The journey to customized security

From first steps to full automation

AWS Enterprise Support Day Iberia | Barcelona

AWS community builders

aws User Group Leader

unicrons.cloud

aws certified Security SPECIALTY

```
> aws sts get-caller-identity

{
 "name": "Samuel Burgos López",
 "job position": "Cloud Security Engineer",
 "company": "Flywire",
 "rrss": {
   "bluesky": "@sbldevnet.com",
   "twitter": "@sbldevnet",
   "linkedin": "sbldevnet",
   "blog": "unicrons.cloud"
 }
}
```

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Agenda

- What’s a CSPM?
- Our Journey
- Auto Remediation
- Next Steps
- Key Takeaways

What is a CSPM?

What is CSPM?

- Cloud Security Posture Management
- Continuously monitoring cloud environments for security risks and misconfigurations.

Why do I need CSPM?

- Proactive Risk Management
- Continuous Compliance
- Scalability
- Incident Response
- Unified Security View
- Cost Efficiency

Makes your cloud looks like this...

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What is CSPM?

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Makes your cloud looks like this...

And not this...

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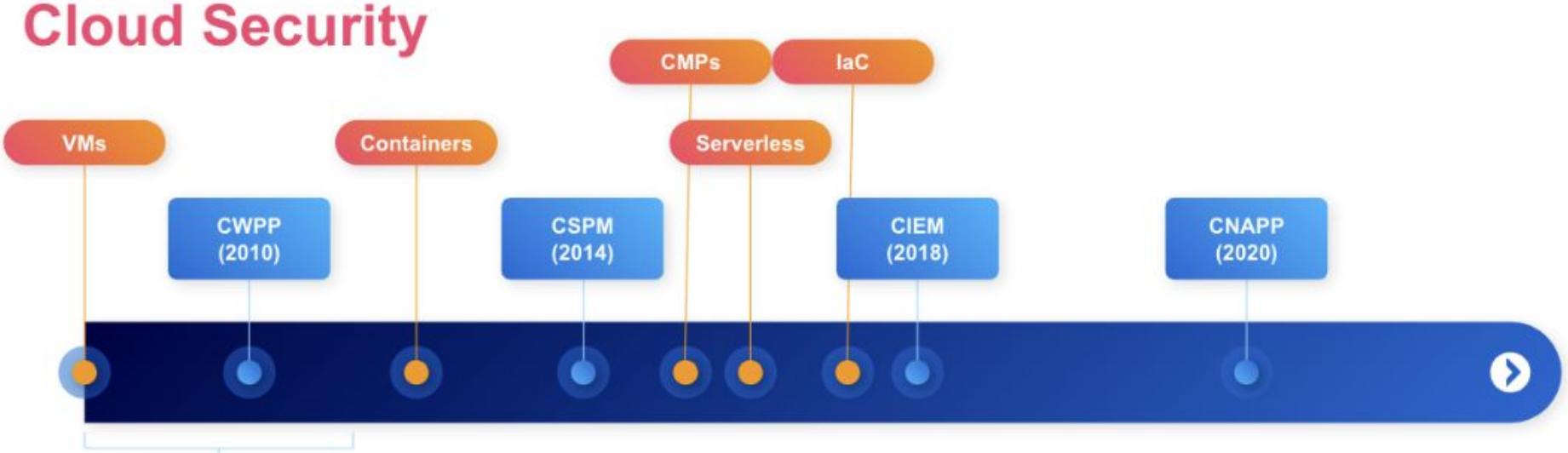
What is CSPM?

And what about CWPP, CIEM, CNAPP and CTEM?



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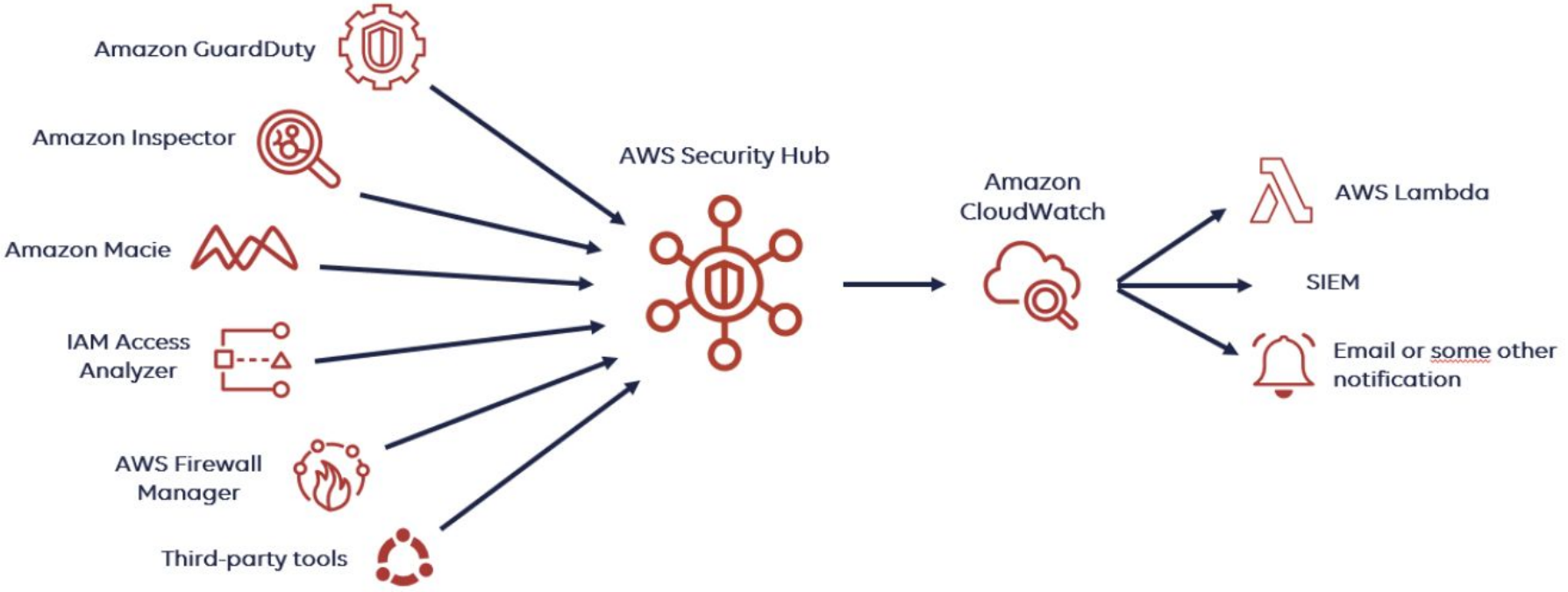
What is CSPM?



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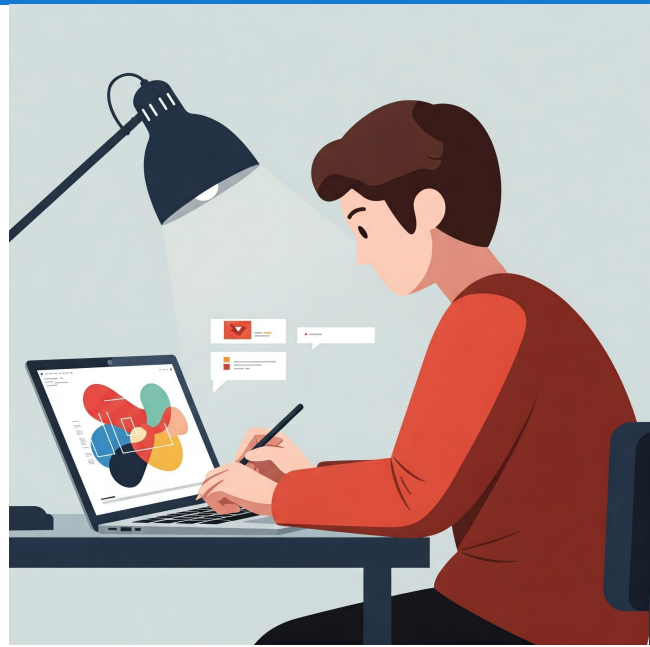
Our Journey

Our journey: the beginning

The beginning

- Small team.
- Local execution.
- What do I have?
- What's the status of my environment?

Let's start to automate it 🚀



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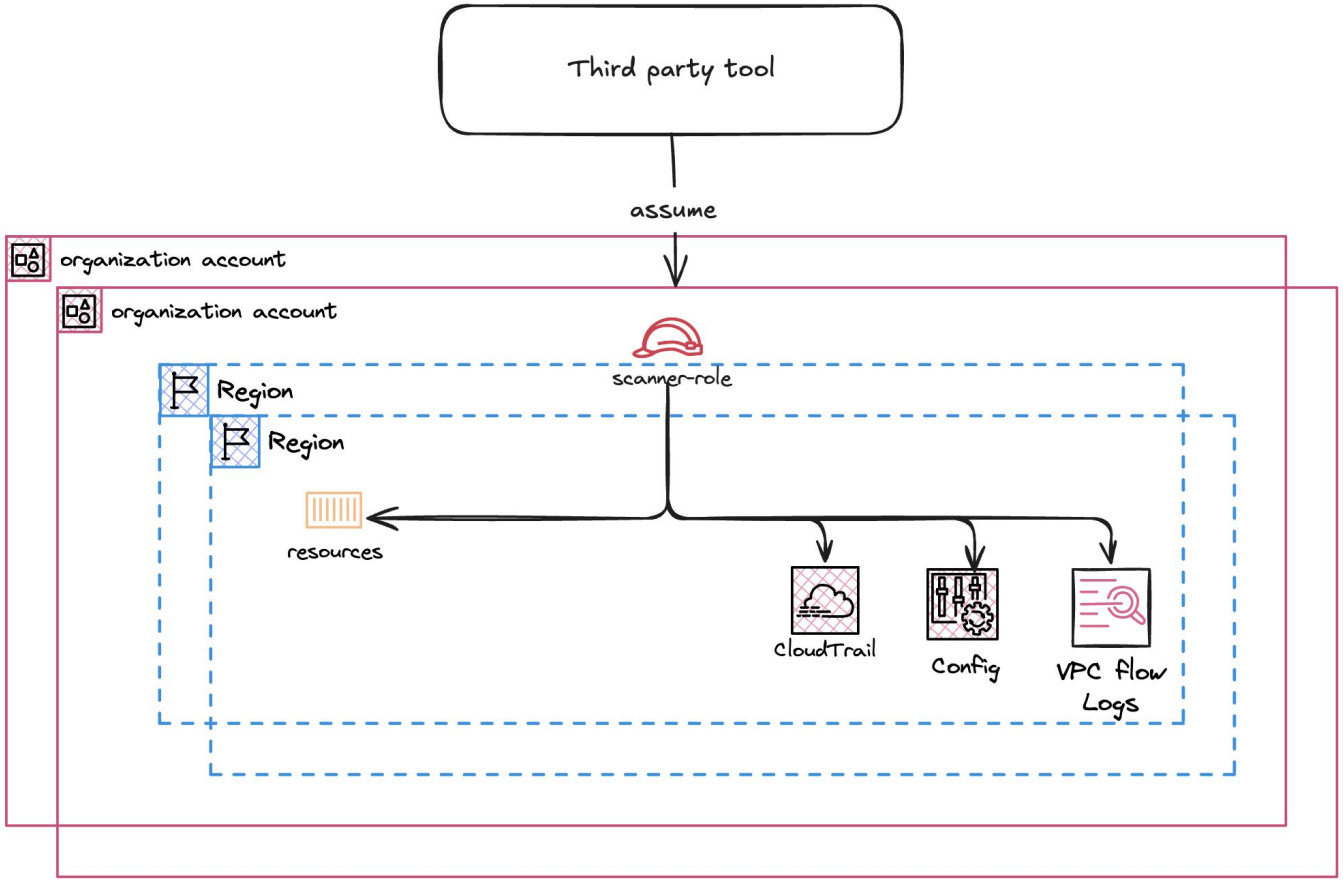
Our journey: 1st attempt



