HITB SECCONF 2023 Phuket

Automated Incident Response

Bring Your Own SOAR

GitLab Security Incident Response Team

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In this workshop, you will learn about:

- The GitLab Security Incident Response Team
- Automation opportunities in incident response
- Integrating multiple platforms using Tines
- Creating your own automations to make your lives easier

But first...who are you?

Workshop Breakdown

30 min	10 min	30 min	40 min	10 min
Theory	**Break**	**Lab 1**	**Lab 2**	**Closing Notes**
A little bit of context	Get yourself ready	Let’s build something together!	Let’s build something on your own!	Conclusion, future work, Q&A

First Challenge

Let’s create your accounts!

- Tines
- GitLab
- Slack

http://bitly.ws/Sk4Y

(this is not a phishing domain)

Theory

Outline

- Who is GitLab SIRT
- A day at SIRT
- It’s not just incident response
- Automation opportunities
- A day at SIRT - walkthrough

Who are we?

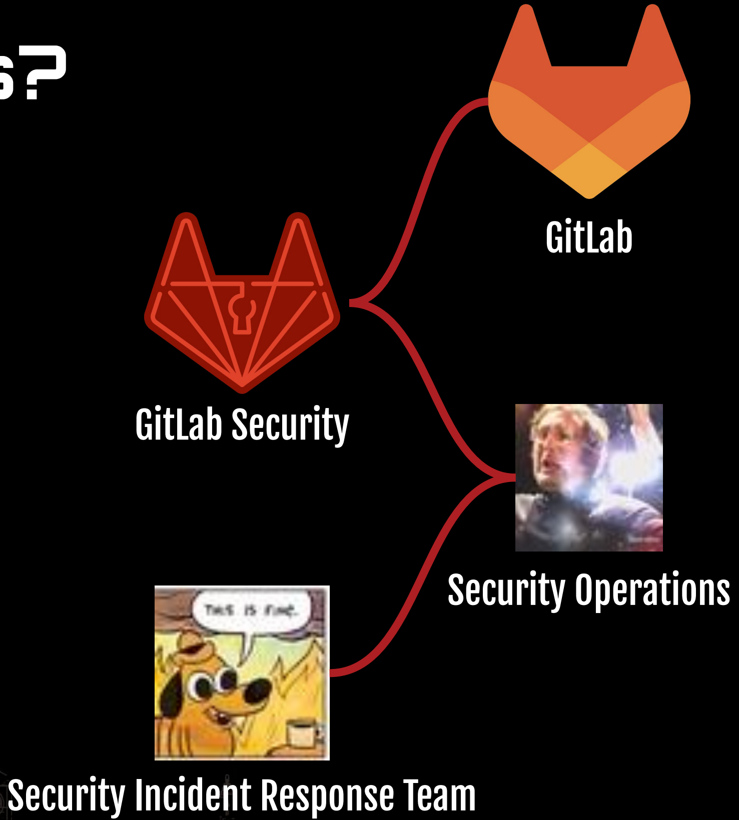
VM

- ★ Offensive security
- ★ Coding
- ★ Threat hunting
- ★ Mountains
- ★ Automation

Harjeet

- ★ Detection engineering
- ★ Monitoring
- ★ Learning new things like AI
- ★ Traveling
- ★ Automation

Who is us?

