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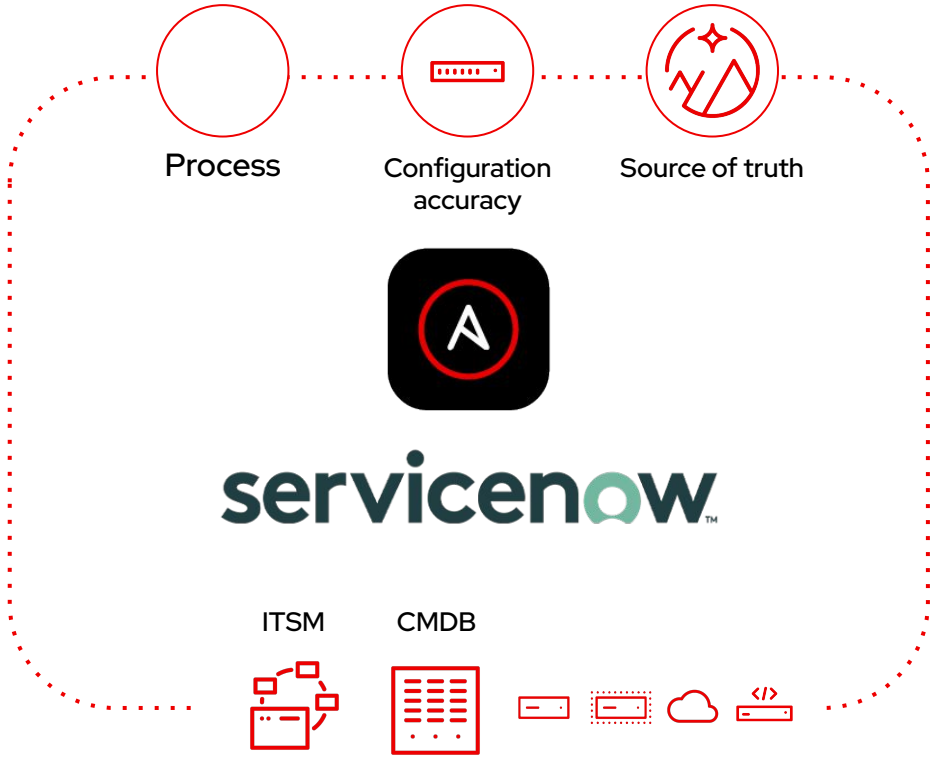
Ansible Automation
Platform

Ansible Automation Platform for ServiceNow ITSM

Updated: December 2022

Ansible for ServiceNow

Increase the value and efficiency of ServiceNow ITSM



- Enables “closed loop” automation of IT service management workflows without time-consuming manual intervention
- Open, close and update ServiceNow ITSM requests as part of Ansible Automation workflows
- Automate common service request actions and remediation events
- Integration of ServiceNow CMDB as a single source of truth inventory source

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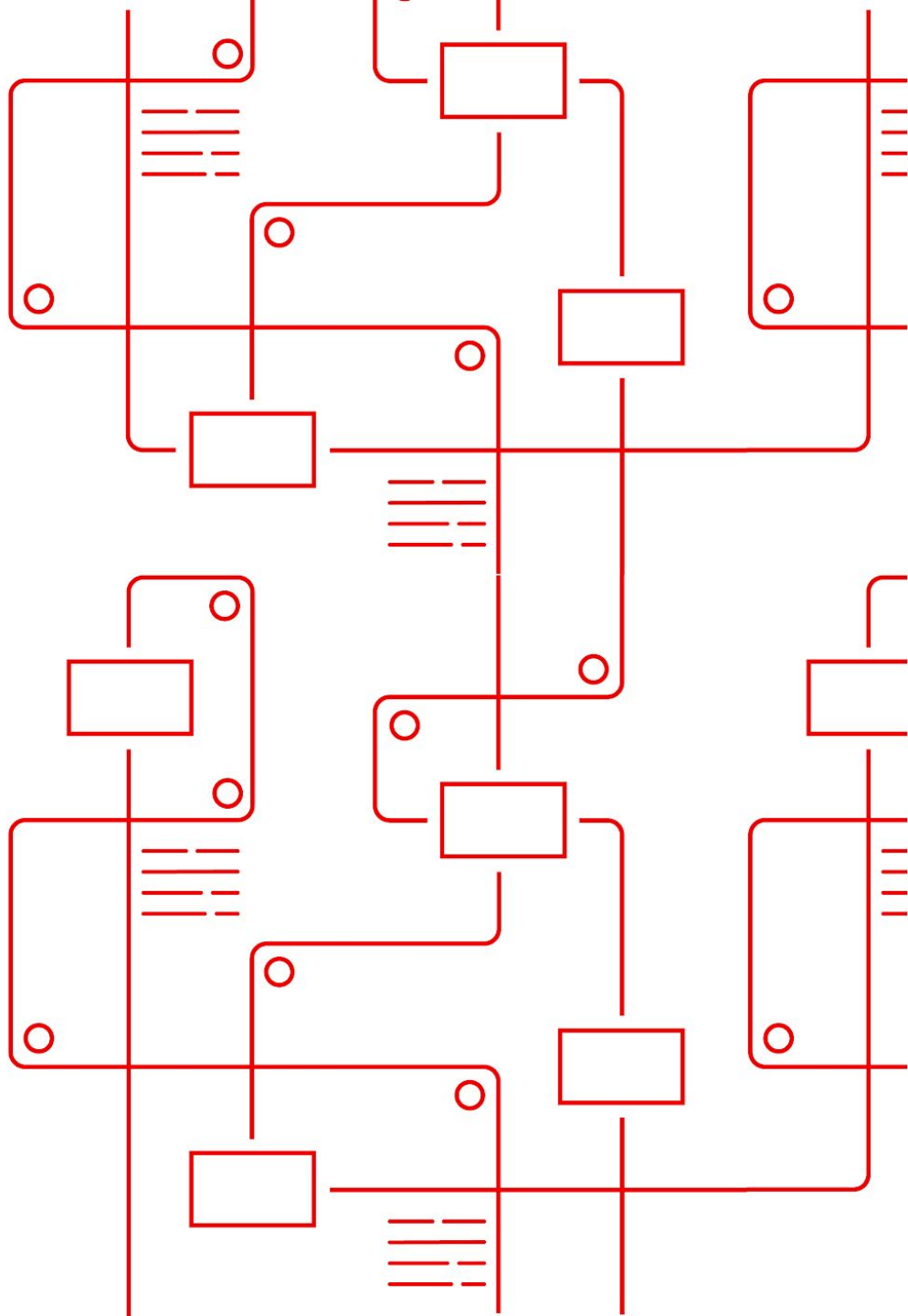
Overview



