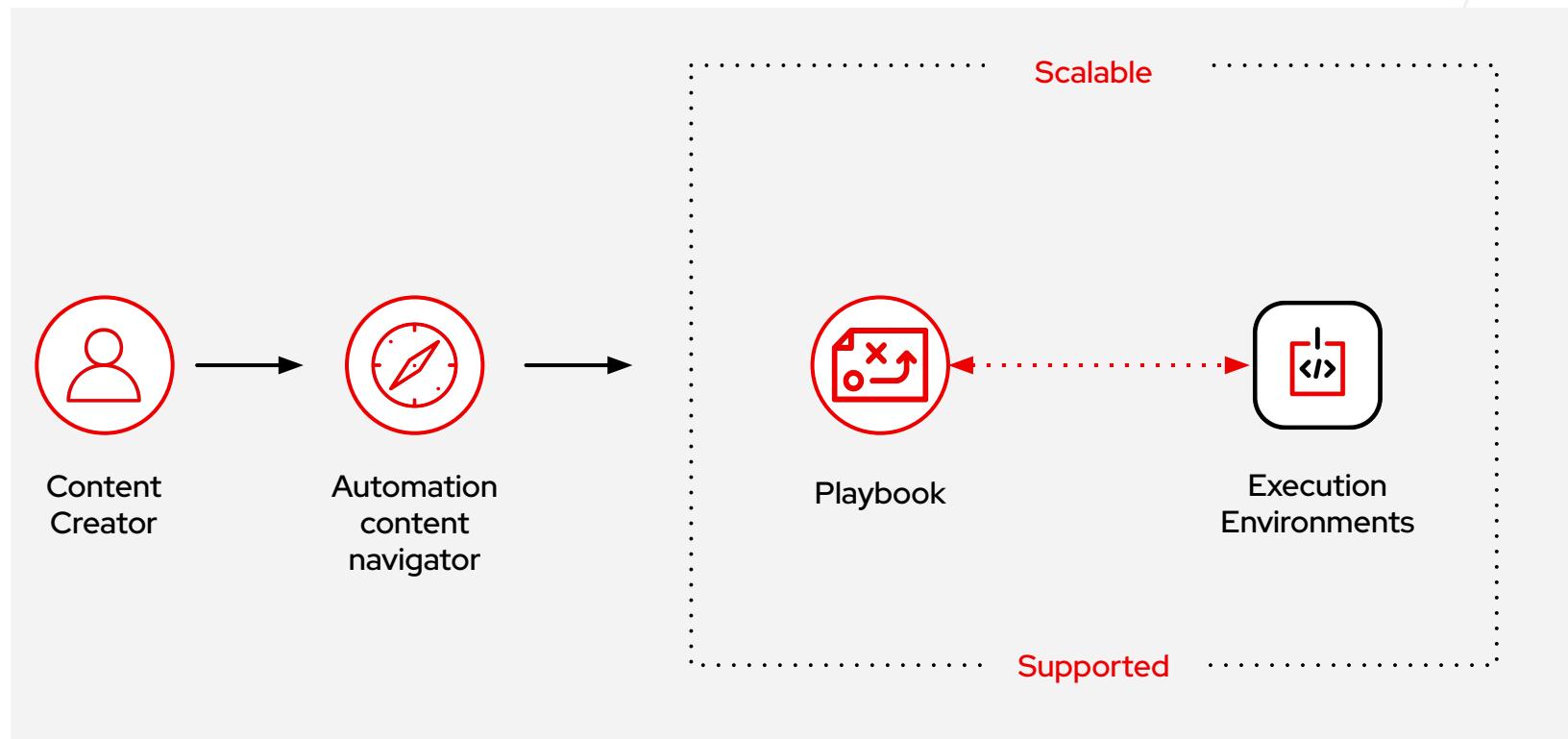
Build, create, publish

Development cycle of an automation execution environment



Develop, test, run

How to develop, test and run containerized Ansible content



Workshop Automation execution environment

Ansible Security Roles and Automation content collections already available



Do I need to do anything? No

- ▶ Everything has been set up for you and ready to use.
- ▶ All Content Collections and Roles are included.
- ▶ `ansible-navigator` configuration preconfigured

What's included?

- ▶ We will use `ansible-navigator` to explore the `security_ee` content

```
ansible-navigator
execution-environment:
  image: security_ee:latest
  enabled: true
  container-engine: podman
  pull-policy: missing
```

Automation content navigator *(ansible-navigator)*



ansible-navigator

Using the latest ansible-navigator command



What is ansible-navigator?

ansible-navigator command line utility and text-based user interface (TUI) for running and developing Ansible automation content.

It replaces the previous command used to run playbooks “ansible-playbook”.

```
$ ansible-navigator run playbook.yml
```

ansible-navigator

Mapping to previous Ansible commands

ansible command	ansible-navigator command
ansible-config	ansible-navigator config
ansible-doc	ansible-navigator doc
ansible-inventory	ansible-navigator inventory
ansible-playbook	ansible-navigator run

How do I use ansible-navigator?

Hello ansible-navigator



How do I use ansible-navigator?

As previously mentioned, it replaces the ansible-playbook command.

As such it brings two methods of running playbooks:

- ▶ Direct command-line interface
- ▶ Text-based User Interface (TUI)

```
# Direct command-line interface method  
$ ansible-navigator run playbook.yml -m stdout  
  
# Text-based User Interface method  
$ ansible-navigator run playbook.yml
```

Workshop inventory



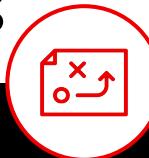
Security workshop inventory

The Basics

- Contains all machines of your environment
- Setup up just for you, individually
- Note your individual IP addresses for each machine
- The exercises needs you to replace example IP addresses with your individual ones
- `/home/student<X>/lab_inventory/hosts`



Workshop inventory - Groups



Ansible Inventory - Groups

[all:vars]

```
ansible_user=student1  
ansible_ssh_pass=ansible  
ansible_port=22
```

[control]

```
ansible ansible_host=22.33.44.55 ansible_user=ec2-user private_ip=192.168.2.3
```

[siem]

```
qradar ansible_host=22.44.55.77 ansible_user=admin private_ip=172.16.3.44  
ansible_httpapi_pass="Ansible1!" ansible_connection=httpapi ansible_httpapi_use_ssl=yes  
ansible_httpapi_validate_certs=False ansible_network_os=ibm.qradar.qradar
```

[ids]

```
snort ansible_host=33.44.55.66 ansible_user=ec2-user private_ip=192.168.3.4
```

Workshop inventory - Variables



```
[all:vars]
ansible_user=student1
ansible_ssh_pass=ansible
ansible_port=22

[control]
ansible ansible_host=22.33.44.55 ansible_user=ec2-user private_ip=192.168.2.3

[siem]
qradar ansible_host=22.44.55.77 ansible_user=admin private_ip=172.16.3.44
ansible_httpapi_pass="Ansible1!" ansible_connection=httpapi ansible_httpapi_use_ssl=yes
ansible_httpapi_validate_certs=False ansible_network_os=ibm.qradar.qradar

[ids]
snort ansible_host=33.44.55.66 ansible_user=ec2-user private_ip=192.168.3.4
```

Exercise Time!

Do Exercise 1.1 in your lab environment

- Follow the steps to access your environment
- Your environment will have unique IP addresses and DNS names.

The screenshots are only examples

- Access to machines is done via the VS Code Online editor using the built-in terminal

Exercise 1.2



Topics Covered:

- Managing Check Point Next Generation Firewalls
- Ansible Playbook basics
- Running your first playbook

Managing Check Point Firewalls



Managing Check Point Next Generation Firewalls

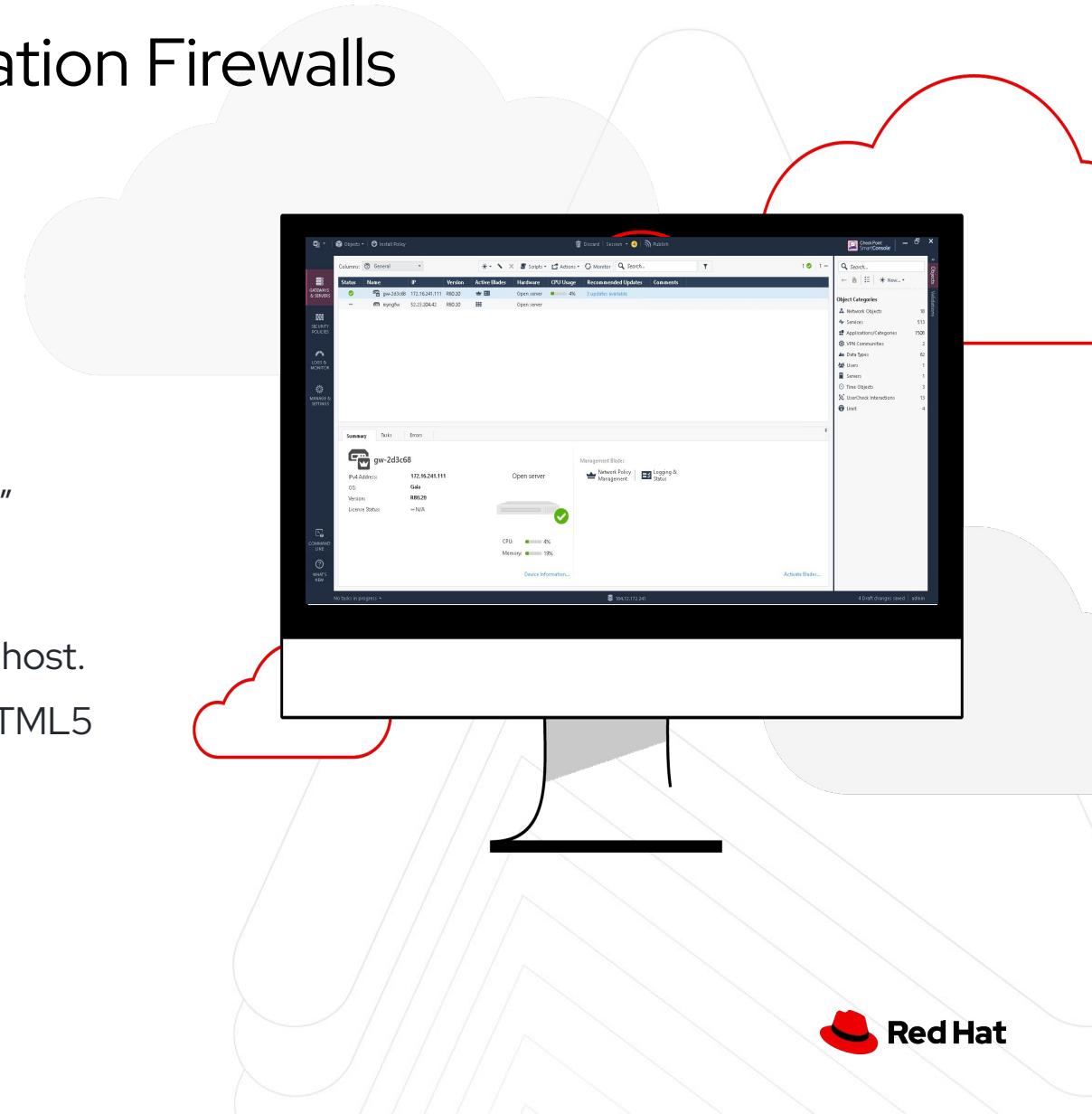


How do I use access Check Point firewalls?

- Accessed via a central management server
- Windows management software is called "SmartConsole"

Lab Check Point instances?

- Lab SmartConsole instance is installed on your Windows host.
- Accessed via generic RDP client or lab-provided RDP-HTML5 client
- HTTP REST API used to call Check Point API



First Check Point Management Server Login

The screenshot shows the Check Point SmartConsole interface. The left sidebar has icons for GATEWAYS & SERVERS, SECURITY POLICIES, LOGS & MONITOR, MANAGE & SETTINGS, COMMAND LINE, and WHAT'S NEW. The main area displays a table of objects with columns: Status, Name, IP, Version, Active Blades, Hardware, CPU Usage, Recommended Updates, and Comments. Two entries are listed: 'gw-2d3c68' (Status: Open server, IP: 172.16.241.111, Version: R80.20) and 'myngfw' (Status: Open server, IP: 52.23.204.42, Version: R80.20). A summary card for 'gw-2d3c68' shows details: IPv4 Address: 172.16.241.111, OS: Gaia, Version: R80.20, License Status: N/A. It also shows resource usage: CPU: 4%, Memory: 19%. The right panel shows object categories like Network Objects, Services, Applications/Categories, etc., with counts. The bottom status bar shows 'No tasks in progress', '184.72.172.241', '4 Draft changes saved | admin', and a large watermark of a person's face.

Ansible Playbook basics



Ansible playbooks



Playbook example

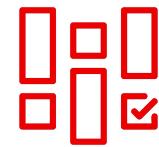
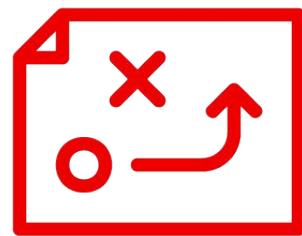
```
---
- name: install and start apache
  hosts: web
  become: yes

  tasks:
    - name: httpd package is present
      yum:
        name: httpd
        state: latest

    - name: latest index.html file is present
      template:
        src: files/index.html
        dest: /var/www/html/

    - name: httpd is started
      service:
        name: httpd
        state: started
```

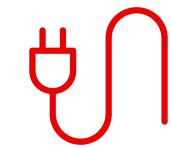
What makes up an Ansible playbook?



Plays



Modules



Plugins

Ansible plays

What am I automating?



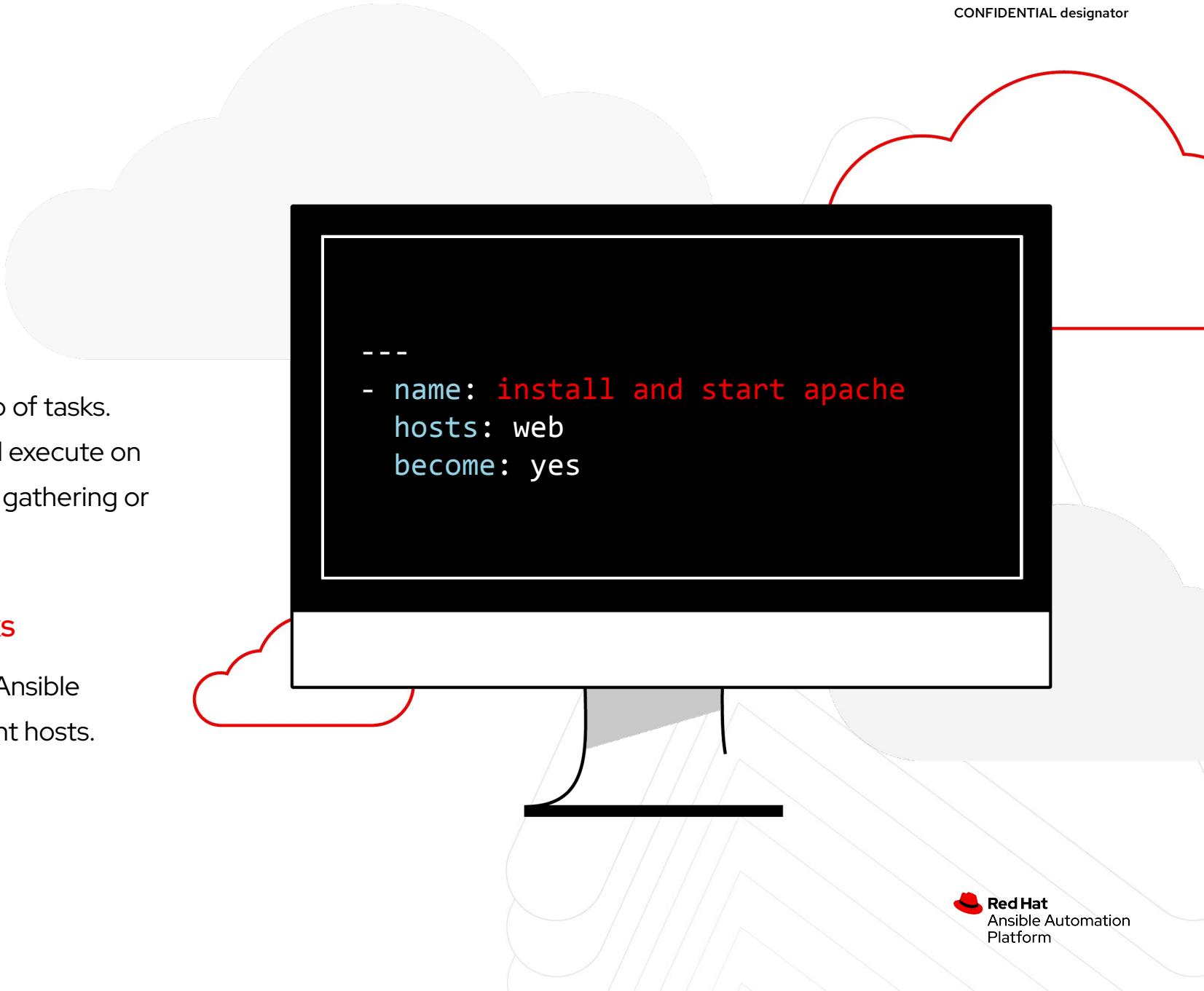
What are they?

Top level specification for a group of tasks.
Will tell that play which hosts it will execute on
and control behavior such as fact gathering or
privilege level.



Building blocks for playbooks

Multiple plays can exist within an Ansible
playbook that execute on different hosts.



Ansible modules

The “tools in the toolkit”



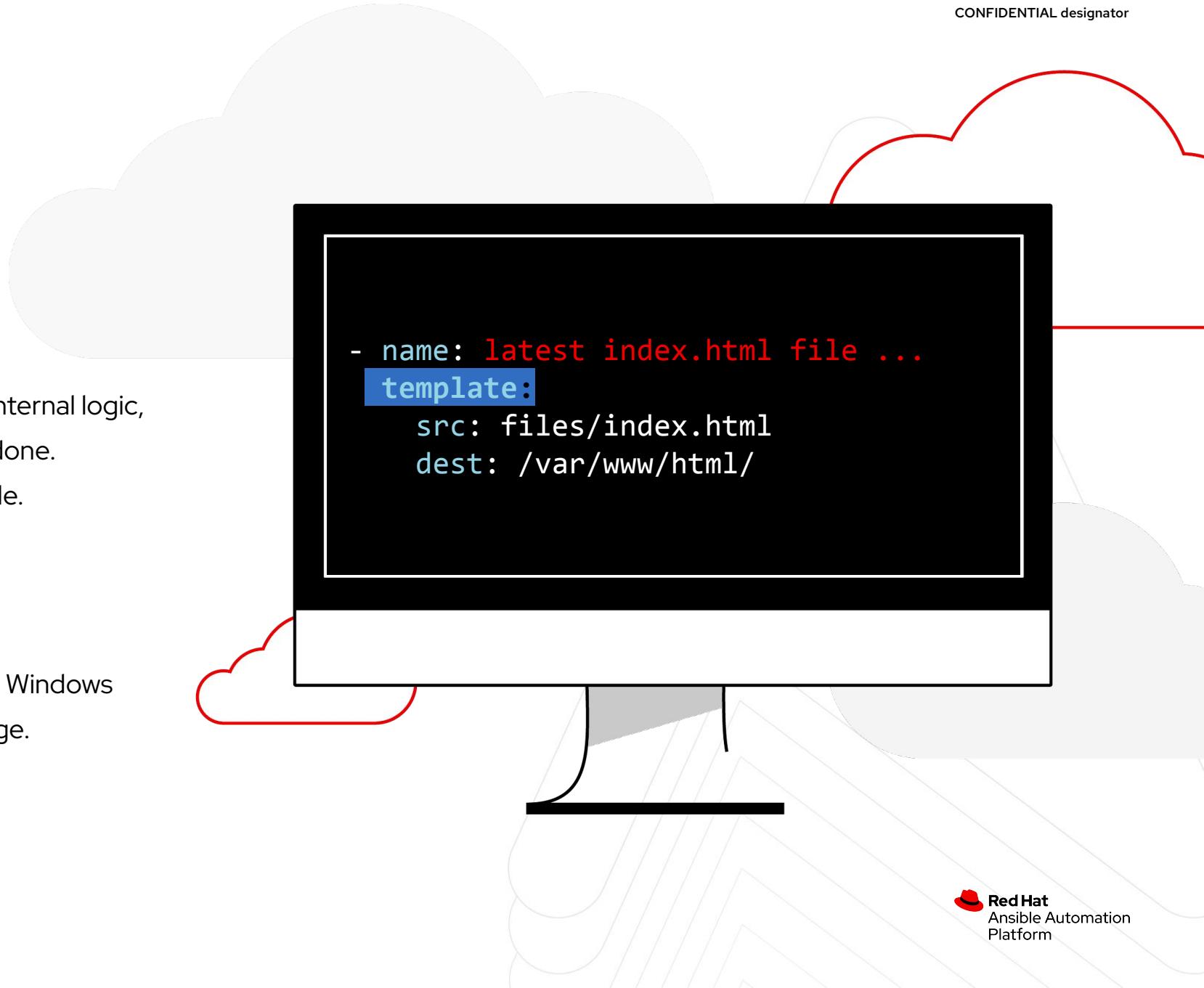
What are they?