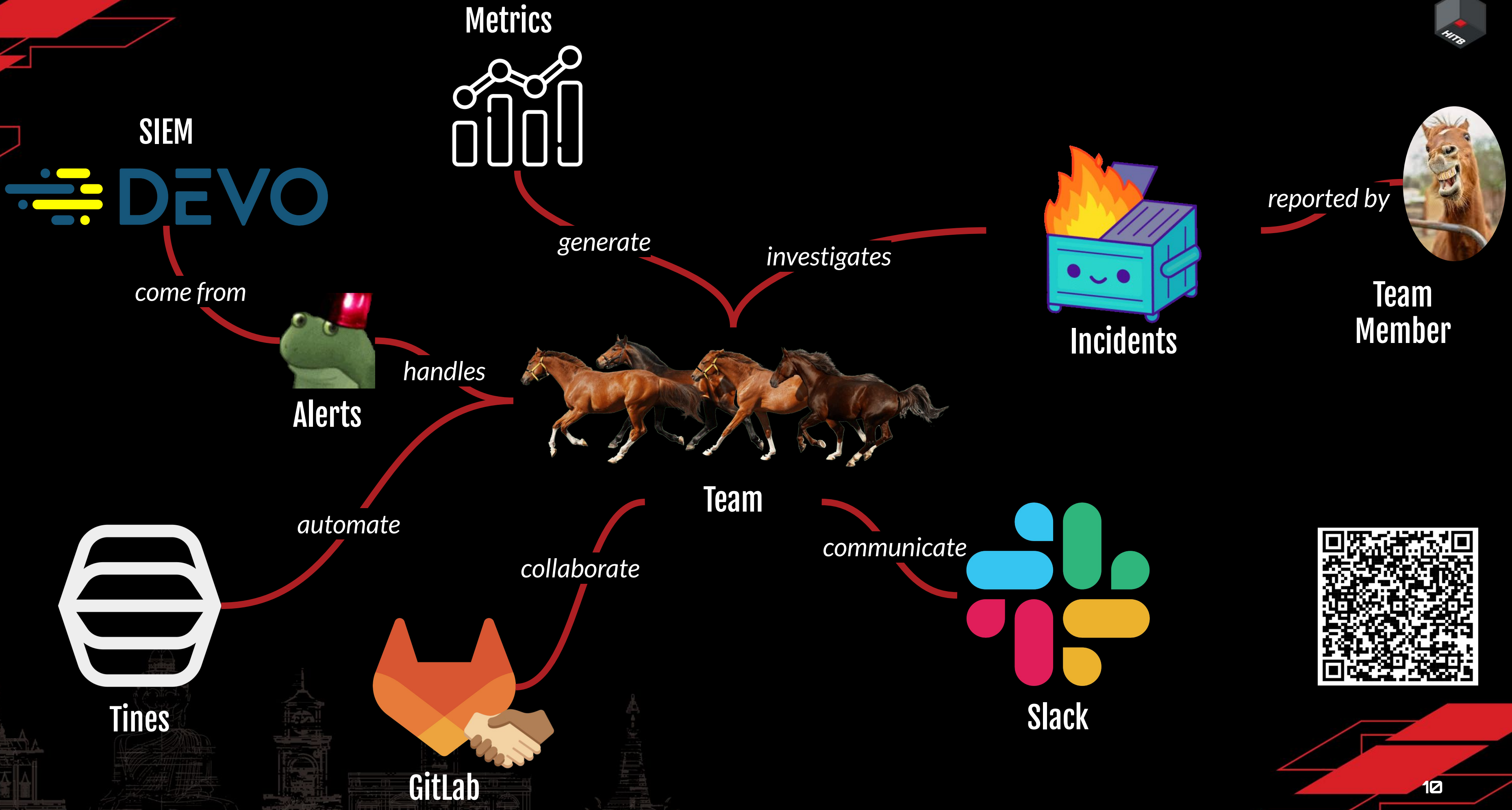


GitLab

GitLab Security

Security Operations

Security Incident Response Team



SIEM

DEVO

Metrics

come from

generate

investigates

Incidents

reported by

Team Member

Alerts

handles

Team

automate

collaborate

communicate

Tines

GitLab

Slack

Obvious Automations

When we think IR automation, we think about investigations:

How can I analyze faster?

- Filtering logs
- Gathering IoCs
- Enrichment
- Mundane tasks like blocking a user or leaked key revocation

Where to use automation?

Detection Engineering

- All alerts should uphold quality standards
- Team members review/approve alerts
- Deploy alerts automatically to our SIEM
- Generate metrics about alerts
- SIEM-agnostic solution

Where to use automation?

Incident Management

- Make it easy to report incidents
- Automate the initial Severity/Priority triage
- Keep ongoing incident documentation up to date
- Use GitLab as SSoT for incidents
- Smooth incident handovers available to the whole team
- High-quality and consistent incident reviews
- Metrics on our incidents

Where to use automation?