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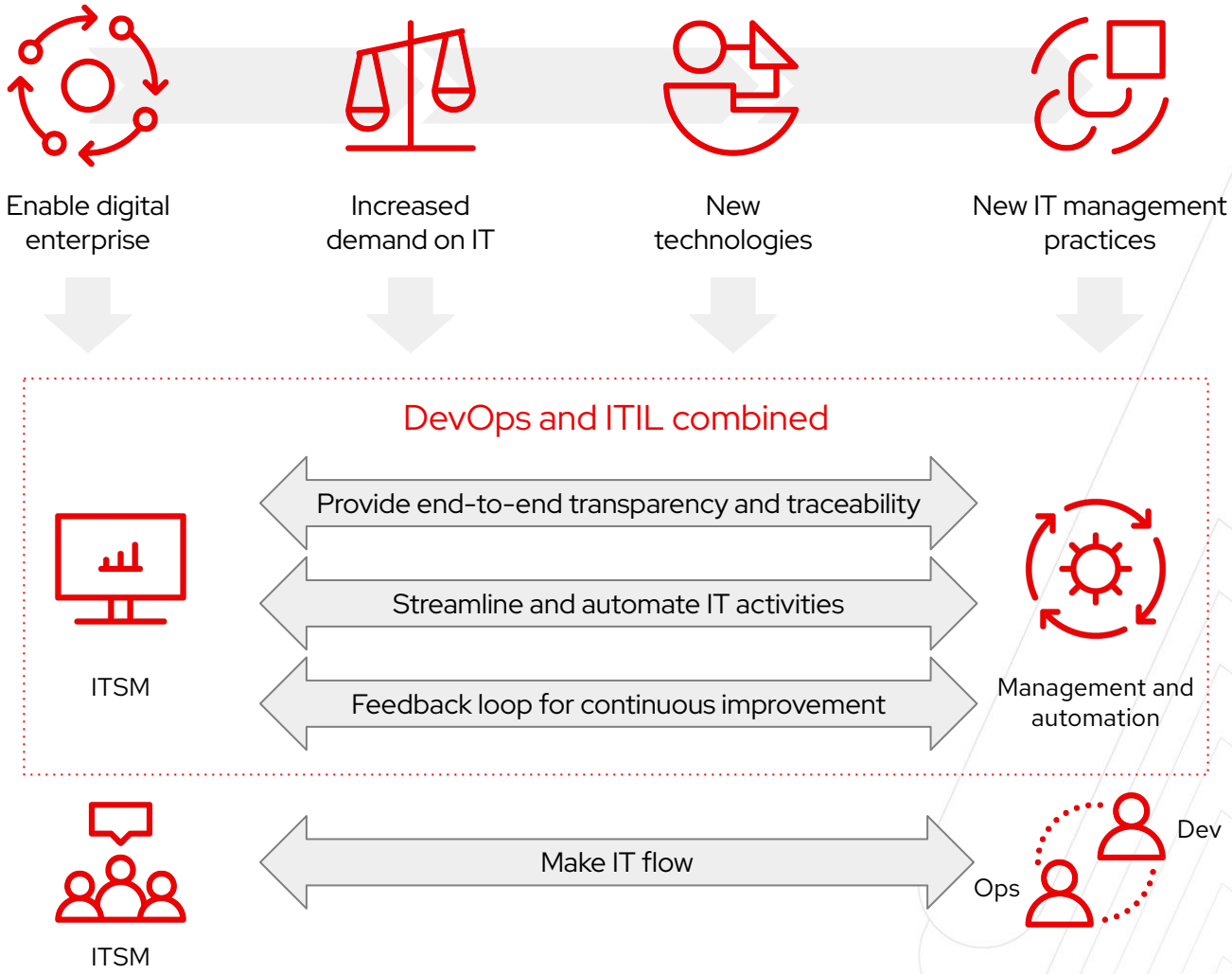
IT Organizations Moving to New Operational Models



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Organizations **must adopt automation**, as it is not possible to scrutinize and manually execute every change.

This approach can be used to **improve existing change management practices or to build new change management practices**.

Gartner

Source:
How to Implement a Modern IT Change Management Practice, April 15, 2020

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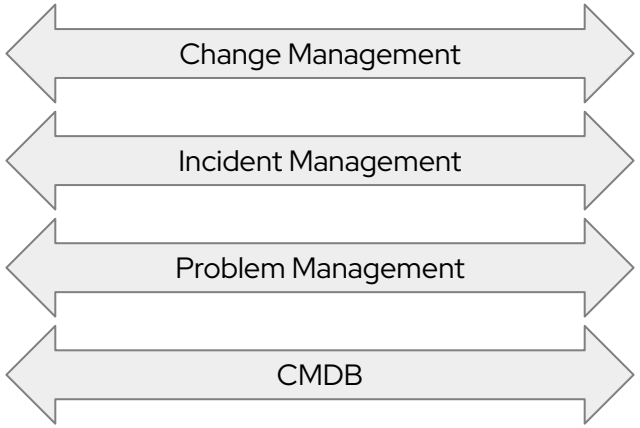
Ansible Automation Platform for ServiceNow Solution

Automation Opportunity

DevOps and ITIL Combined

servicenow™

Make ITSM your superpower
Deliver resilient services that increase productivity and create amazing experiences wherever your employees work, with the most innovative ITSM solution.



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Enterprise IT automation
The Ansible Automation Platform provides easy, powerful and agentless automation and is the de-facto standard in IT domains

IT Service Management Key Phrases

Incident

An unplanned outage or reduction in quality of an IT service or application

Problem

The cause of one or more incidents - The root cause of the problem may not be known at the time of creation and may represent a root cause analysis through the problem management process.