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Our journey: 1st attempt

1st attempt: 3rd party tool

- Price per resource $$$
- Custom rules complexity
  - Pseudo-SQL
- No support for custom findings
- Terraform provider missing features

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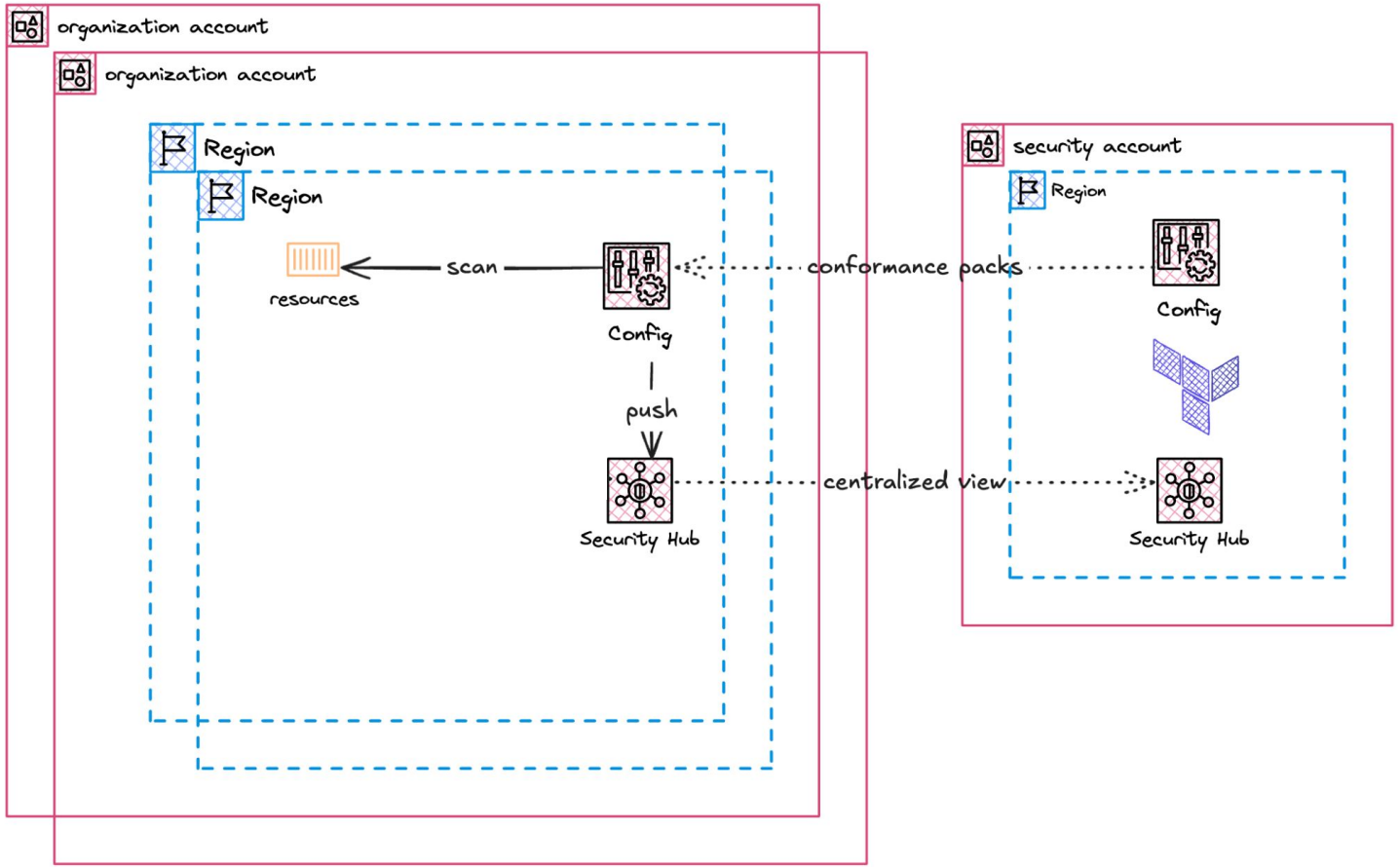
Our journey: 2nd attempt



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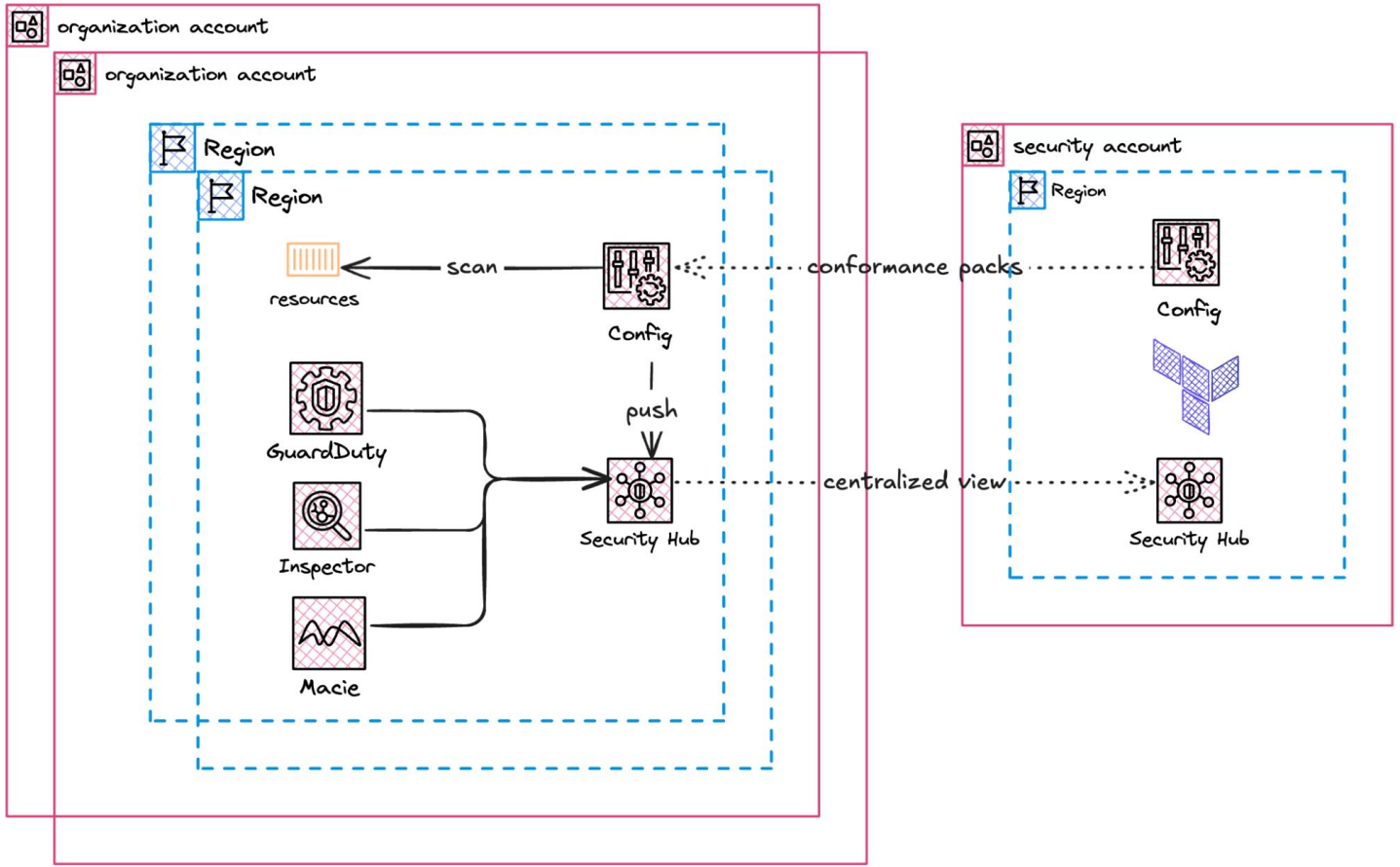
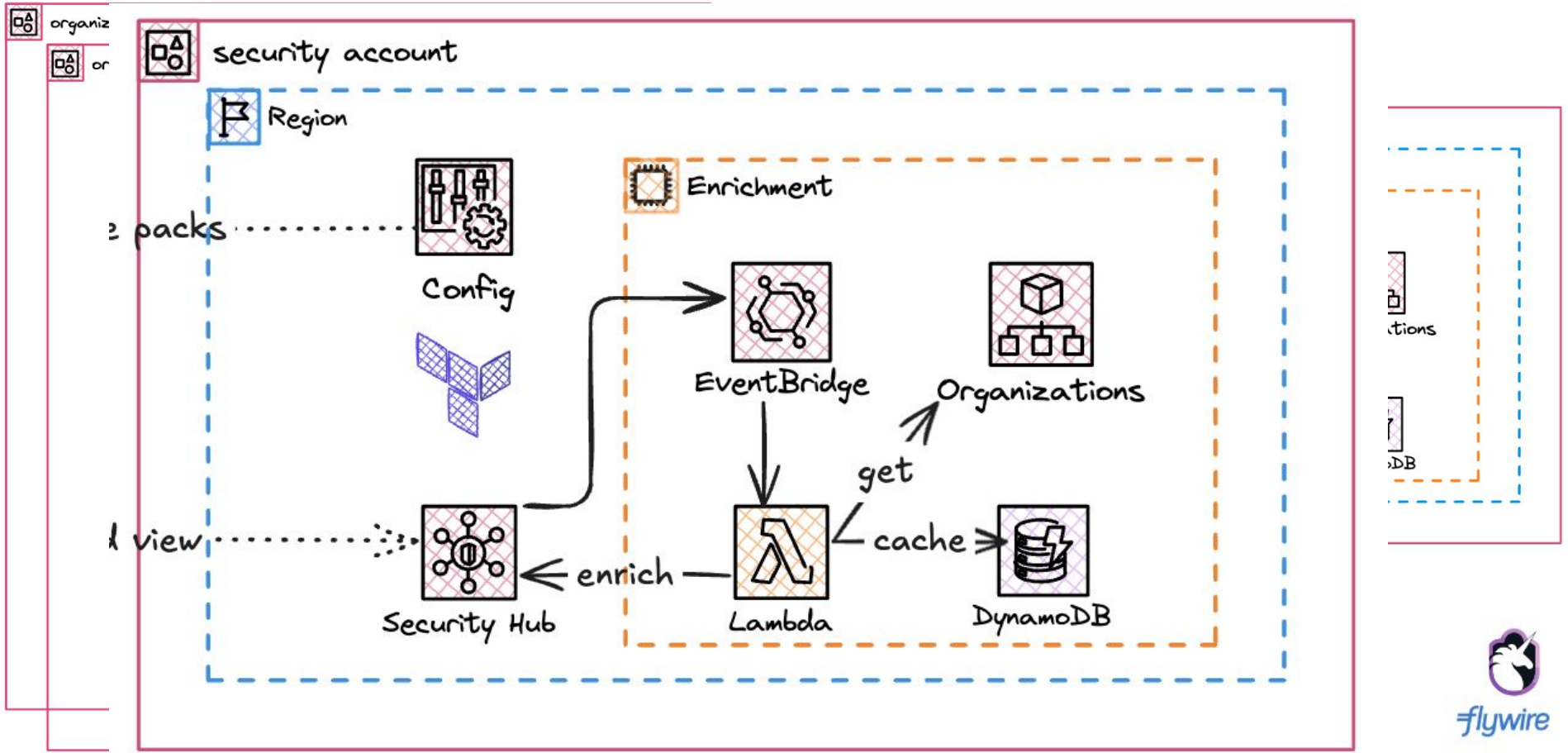
Our journey: More services