Metrics Generation

- Insights on most/least noisy alerts/incidents
- Identify trends
- To reduce alert fatigue
- Insights on most/least common alerts/incidents
- Make it easy for team members to provide feedback on alerts
- Insights on false/true positives alerts/incidents
- Metrics to justify necessary team growth

Why automate?

- To make it easy
- To standardize
- To save time
- To not forget
- To scale better

And so, we automated:

- Alert creation
- Alert deployment
- Alert tuning

- Incident reporting
- Incident handling
- Incident handovers
- Incident reviews

- Metrics generation

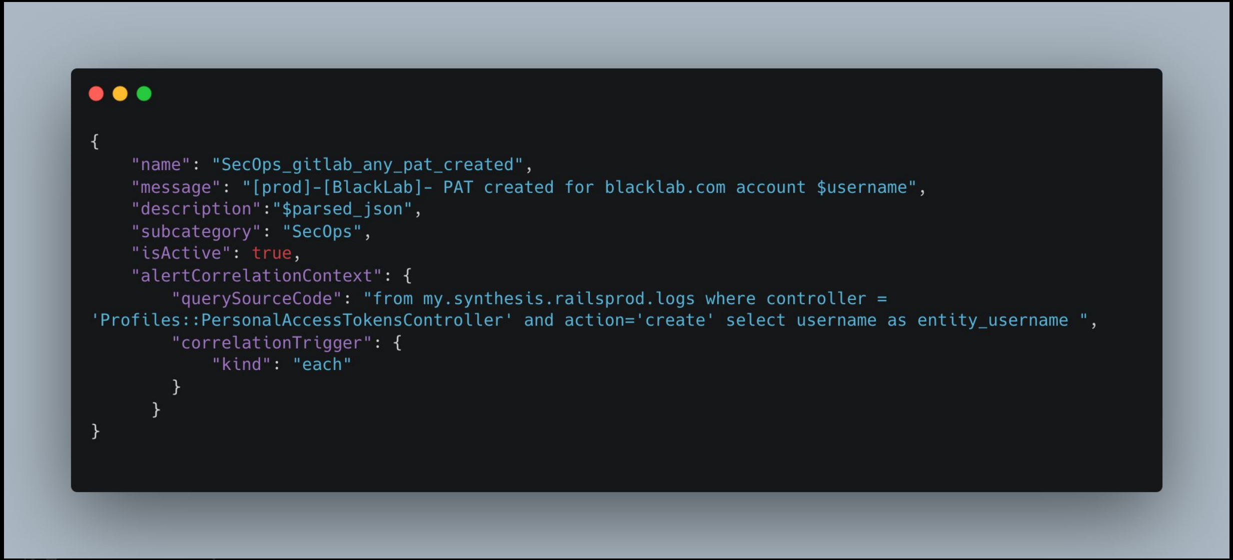
Walkthrough

A typical scenario to show the entire pipeline

Walkthrough

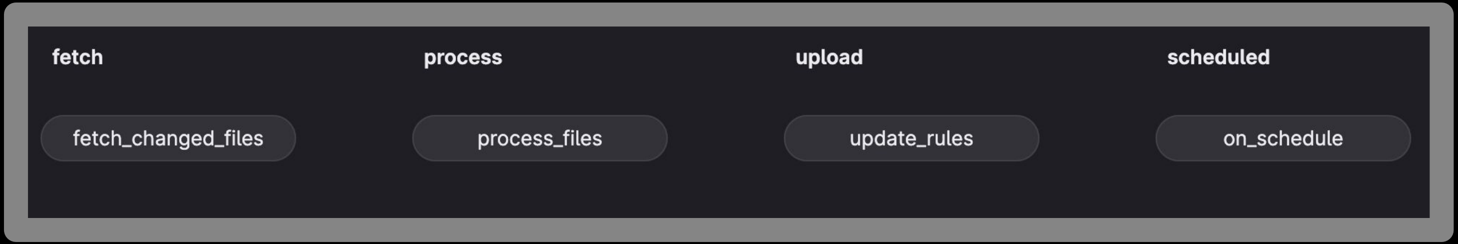
- **GitLab API tokens can be dangerous.** We want to monitor their creation.
  - We create an alert as code
  - We deploy this alert on our SIEM through our pipeline
  - We wait…
- Alert triggers
  - Automation validates the creation of the token directly with the actor
  - Automation notifies SIRT
  - SIRT closes the alert and gives feedback.
- End of day
  - SIRT writes a handover for the next responder on call.