Parametrized components with internal logic,
representing a single step to be done.
The modules “do” things in Ansible.



Language

Usually Python, or Powershell for Windows
setups. But can be of any language.



Ansible plugins

The “extra bits”



What are they?

Plugins are pieces of code that augment Ansible's core functionality. Ansible uses a plugin architecture to enable a rich, flexible, and expandable feature set.

Example become plugin:

```
---
```

```
- name: install and start apache
  hosts: web
  become: yes
```

Example filter plugins:

```
{{ some_variable | to_nice_json }}
```

```
{{ some_variable | to_nice_yaml }}
```



Ansible playbooks

A play

```
---  
- name: install and start apache  
  hosts: web  
  become: yes  
  
  tasks:  
    - name: httpd package is present  
      yum:  
        name: httpd  
        state: latest  
  
    - name: latest index.html file is present  
      template:  
        src: files/index.html  
        dest: /var/www/html/  
  
    - name: httpd is started  
      service:  
        name: httpd  
        state: started
```



A task

```
---
```

```
- name: install and start apache
  hosts: web
  become: yes
```

```
  tasks:
    - name: httpd package is present
      yum:
        name: httpd
        state: latest
```

```
    - name: latest index.html file is present
      template:
        src: files/index.html
        dest: /var/www/html/
```

```
    - name: httpd is started
      service:
        name: httpd
        state: started
```



Ansible playbooks

A module

```
---
```

```
- name: install and start apache
  hosts: web
  become: yes
```

```
  tasks:
    - name: httpd package is present
      yum:
        name: httpd
        state: latest
```

```
    - name: latest index.html file is present
      template:
        src: files/index.html
        dest: /var/www/html/
```

```
    - name: httpd is started
      service:
        name: httpd
        state: started
```



Running Playbooks

The most important **colors** of Ansible

A task executed as expected, no change was made.

A task executed as expected, making a change

A task failed to execute successfully

Running your first Playbook



Verifying the playbook was successful

Check Point Firewall Policy



Log into SmartConsole

- ▶ Check Point Firewall Policy
- ▶ Check network objects for added hosts
- ▶ Check policies for added policy

The screenshot shows the Check Point SmartConsole interface. The top navigation bar includes 'Search...', 'New...', and tabs for 'Objects' and 'Validations'. The left sidebar lists 'Hosts' with two entries: 'asa-192.168.0.10' and 'asa-192.168.0.11'. The main pane displays a table of firewall policies:

No.	Name	Source	Destination	VPN	Services & Applications	Action	Track	Install On
1	asa-drop-192.168.0.10-to-192.168.0.11	asa-192.168.0.10	asa-192.168.0.11	* Any	* Any	Drop	None	* Policy Targets
2	Cleanup rule	* Any	* Any	* Any	* Any	Drop	None	* Policy Targets

Exercise Time!

Do Exercise 1.2 in your lab environment

- Follow the steps in the exercises
- Remember to use the IP addresses assigned to you
- The Check Point credentials differ from the standard workshop details provided.

Exercise 1.3



Topics Covered:

- What is an IDPS?
- Snort basics
- Intro to Ansible Roles
- Running a playbook interacting with Snort

What is an IDPS?

Intrusion Detection and Prevention Systems



What do they do?

- ▶ Monitors systems and networks
- ▶ Generates logs for malicious activity or policy violations
- ▶ Attempts to stop incident
- ▶ Logs are collected centrally, typically to a SIEM
- ▶ Typically used by security operations



Snort basics



Snort

Open Source Intrusion Detection and Prevention System

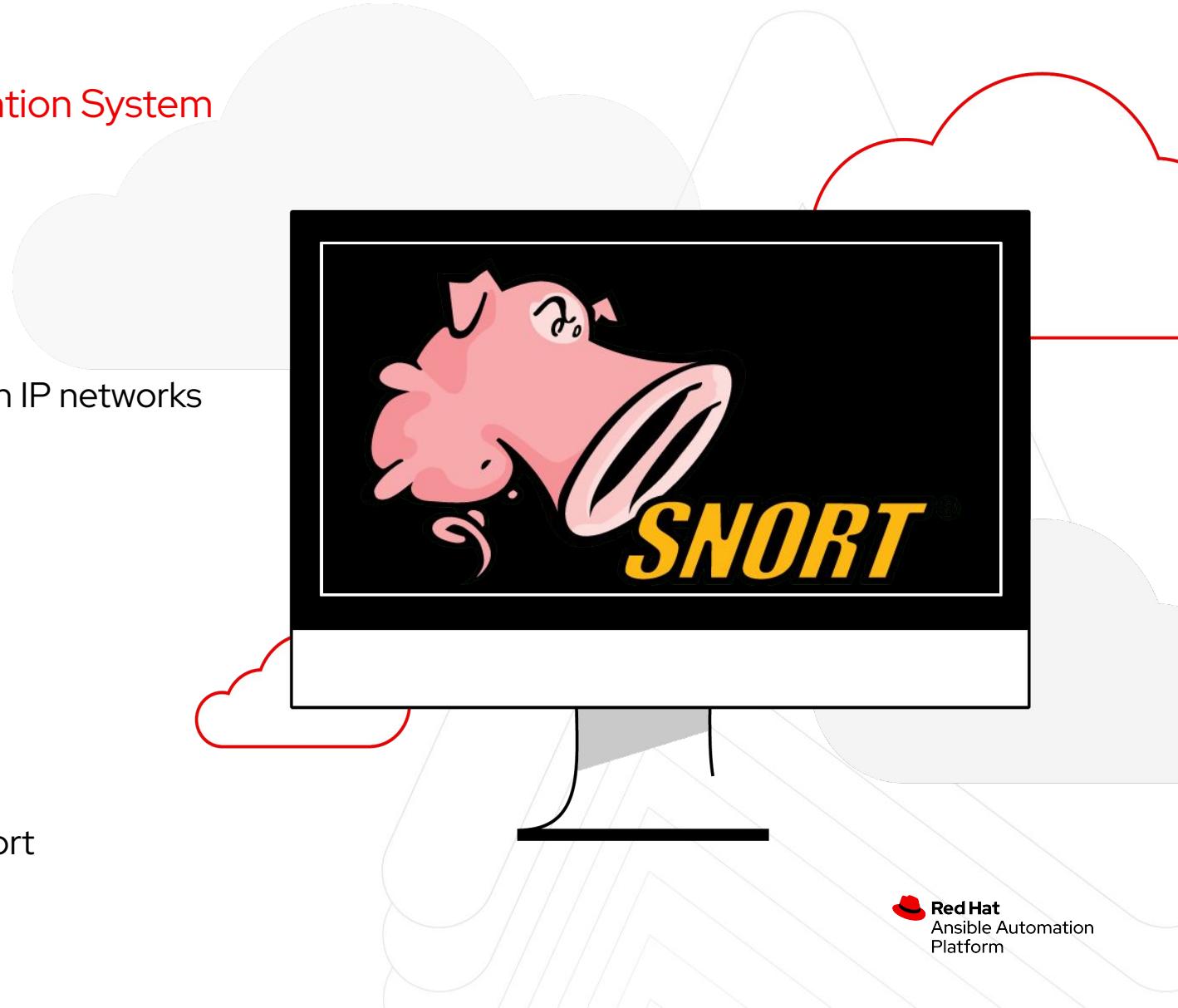


What does Snort do?

- ▶ Real time traffic analysis and packet logging on IP networks
- ▶ Content search and matching
- ▶ Service running on possible targets

Your Snort workshop instance

- ▶ Snort is installed on a RHEL instance
- ▶ RHEL instance accessed via SSH
- ▶ Ansible uses SSH connection to automate Snort



Snort Rules

Open Source Intrusion Detection and Prevention System

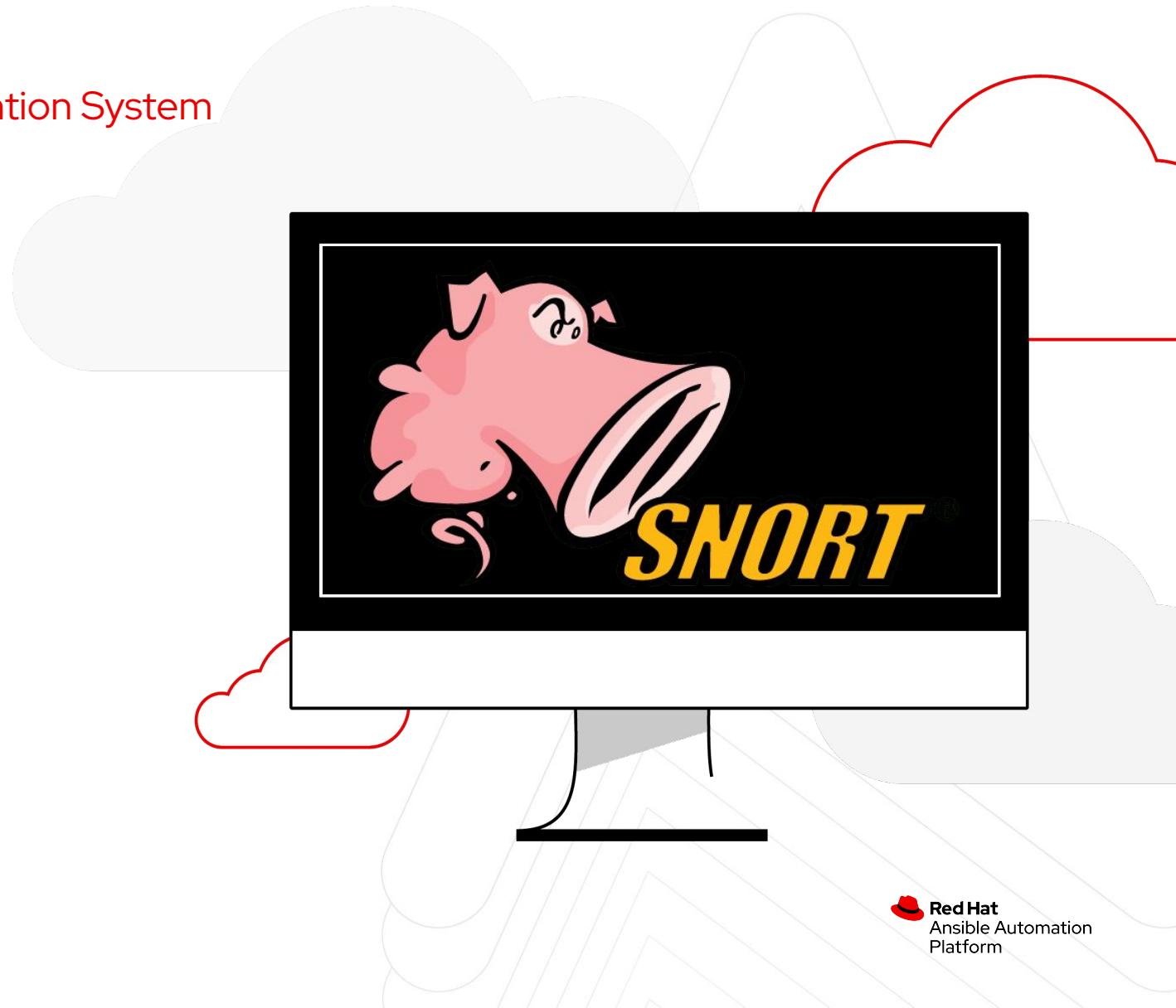


What are Snort rules?

- ▶ Rules determine what traffic is collected
- ▶ Rules define next step for collected traffic

Want more details on Snort rules?

- ▶ [Snort rule infographic](#)





Intro to Ansible Roles

Ansible security automation roles

Reusable automation actions



What are Ansible roles?

- ▶ Group your tasks and variables of your automation in a reusable structure.
- ▶ Write roles once, and share them with others who have similar challenges in front of them.

Workshop Ansible Security Roles

- ▶ Already included in security EE
- ▶ `ids_config`, `ids_rule`, `log_manager`

```
tasks:  
  - name: import ids_config role  
    include_role:  
      name: "ansible_security.ids_config"
```

Exercise Time!

Do Exercise 1.3 in your lab environment

- Follow the steps in the exercises
- Remember to use the IP addresses assigned to you

Exercise 1.4



Topics Covered:

- Intro to Automation Content Collections
- What is a SIEM?
- Introducing QRadar
- Automating your QRadar instance

Intro to Automation Content Collections



Ansible Content Collections

Simplified and consistent content delivery



What are they?

Collections are a data structure containing automation content:

- ▶ Modules, playbooks, roles, plugins, docs, tests

Workshop Ansible security collections

- ▶ Already included in security EE
- ▶ `ibm.qradar`, `ansible.security`, `check_point.mgmt` and more



Using Collections



Collections

```
nginx_core
├── MANIFEST.json
├── playbooks
│   └── deploy-nginx.yml
│       ...
└── roles
    ├── nginx
    │   ├── defaults
    │   ├── files
    │   │   ...
    │   ├── tasks
    │   └── templates
    │       ...
    └── nginx_app_protect
    └── nginx_config
```

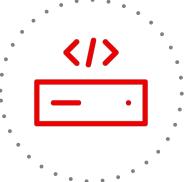
```
---
```

```
- name: Install NGINX Plus
hosts: all
tasks:
  - name: Install NGINX
    include_role:
      name: nginxinc.nginx
    vars:
      nginx_type: plus

- name: Install NGINX App Protect
  include_role:
    name: nginxinc.nginx_app_protect
  vars:
    nginx_app_protect_setup_license: false
    nginx_app_protect_remove_license: false
    nginx_app_protect_install_signatures: false
```

Certified Content Collections

90+
certified platforms



Infrastructure



Cloud



Network



Security



ARISTA



Google



FORTINET

Check Point®
SOFTWARE TECHNOLOGIES LTD

CYBERARK®



Red Hat
Ansible Automation
Platform

Ansible security automation Content Collections

Reusable automation actions



What are Ansible roles?

- ▶ Group your tasks and variables of your automation in a reusable structure.
- ▶ Write roles once, and share them with others who have similar challenges in front of them.

Workshop Ansible Security Roles

- ▶ Already included in security EE
- ▶ `ids_config`, `ids_rule`, `log_manager`

```
tasks:  
  - name: import ids_config role  
    include_role:  
      name: "ansible_security.ids_config"
```

SIEM Overview



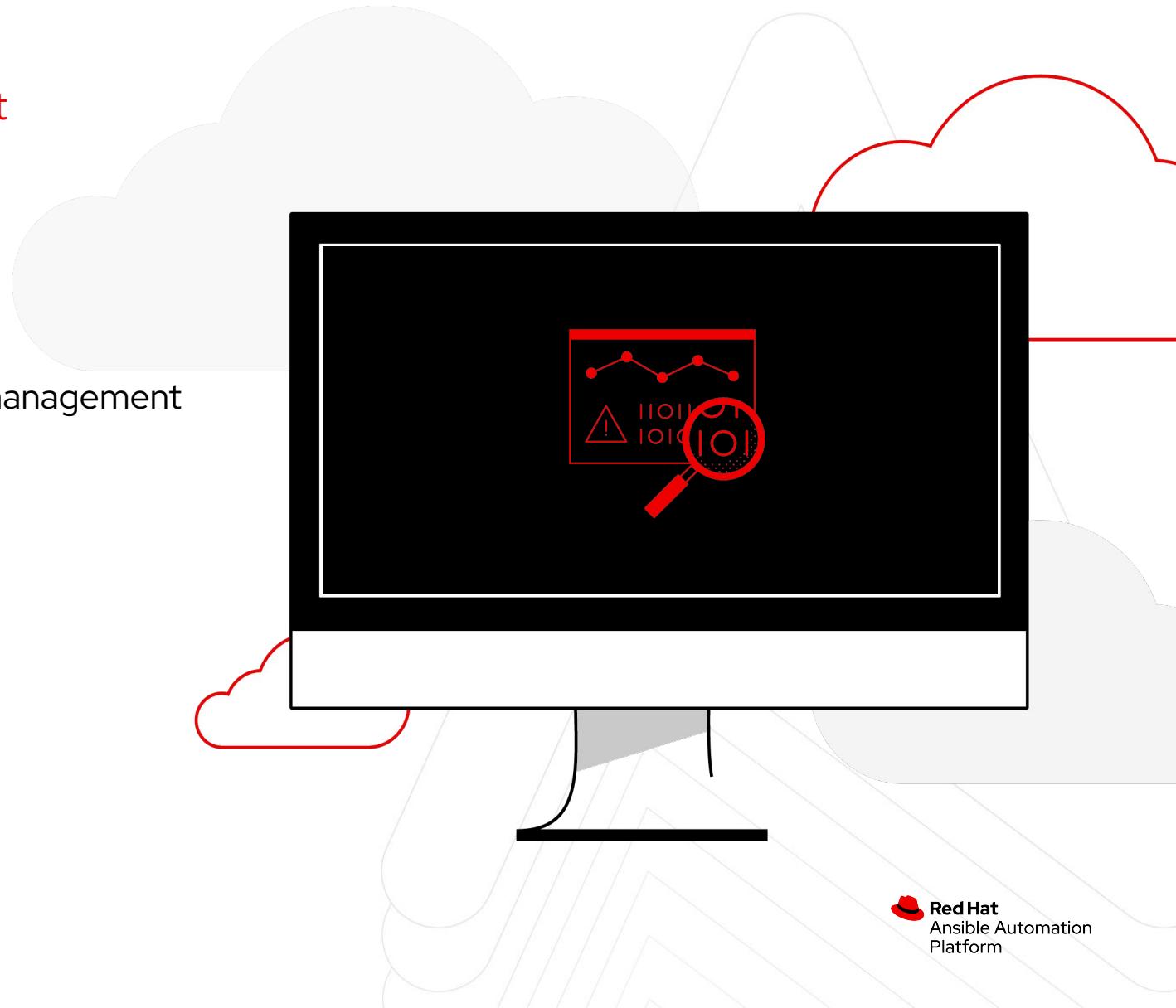
What is a SIEM?

Security Information and Event Management



What do they do?