Our journey: Enrichment



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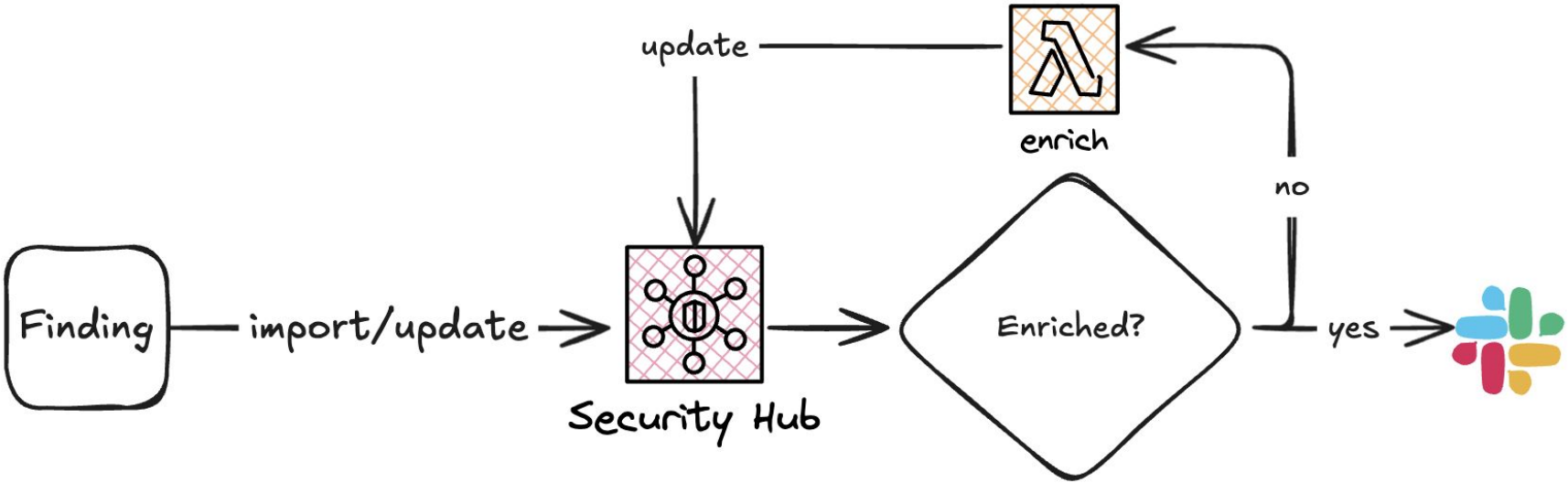
Our journey: Enrichment



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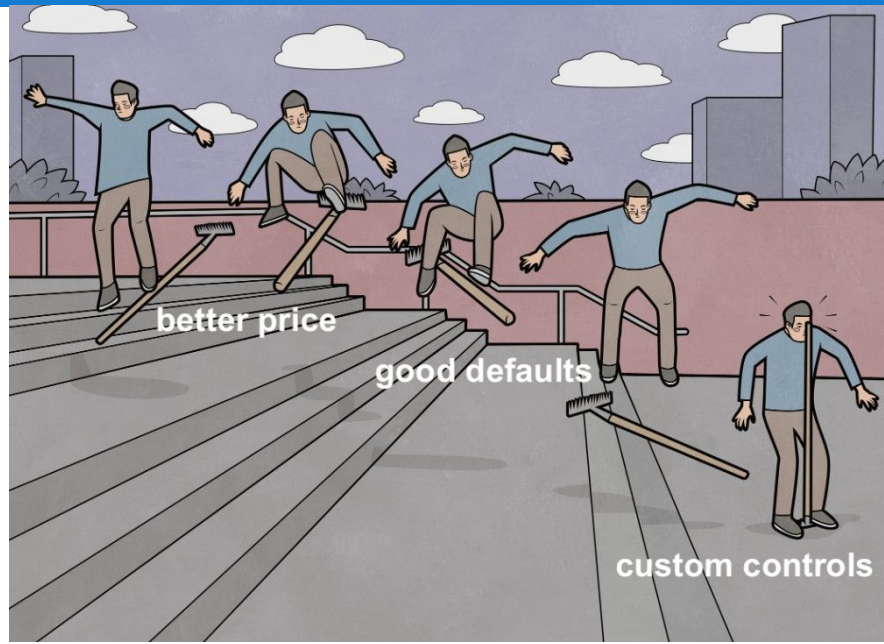
Our journey: 2nd attempt

2nd attempt: AWS Config + SecurityHub

- Better price per resource
- Good default controls
- Custom rules:
  - Lambda
  - AWS CloudFormation Guard



Default controls are standard. Your company is not.

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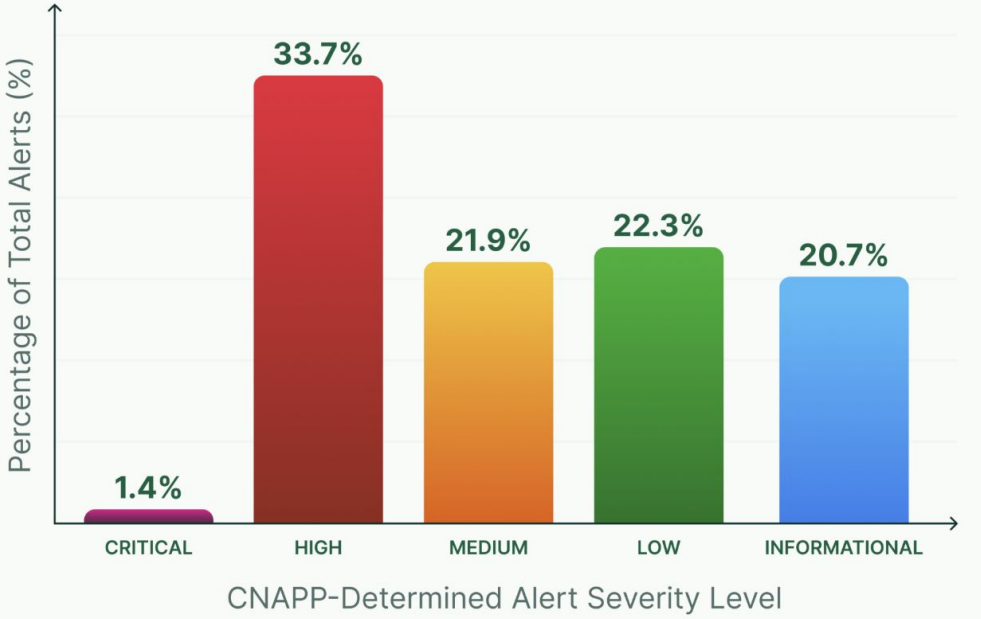
Our journey: Current approach