Change

Anything added, removed, or modified to address a problem that may be related to a past or ongoing incident

Ansible Automation Platform for ServiceNow Solution

Available via Automation Hub

New in Q3 2022

servicenow.itsm 2.0 enhancements:

- Integration of Ansible ServiceNow content with a scripted ServiceNow Store application.
- ServiceNow URI module for direct REST API interactions where a purpose made module does not exist.
- Support for downloading ServiceNow attachments
- Added parameters for filtering info modules
- CMDB batch operations now return updated records

servicenow.itsm 1.4:

- Modules to manage Change Request, Incidents, Problems and Problem Tasks
- Support for customized mappings
- Query support to info modules
- Attachments support to Incident and Problem tickets
- Manage CMDB items including batch updates
- Advanced inventory features for creating i.e., creating groups based on CMDB relationships, fine grain fetching

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New!

Ansible Certified Content Collection for ServiceNow ITSM 2.0

API for Red Hat Ansible Automation Platform Certified Content Collection*

API for Red Hat Ansible Automation Platform Certified Content Collection

Integrates Ansible Certified Content Collection for ServiceNow ITSM into your ServiceNow instance

Available at
store.servicenow.com

Ansible Certified Content Collection for ServiceNow ITSM

Helps create new automation workflows faster; while establishes a single source of truth in the ServiceNow CMDB.

Available at
console.redhat.com

**For ServiceNow ITSM releases Rome and later*

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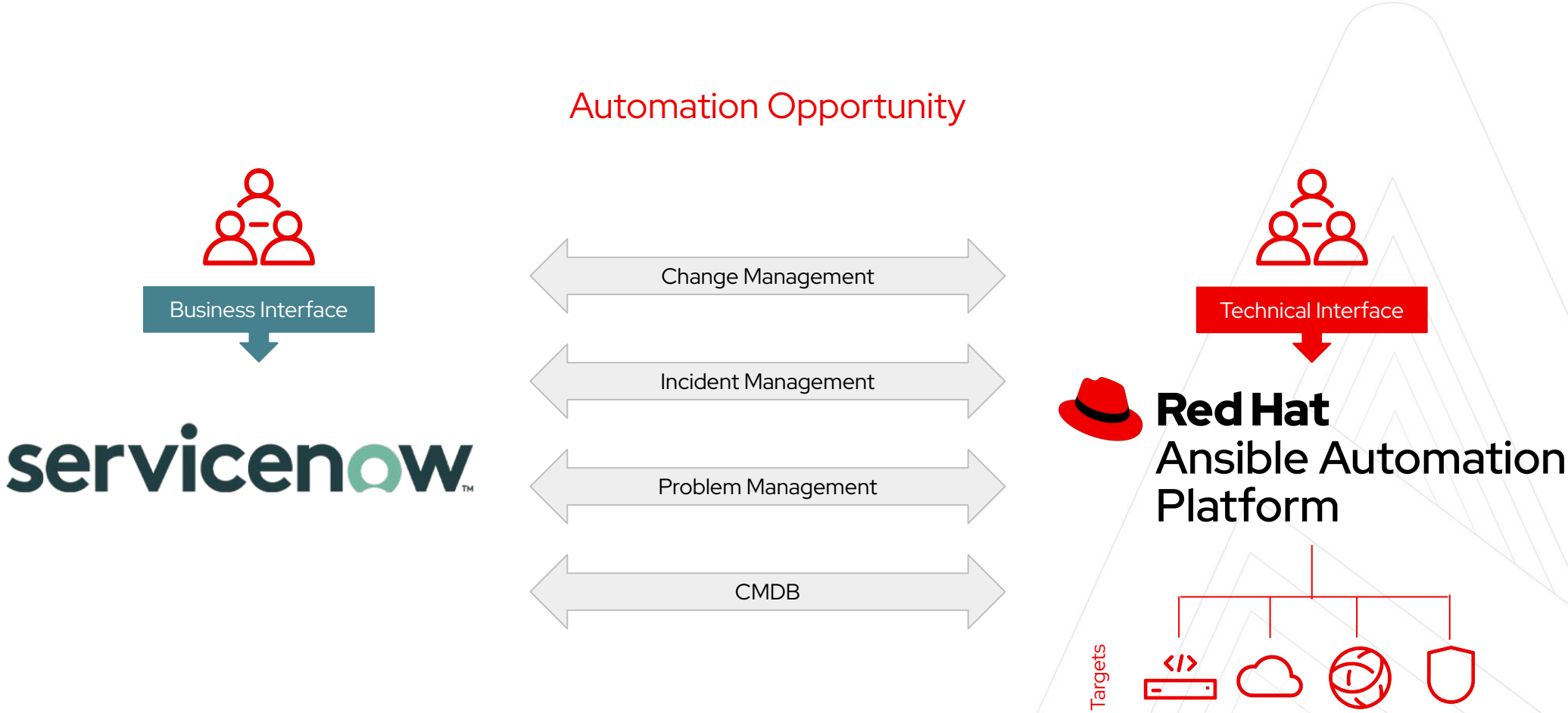
Ansible Automation Platform for ServiceNow Solution



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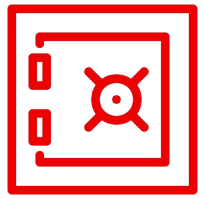
Customer Implementations

Insurance

Initiate on demand self-service provisioning and patching using Ansible Automation Platform

Oil and Gas

Automatically create the incident ticket and initiate remediation, e.g., virtual machine disk is filling up.