Alert as code



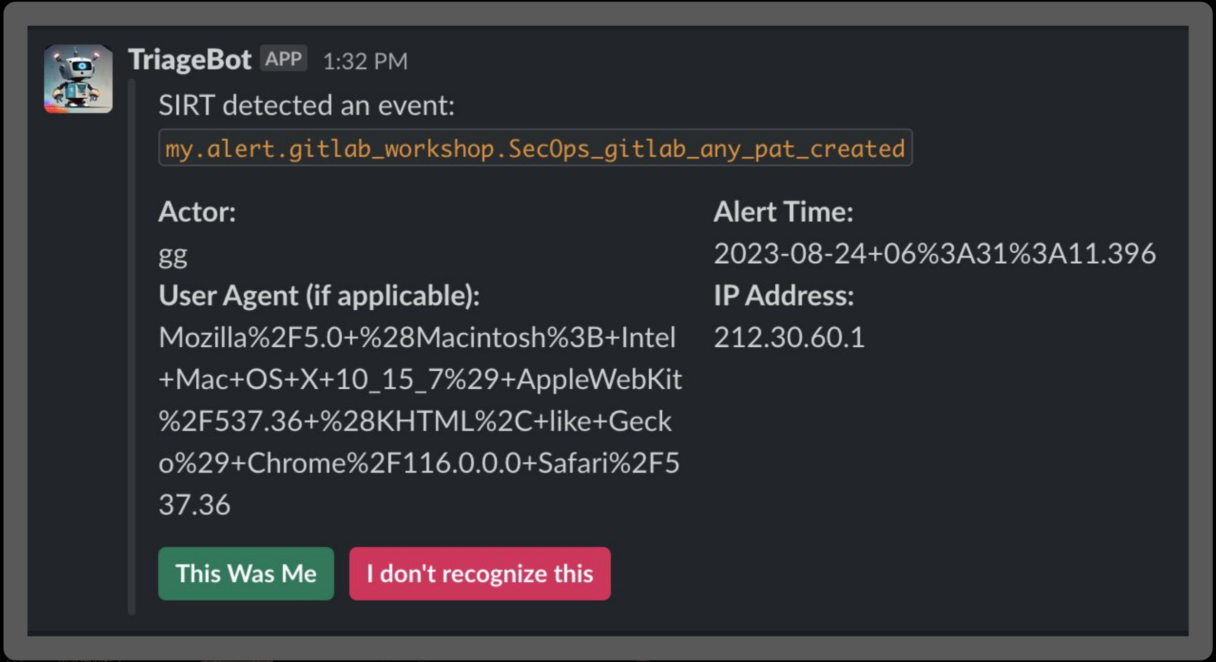
```
{
    "name": "SecOps_gitlab_any_pat_created",
    "message": "[prod]-[BlackLab]- PAT created for blacklab.com account $username",
    "description":"$parsed_json",
    "subcategory": "SecOps",
    "isActive": true,
    "alertCorrelationContext": {
        "querySourceCode": "from my.synthesis.railsprod.logs where controller =
'Profiles::PersonalAccessTokensController' and action='create' select username as entity_username ",
        "correlationTrigger": {
            "kind": "each"
        }
      }
}
```

Deployment pipeline



fetch	process	upload	scheduled
fetch_changed_files	process_files	update_rules	on_schedule

User Attestation Module (UAM)



TriageBot APP 1:32 PM

SIRT detected an event:

`my.alert.gitlab_workshop.SecOps_gitlab_any_pat_created`

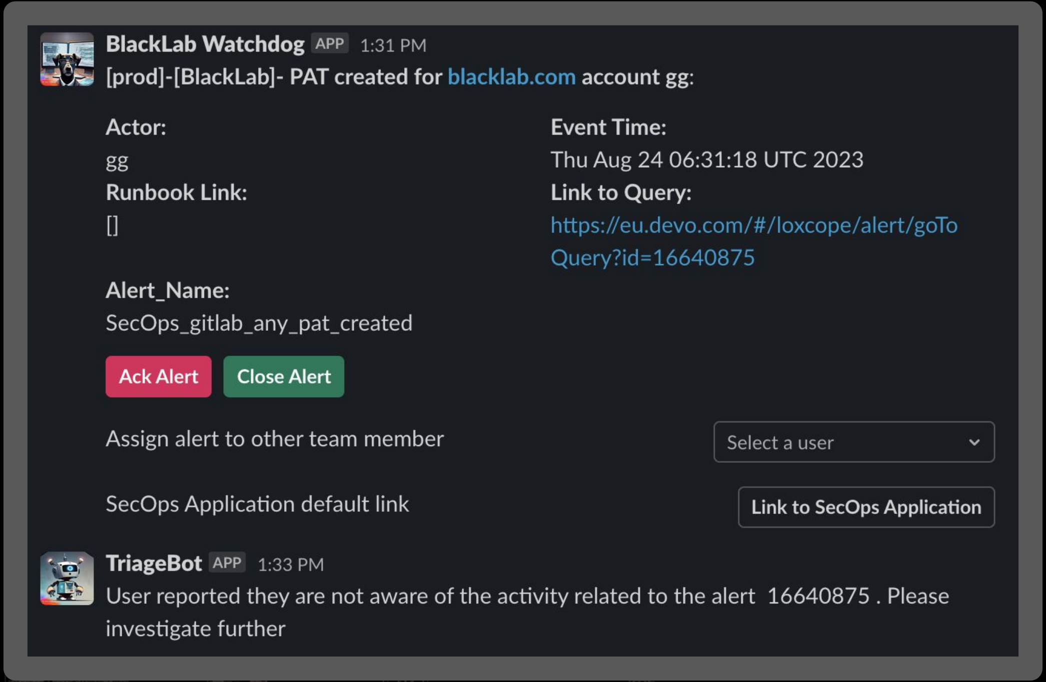
Actor:
gg

Alert Time:
2023-08-24+06%3A31%3A11.396

User Agent (if applicable):
Mozilla%2F5.0+%28Macintosh%3B+Intel+Mac+OS+X+10_15_7%29+AppleWebKit%2F537.36+%28KHTML%2C+like+Gecko%29+Chrome%2F116.0.0.0+Safari%2F537.36

IP Address:
212.30.60.1

BlackLab Watchdog



BlackLab Watchdog APP 1:31 PM
[prod]-[BlackLab]- PAT created for blacklab.com account gg:

Actor:
gg

Runbook Link:
[]

Event Time:
Thu Aug 24 06:31:18 UTC 2023

Link to Query:
https://eu.devo.com/#/loxcope/alert/goToQuery?id=16640875

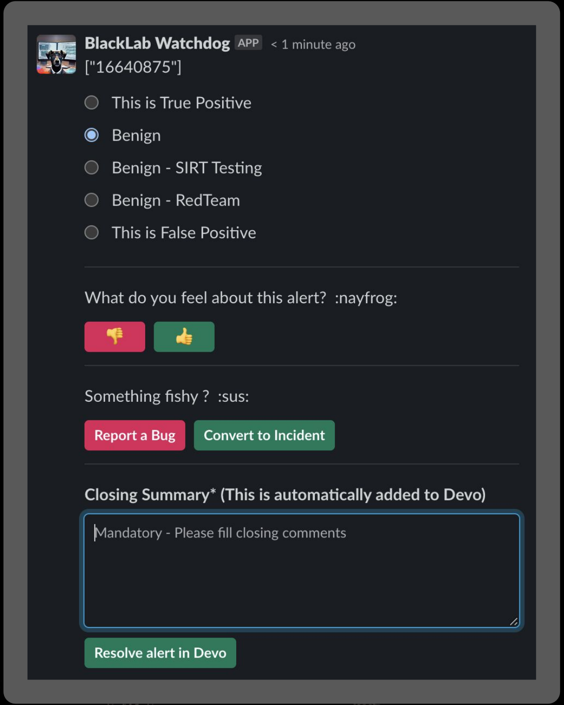
Alert_Name:
SecOps_gitlab_any_pat_created

Assign alert to other team member

SecOps Application default link

TriageBot APP 1:33 PM
User reported they are not aware of the activity related to the alert 16640875 . Please investigate further