High Alerts Make Up the Majority of Your Alerts



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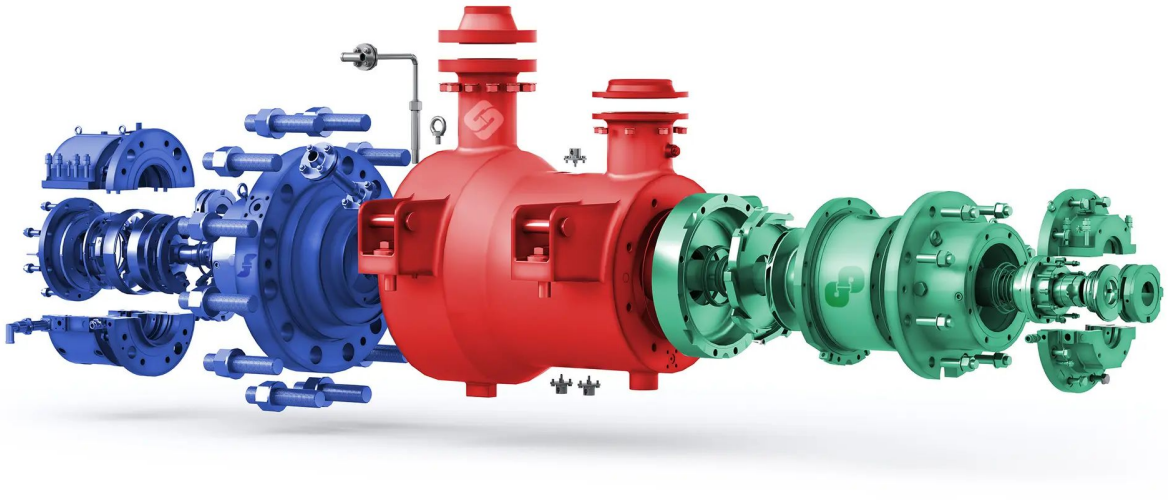
Our journey: Current approach

Current approach: Steampipe + SecurityHub

- Cheaper, much cheaper
- Good default controls
- SQL rules, real SQL rules



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Our journey: Current approach

```
> select
  runtime,
  count(*) as functions
from
  aws_lambda_function
group by
  runtime;
+------------+-----------+
|  runtime   | functions |
+------------+-----------+
| nodejs12.x |         1 |
| python3.7  |         1 |
| python3.8  |         2 |
+------------+-----------+
```

```
query "s3_bucket_restrict_public_read_access" {
  sql = <<-EOQ
    select
      arn as resource,
      case
        when bucket_policy_is_public and restrict_public_buckets then 'skip'
        when bucket_policy_is_public and tags ->> 'public' = 'true' then 'info'
        when bucket_policy_is_public then 'alarm'
        else 'ok'
      end as status,
      case
        when bucket_policy_is_public then title || ' has a public bucket policy.'
        else title || ' does not have a public bucket policy.'
      end as reason,
      region,
      account_id
    from
      aws_s3_bucket;
  EOQ
}
```

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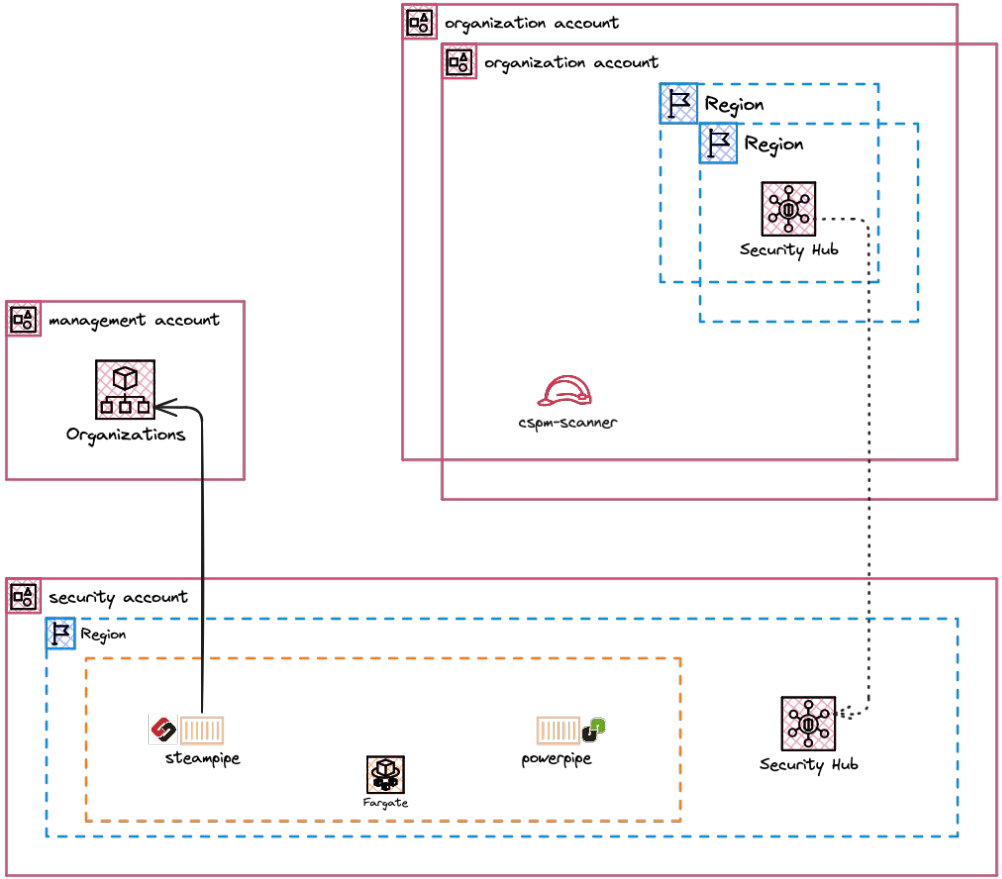
Our journey: Current approach



1. Generate Steampipe configuration files based on AWS Organization accounts.

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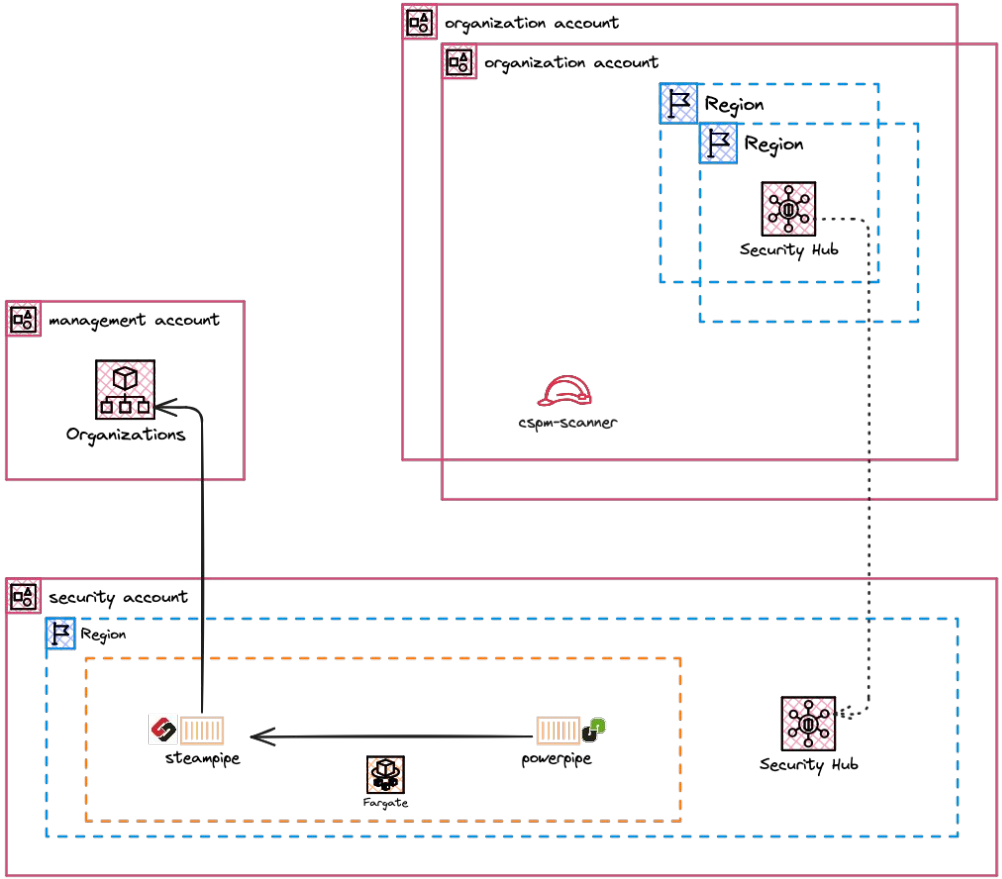
Our journey: Current approach



2. Execute desired controls.

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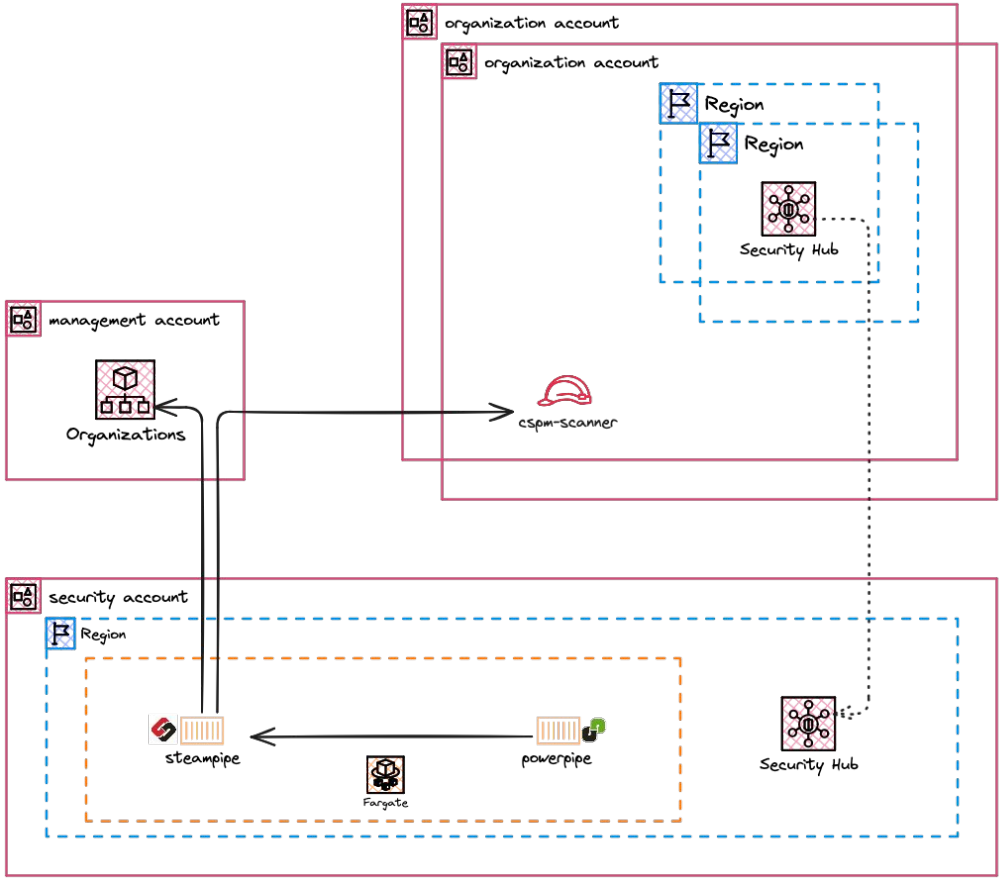
Our journey: Current approach