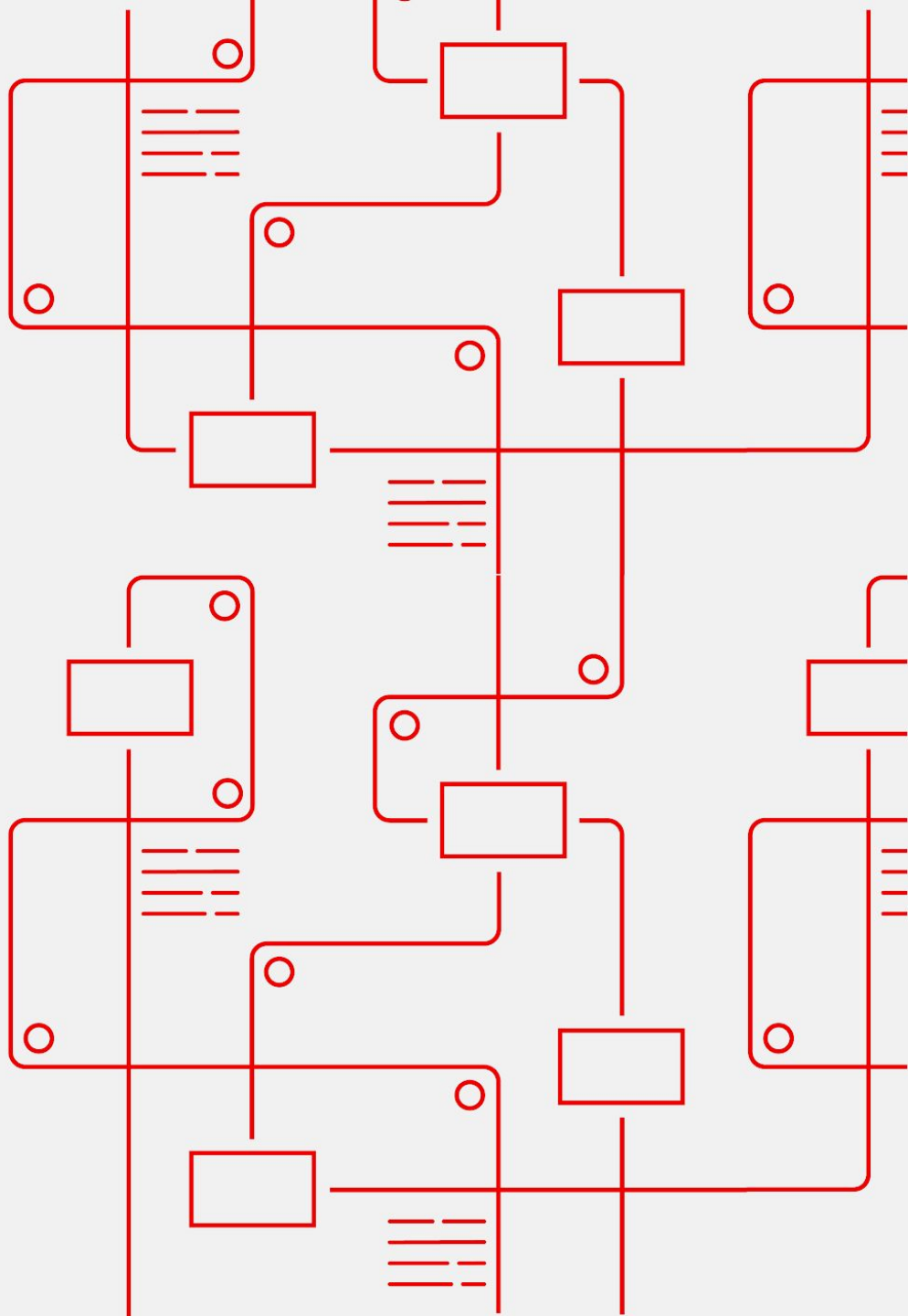
Financial Services

Gather facts and enrich and update CMDB configuration items as changes occur through automation.

Government

Automatically trigger Ansible playbooks from user service requests in ServiceNow.

ServiceNow Use Cases



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Ansible for ServiceNow solution

Components

servicenow

Source of truth and process orchestrator

Ansible spoke v2.2.5 - Automate job scheduling, job templates, inventory and user management in Tower environment from the ServiceNow instance.

Distributed through ServiceNow Store and included in the IntegrationHub 'Professional' package

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Infrastructure integration and task automation

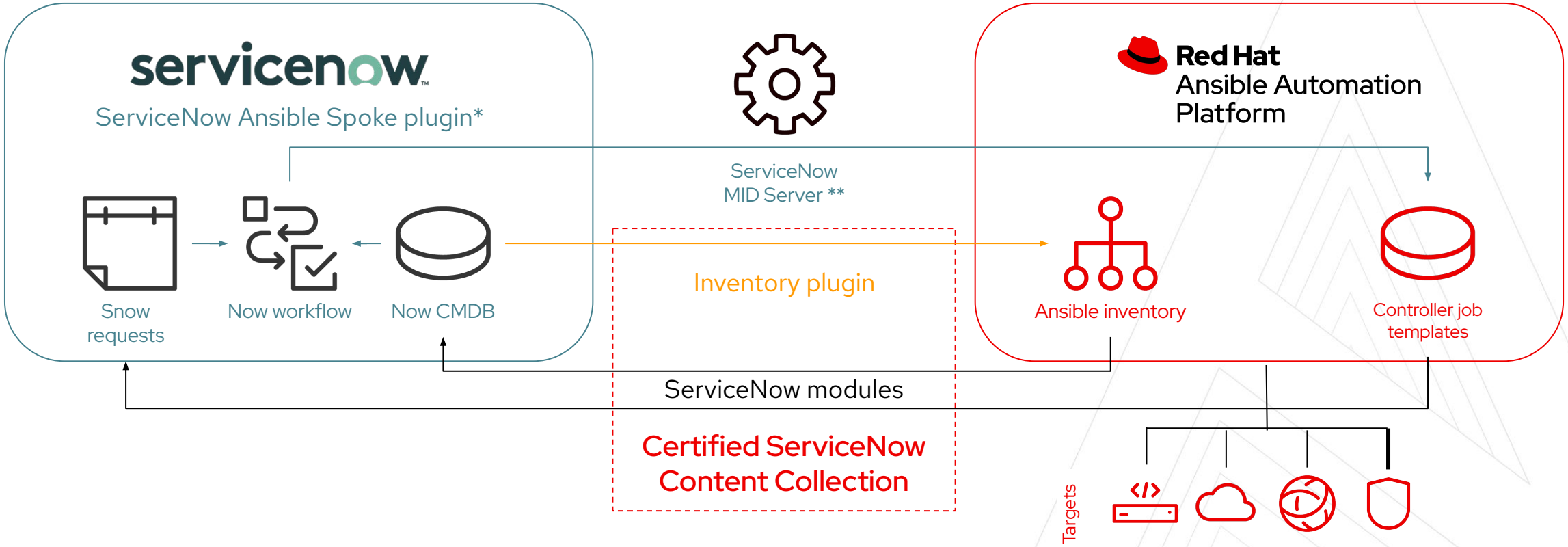
servicenow.itsm - Certified Content Collection

- ServiceNow Modules
- ServiceNow CMDB Inventory PlugIn

Distributed through Ansible automation hub and included into the Ansible Automation Platform subscription

