

DEMISTO

The Human
Perspective

Security Automation
and Orchestration

Table of Contents

1. Are security automation and orchestration the same?	3
2. Automation, Orchestration and Workflow Requirements	3
Requirement 1: Process Workflow	3
Requirement 2: Task Automation	4
Requirement 3: Playbook Automation	5
3. Real Life Security Operations – Security Orchestration	6
Step 1: Automate the enrichment:	6
Step 2: Act on the information:	7
Step 3: Collaborate on the information:	7
Step 4: Automate the actions:	8
4. Summary	9

01. Are security automation and orchestration the same?

Recently, we attended a CISO roundtable where the topic of discussion centered around security automation and orchestration. One of the questions that was asked was – “What is the difference between security orchestration and automation?”. Nobody had a concrete answer. The best answer was – “Orchestration” is a sexier word for “Automation”.

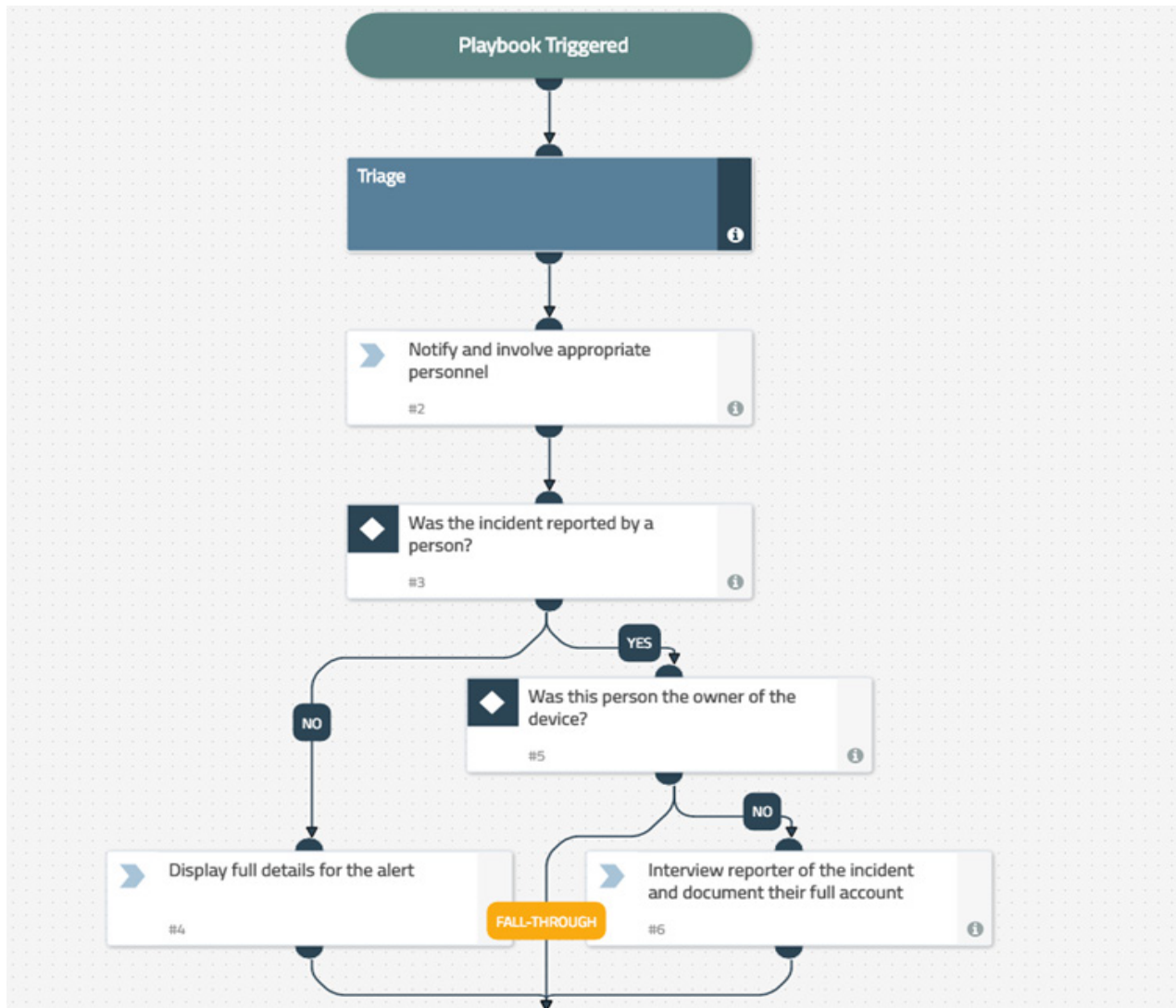
Since these terms are pretty hot right now and are used almost interchangeably, we did some research with the goal of defining three different terms – “Security Automation”, “Security Orchestration” and “Security Workflow”. We sent a bunch of emails, made lots of phone calls to customers, prospects and colleagues and read whatever material was available out there. Some highlights of the research include: –

