Cyber Deception in GCP with Generative Traps

BSidesCharm 2025

Matt Maisel

Defenders think in lists.
Attackers think in graphs.
As long as this is true, attackers win.

John Lambert, 2015

It’s 2025.

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Defenders think in graphs:

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Defenders think in graphs:

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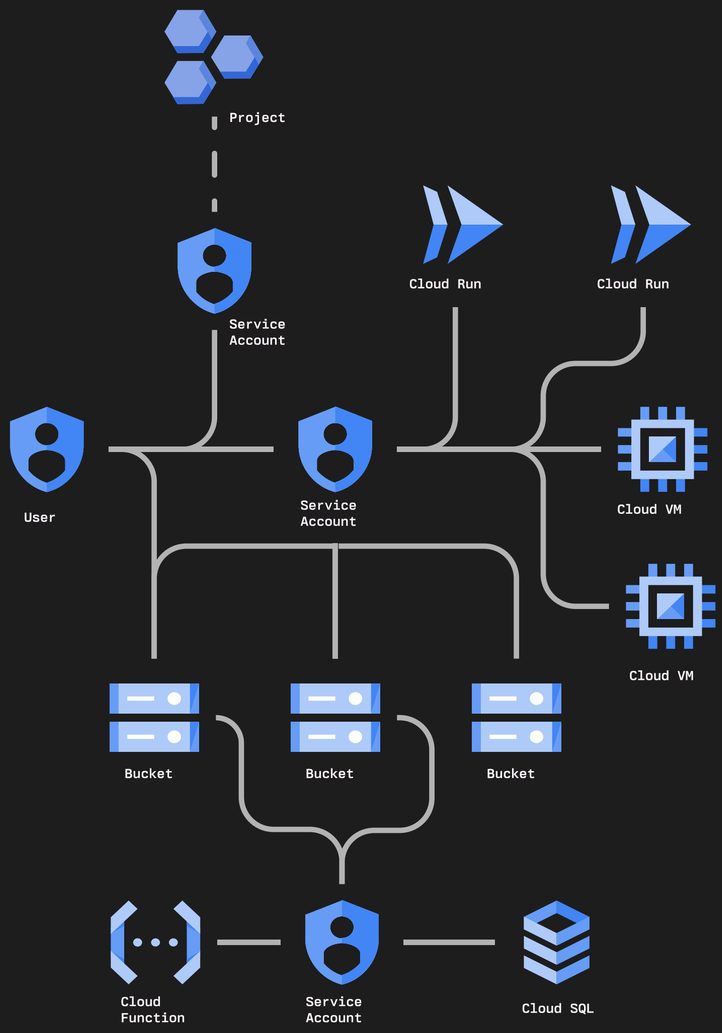
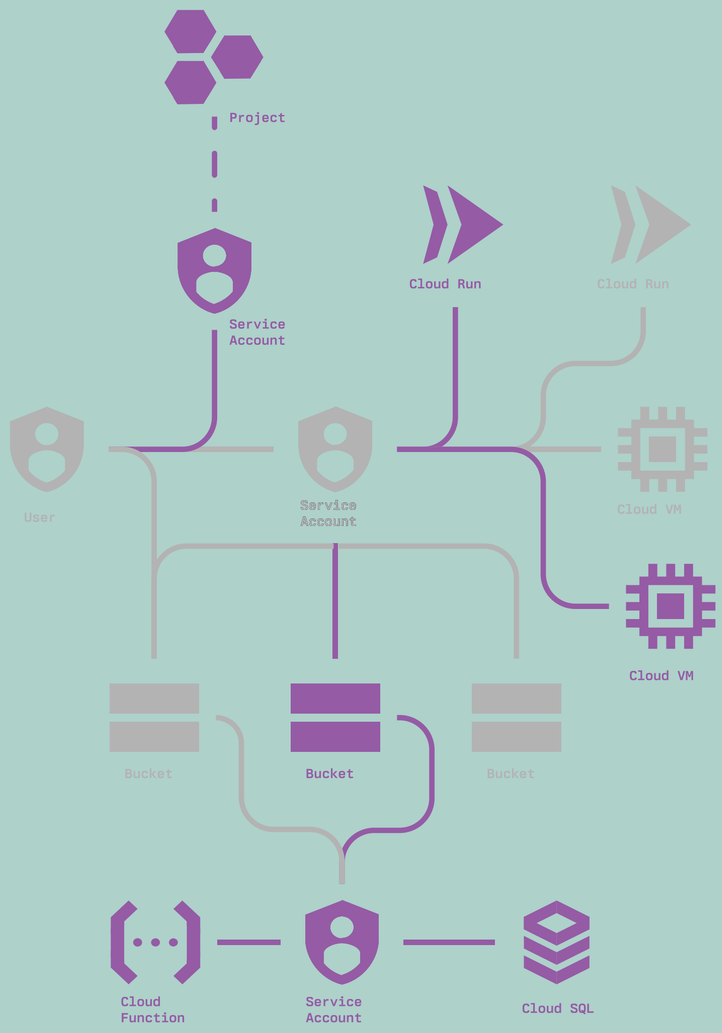
But attackers still win.