3. Assume a Role in each AWS Account with the needed permissions.

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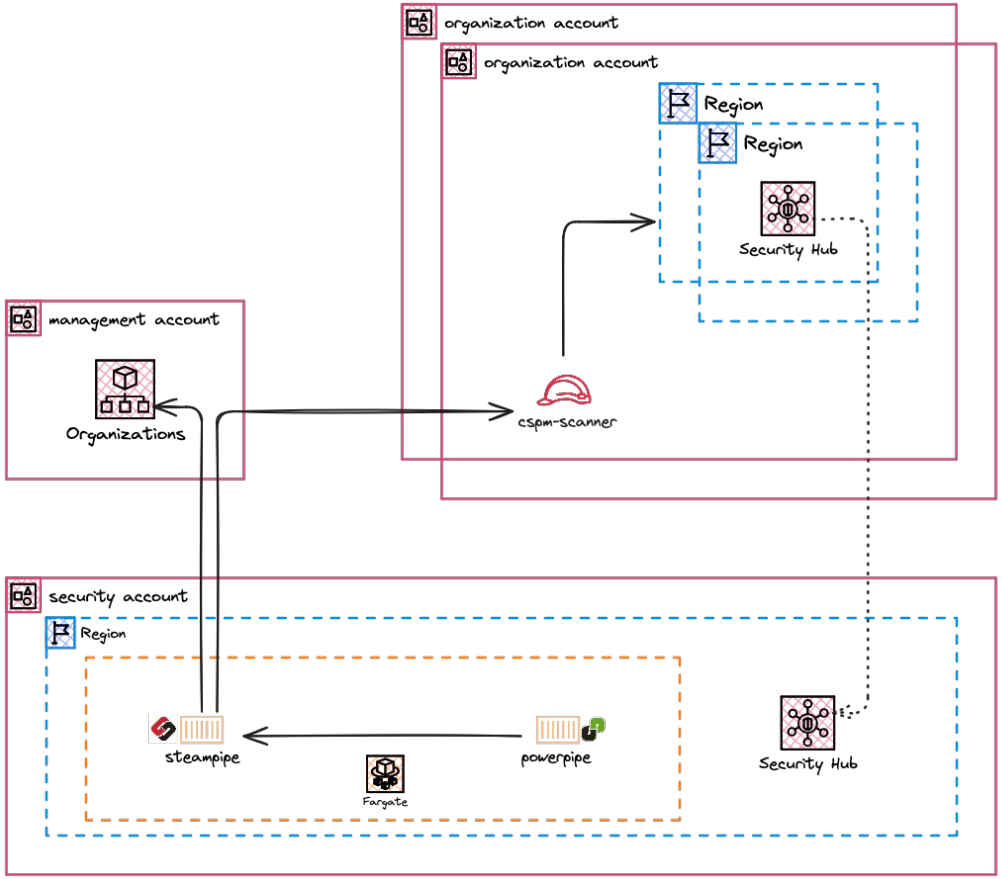
Our journey: Current approach



4. Scan account resources based on controls.

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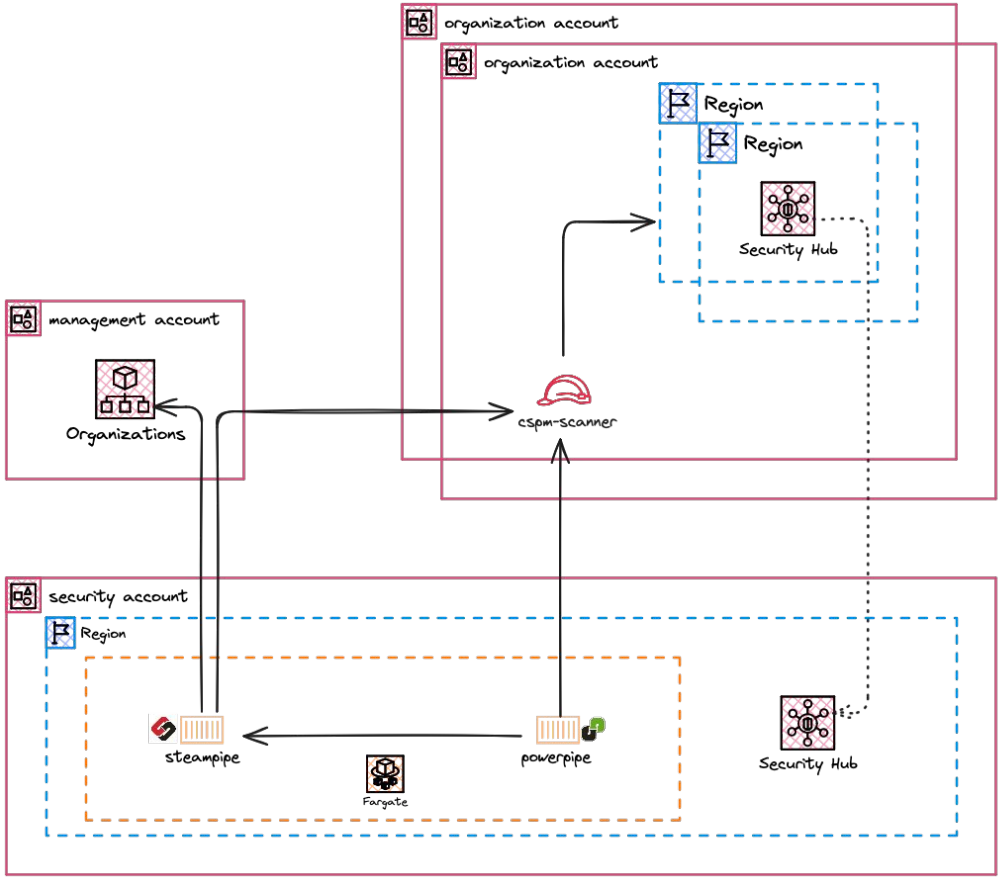
Our journey: Current approach



5. Assume a Role in each AWS Account with the needed permissions.

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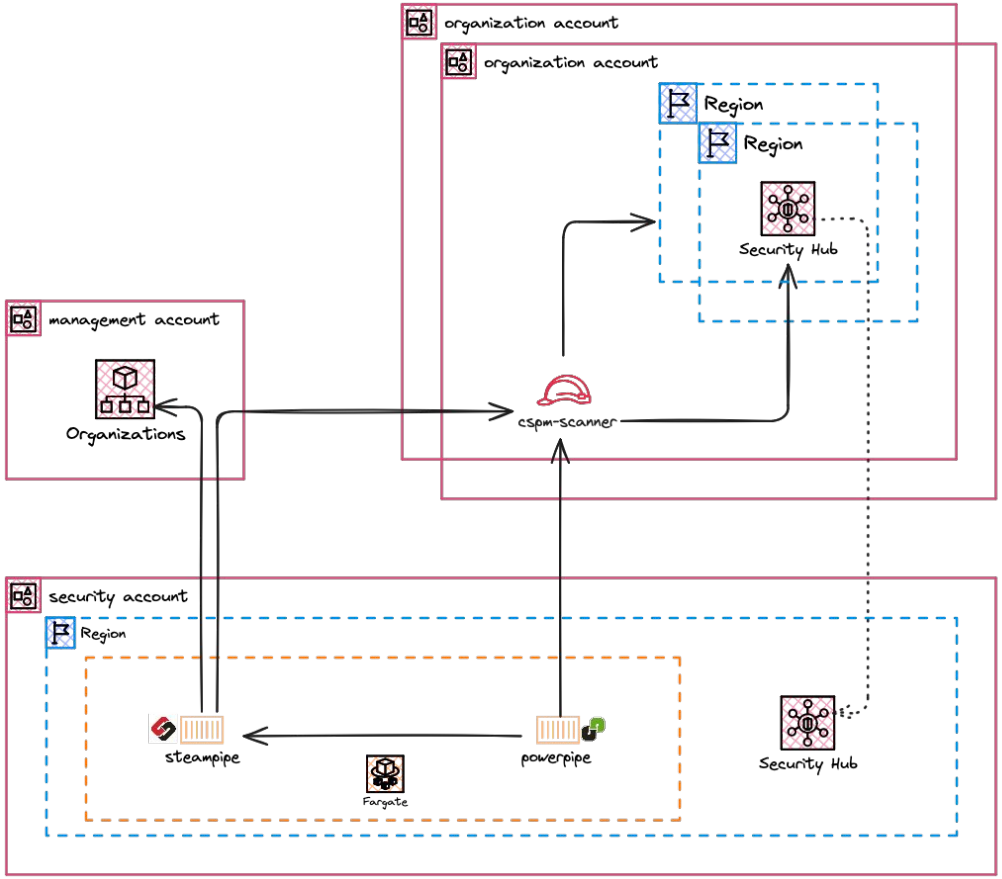
Our journey: Current approach