1. None of the customers and prospects clearly see the difference. They all understand the value that products in this space intend to deliver but the crowded market and the buzzword bingo that we are all part of result in a lot of confusion.
2. The Customers have separate requirements or wishes in this space. Some requirements that we had encountered earlier came up again.

02. Automation, Orchestration and Workflow Requirements

Requirement 1: Process Workflow

Customers, like most of us, have a need for order. When it comes to problem solving, order means consistency, repeatability and predictable results. They would like to have a system where they can see all of their processes documented and be tracked. This is not about integration with any security tools at all. Customers have had playbooks (or runbooks) which document the best practices and steps for each type of incident. For example, what to do when a ransomware incident is reported? Such a playbook can have steps that are very technical in nature like “check whether the encrypted file types are of a known ransomware type?” or the steps can be procedural like “call your legal and PR teams and get them ready for the bad news”. Here is an example of pure process workflow.



Requirement 2: Task Automation

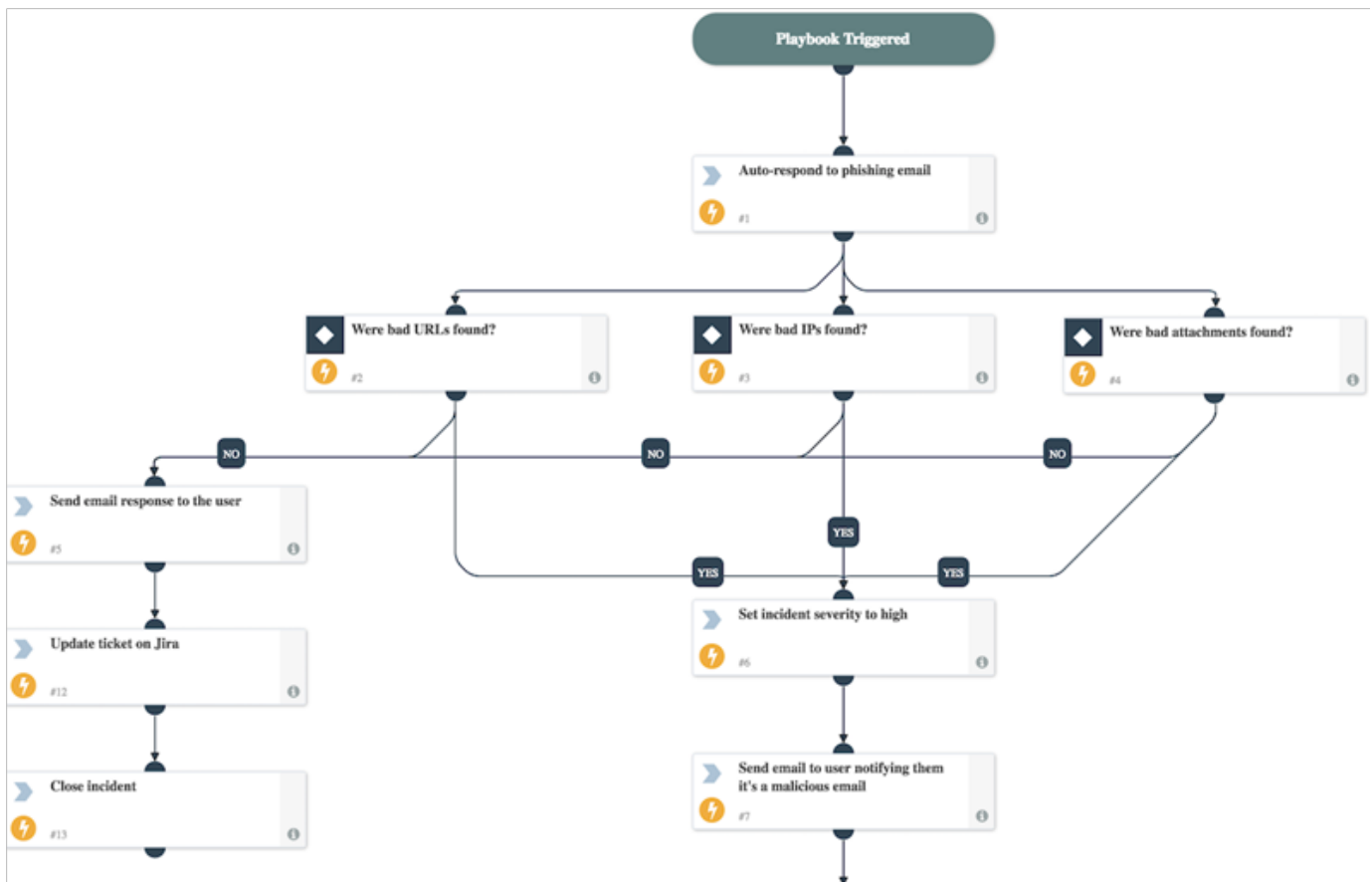
Customers have a large volume of security alerts spewing out of their SIEM or being generated by other security tools in their network. Security Operations Teams (SOC) and specifically Incident Response Analysts are tasked with reviewing, understand and dispensing with these alerts. With an increasing flood of alerts, they can't keep up. They need a way to be able to automate response and resolution of these alerts/tasks.

Additionally, resolution usually requires integrating with various security tools and being able to take actions across those security tools like "hunt for a hash", "ban an IP", "check reputation of a url" etc. These actions can be triggered by an analyst or triggered when a new artifact is added to the incident. Notice that at its core this kind of automation does not include context sharing across different products. in the same playbook. These are is primarily "fetch" tasks and serve to gather information and evidence to support eventual resolution.

Requirement 3: Playbook Automation

SOC teams would like to create a sequence of the security automation tasks so that these tasks can be performed in a logical sequence with chained data flow. For example, in the initial phase of the Phishing incident example below, triage includes steps like reputation checks for IPs and hashes across different threat intelligence feeds, hunting for the malicious IP's across the enterprise environment etc.

If the system can support sequencing of security automations then the system can be used to perform incident prioritization or detecting false positives etc. Notice that the **playbook automation is a “sequence of task automation with conditional logic”**.