Ansible for ServiceNow solution

Logical architecture



* Distributed through ServiceNow Store
** Optional

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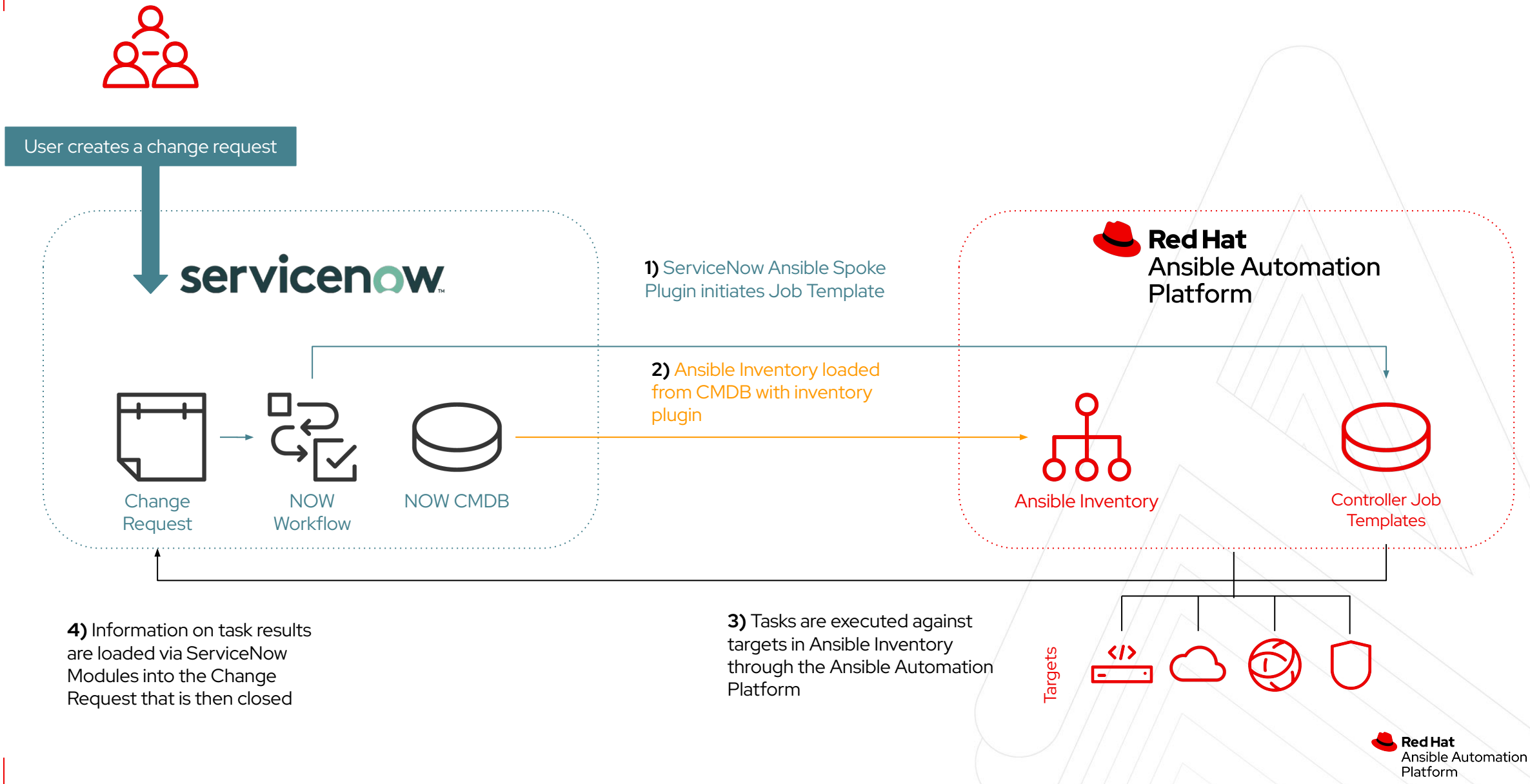
Automated change request fulfillment