6. Import findings into AWS SecurityHub.

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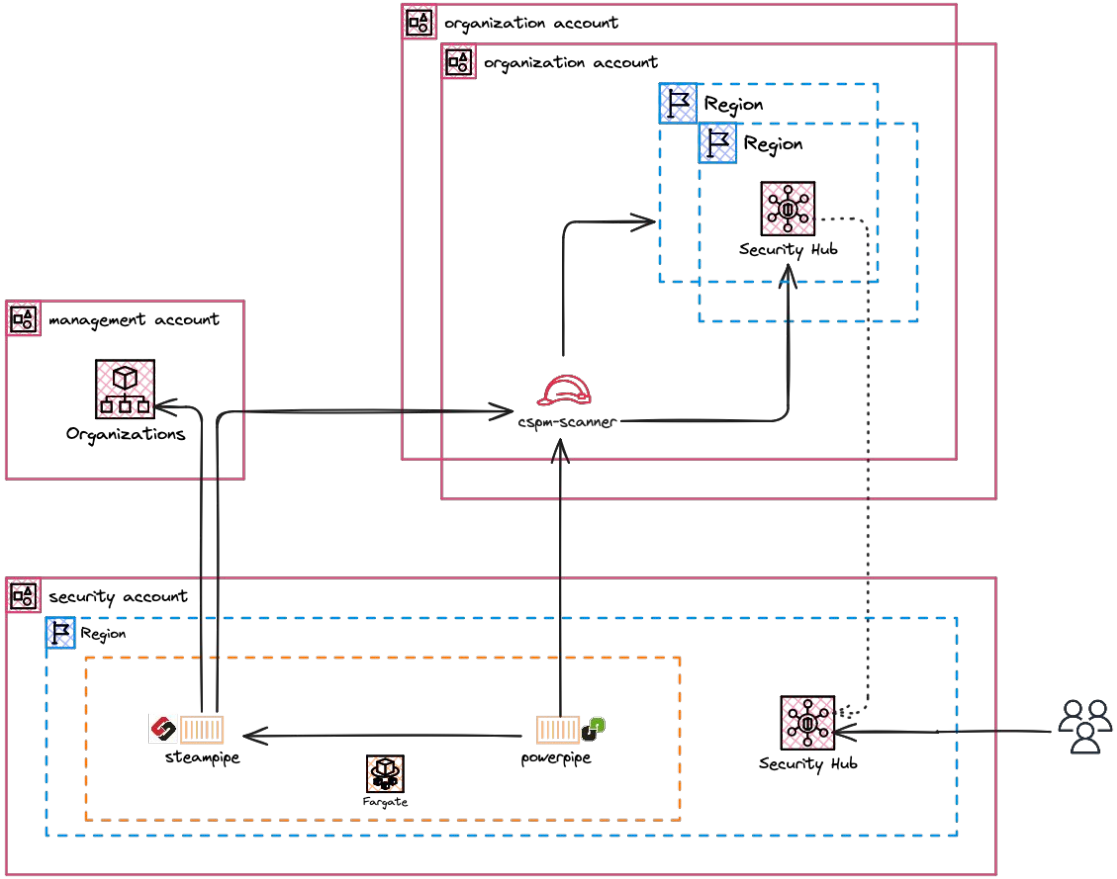
Our journey: Current approach



7. Manage centralized findings.

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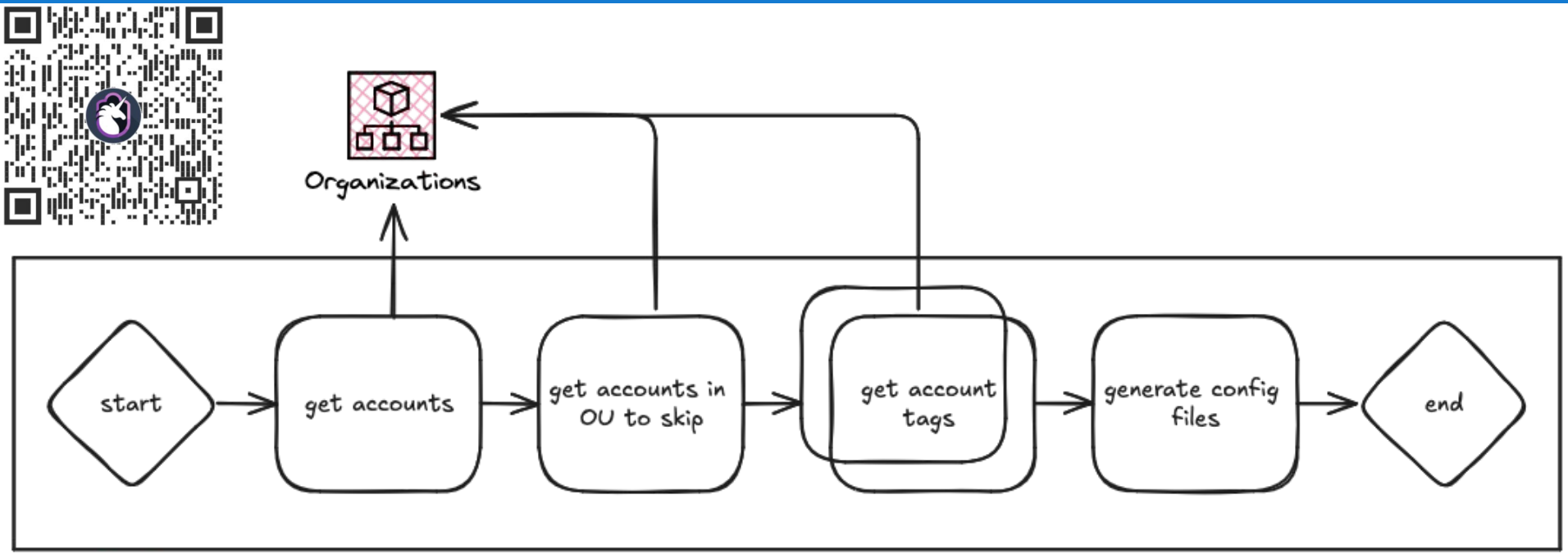
Integrate Steampipe with AWS Organizations



steampipe-config-generator

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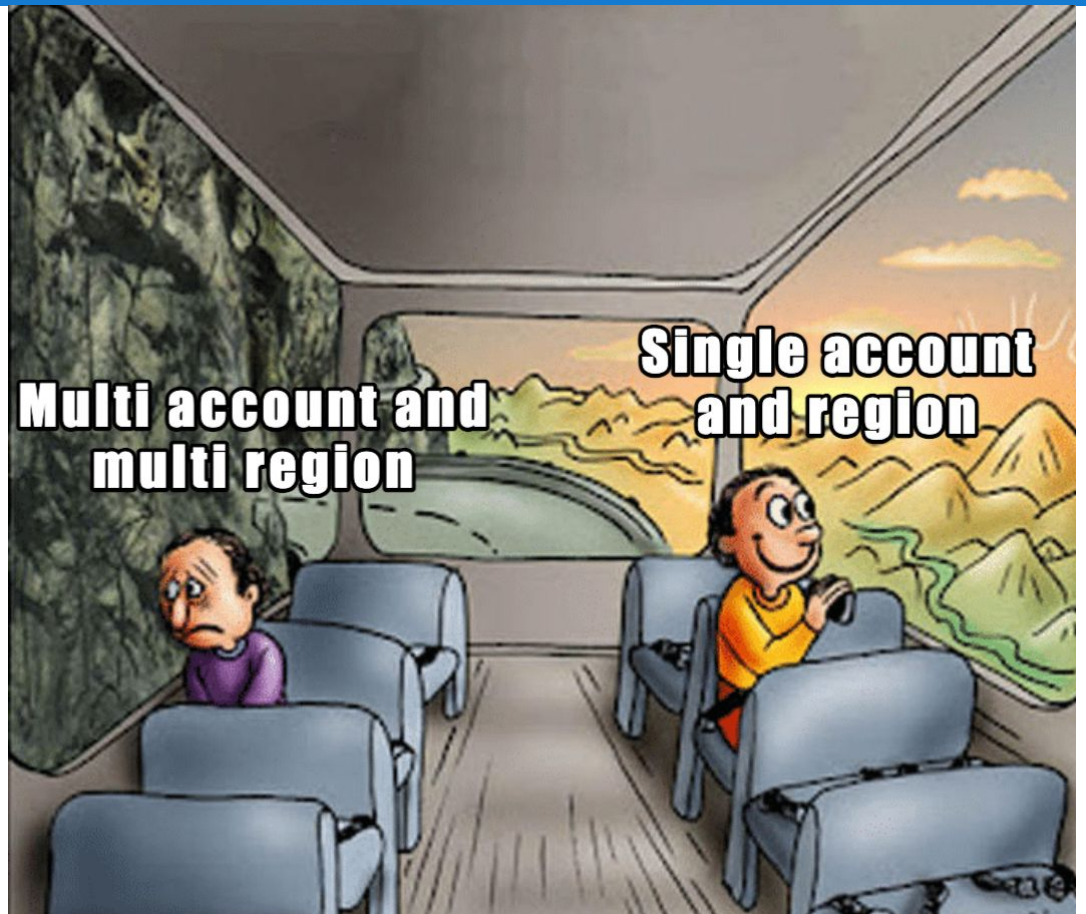
Our journey: Current approach



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Our journey: Current approach

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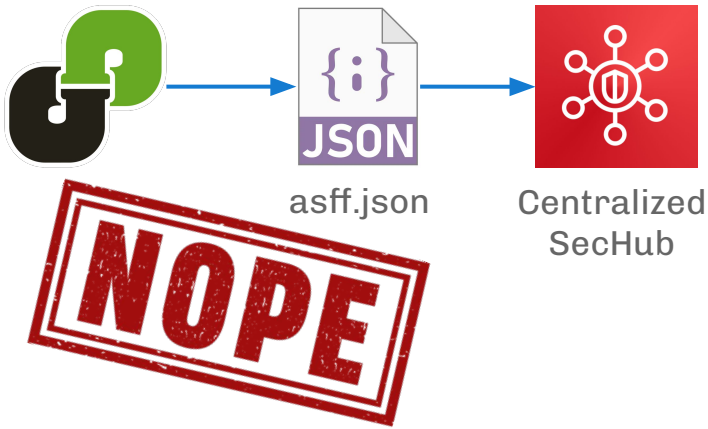
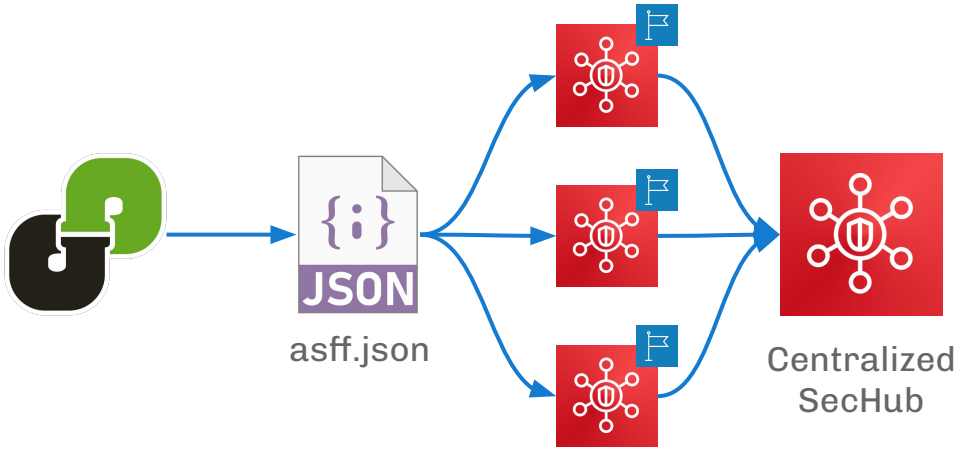
Our journey: Current approach

```
❯ powerpipe benchmark run aws_communityday --export asff.json
```