Alert closure



BlackLab Watchdog APP < 1 minute ago

["16640875"]

○ This is True Positive

● Benign

○ Benign - SIRT Testing

○ Benign - RedTeam

○ This is False Positive

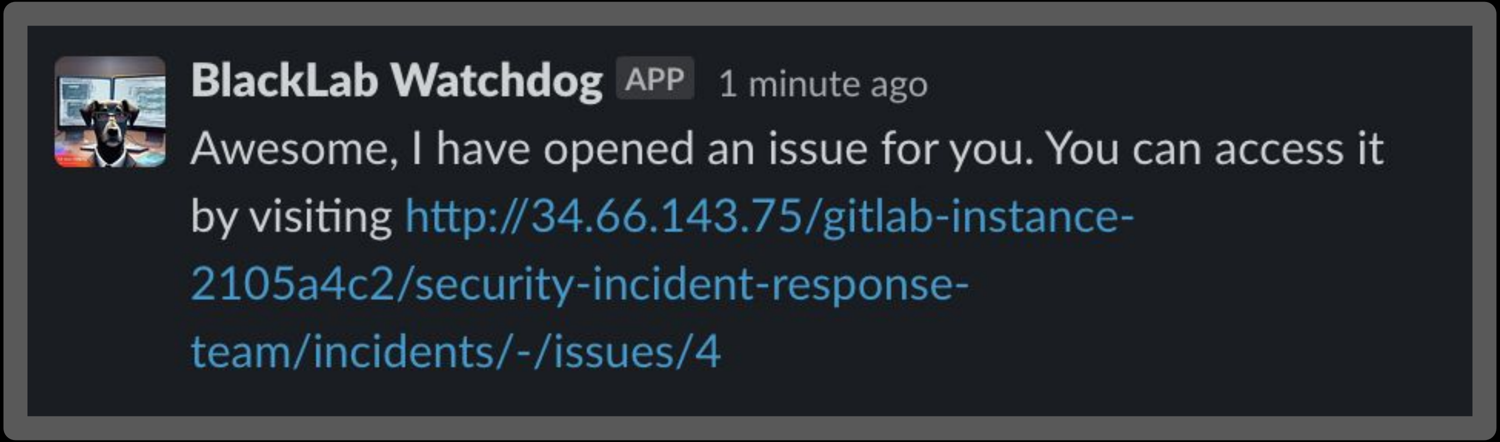
What do you feel about this alert? :nayfrog:

Something fishy ? :sus:

Closing Summary* (This is automatically added to Devo)

Mandatory - Please fill closing comments

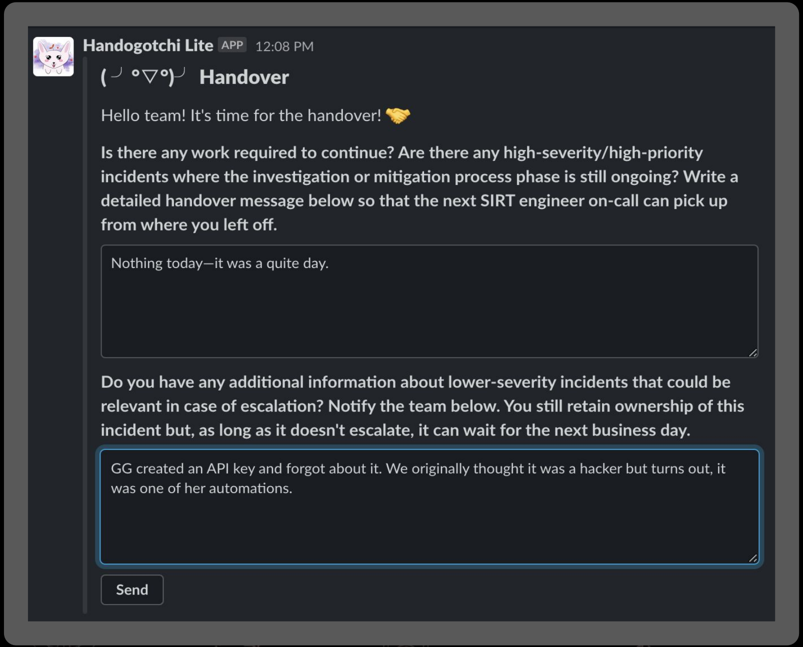
Escalation



BlackLab Watchdog APP 1 minute ago

Awesome, I have opened an issue for you. You can access it by visiting http://34.66.143.75/gitlab-instance-2105a4c2/security-incident-response-team/incidents/-/issues/4