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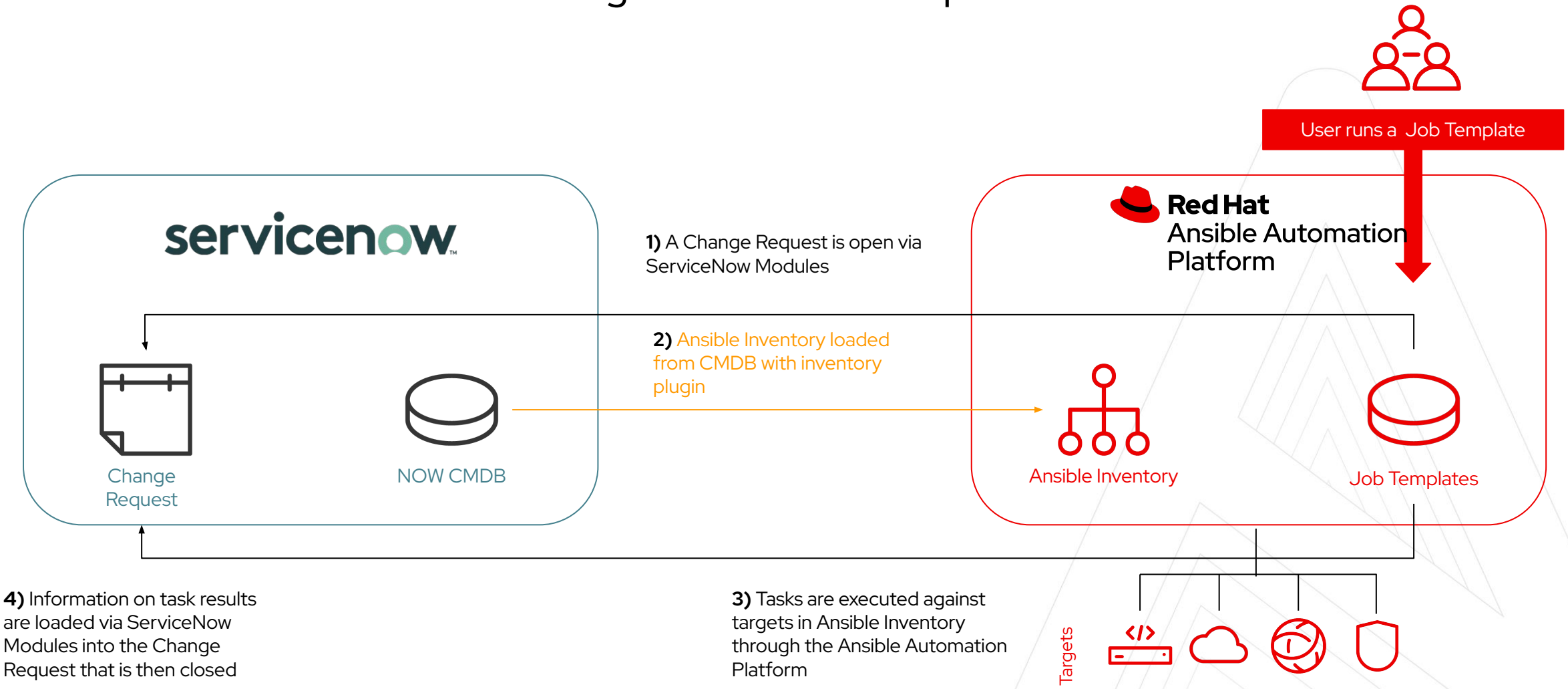
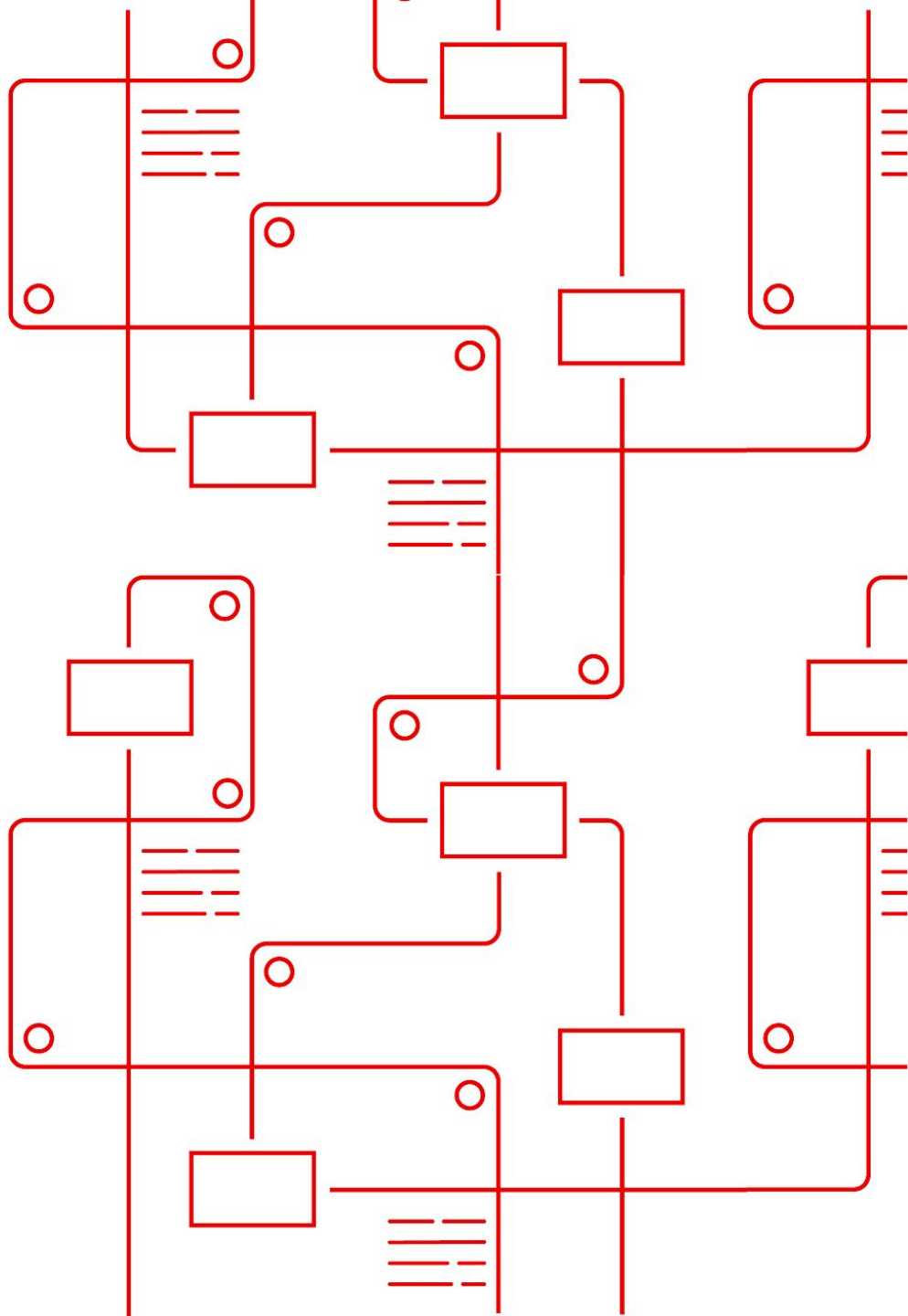
ITSM filing of automated operations



ServiceNow Implementation



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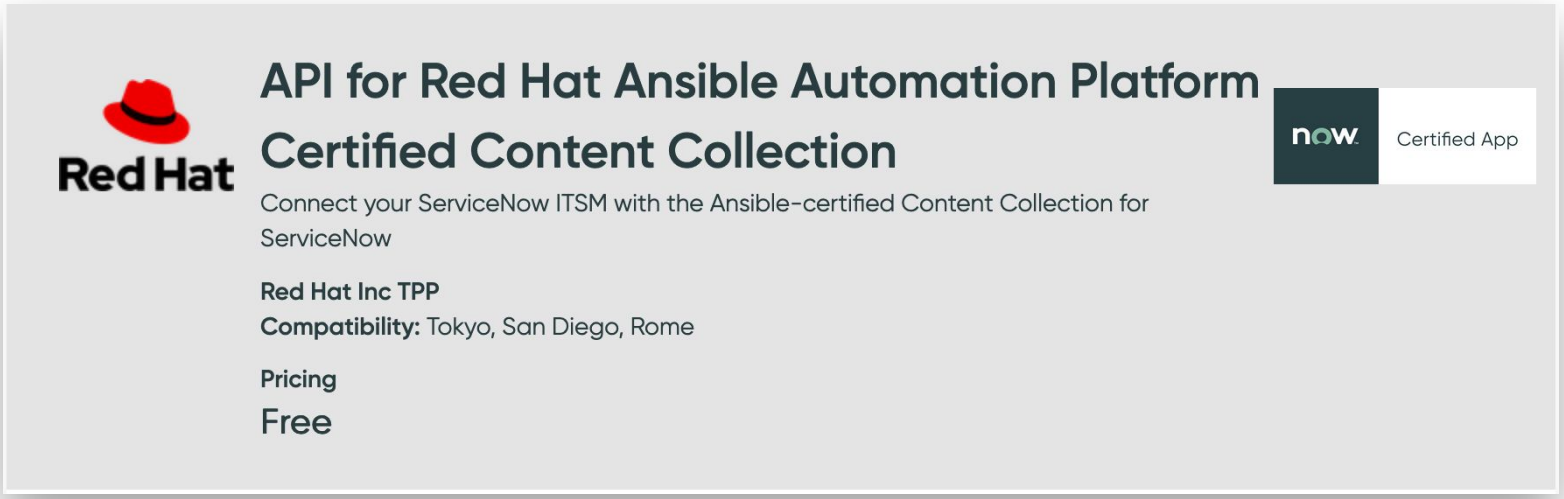
ServiceNow Store component