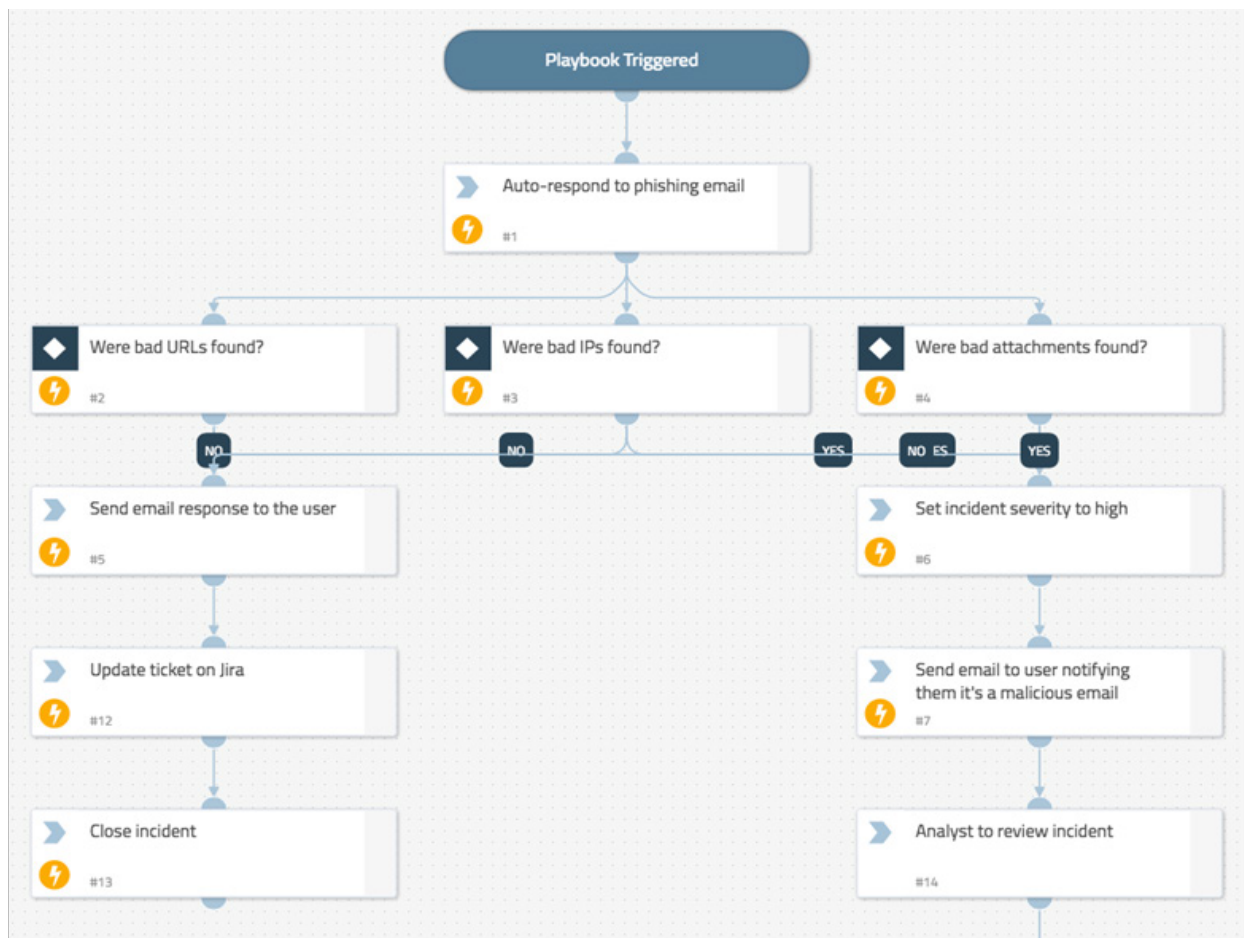


03. Real Life Security Operations – Security Orchestration

In a real life security incident, SOC teams require all of the above in a complicated mix and match scenario. Most of the vendors in this space have failed to deliver a solution that encompasses the whole of security operations. It is not about simply automating individual security tasks, not about creating a playbook of security tasks with logic. It is about weaving the human analyst into the middle of these workflows and playbooks.

Let's walk through a scenario for a ransomware investigation. Typically, such an investigation will start with a simple malware alert from a SIEM or an employee calling about the problem. The following steps need to be done:

- 1. Step 1: Automate the enrichment:** about the system compromised or user using Active Directory, Asset databases etc. This can be a completely automated series of steps like



- Step 2: Act on the information:** At this time, you might want an analyst to look at all the data and make decisions, maybe collaborate and ask questions to peers, make comments on the task etc. Once all this is done, they can mark a task complete or assign it to another analyst. This step can have a lifecycle and timeline of its own.