So what now?


Project
Service Account
Cloud Run
Cloud Run
User
Service Account
Cloud VM
Cloud VM
Bucket
Bucket
Bucket
Cloud Function
Service Account
Cloud SQL

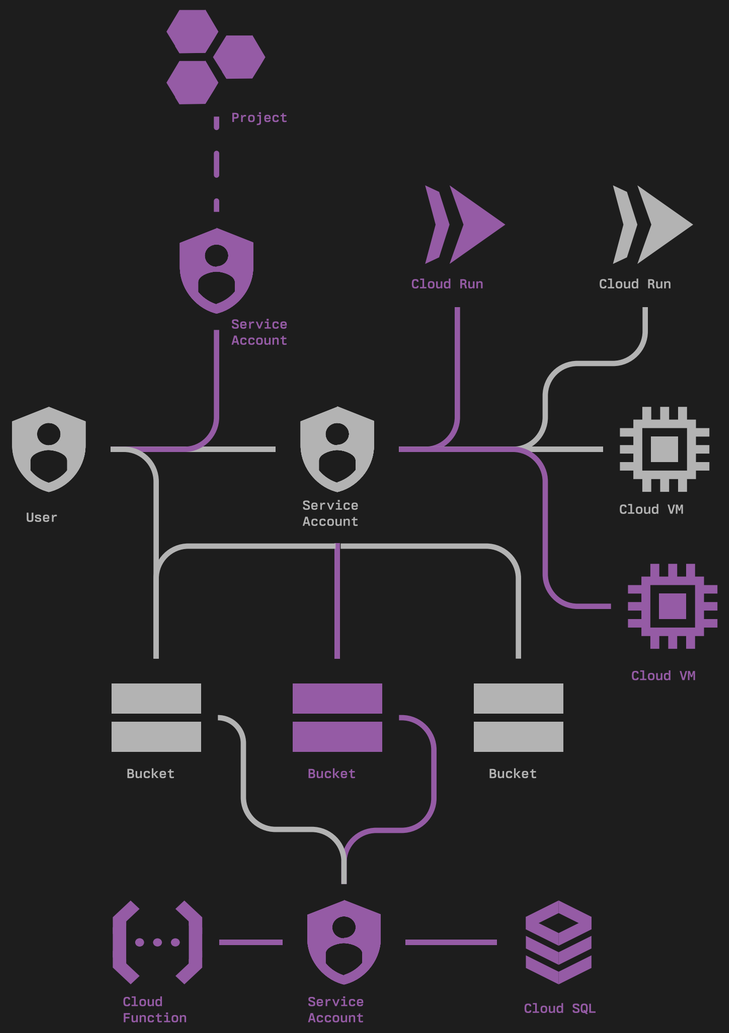
We lie to them.



Reinforce the seams in detection surfaces.

Cyber Deception is a ruse to mislead or disrupt adversaries by exploiting their cognitive biases.

Traps detect adversary interaction and alert SecOps.



Old idea.

History

~35 years since The Cuckoo's Egg (1989)

MITRE Engage for adversarial engagement

Security Canary Maturity Model

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Tools

100+ tools listed on awesome-honeypot and awesome-deception

HoneyTrail uses CloudTrail with AWS honeypot resources.

Koney K8s Operator honeytokens and fake API endpoints.

LLM-based honeypot frameworks like Galah, GenAIPot, and VelLMes.