[API for Red Hat Ansible Automation Platform Certified Content Collection]

- Allows greater control and stability of endpoints leveraged by collection modules
- Roles required for service account documented in Installation Guide on the store page
- No additional ServiceNow configuration needed post installation
- Compatible with latest release

ServiceNow Authentication

Connecting to an instance

What's wrong here?

Plain text password?

```yaml
---
- name: Sample playbook
  hosts: localhost
  gather_facts: false

  tasks:
    - name: Create a new incident
      servicenow.itsm.incident:
        # Instance data
        instance:
          host: https://dev12345.service-now.com
          username: user
          password: pass
          client_id: cid
          client_secret: csecret
```

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ServiceNow Authentication

Input Configuration

```
fields:
  - id: SN_HOST
    type: string
    label: Snow Instance
  - id: SN_USERNAME
    type: string
    label: Username
  - id: SN_PASSWORD
    type: string
    label: Password
    secret: true
required:
  - SN_HOST
  - SN_USERNAME
  - SN_PASSWORD
```

Read this blog!

Injector Configuration

```
env:
  SN_HOST: '{{ SN_HOST }}'
  SN_PASSWORD: '{{ SN_PASSWORD }}'
  SN_USERNAME: '{{ SN_USERNAME }}'
```

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Use case: Incident management

Something happened:
Create an incident

Attach a sosreport to
the incident

```
- name: Create new incident
  servicenow.itsm.incident:
    caller: admin
    state: new
    short_description: Demo incident
    attachments:
      path: /tmp/sosreport.bz2
    impact: low
    urgency: low
  register: incident
```

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Use case: Incident management

Create a problem
Attach it to existing incident

```
- name: Create a problem from incident
  servicenow.itsm.problem:
    short_description: Demo problem
  register: problem

- name: Update incident with a problem information
  servicenow.itsm.incident:
    number: "{{ incident.record.number }}"
    state: in_progress
    other:
      problem_id: "{{ problem.record.sys_id }}"
```

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Use case: Incident management

Change the state of the problem
Create a change request

```
- name: Assign problem for assessment
  servicenow.itsm.problem:
    sys_id: "{{ problem.record.sys_id }}"
    state: assess
    assigned_to: problem.manager

- name: Create change request for resolving a problem
  servicenow.itsm.change_request:
    state: new
    type: standard
    short_description: Demo change request
    template: Clear BGP sessions on a Cisco router - 1
    other:
      parent: "{{ problem.record.sys_id }}"
  register: change
```

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Use case: Incident management

Mark the problem for root cause analysis
Fix the problem

```
- name: Mark the problem for root cause analysis
  servicenow.itsm.problem:
    number: "{{ problem.record.number }}"
    state: root_cause_analysis
    cause_notes: Document thoroughly!
    other:
      rfc: "{{ change.record.sys_id }}"

- name: Start fixing the problem
  servicenow.itsm.problem:
    sys_id: "{{ problem.record.sys_id }}"
    state: fix_in_progress
    fix_notes: Detailed fix description here.
```

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Use case: ServiceNow CMDB Inventory

Inventory configuration

Query parameter allows for reusing of ServiceNow filters and operators just like in modules

```
---
plugin: servicenow.itsm.now
query:
  -os: = Linux Red Hat
  -os: = Windows XP
keyed_groups:
  -   key: os
      prefix: os
```

Example output

```
ansible-inventory -i inventory.now.yaml --graph
 @all:
  |--@os_Linux_Red_Hat:
  |   |--FileServerFloor1
  |   |--FileServerFloor2
  |--@os_Windows_XP:
  |   |--DatabaseServer1
  |   |--DatabaseServer2
...
```

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Use case: CMDB update

Add/update linux instance in CMDB

```
- name: Register instance in ServiceNow
  servicenow.itsm.configuration_item:
    name: “{{ item.hostname }}”
    ip_address: "{{ item.default_ip }}"
    mac_address: “{{ item.default_mac }}”
    assigned_to: “{{ username }}”
    other:
        sys_class_name: cmdb_ci_ec2_instance
  loop: “{{ node_info }}”
  register: item
```

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Ansible based mappings

```
- name: Retrieve all incidents
    servicenow.itsm.incident_info:
      incident_mapping:
        state:
          1: "new"
          2: "in_progress"
          3: "on_hold"
          4: "resolved"
          5: "closed"
          6: "canceled"
          7: "test"
  register: result
```

- ServiceNow choice lists can be updated for things like problem/incident/change request, etc.
- Choice lists contain things like incident state of: **New, Known Issue, Investigating, Closed** and are customizable
- As choice lists are modified in ServiceNow, mappings allow to keep Ansible in sync with customized choice lists
- Makes state transitions more predictable by using the value instead of the number ID

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API and API_info Modules

- ServiceNow is highly customizable across many different tables including the ability to define new tables
- Modules for incident/problem/change request, etc., are only targeting one table
- API modules allow automation creators to target all other resources available in ServiceNow
- Allows for automated tasks outside what is covered by ITSM modules

```
- name: Find tag ID by name
  servicenow.itsm.api_info:
  resource: label
  sysparm_query: name={{ tag_name }}
  columns:
       - name
       - sys_id
  register: tag_info

- name: Attach role to new user
  servicenow.itsm.api:
  resource: sys_user_has_role
  action: post
  data:
       user: "{{ username }}"
       role: "{{ role }}"
  register: user_role
```