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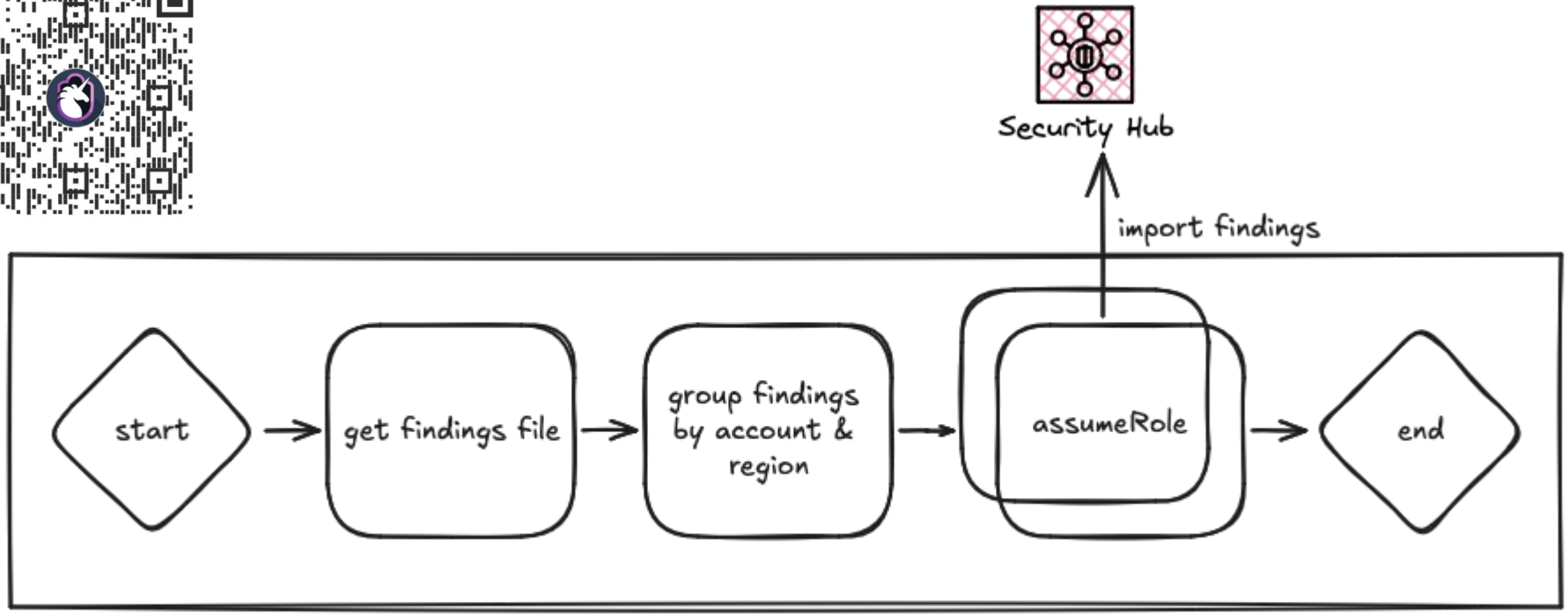
Integrate Powerpipe with AWS SecurityHub



powerpipe-securityhub-importer

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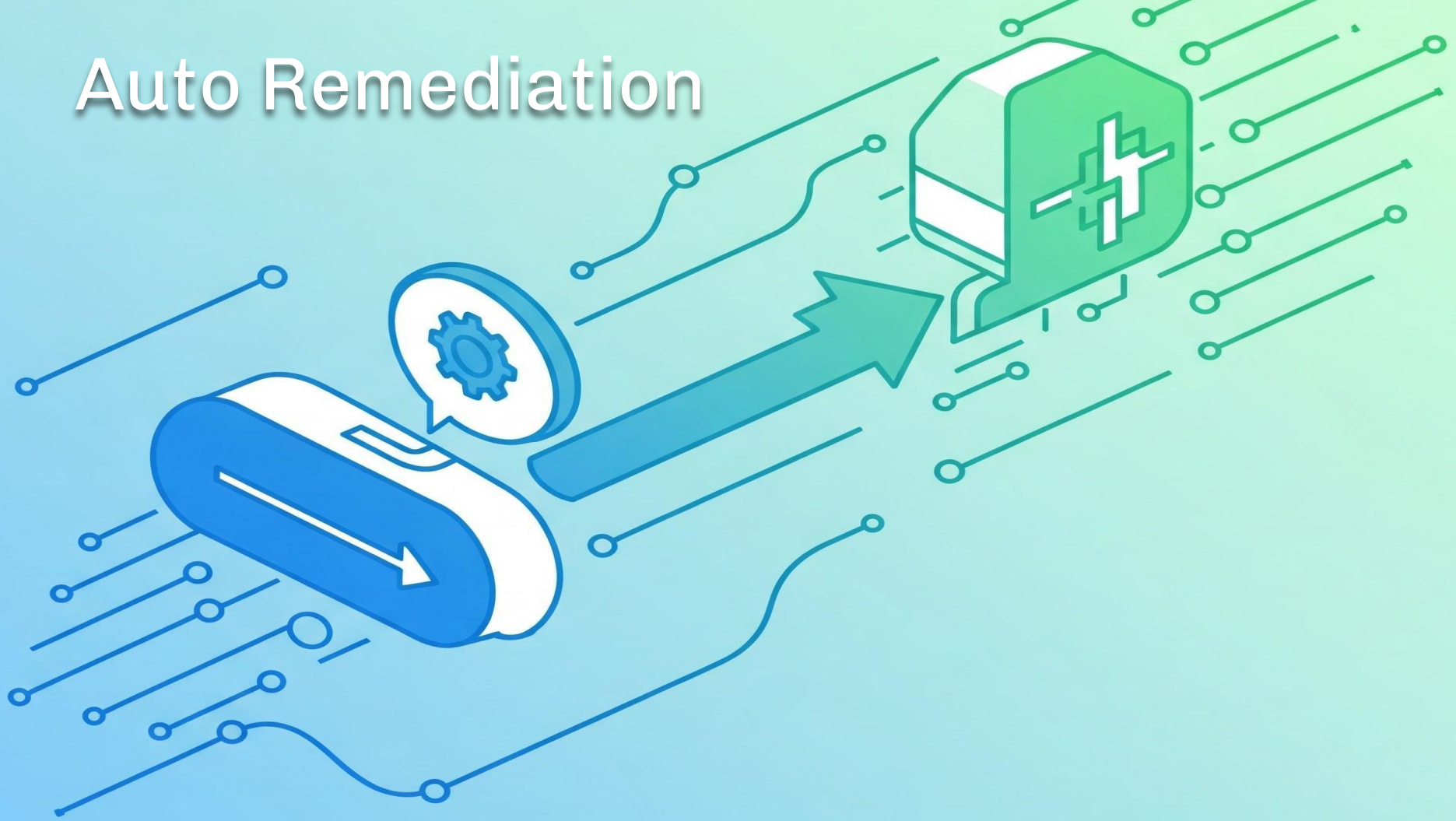
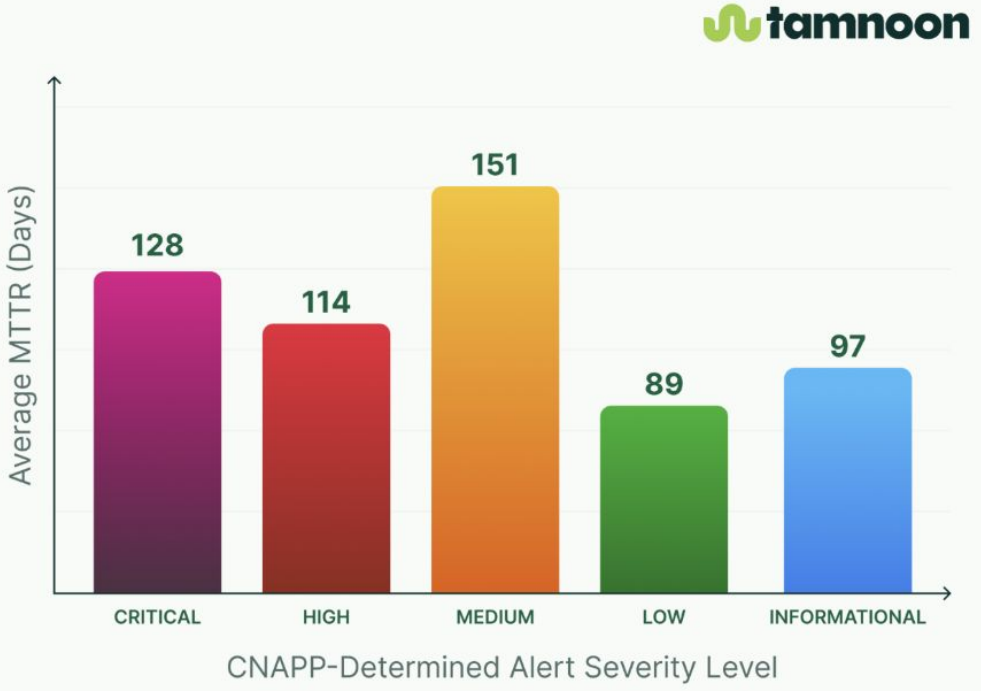
Auto Remediation