SAP Cloud Active deploys decoys to application layer.

Old idea; new tools--- not dead.

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Vendors

Why don’t we have more deception-based detections?

> Within hours of sending the letter, Deel’s spy inside of Rippling searched - for the first time - for this empty and never-before-used Slack channel...

Lawsuit Alleges $12 Billion "Unicorn" Deel Cultivated Spy, Orchestrated Long-Running Trade-Secret Theft & Corporate Espionage Against Competitor, 2025

Why don’t we have more deception-based detections?

No one talks about it?

> By 2030, 75% of organizations will have deployed deception capabilities in their enterprise environments, up from less than 10% today.

Gartner, 2025

1. Questionable Effectiveness

37% fell for traps, reduce finding true risk by 22%

Don’t be too obvious or camouflaged.

Imitate true risks.

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Tularosa Study (2021)

> 0.5% network, increase attack path

“it would completely break all of my workflows”

"I might give up and find a softer target."

“...you’re just going to have to be slower. More methodical.”

Reeves and Ashenden (2025)

2. Distinguishable from Targets

Reputation of honeypots

honeydet and nuclei templates

AWS canary tokens shared the same account ids.

3. Tedious and Risky Infrastructure

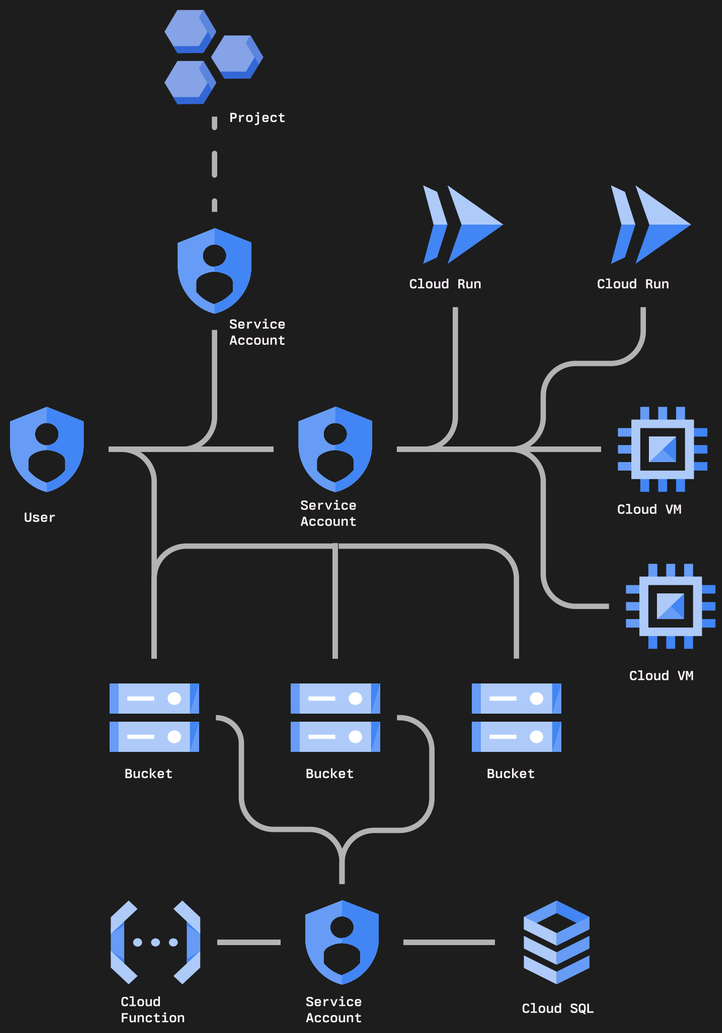
Who does the book keeping?

What if deception introduces risk or disrupts production?

> What held Deception back was not the concept, but the technology.

Lance Spitzer, 2019

So what now?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Paltergeist

is a cyber deception tool for **generation**, **orchestration**, and **monitoring** of cloud-native **traps** that lure and detect attackers.

Generates tailored, believable traps.

Don’t craft by hand anymore.

Sample your environment.

Apply n-shot learning, LLM-as-a-judge, etc.

Orchestrates trap infra & monitoring.

Programmatic IaaC with Pulumi Automation API

“Scale to zero”

Shared infrastructure lifecycle

Monitoring and observability

Manages deception engagements.