The screenshot displays a 'Task Details' panel on the left and a workflow diagram on the right. The task panel is titled 'Analyst to review incident' (ID #14) and is in a 'Not Started' state. It includes interactive elements like 'Add comment', 'Assign owner', and 'Set due date'. A file upload area is present with the text 'Drop any file here (or click to browse)'. Below this is a text input field containing 'Reviewed all the information' and a yellow 'Mark Completed' button. The workflow diagram on the right shows a vertical sequence of three task steps: 'Analyst to review incident' (#14), 'Search attachment using Carbon Black' (#8), and 'Pause for Approval' (#9), connected by downward arrows.

- Step 3: Collaborate on the information:** They might also want to assign a task to another analyst and set a due date. Once that completes is when the playbook continues.

This screenshot is similar to the previous one but shows the 'Assign owner' dropdown menu open. The menu lists two users: 'admin' and 'amir'. The rest of the task details panel and the workflow diagram remain the same as in the previous image.

Task Details Expand ✕

Analyst to review incident #14

State: Not Started

[Add comment](#) [Assign owner](#) [Set due date](#)

[Complete](#) [Comments \(0\)](#)

Drop any file here (or click)

Reviewed all the information

[Mark Completed](#)

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March 2017

Su	Mo	Tu	We	Th	Fr	Sa
26	27	28	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	1
2	3	4	5	6	7	8

[Cancel](#) [Save](#)

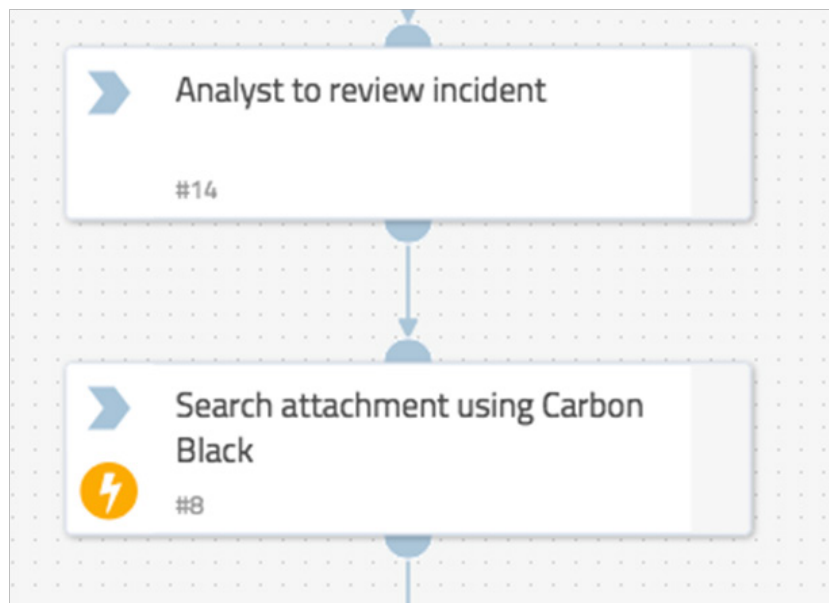
Analyst to review incident #14

Search attachment using Carbon Black #8

Pause for Approval #9

Find and delete malicious email #10

4. **Step 4: Automate the actions:** The playbook automation comes in play again starts the series of tasks to bring more data or contain the incident.



04. Summary

What looks like a simple four-step process can be very complicated and Step 2 and Step 3 can be repeated many times. This is real life security operations. In real life, automation and human tasks needs to be interweaved and work together in a seamless fashion. Automation and human process workflow when combined is essential to optimized security operations.

A comprehensive “Security Orchestration” platform should be able to automate security product tasks, create playbooks with complicated logic and be able to track and orchestrate tasks assigned to analysts. This is essential to streamlined security operations processes.

This is what should be defined as “Security Orchestration” - like a conductor conducting a harmonious musical symphony. You need to make music. Not noise.