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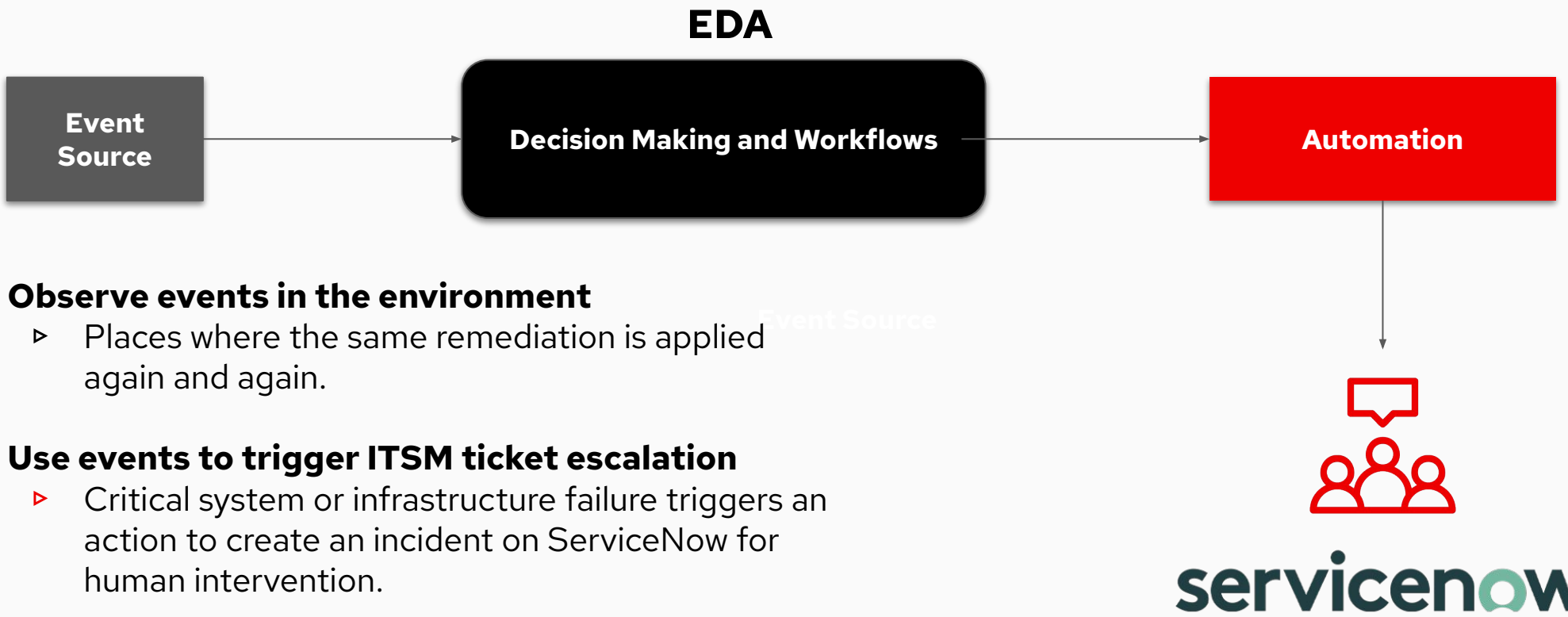
Event-Driven Ansible - ServiceNow ITSM integration

Events to human observation



- **Observe events in the environment**
  - Places where the same remediation is applied again and again.
- **Use events to trigger ITSM ticket escalation**
  - Critical system or infrastructure failure triggers an action to create an incident on ServiceNow for human intervention.
- **Update ServiceNow CMDB**
  - Infrastructure changes can be observed and used to trigger ServiceNow to update its inventory

Additional resources

Log in to **download the collection**

Blog: Introducing the Ansible API for ServiceNow ITSM

Blog: Enabling modern IT service management actions for ServiceNow with Red Hat Ansible Automation Platform

Blog: Automating ServiceNow with Red Hat Ansible Automation Platform

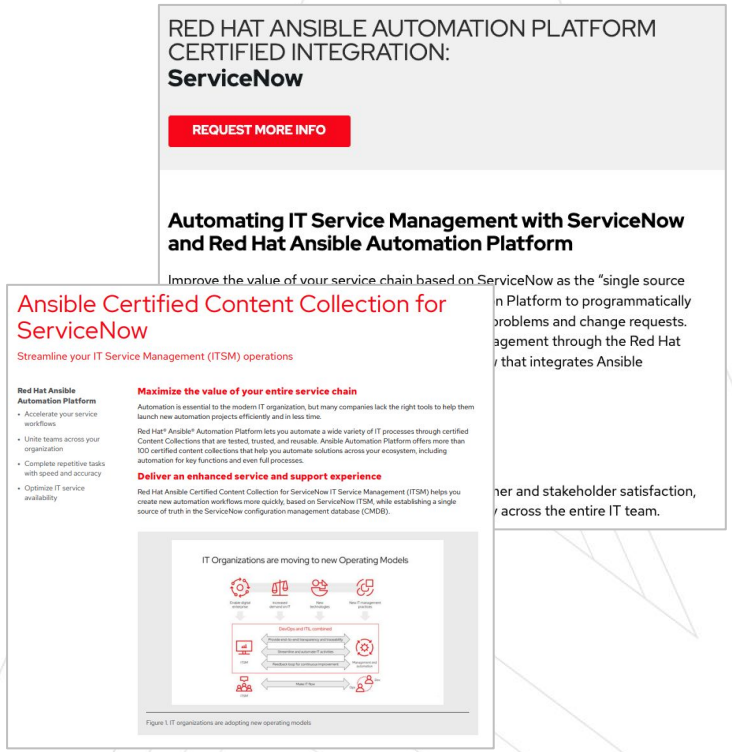
Blog: Inside the newest features in the Red Hat Ansible Certified Content Collection for ServiceNow ITSM

Overview: Ansible Certified Content Collection for ServiceNow

YouTube: Automate ServiceNow ITSM

Webinar: Ansible certified Content Collection for ServiceNow

Website: Ansible Automation Platform: ServiceNow Integration



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