Groups traps with related targets.

Stratagems are templates for traps:

1. What use case?
2. Where in the attack path?
3. What do they masquerade as?

Follow The Yellow Brick Road.

Expose

Lateral Movement, Privilege Escalation

Valid Cloud Accounts, Credentials

Save Your Pets.
Shoot Your Cattle.
Watch Your Canaries.

Expose or Elicit

Discovery, Exploitation, Persistence

Compute traps with preconfigured vulnerabilities or weaknesses.

Crown Jewel Gravity Well

Expose

Collection, Exfiltration

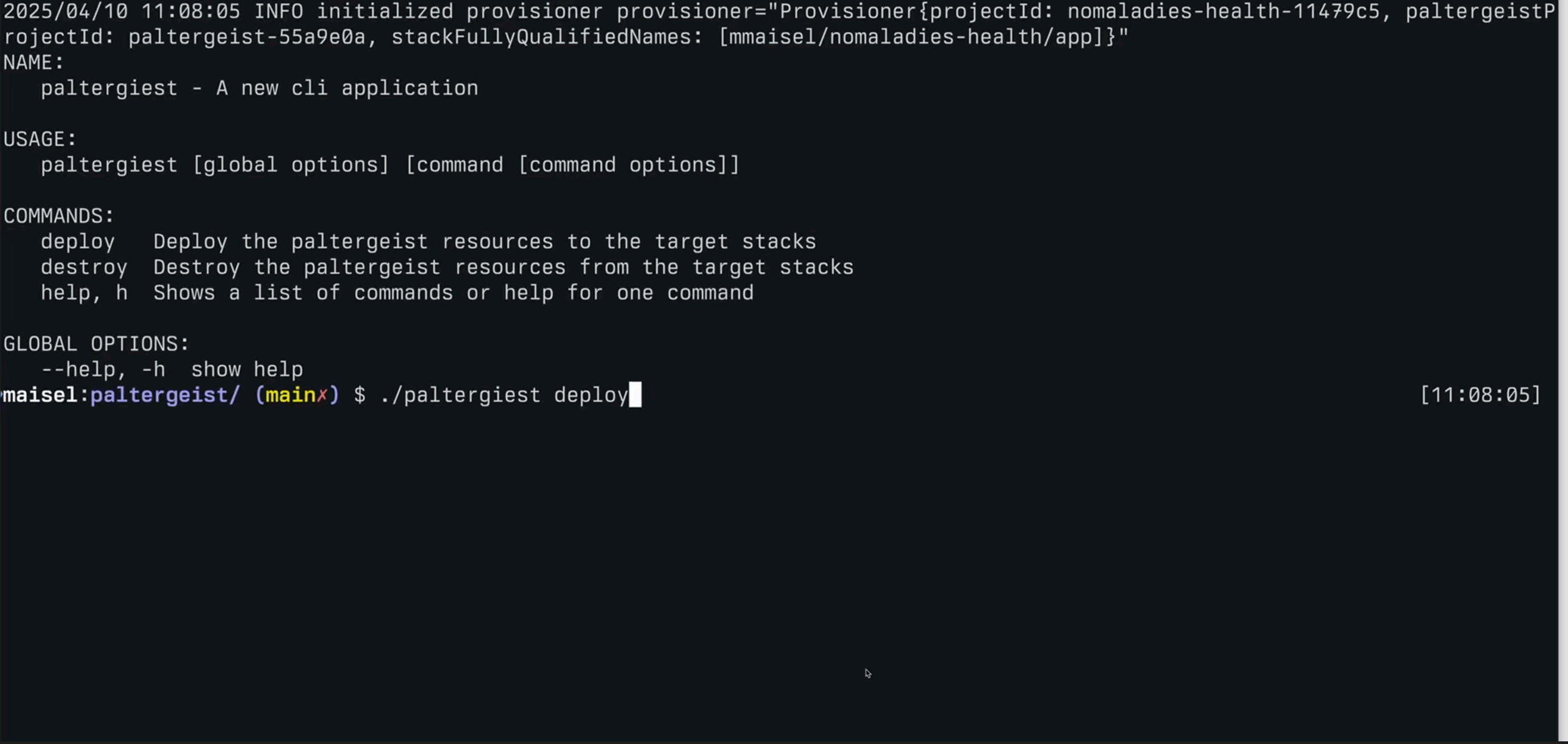
Storage traps

Enter My Cloud Labyrinth.