Handogotchi



Handogotchi Lite APP 12:08 PM

(╯ °▽°)╯ Handover

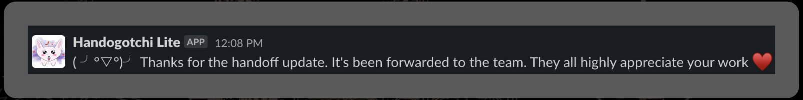
Hello team! It's time for the handover! 🤝

Is there any work required to continue? Are there any high-severity/high-priority incidents where the investigation or mitigation process phase is still ongoing? Write a detailed handover message below so that the next SIRT engineer on-call can pick up from where you left off.

Nothing today—it was a quite day.

Do you have any additional information about lower-severity incidents that could be relevant in case of escalation? Notify the team below. You still retain ownership of this incident but, as long as it doesn't escalate, it can wait for the next business day.

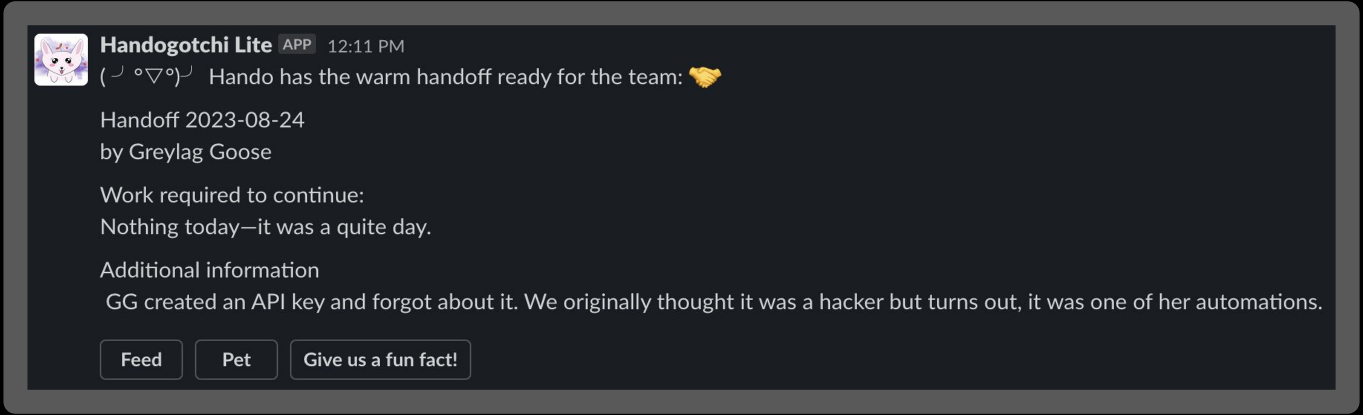
GG created an API key and forgot about it. We originally thought it was a hacker but turns out, it was one of her automations.



Handogotchi Lite APP 12:08 PM

(╯ °▽°)╯ Thanks for the handoff update. It's been forwarded to the team. They all highly appreciate your work ❤️

Handogotchi



Handogotchi Lite APP 12:11 PM

(╯ °▽°)╯ Hando has the warm handoff ready for the team: 🤝

Handoff 2023-08-24
by Greylag Goose

Work required to continue:
Nothing today—it was a quite day.

Additional information
GG created an API key and forgot about it. We originally thought it was a hacker but turns out, it was one of her automations.

Break

Validate that you have access to:

- Tines
- GitLab
- Slack

Shout if you don’t!

Lab 1

Let’s make teams!

- At least 1 laptop per team
- At least 1 technical person per team

Shout if you have questions.

If you don’t want to shout, you can DM us on Slack.