Auto Remediation

Cloud Alert Resolution Time: Severity Matters



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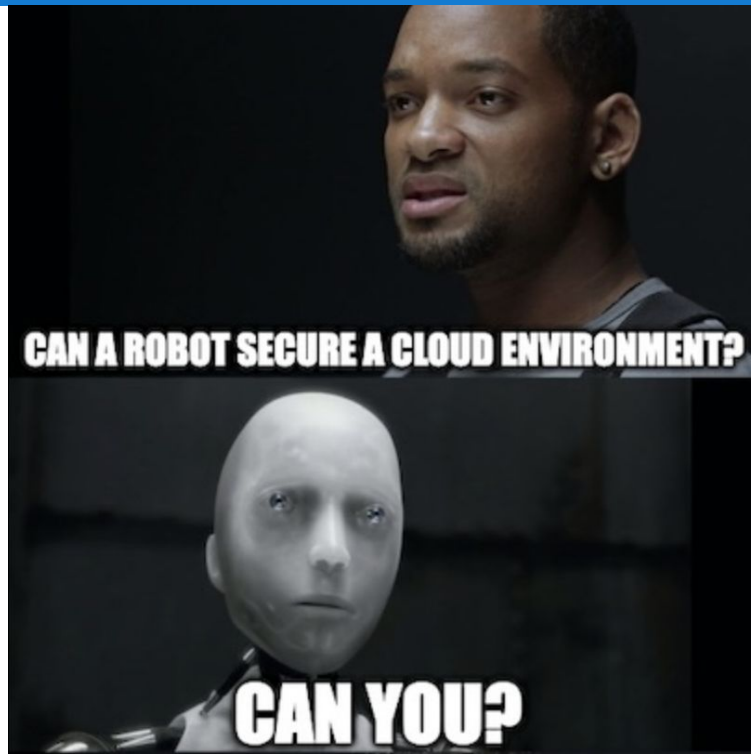
Auto Remediation

Farris's Three Laws of Cloud Security Auto Remediation:

- A bot must never harm stateful data or allow stateful data to come to harm.
- A bot must act with utmost haste so functionality doesn't become dependent on a misconfiguration.
- A bot must announce its existence and tell a carbon-based life form what it did and why.



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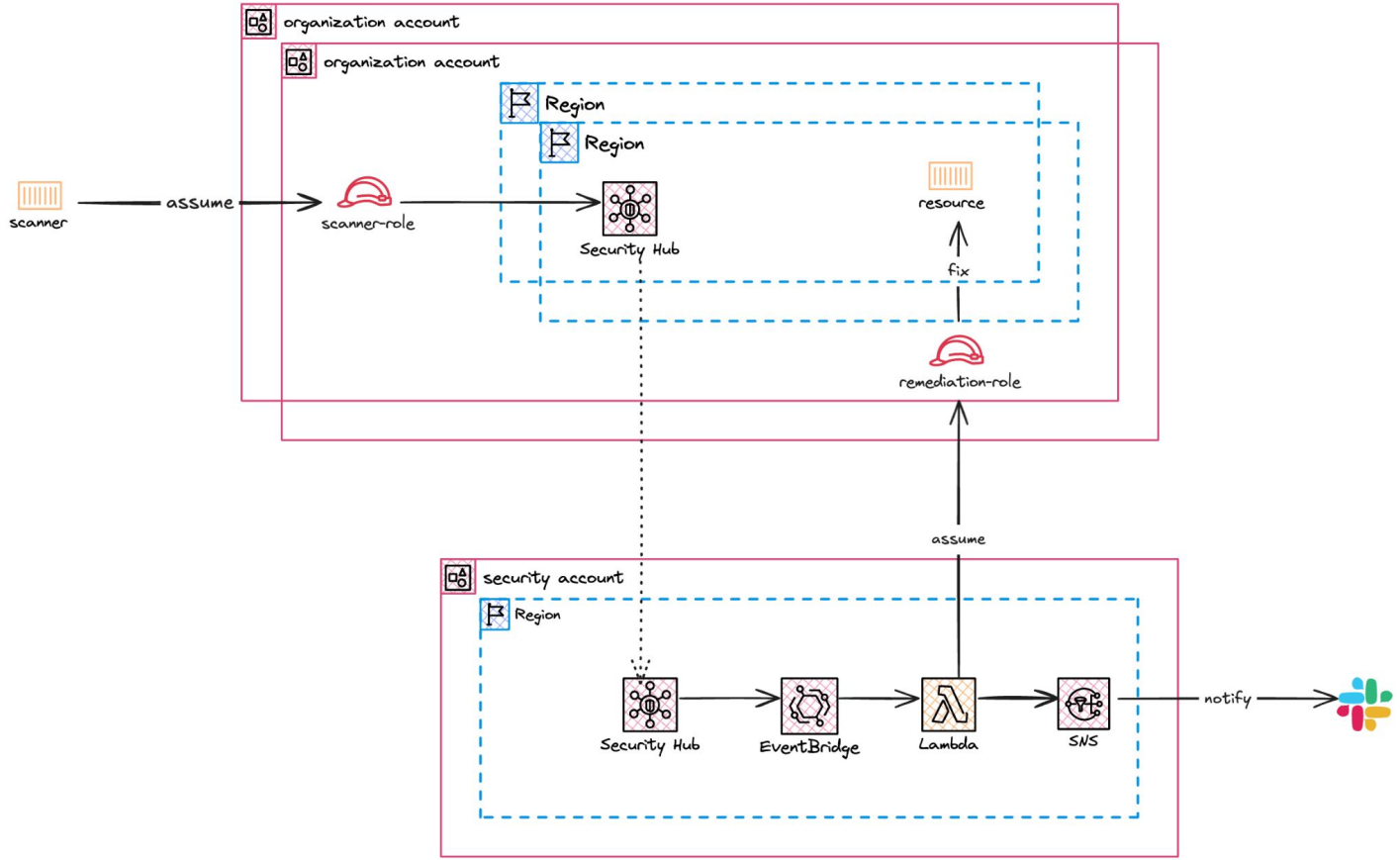
Auto Remediation



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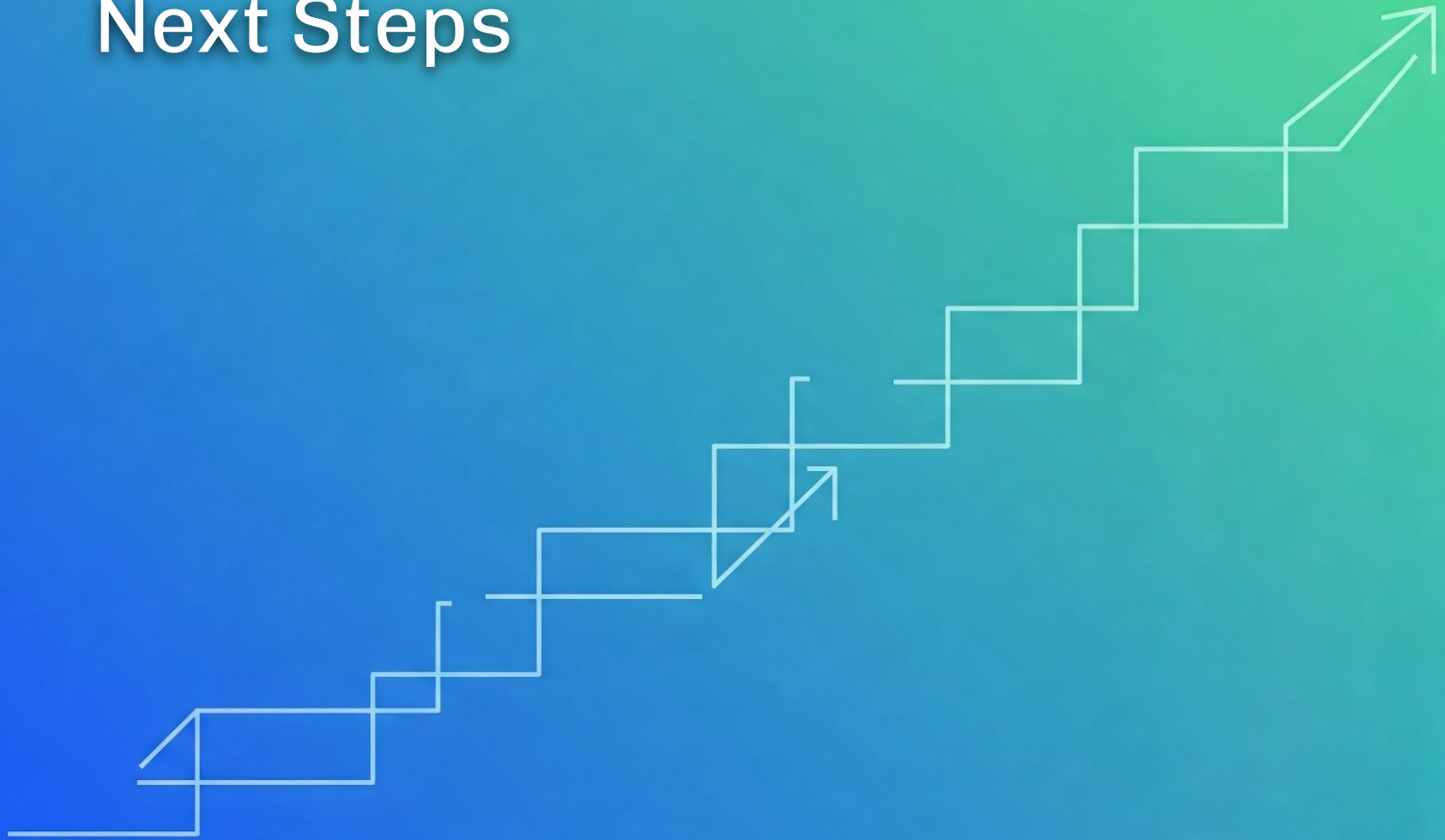
Next Steps



Next steps

- **RBAC reporting access.**
- **More integrations.**
- **Expand auto remediation coverage.**
- **Auto remediation approvals.**

Key Takeaways

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- **Use AWS Organizations. Always.**
- **Default controls are standard. Your company is not.**
- **Build your solution is not easy, but it's worth it.**
- **Automate everything as possible.**
- **Expend time building your own reports.**

Questions?

@sbldevnet

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Oct 14, 2024 · in aws, iam, iac, terraform · 6 min read

Deploy IAM Roles across an AWS Organization as code

Oct 18, 2024 · in aws, aws_organizations, go · 3 min read

Import your Powerpipe results into AWS SecurityHub

Automate your Steampipe AWS configuration with AWS Organizations