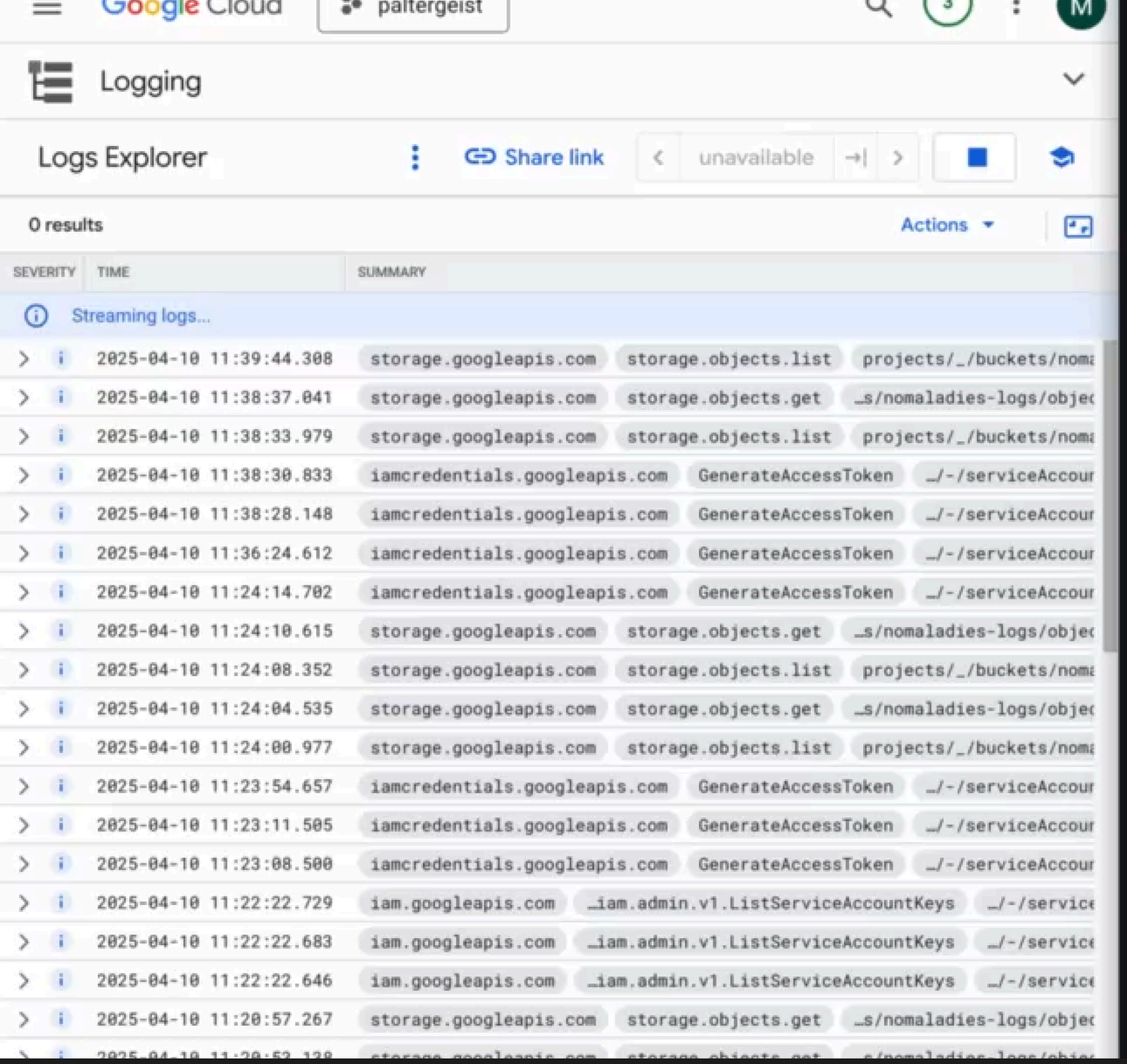
Elicit TTPs

Multiple stratagems

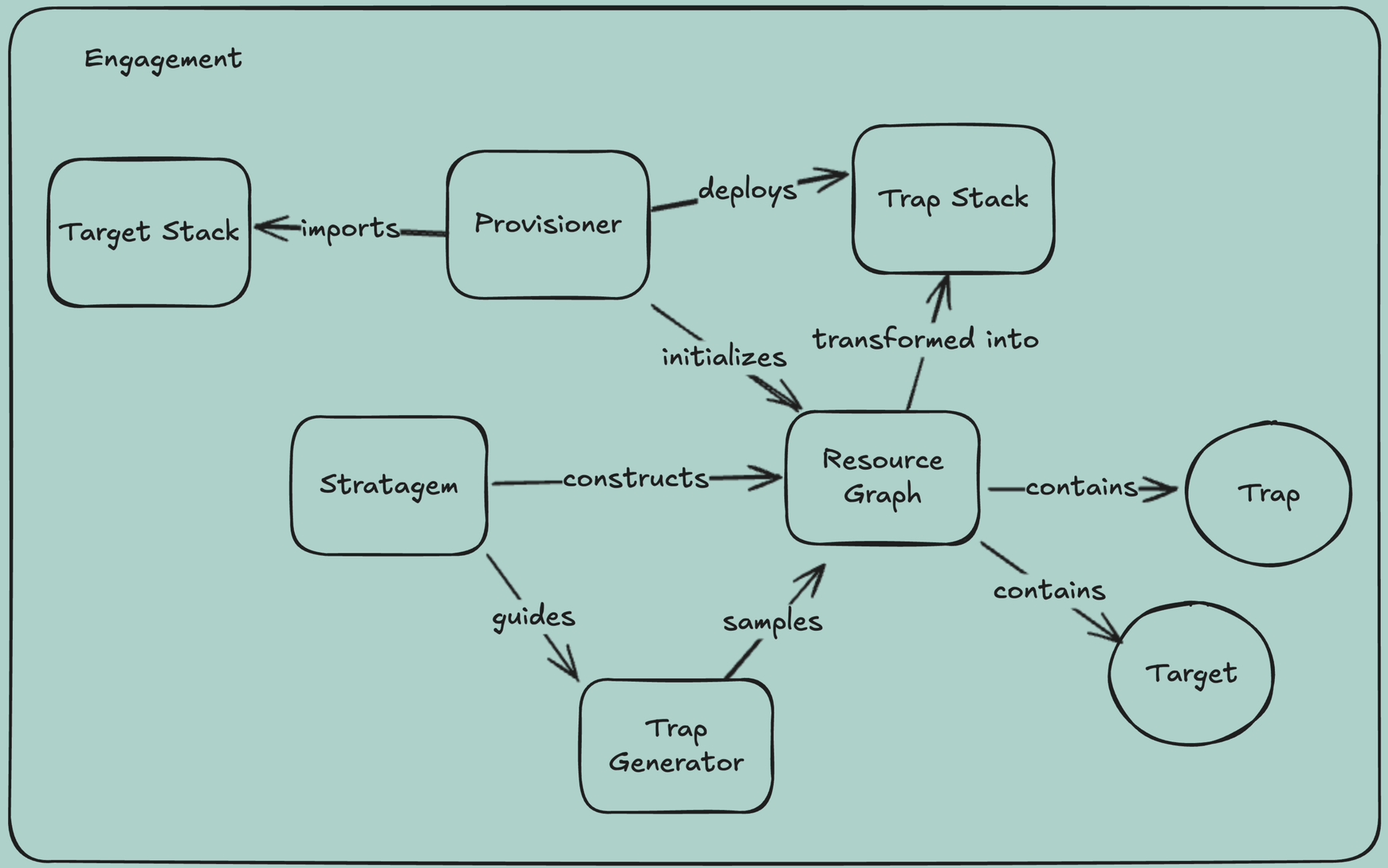
Project traps!



Deployment Demo



Trap Monitoring Demo



Paltergeist Components

Dynatrace Research, 2020

Where do we go from here?

Optimize placement.

Maximize discoverability,
minimize costs.

Minimize exposure
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Expand coverage.

More strategems

K8s, AWS, Azure

> *Everyone thinks in graphs.*
> *Defenders think in game theory.*
> *Attackers win—— or did they?*

https://github.com/mmaisel/paltergeist