- ▶ Supports threat detection, security incident management
- ▶ Real-time analysis of security alerts
- ▶ Aggregates activity from multiple sources
- ▶ Mostly used by security analysts



Introducing QRadar



IBM QRadar SIEM

Security and Information and Event Management

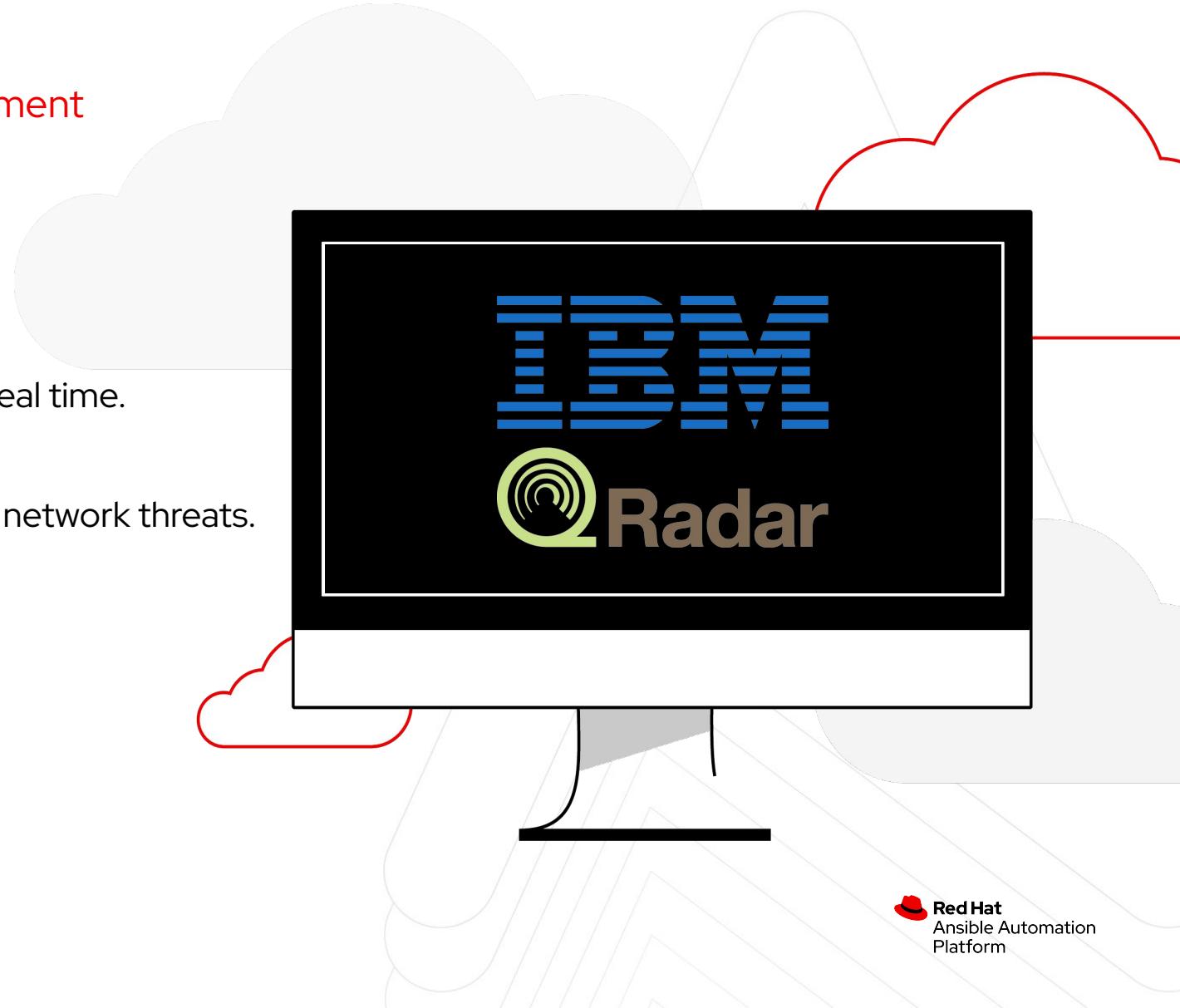


What does it do?

- ▶ Collects, analyses and stores network data in real time.
- ▶ Provides real-time information and monitoring
- ▶ Creates alerts and offenses, and responses to network threats.

QRadar Workshop Instance

- ▶ Uses `ibm.qradar` collection
- ▶ Ansible connects using QRadar HTTP API



IBM QRadar SIEM

Address most important security challenges

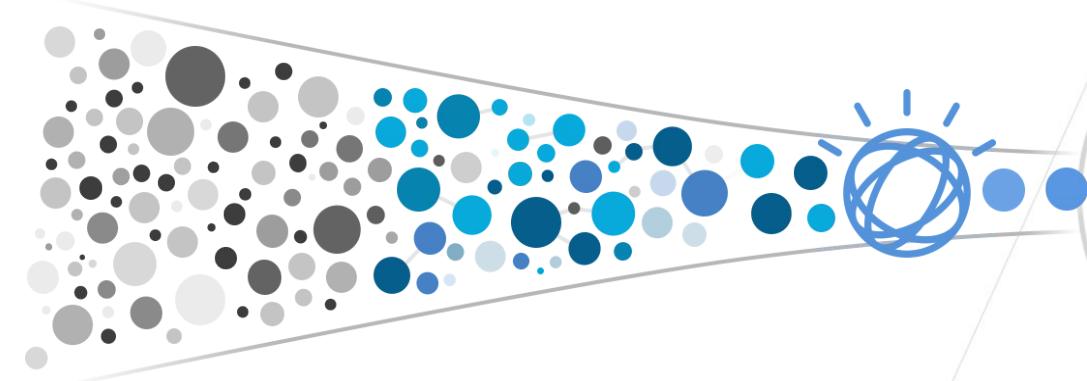
Complete Visibility

- Endpoints
- Network activity
- Data activity
- Users and identities
- Threat intelligence
- Configuration information
- Vulnerabilities and threats
- Application activity
- Cloud platforms

Prioritized Threats

Automated Investigations

Proactive Hunting



Automating your QRadar instance



IBM QRadar Interface

IBM QRadar Security Intelligence - Community Edition

System Time: 2:15 PM

Show Dashboard: Threat and Security Monitoring

New Dashboard | Rename Dashboard | Delete Dashboard | Add Item... | Next Refresh: 00:00:15 | Help | ?

Offenses

Log Activity

Network Activity

Assets

Reports

Default-IDS / IPS-All: Top Alarm Signatures (Event Count)

My Offenses

No results were returned for this item.

Most Severe Offenses

No results were returned for this item.

Most Recent Offenses

No results were returned for this item.

Top Services Denied through Firewalls (Event Count)

Time Series data unavailable at this time.

View in Log Activity

Top Systems Attacked (IDS/IDP/IPS) (Event Count)

Time Series data unavailable at this time.

Time Series data unavailable at this time.

Flow Bias (Total Bytes)

Time Series data unavailable at this time.

View in Network Activity

Top Category Types

Category	Offenses
Application Query	0
Host Query	0
Network Sweep	0
Mail Reconnaissance	0
Unknown Form of Recon	0

Top Sources

No results were returned for this item.

Verify Changes in the UI

IBM QRadar Security Intelligence - Community Edition

Dashboard Offenses Log Activity Network Activity Assets Reports System Time: 4:30 PM

Offenses

Display: Rules Group: Select a group... Groups Actions Revert Rule DDoS View the IBM App Exchange for more... ?

	Rule Name ▲	Group	Rule Category	Rule Type	Enabled	Response	Event/Flow Count	Offense Count	Origin
My Offenses	DDoS Attack Detected	DDoS	Custom Rule	Event	True	Dispatch New Event	0	0	Modified
All Offenses	DDoS Events with High Magnitude Become Offen...	DDoS	Custom Rule	Event	True		0	0	System
By Category	Load Basic Building Blocks	System	Custom Rule	Event	True		0	0	System
By Source IP	Potential DDoS Against Single Host (TCP)	DDoS	Custom Rule	Flow	False	Dispatch New Event	0	0	Modified

Exercise Time!

Do Exercise 1.4 in your lab environment

- Follow the steps in the exercises
- Remember to use the IP addresses assigned to you
- QRadar credentials differ from the standard workshop
username and password

Section 2

Security personas

Ansible Security Automation Use-Cases



Security Personas Overview



Security Personas



Security Operator

Toolset

- ▶ Firewalls, PAM, IDPS

Tasks

- ▶ Manage, configure security devices
- ▶ Escalate security events to analyst

Challenges

- ▶ Attacks more frequent and sophisticated



Security Analyst

Toolset

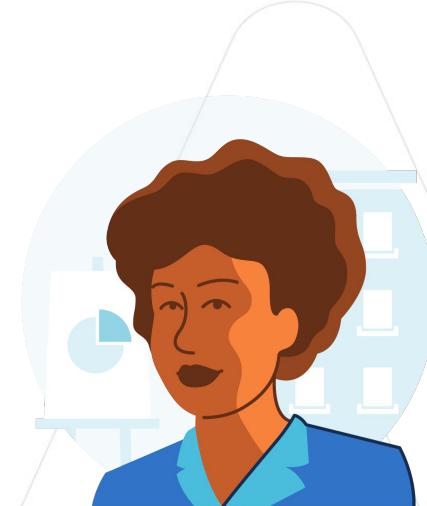
- ▶ SIEM, SOAR

Tasks

- ▶ Analyze and coordinate remediation

Challenges

- ▶ Attacks more frequent and sophisticated



Chief Information Security Officer

Resources

- ▶ Conferences, papers, analyst reports

Tasks

- ▶ Oversee security operations
- ▶ Direct and manage security strategy

Challenges

- ▶ Multiple, siloed security teams

Exercise 2.1



Topics Covered:

- What is investigation enrichment?
- Lab scenario overview

What is investigation enrichment?

Collate, investigate and build context for security anomalies

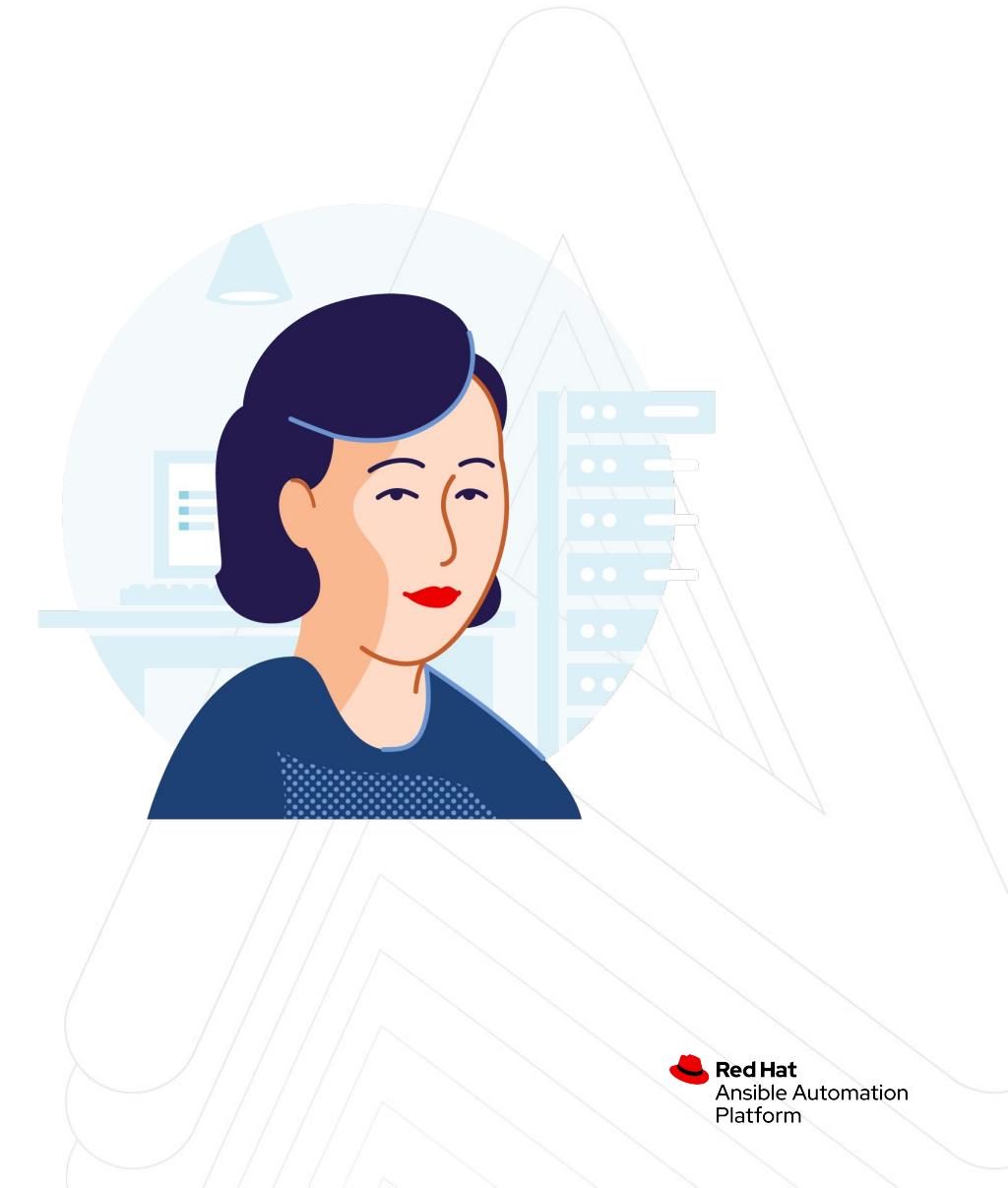


What is investigation enrichment?

- ▶ Process of adding contextual information to security events
- ▶ Vital for effective security response
- ▶ Typically performed by security analyst
- ▶ Events redirected to a SIEM

Lab Scenario

- ▶ You, the security analyst, is informed of a security anomaly
- ▶ You need to gather events from devices and investigate the event



Investigation Enrichment Scenario overview



Investigation Enrichment

Attacker launches web attack



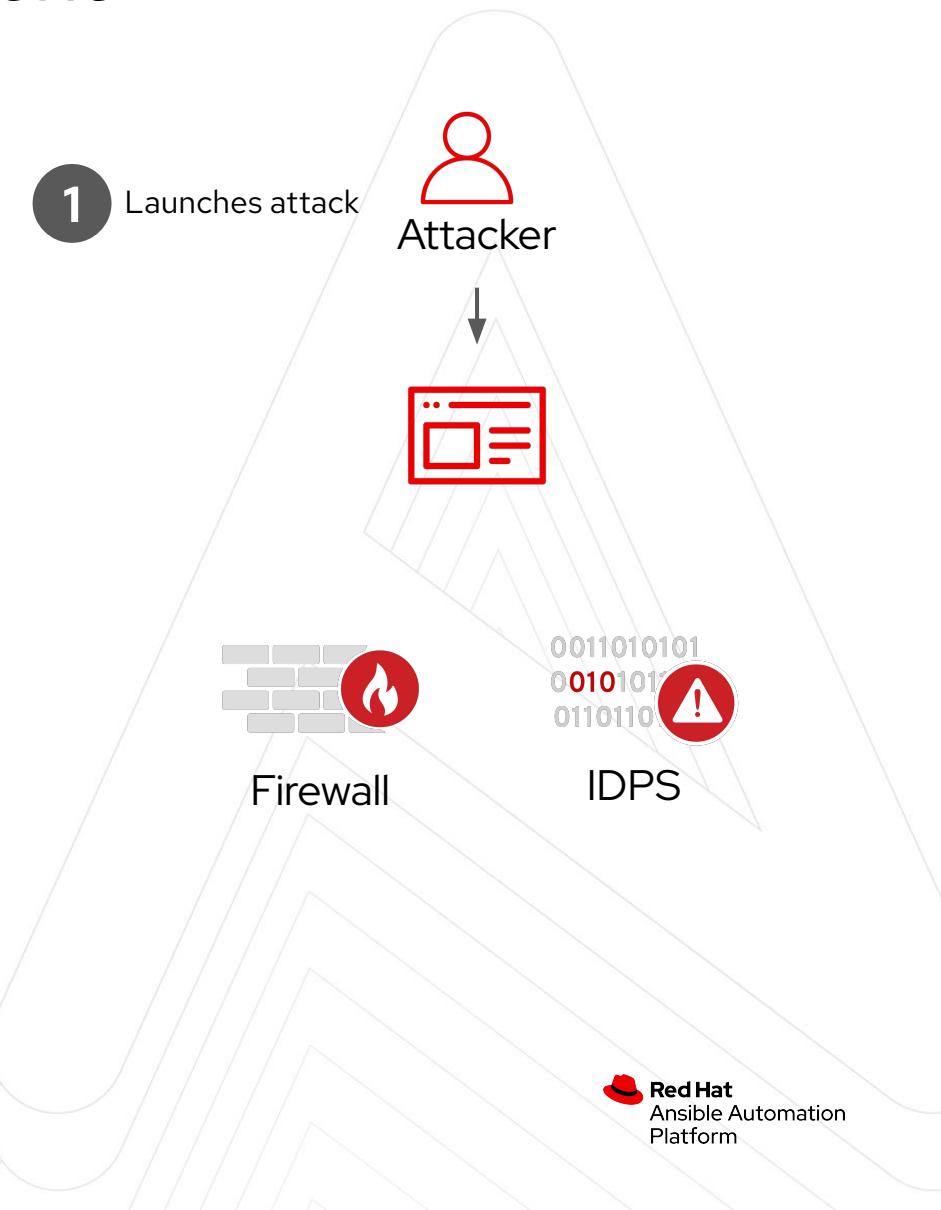
Analyst



SIEM



Ansible Automation
Platform



Investigation Enrichment

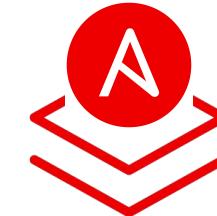
Anomaly detected



Analyst



SIEM



Ansible Automation
Platform

1 Launches attack



Attacker

2 Anomalies detected



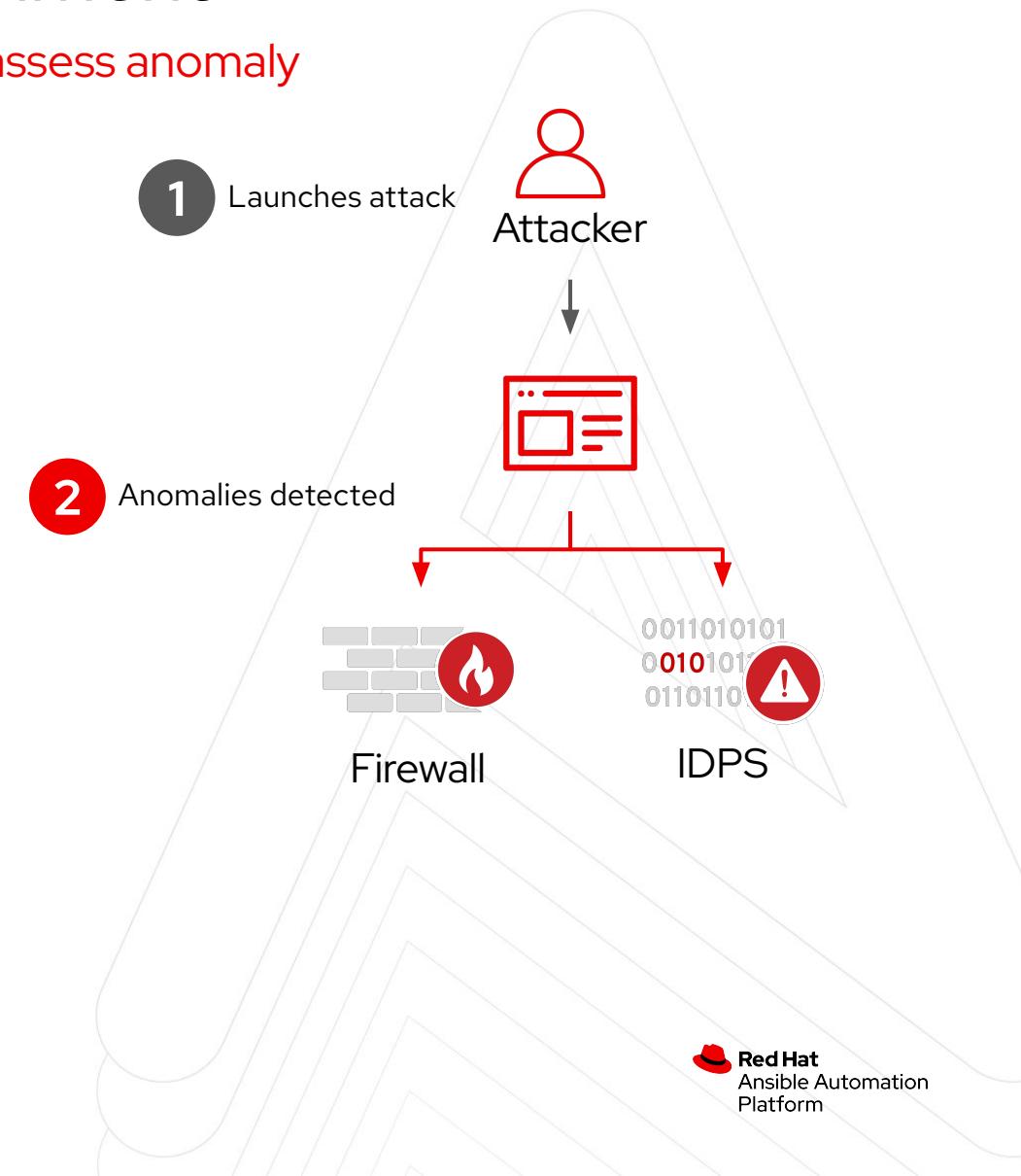
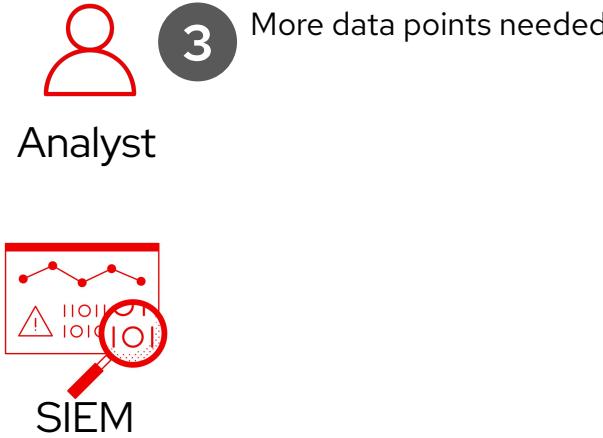
Firewall