@Greylag Goose
(VM)

@Harjeet

Lab 1

Tokenheimer - automatic token revocation

Lab 1

Open the **Tokenheimer** story

Open the **Lab 1** story

Copy/paste the Tokenheimer story into Lab 1

Rename the first action to “Tokenheimer - [your team’s name]”

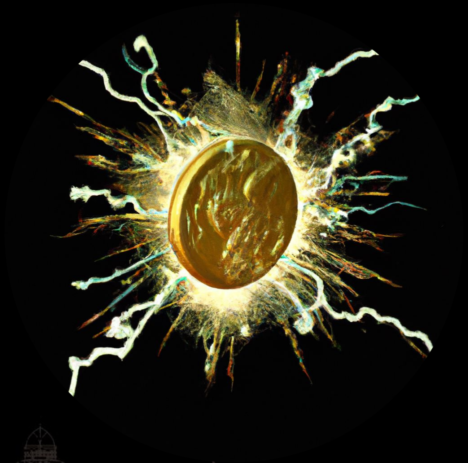
Once everyone has their own Tokenheimer story, we’ll create /commands for each team.

Lab 1

Show off your Tokenheimer!

Lab 2

Tokenheimer Version 2



Lab 2

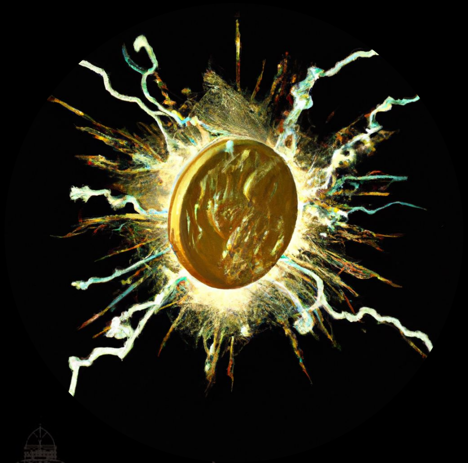
Build upon your Tokenheimer story

Need ideas?

- Tokenheimer also scopes a token (type, user, groups, etc)
- Tokenheimer accepts multiple tokens
- Tokenheimer creates an incident

Lab 2

Show off your Tokenheimer v2!



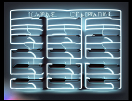
What we automated today

- Alert deployment pipeline
- Alert handling in Slack
- User attestations
- Team handovers
- Token revocation

What we’ve already automated at home

- Reporting incidents
- Assessing Severity and Priority
- Triaging incidents
- Keeping incidents up-to-date
- Incident review process
- Transferring Slack messages over to GitLab incidents
- Handogotchi++

- Collecting metrics on detections and incidents



The beast we've made

GitLab Universal Automated Response and Detection

- Alert deployment pipeline
- Slack-powered alert handling capabilities
- Alert feedback support
- UAM integrations
- Alert metrics collection

Future Work

GitLab Universal Automated Response and Detection

- MITRE ATT&CK expansion
- Risk scoring
- Dashboards!
- AI-integration
  - Enrichment
  - Assisted alert handling
  - Reporting

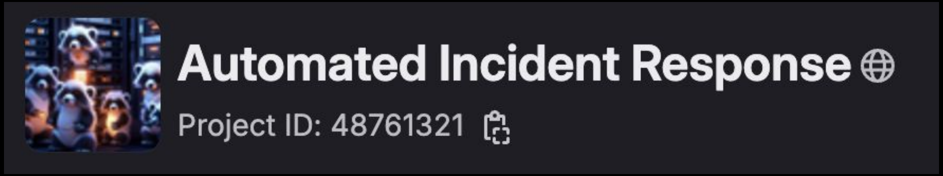
GUARD Publications

- Speaking at mWISE on September 18-20
- Blog series incoming
  https://about.gitlab.com/blog/categories/security/

mWISE
MANDIANT WORLDWIDE
INFORMATION SECURITY EXCHANGE

As promised...

All we've talked about today is opensourced here:



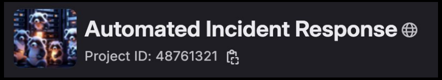
Automated Incident Response

Project ID: 48761321

https://gitlab.com/gitlab-com/gl-security/security-operations/gitlab-sirt-public/automated-incident-response

Because Transparency is one of our core values!

THANK YOU!



Automated Incident Response

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