IDPS

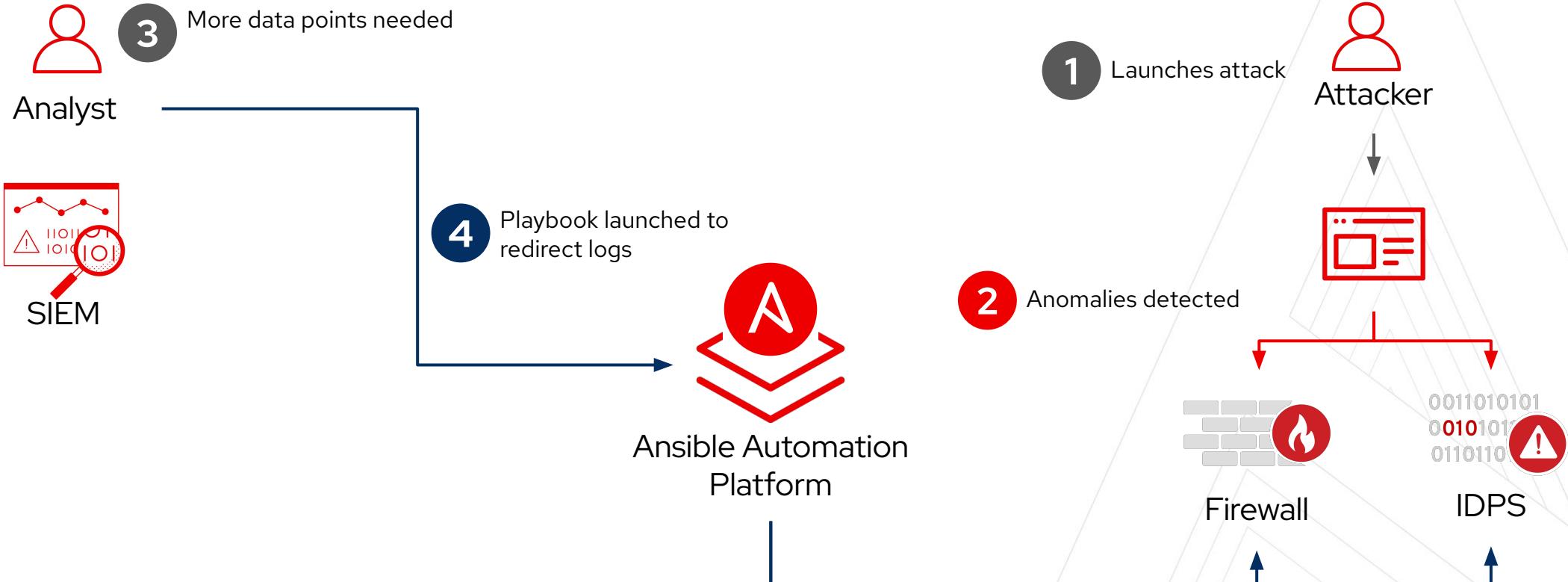
Investigation Enrichment

Analyst needs more data points to assess anomaly



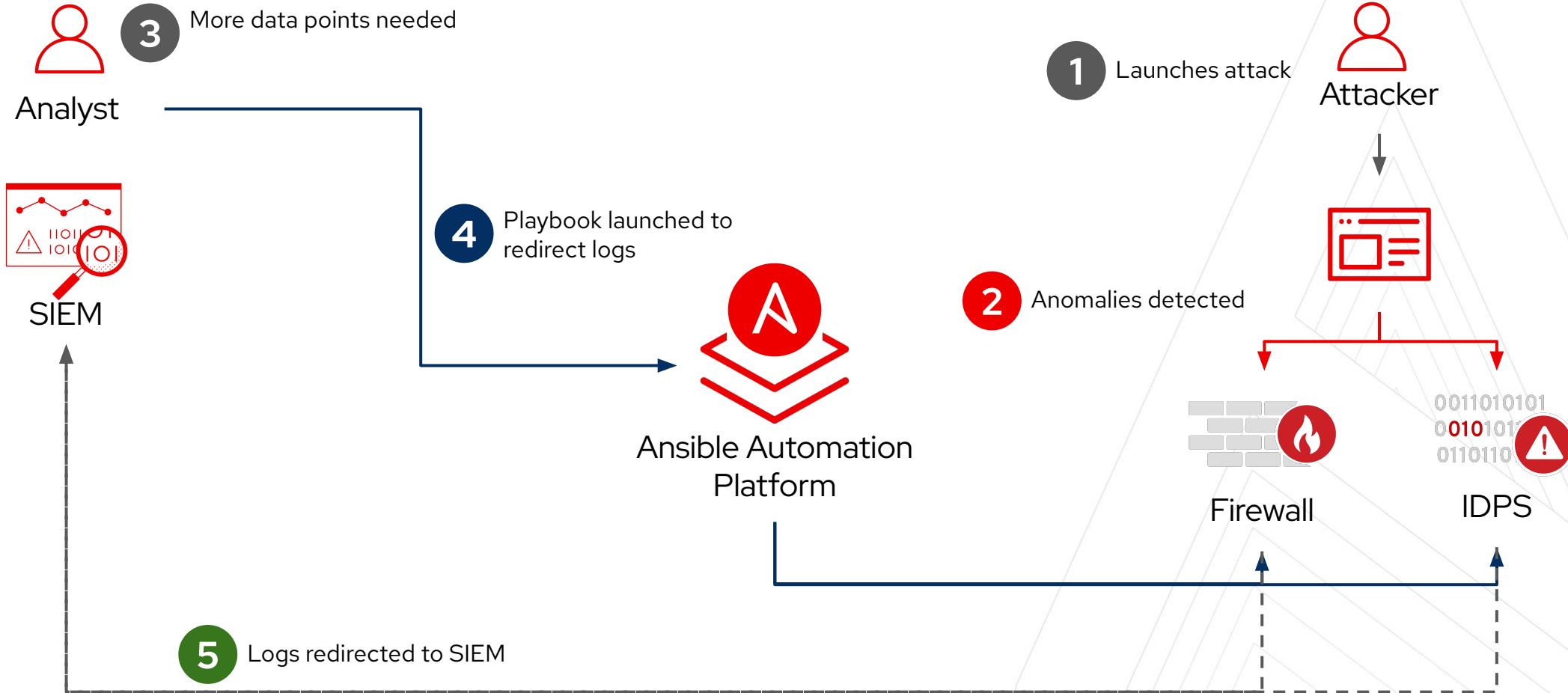
Investigation Enrichment

Playbook launched to redirect logs to SIEM for analysis



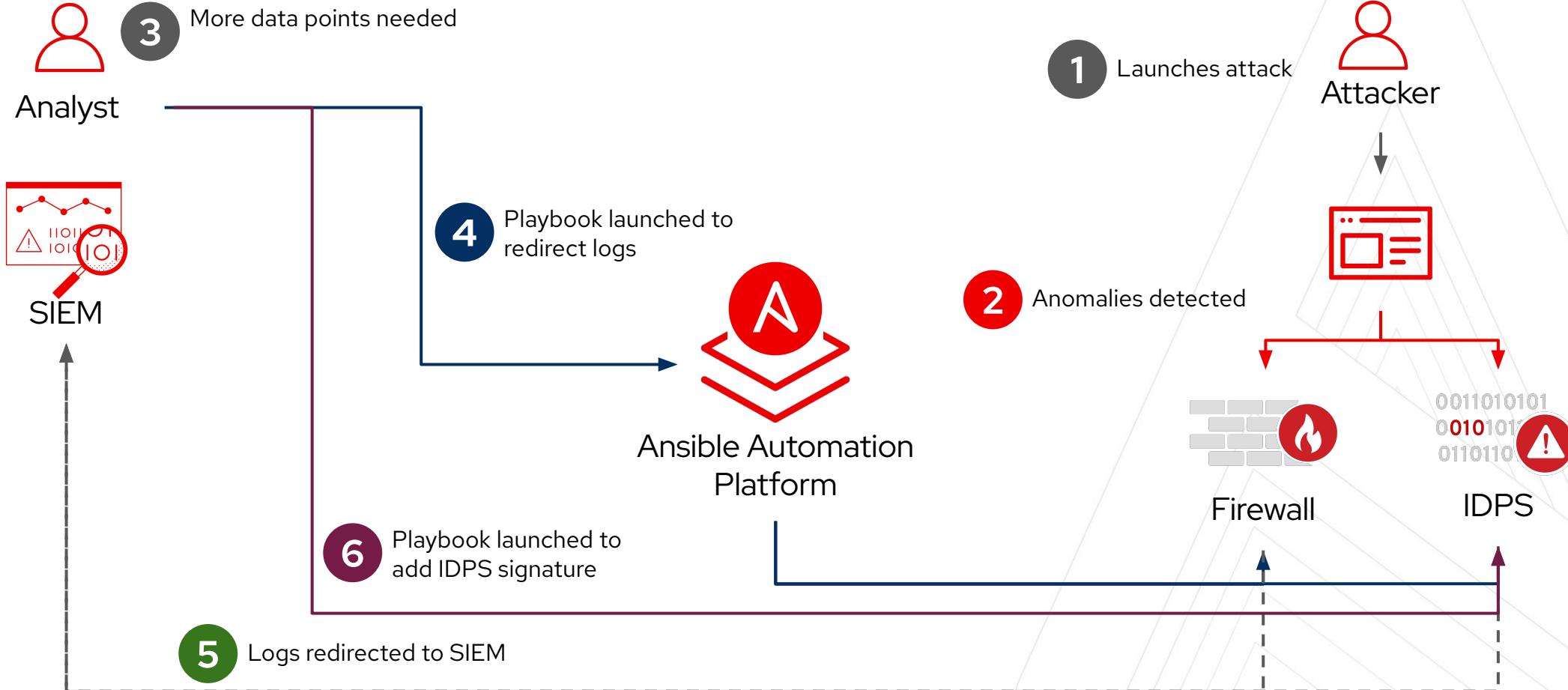
Investigation Enrichment

Ansible security automation redirects events to SIEM



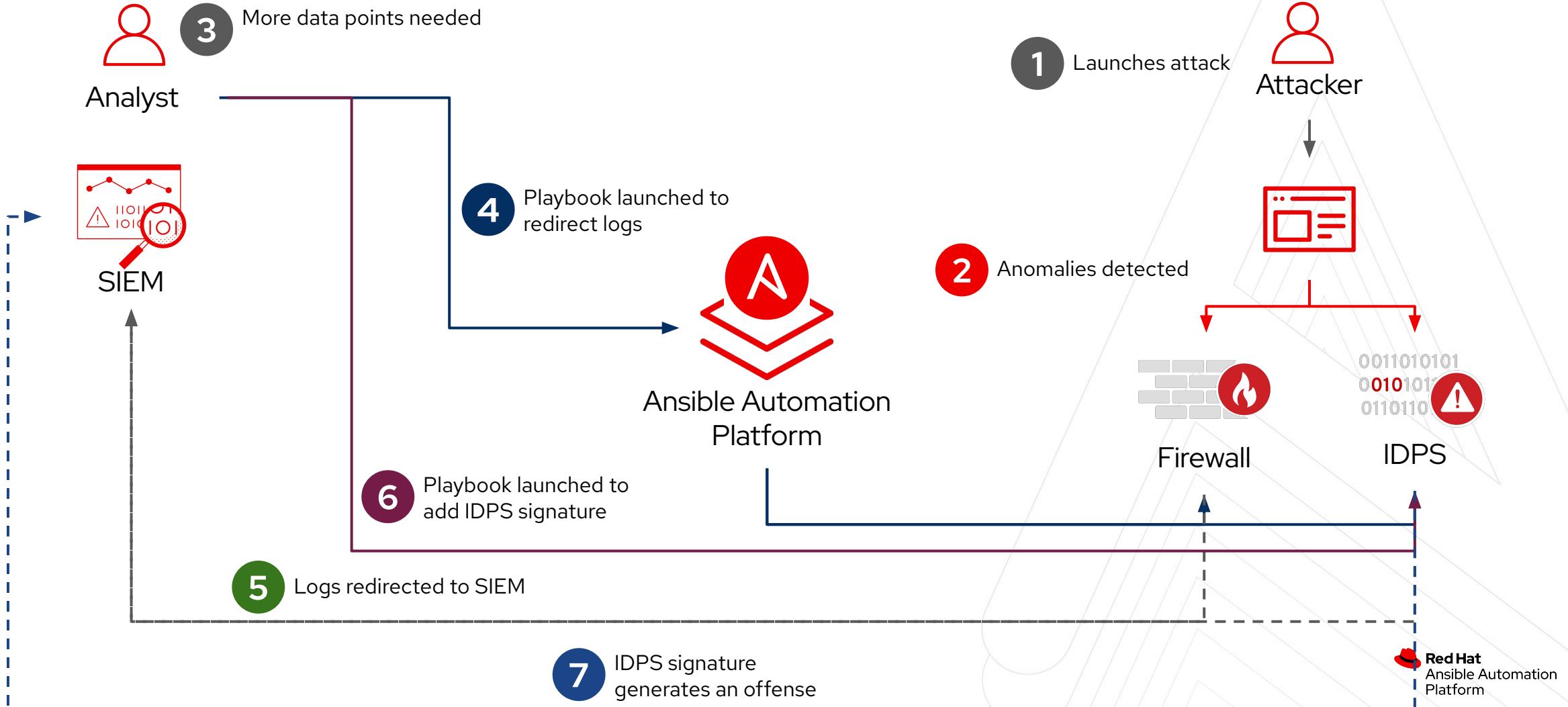
Investigation Enrichment

IDPS signature added using Ansible security automation



Investigation Enrichment

IDPS signature generates an offense in the SIEM



Exercise Time!

Do Exercise 2.1 in your lab environment

- Follow the steps in the exercises
- Remember to use the IP addresses assigned to you

Exercise 2.2



Topics Covered:

- Introduction to automation controller
- What is threat hunting?
- Lab scenario overview

Introduction to Automation controller





Red Hat Ansible Automation Platform



Content creators



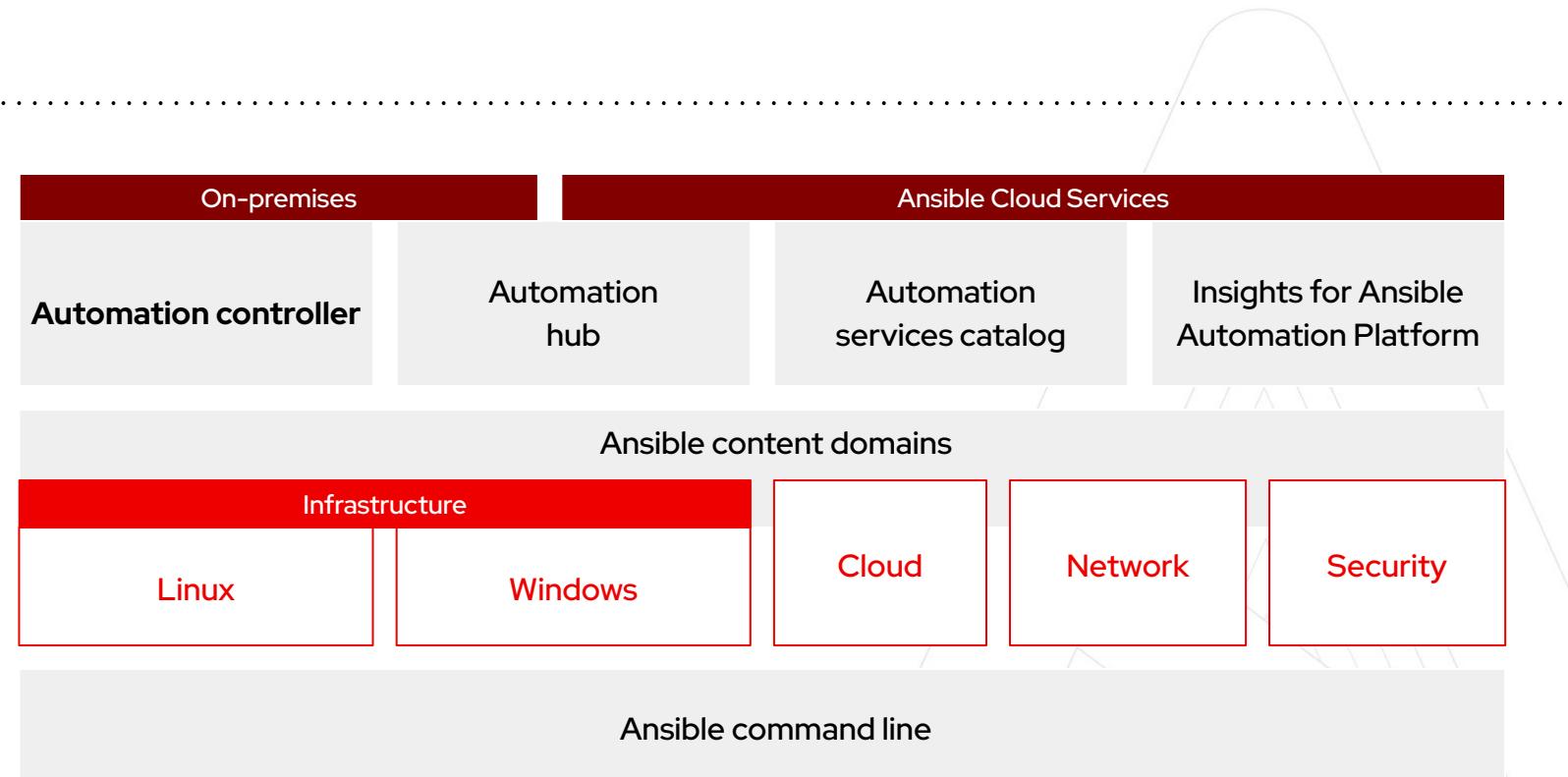
Operators



Domain experts



Users



Fueled by an
open source community

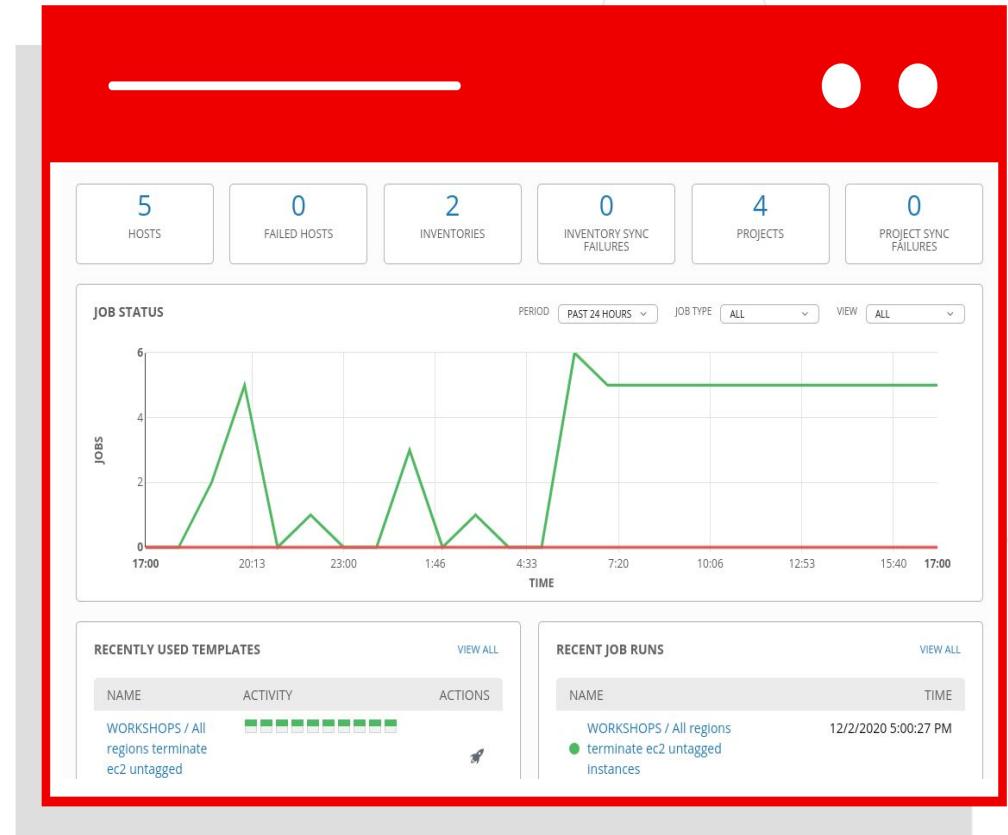
What is Automation controller?



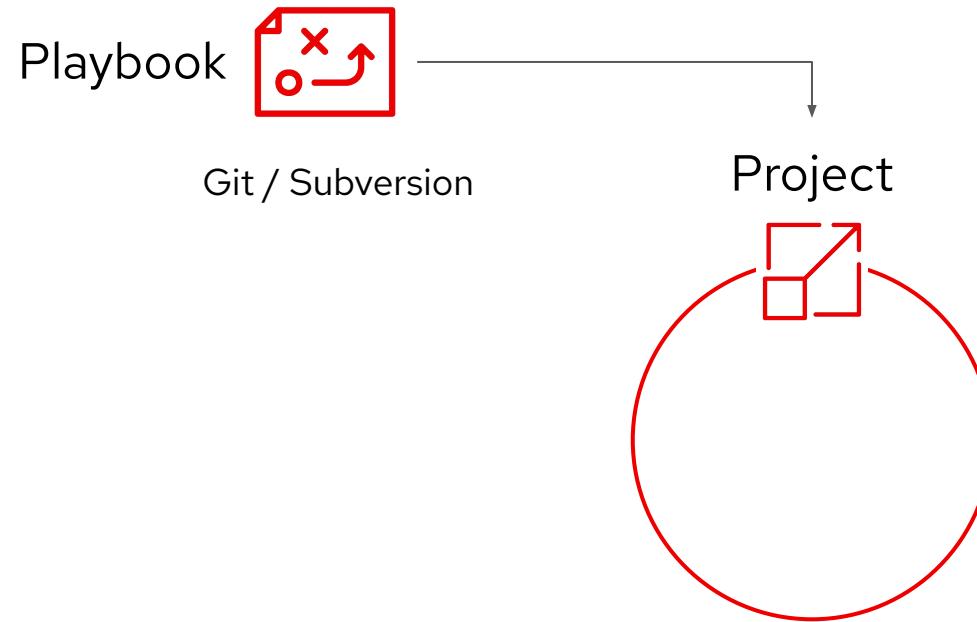
Automation controller is a UI and RESTful API allowing you to scale IT automation, manage complex deployments and speed productivity.

Automation controller provides

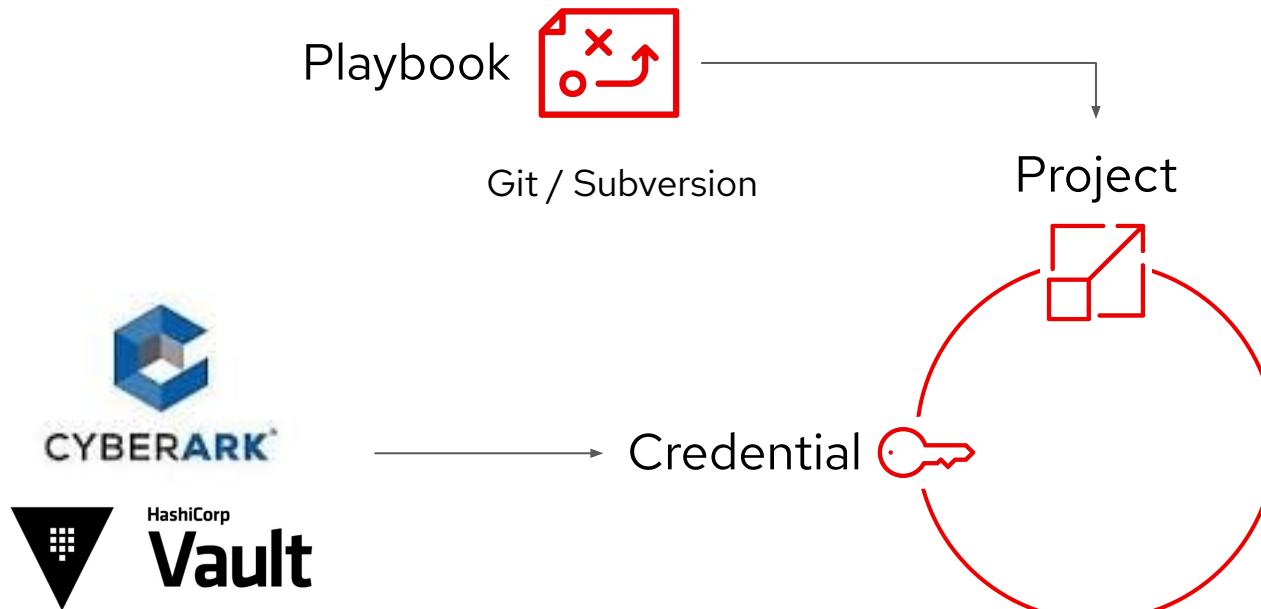
- ▶ Role-based access control
- ▶ Push-button deployment access
- ▶ All automations are centrally logged
- ▶ Powerful workflows match your IT processes



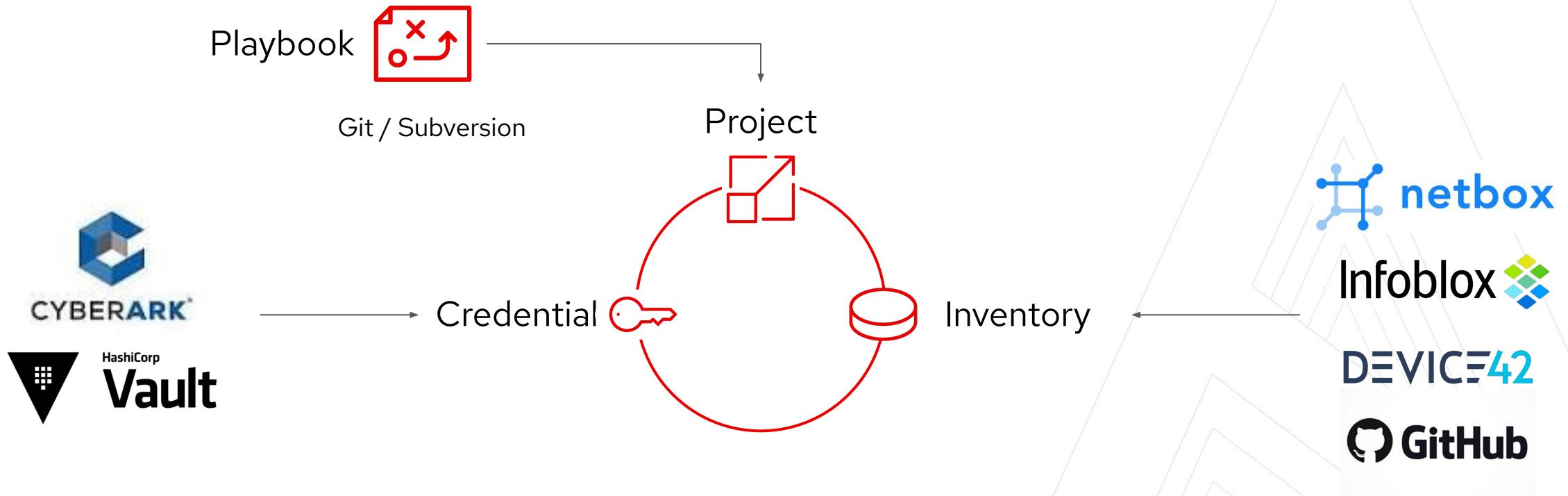
Anatomy of an Automation Job



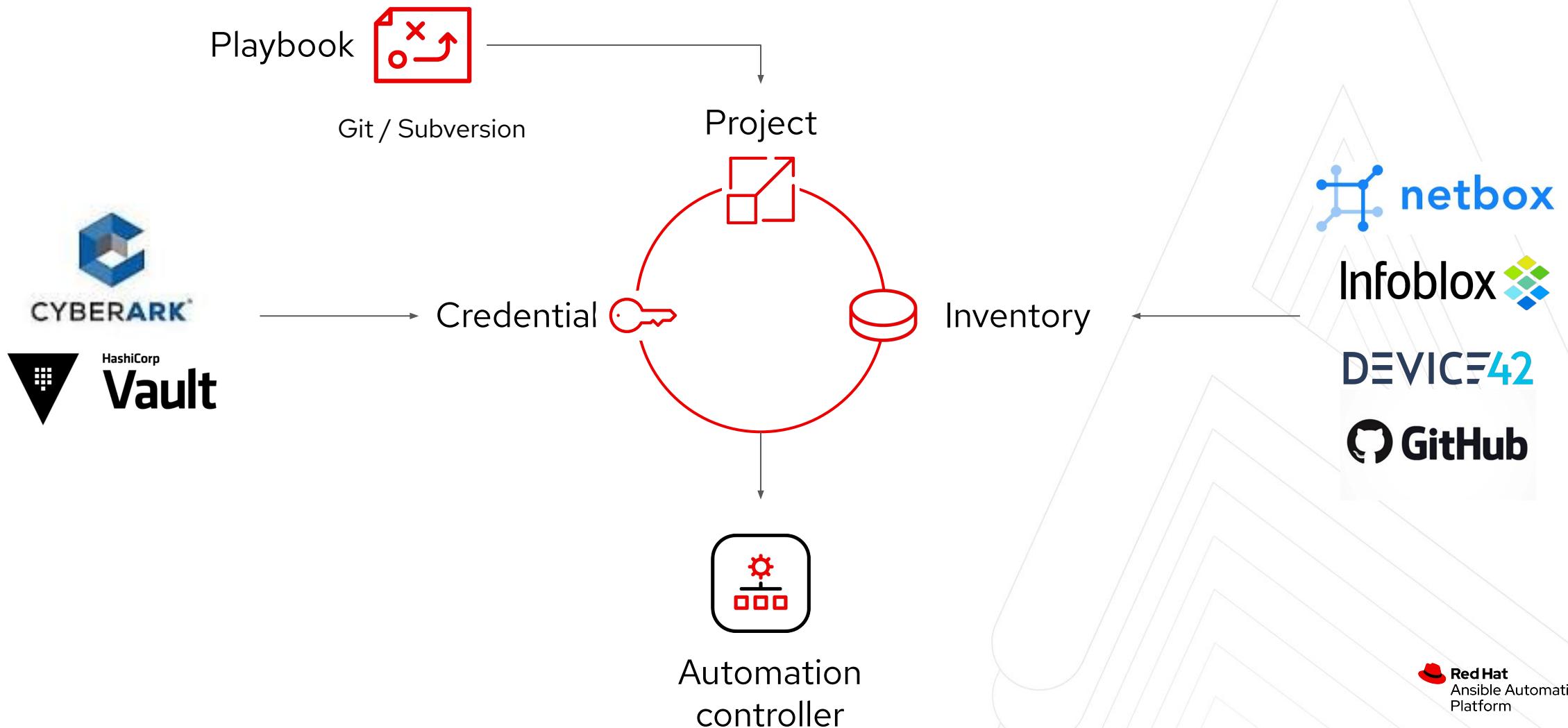
Anatomy of an Automation Job



Anatomy of an Automation Job



Anatomy of an Automation Job



Automation controller features



Inventories

Inventory is a collection of hosts (nodes) with associated data and groupings that Automation Controller can connect to and manage.

- ▶ Hosts (nodes)
- ▶ Groups
- ▶ Inventory-specific data (variables)
- ▶ Static or dynamic sources

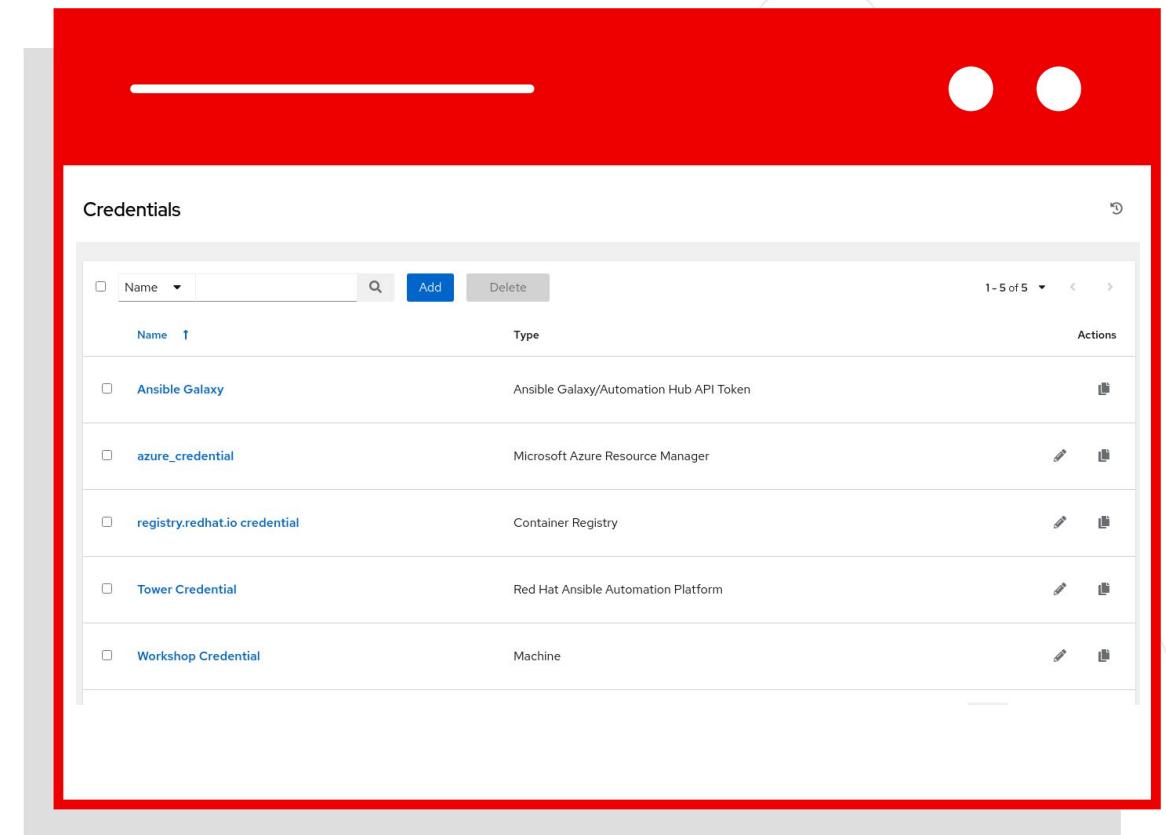
The screenshot shows a web-based interface for managing inventories. At the top, there's a navigation bar with links for Inventories, Details, Access, Groups, Hosts (which is the active tab), Sources, and Jobs. Below the navigation is a search bar with a dropdown menu set to 'Name' and a search icon. There are also buttons for 'Add', 'Run Command', and 'Delete'. The main area displays a list of four hosts: 'ansible-1', 'node1', 'node2', and 'node3'. Each host entry includes a checkbox, a name link, a status indicator (blue switch labeled 'On'), and an edit icon. At the bottom of the list, there's a pagination message '1 - 4 of 4 items' and a page number '1 of 1 page'.

Credentials

Credentials are utilized by Automation Controller for authentication with various external resources:

- ▶ Connecting to remote machines to run jobs
- ▶ Syncing with inventory sources
- ▶ Importing project content from version control systems
- ▶ Connecting to and managing network devices

Centralized management of various credentials allows end users to leverage a secret without ever exposing that secret to them.

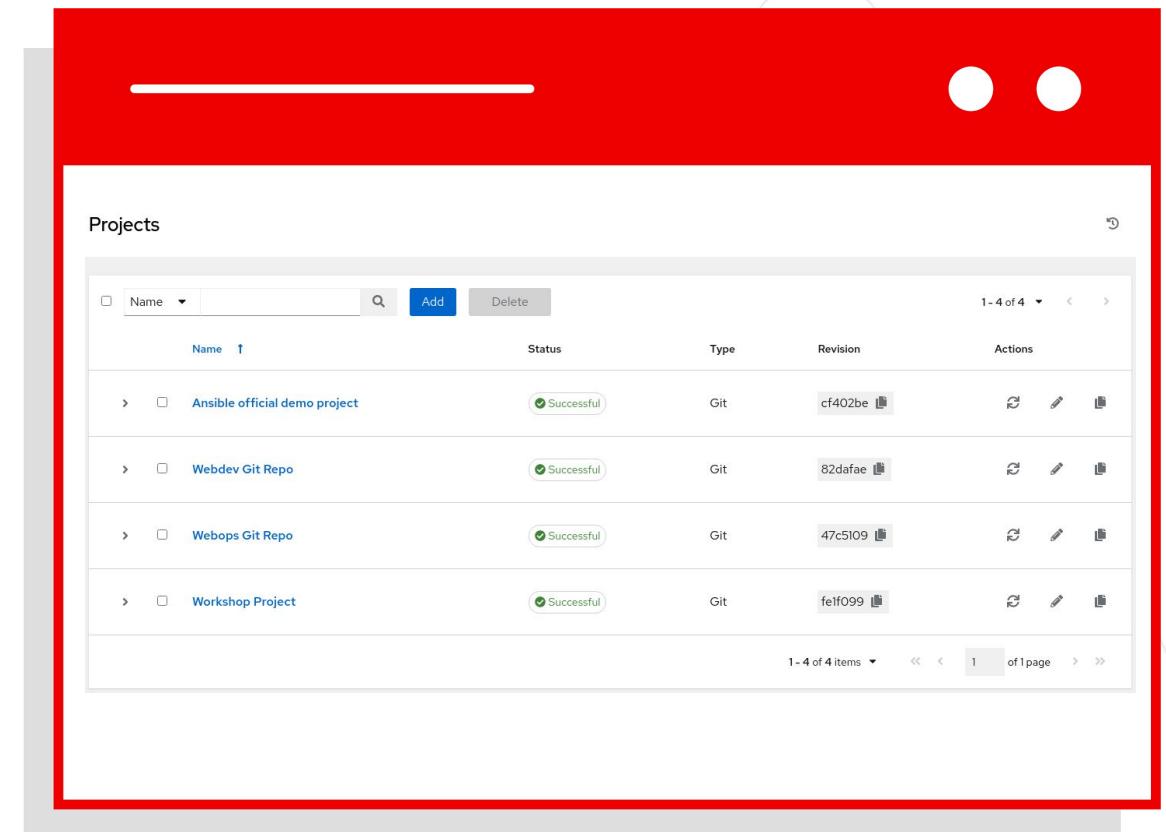


Name	Type	Actions
Ansbile Galaxy	Ansible Galaxy/Automation Hub API Token	 
azure_credential	Microsoft Azure Resource Manager	 
registry.redhat.io credential	Container Registry	 
Tower Credential	Red Hat Ansible Automation Platform	 
Workshop Credential	Machine	 

Project

A project is a logical collection of Ansible Playbooks, represented in Ansible Automation Controller.

You can manage Ansible Playbooks and playbook directories by placing them in a source code management system supported by automation controller, including Git, Subversion, and Mercurial.



The screenshot shows a web-based interface for managing projects. At the top, there's a search bar labeled 'Name' with a magnifying glass icon, an 'Add' button, and a 'Delete' button. To the right, there are navigation icons and a status message '1 - 4 of 4 items'. Below the header is a table titled 'Projects' with columns: Name, Status, Type, Revision, and Actions. The table lists four projects:

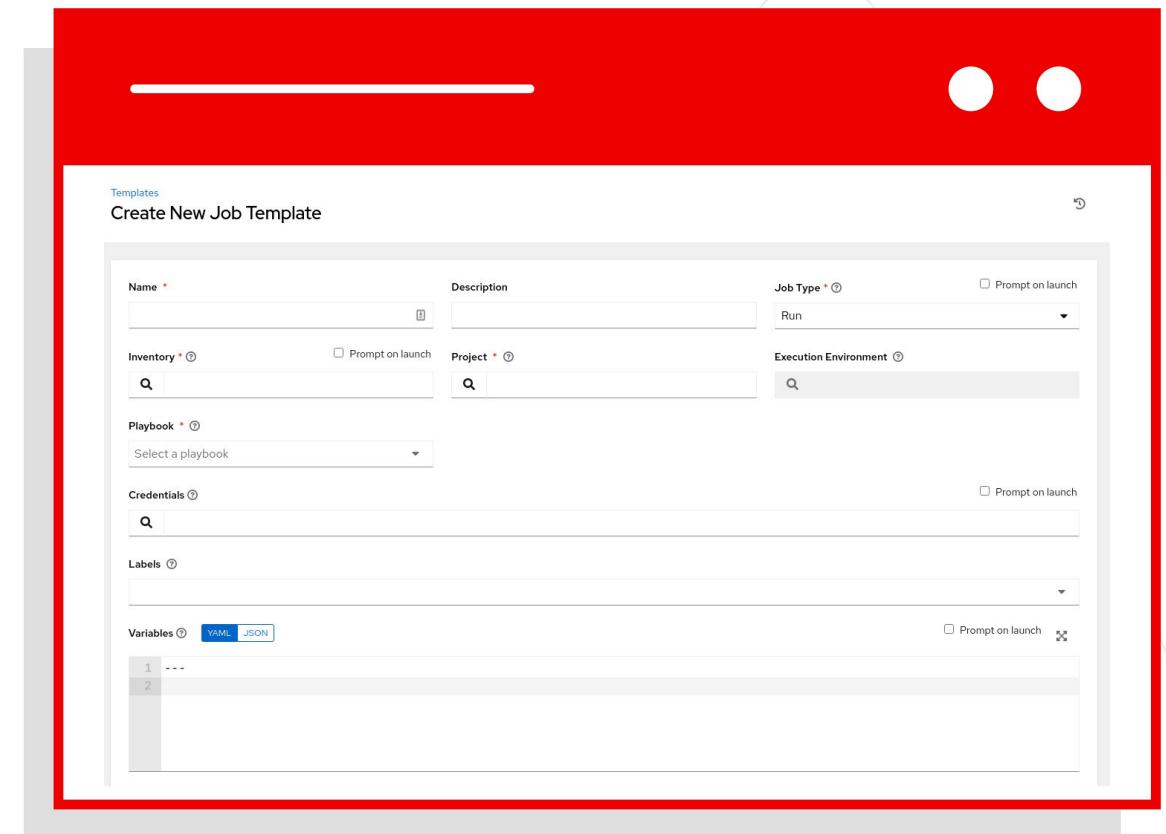
Name	Status	Type	Revision	Actions
Ansible official demo project	Successful	Git	cf402be	 
Webdev Git Repo	Successful	Git	82dafaef	 
Webops Git Repo	Successful	Git	47c5109	 
Workshop Project	Successful	Git	fef099	 

Job Templates

Everything in automation controller revolves around the concept of a **Job Template**. Job Templates allow Ansible Playbooks to be controlled, delegated and scaled for an organization.

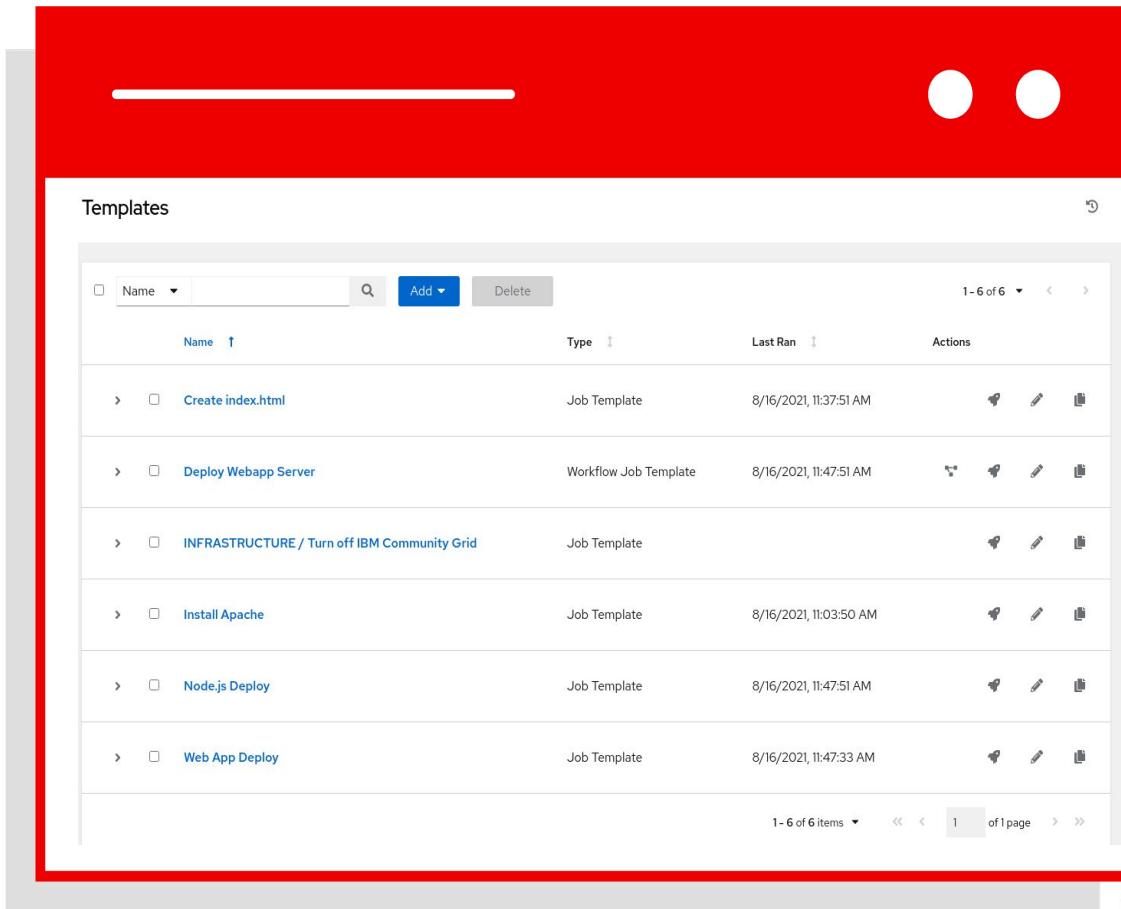
A **Job Template** requires:

- ▶ An **Inventory** to run the job against
- ▶ A **Credential** to login to devices.
- ▶ A **Project** which contains Ansible Playbooks



Expanding on Job Templates

Job Templates can be found and created by clicking the **Templates** button under the *Resources* section on the left menu.



The screenshot shows a list of job templates in a red-themed interface. A red box highlights the list area. The columns are Name, Type, Last Ran, and Actions. The actions column contains icons for edit, delete, and copy. The last ran column shows dates like 8/16/2021, 11:37:51 AM.

Name	Type	Last Ran	Actions
Create index.html	Job Template	8/16/2021, 11:37:51 AM	
Deploy Webapp Server	Workflow Job Template	8/16/2021, 11:47:51 AM	
INFRASTRUCTURE / Turn off IBM Community Grid	Job Template		
Install Apache	Job Template	8/16/2021, 11:03:50 AM	
Node.js Deploy	Job Template	8/16/2021, 11:47:51 AM	
Web App Deploy	Job Template	8/16/2021, 11:47:33 AM	

Executing an existing Job Template

Job Templates can be launched by clicking the **rocketship button** for the corresponding Job Template



The screenshot shows a list of job templates in a web-based interface. A red box highlights the list area, and a red rectangle highlights the 'Actions' column for the first item. The interface includes a search bar, an 'Add' button, and a 'Delete' button at the top. The table has columns for Name, Type, Last Ran, and Actions.

Name	Type	Last Ran	Actions
Create index.html	Job Template	8/16/2021, 11:37:51 AM	[Edit, Delete, Rocketship]
Deploy Webapp Server	Workflow Job Template	8/16/2021, 11:47:51 AM	[Edit, Delete, Rocketship]
INFRASTRUCTURE / Turn off IBM Community Grid	Job Template		[Edit, Delete, Rocketship]
Install Apache	Job Template	8/16/2021, 11:03:50 AM	[Edit, Delete, Rocketship]
Node.js Deploy	Job Template	8/16/2021, 11:47:51 AM	[Edit, Delete, Rocketship]
Web App Deploy	Job Template	8/16/2021, 11:47:33 AM	[Edit, Delete, Rocketship]

Creating a new Job Template (1/2)

New Job Templates can be created by clicking the **Add button**

The screenshot shows a list of templates in the Automation controller. The 'Add' button in the top navigation bar is highlighted with a red box and a blue circle.

Name	Type	Last Ran	Actions
Create index.html	Job Template	8/16/2021, 11:37:51 AM	Edit, Delete, Preview
Deploy Webapp Server	Workflow Job Template	8/16/2021, 11:47:51 AM	Edit, Delete, Preview
INFRASTRUCTURE / Turn off IBM Community Grid	Job Template		Edit, Delete, Preview
Install Apache	Job Template	8/16/2021, 11:03:50 AM	Edit, Delete, Preview
Node.js Deploy	Job Template	8/16/2021, 11:47:51 AM	Edit, Delete, Preview
Web App Deploy	Job Template	8/16/2021, 11:47:33 AM	Edit, Delete, Preview

Creating a new Job Template (2/2)

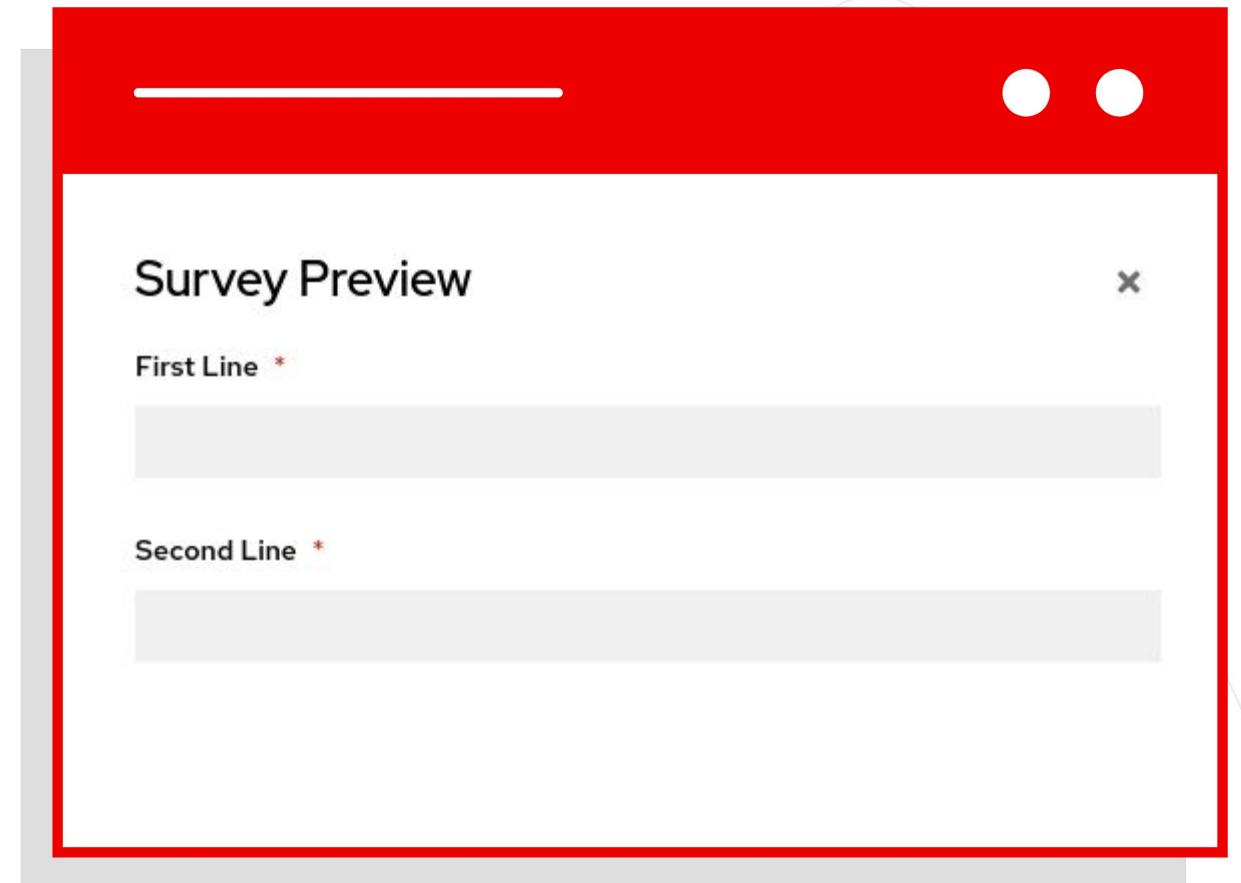
This **New Job Template** window is where the inventory, project and credential are assigned. The red asterisk * means the field is required .

The screenshot shows the 'Create New Job Template' dialog box. The 'Name' field is required, indicated by a red asterisk. The 'Job Type' is set to 'Run'. The 'Inventory' and 'Project' fields are also required. The 'Playbook' field has a dropdown menu showing 'Select a playbook'. The 'Variables' section shows two entries: '1' and '2'. The 'YAML' tab is selected for variables.

Surveys

Controller surveys allow you to configure how a job runs via a series of questions, making it simple to customize your jobs in a user-friendly way.

An Automation controller survey is a simple question-and-answer form that allows users to customize their job runs. Combine that with controller's role-based access control, and you can build simple, easy self-service for your users.



Creating a Survey (1/2)

Once a Job Template is saved, the Survey menu will have an **Add Button**

Click the button to open the Add Survey window.

The screenshot shows a web-based configuration interface for a survey question. The main title is "Add Question". The navigation bar includes "Back to Templates", "Details", "Access", "Notifications", "Schedules", "Jobs", and "Survey". The "Survey" tab is active. The form fields are as follows:

- Question ***: What is your favorite color?
- Description**: (empty field)
- Answer variable name * ⓘ**: Blue
- Answer type * ⓘ**: Text (selected from a dropdown)
- Required**:
- Minimum length**: 0
- Maximum length**: 1024
- Default answer**: (empty field)

At the bottom are "Save" and "Cancel" buttons.

Creating a Survey (2/2)

The Add Survey window allows the Job Template to prompt users for one or more questions. The answers provided become variables for use in the Ansible Playbook.

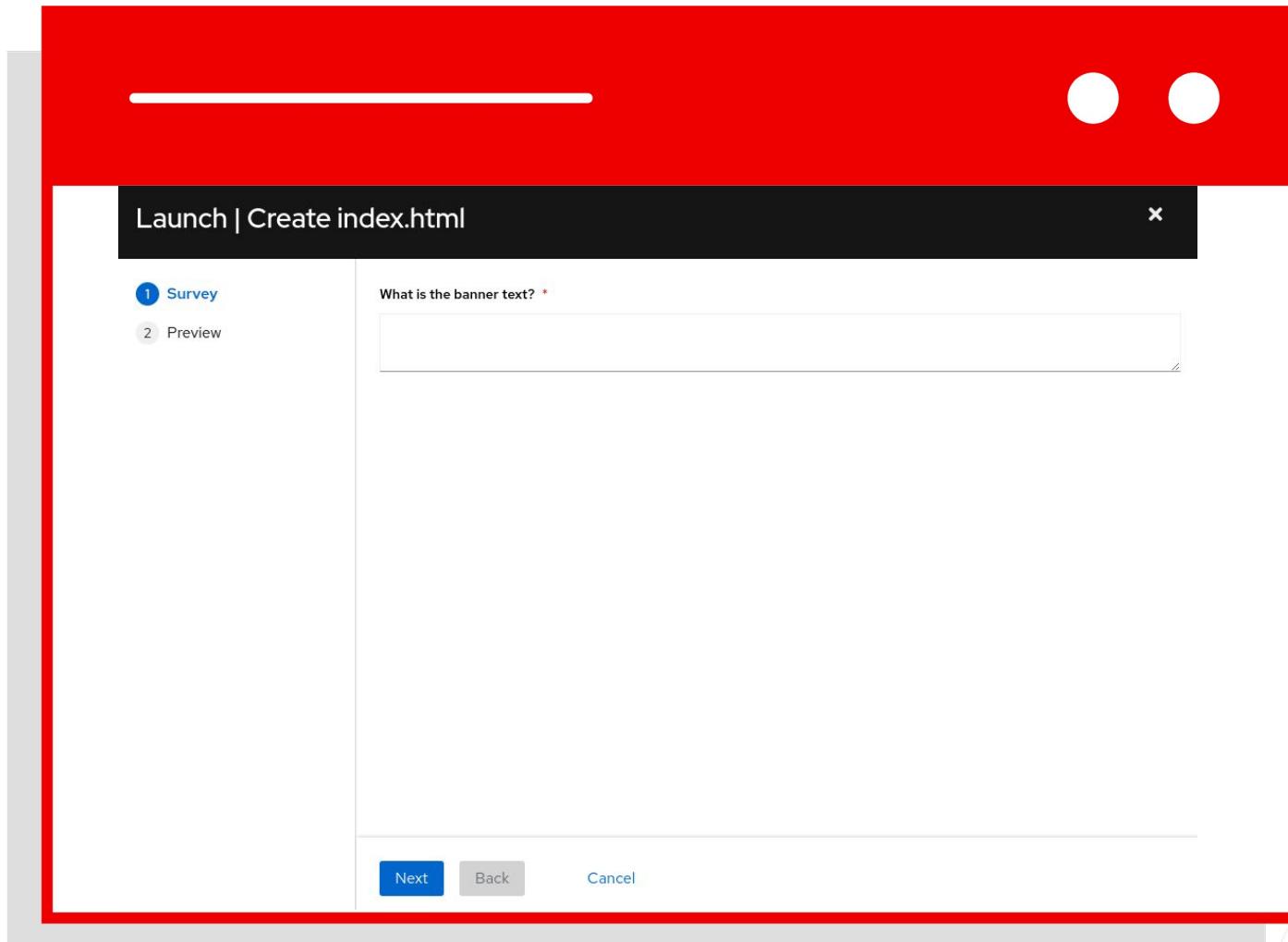
The screenshot shows the 'Add Question' dialog box within a web-based interface. The dialog has a red header bar with two white circles on the right. Below the header, the title 'Add Question' is displayed. The main form contains the following fields:

- Question ***: A text input field containing "What is the banner text?"
- Description**: An empty text input field.
- Answer variable name ***: A text input field containing "net_banner".
- Answer type ***: A dropdown menu showing "Textarea".
- Required**: A checked checkbox.
- Minimum length**: A text input field containing "0".
- Maximum length**: A text input field containing "1024".
- Default answer**: An empty text input field.

At the bottom of the dialog are two buttons: "Save" (in blue) and "Cancel".

Using a Survey

When launching a job, the user will now be prompted with the Survey. The user can be required to fill out the Survey before the Job Template will execute.





What is threat hunting?

Threat hunting

Proactively defend your environment



What is threat hunting?

- ▶ Proactive tasks such as triage, identifying new threats.
- ▶ Updates from security bulletins and signature manipulation
- ▶ Correlation of events to create new alerts
- ▶ Typically performed by security operators and analysts
- ▶ Requires multiple tools.

Lab Scenario

- ▶ You're the security operator in detect a firewall policy violation
- ▶ Then, we are the security analyst who needs to correlate events and investigate



Threat hunting Scenario overview



Threat Hunting

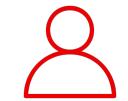
DDOS attack started



Analyst



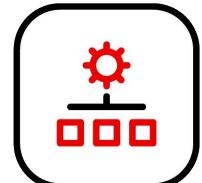
SIEM



opsids



opsfirewall



Automation
controller

1

Launches DDOS



Attacker



Firewall

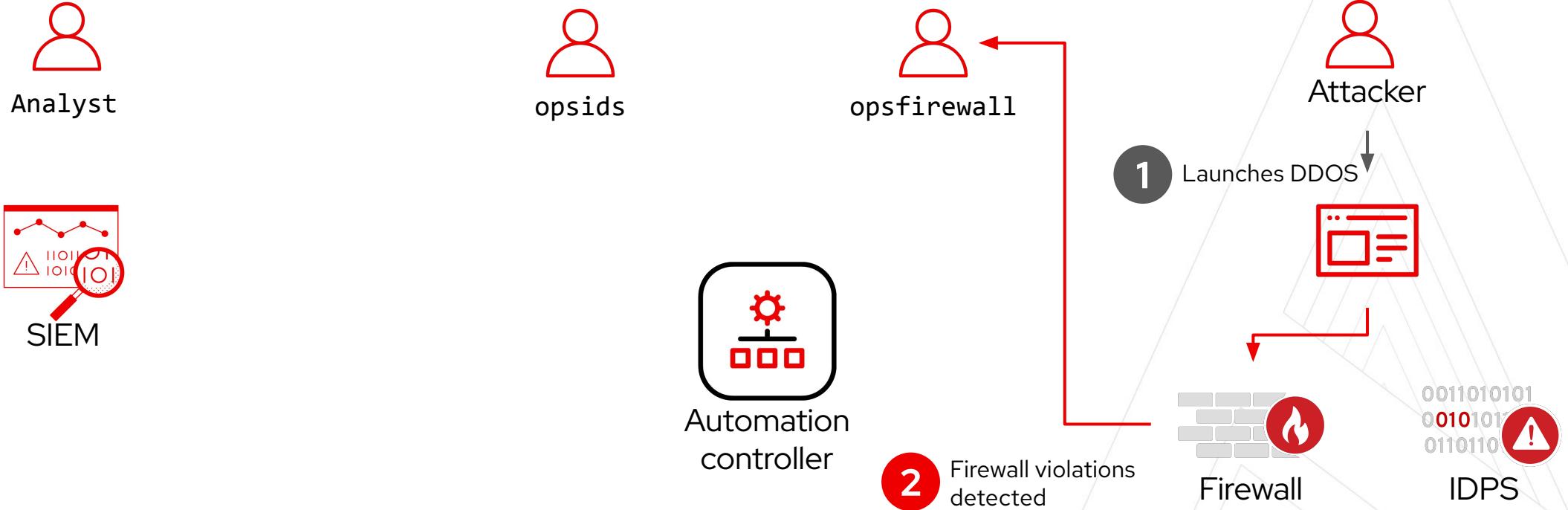
0011010101
00101011
01101101



IDPS

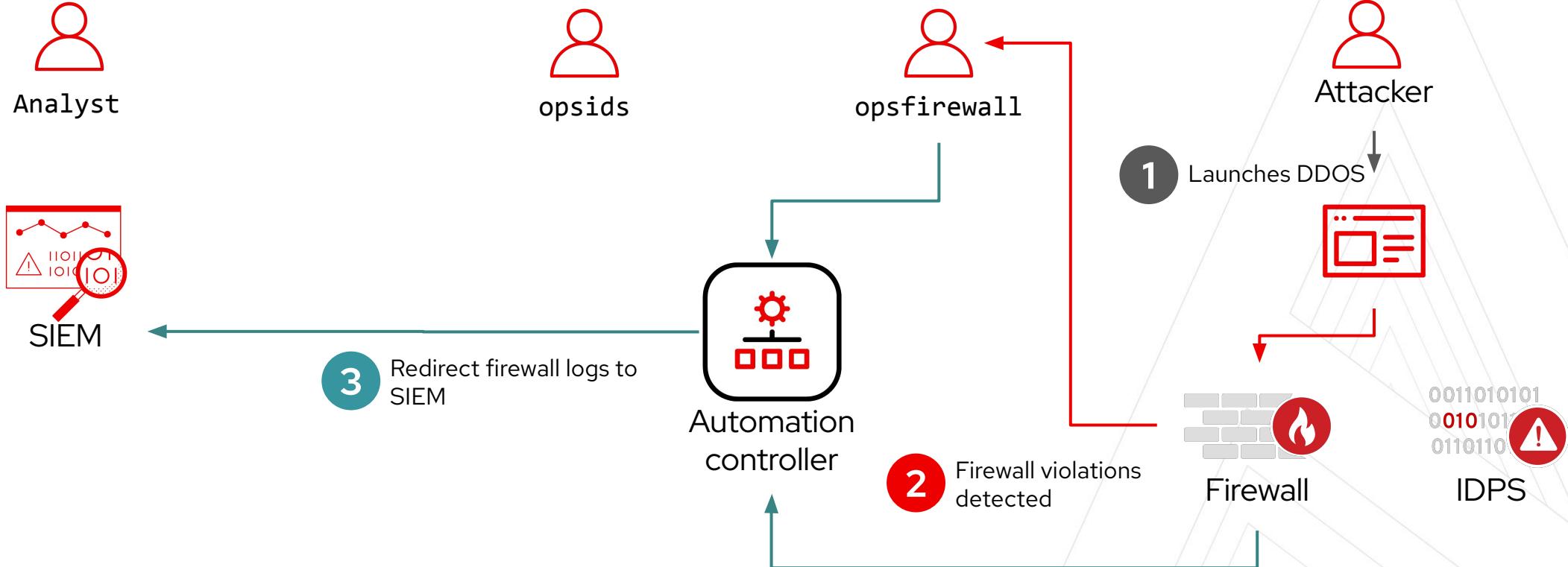
Threat Hunting

Firewall policy violated



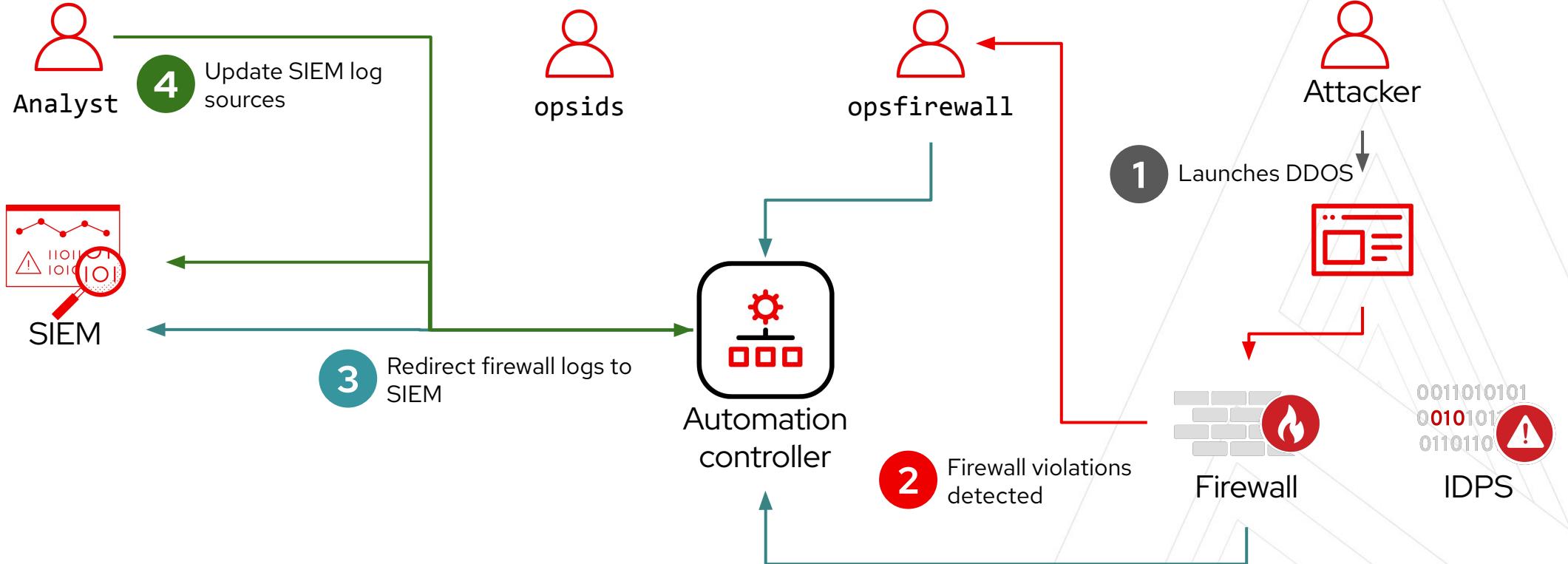
Threat Hunting

opsfirewall redirects logs to SIEM using controller



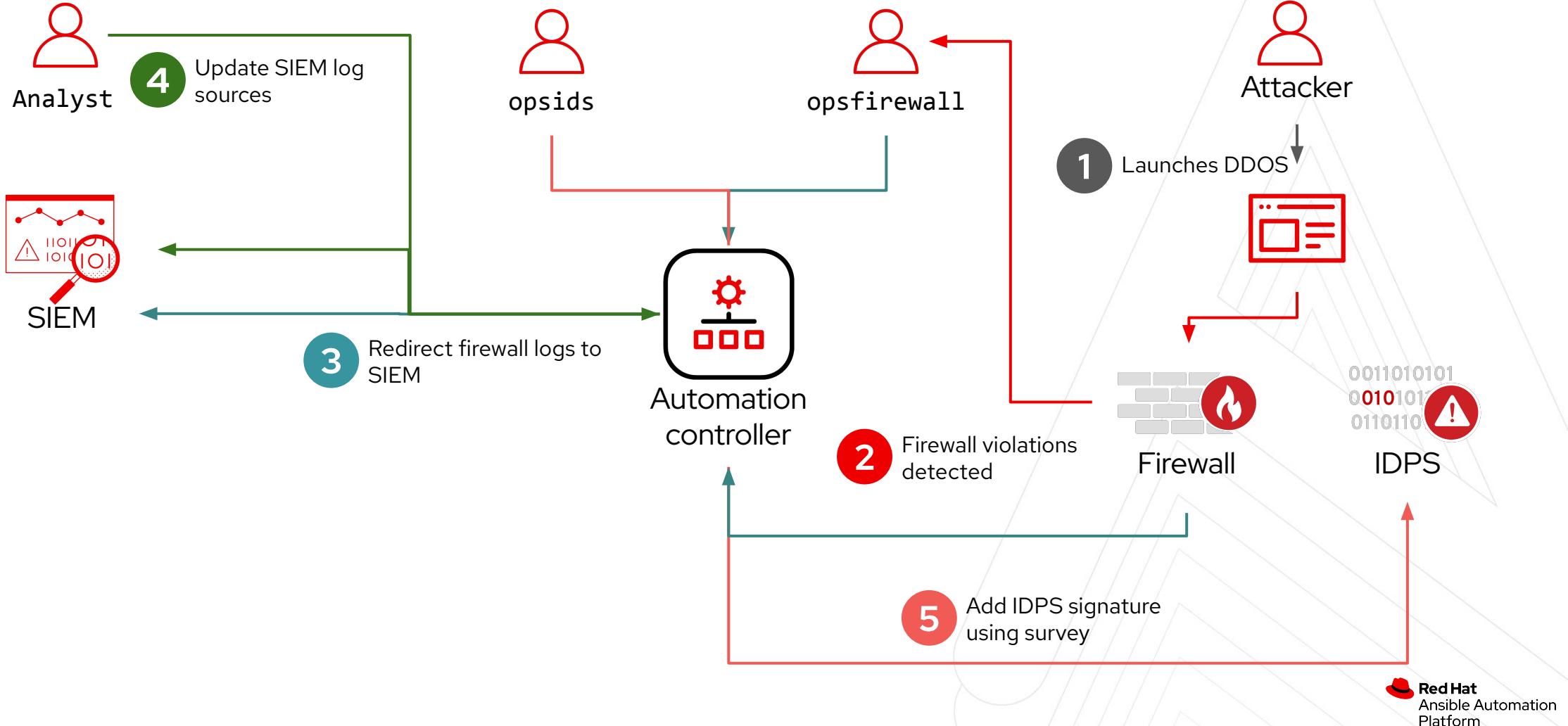
Threat Hunting

analyst updates QRadar log sources to accept firewall logs



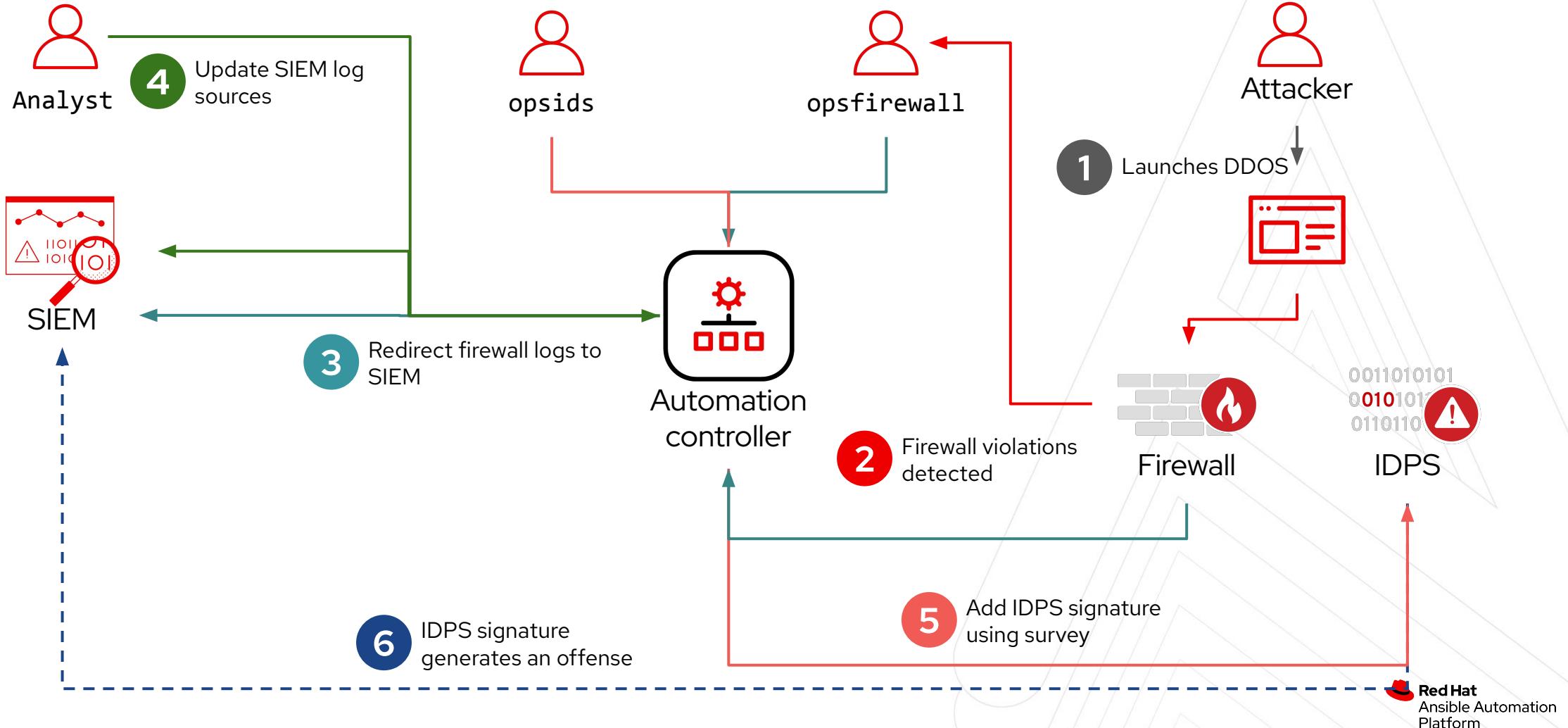
Threat Hunting

opsids adds IDPS signature using controller survey



Threat Hunting

IDPS signature generates an offense in the SIEM



Exercise Time!

Do Exercise 2.2 in your lab environment

- Follow the steps in the exercises
- Remember to use the IP addresses assigned to you

Exercise 2.3



Topics Covered:

- What is incident response?
- Lab scenario overview

Incident response

Mitigating the damage of a security attack or breach



What is incident response?

- ▶ Remediate a cyber attack or security breach
- ▶ Mitigate the risk caused by the security event
- ▶ Involves multiple stakeholders
- ▶ Organization must have incident response plan
- ▶ Requires multiple tools.

Lab Scenario

- ▶ As SecOps, we identify events generated on IDPS.
- ▶ Events need to be escalated. Logs must be redirects to SIEM
- ▶ As the analyst, we will inspect and create a remediation plan



Incident Response Scenario overview



Incident Response

Attacker launches SQL injection attack



Analyst



SIEM



SecOps

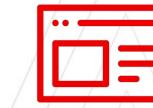


Ansible Automation
Platform



Attacker

1 Launches SQL
Injection attack



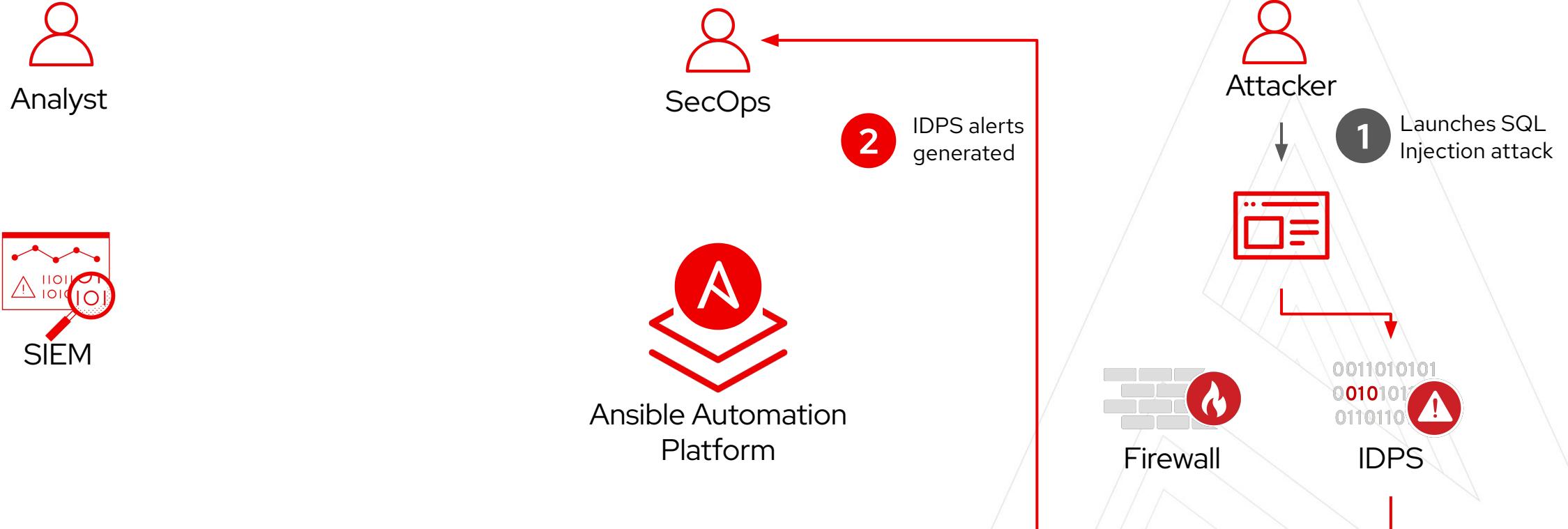
Firewall



IDPS

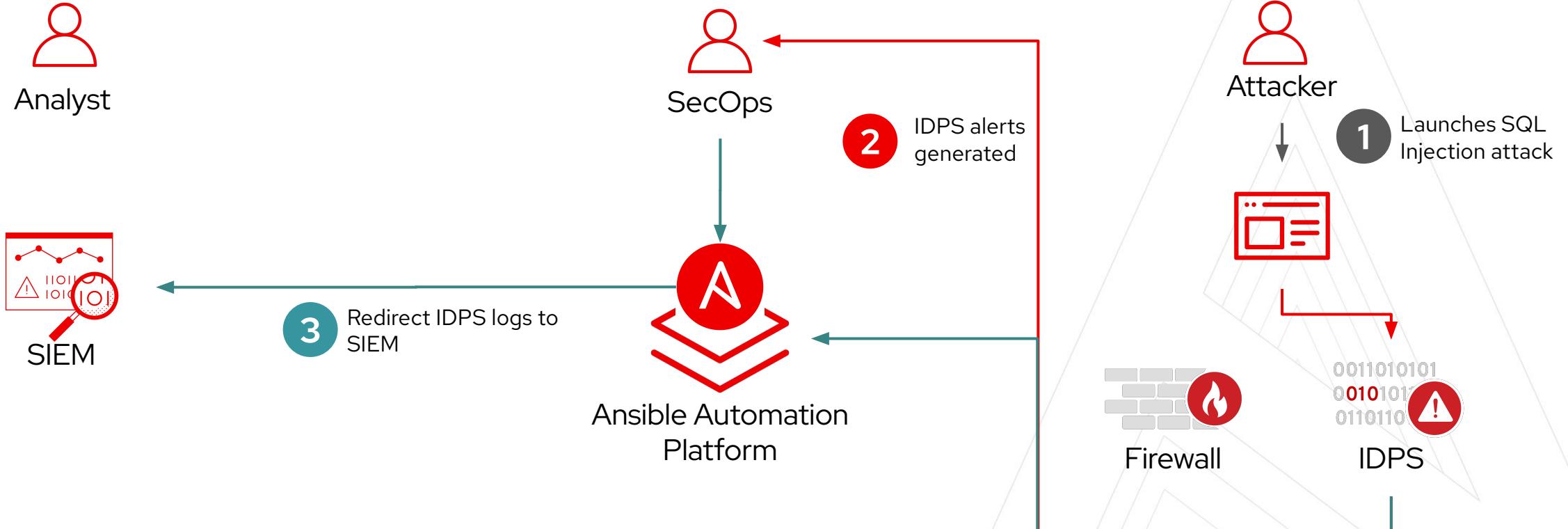
Incident Response

IDPS alerts identified by SecOps



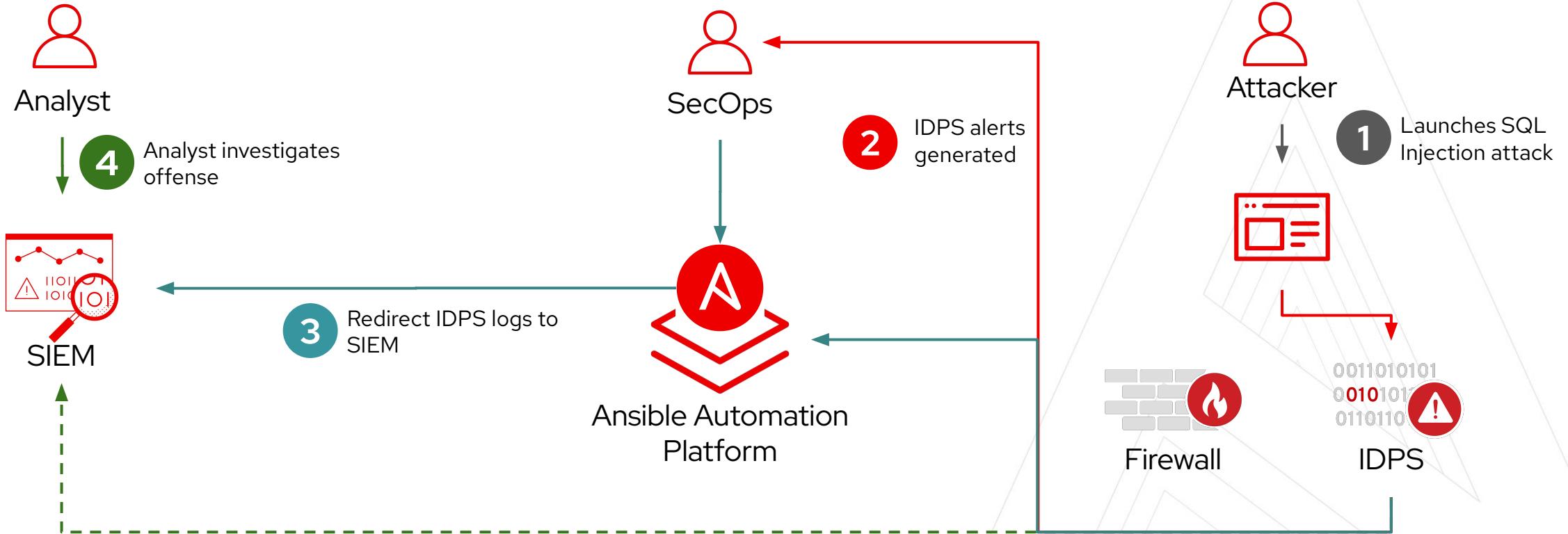
Incident Response

SecOps forwards events to SIEM



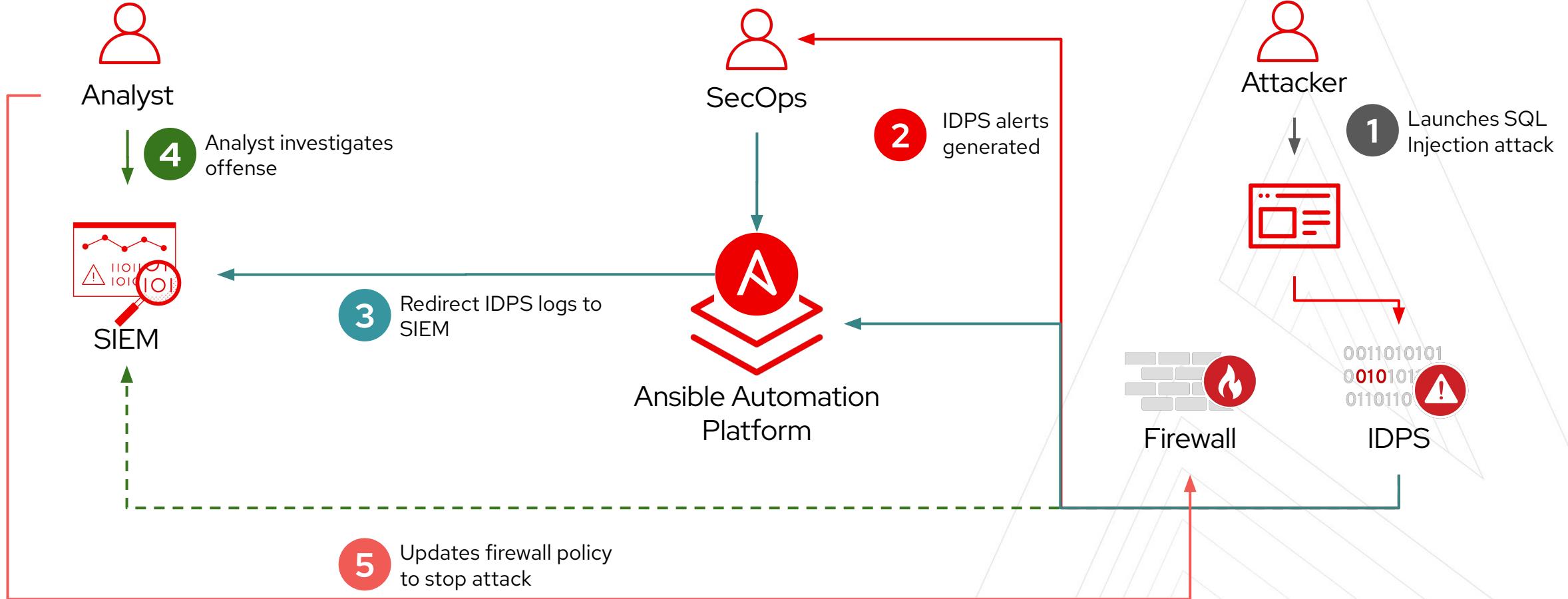
Incident Response

Analyst investigates offense generated on the SIEM



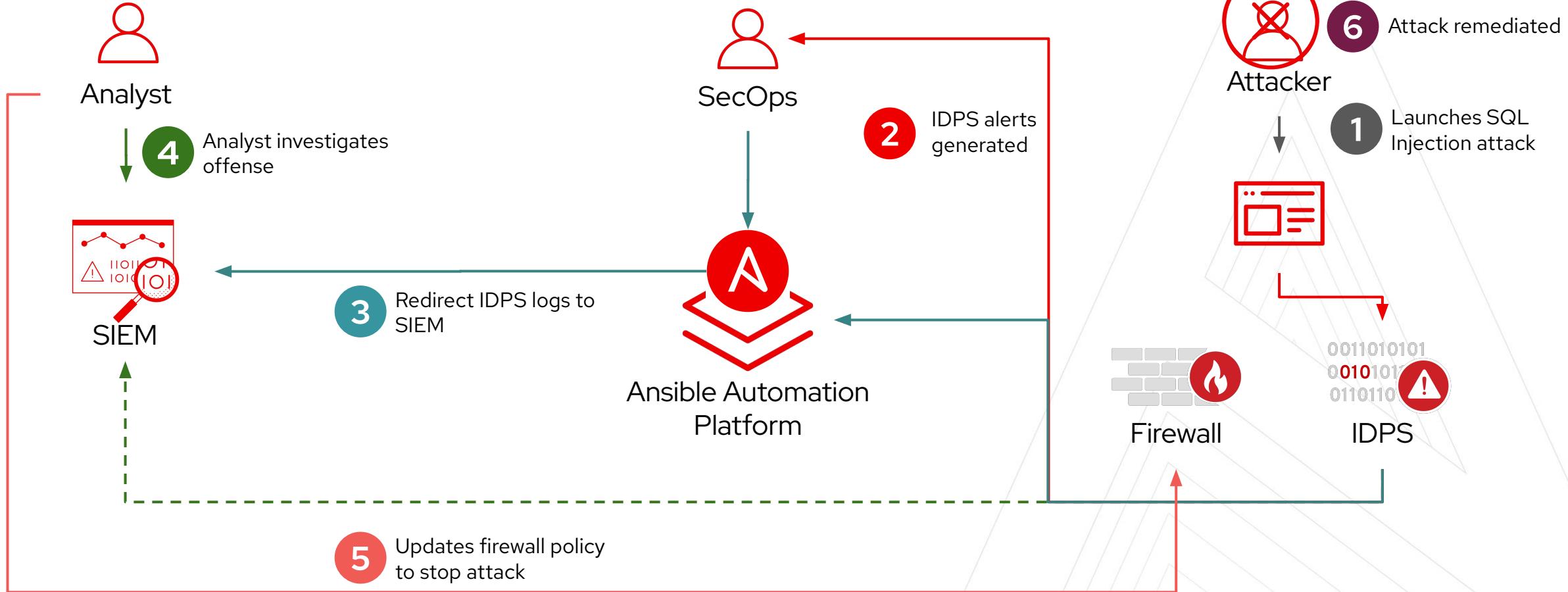
Incident Response

Analyst determines this is a cyber attack and launches remediation



Incident Response

SQL Injection attack remediated



Exercise Time!

Do Exercise 2.3 in your lab environment

- Follow the steps in the exercises
- Remember to use the IP addresses assigned to you

Section 3

Wrapping up



Where to go next

Learn more

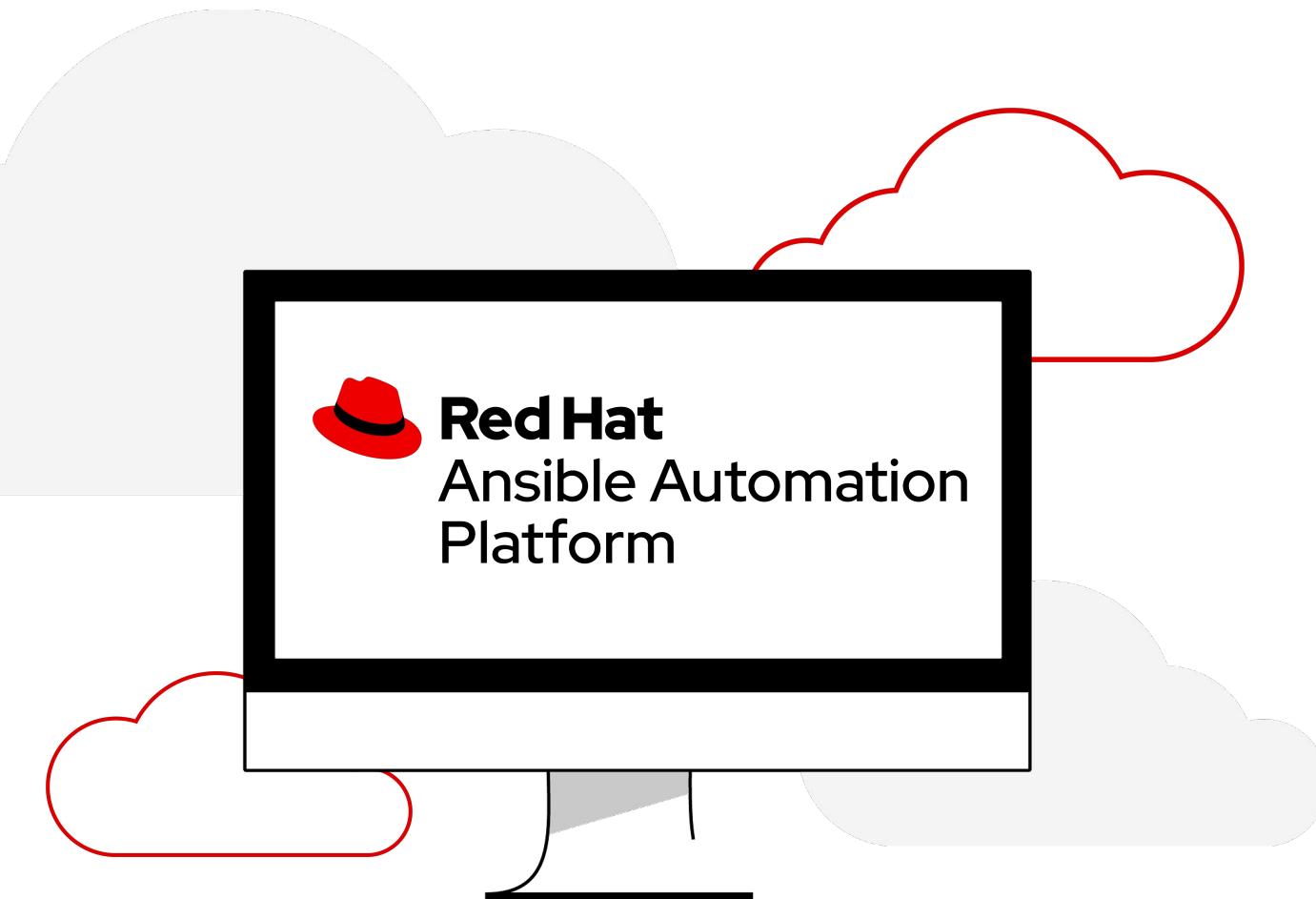
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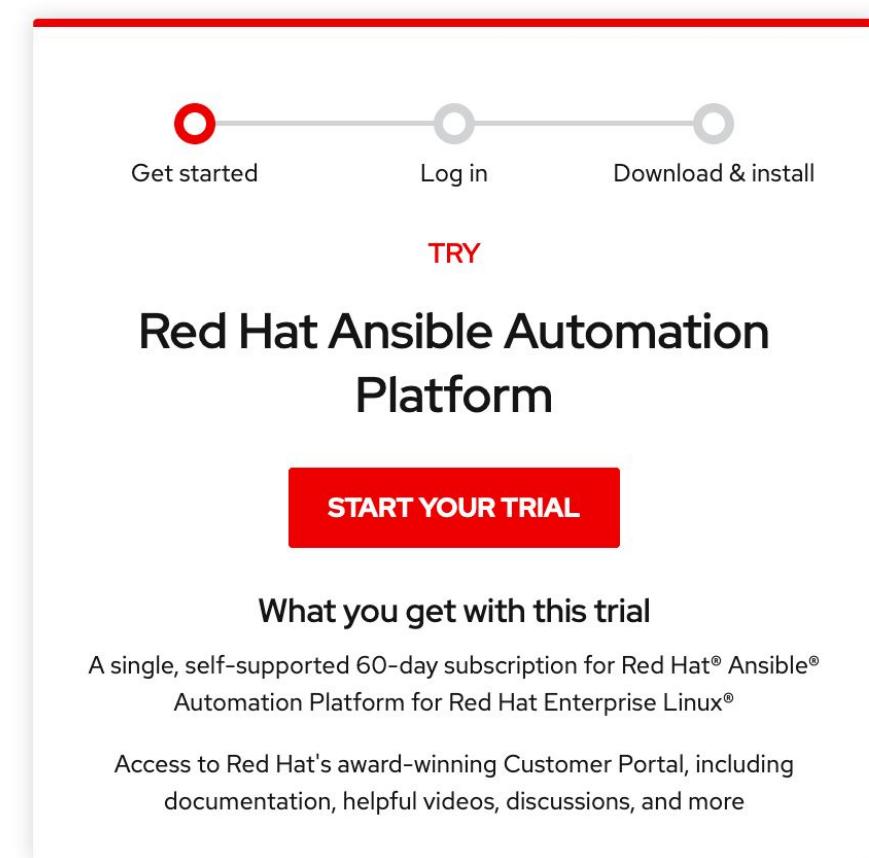
Bookmark the Github organization

- GitHub organization
- Examples, samples and demos

The screenshot shows the GitHub organization page for `ansible-security`. The page includes a navigation bar with links for Overview, Repositories (13), Packages, People, and Projects. A prominent feature is the "Popular repositories" section, which lists six repositories: `ids_rule`, `demo-content`, `log_manager`, `SplunkEnterpriseSecurity`, `ids_rule_facts`, and `acl_manager`. Each repository card displays its name, description, language (Python or Jinja), star count, and fork count. To the right of the repository cards, there is a "People" section stating that the organization has no public members and a "Top languages" section showing Python, Shell, and Jinja. At the bottom, there is a search bar for repositories and dropdown menus for Type, Language, and Sort.

Resources

- ▶ Ansible Automation Platform website
- ▶ [Ansible security automation](#) (Overview)
- ▶ [Simplify your security operations center](#) (E-Book)
- ▶ [Red Hat Ansible Automation Platform blog](#)
- ▶ [Start your Ansible Automation Platform trial](#)



The image shows a promotional landing page for the Red Hat Ansible Automation Platform trial. At the top, there is a horizontal navigation bar with three items: 'Get started' (highlighted with a red dot), 'Log in', and 'Download & install'. Below this is a large button labeled 'TRY'. The main title is 'Red Hat Ansible Automation Platform'. A prominent red button at the bottom right is labeled 'START YOUR TRIAL'. To the right of the trial button, the text 'What you get with this trial' is followed by a description: 'A single, self-supported 60-day subscription for Red Hat® Ansible® Automation Platform for Red Hat Enterprise Linux®'. Further down, another section describes access to the Customer Portal.

red.ht/ansible_trial

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