Centralized
Logging Patterns

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elastic

```
$cat logs/java-logging.log
[2018-05-18 01:44:28.083] INFO  net.xeraa.logging.LogMe [main] - session=79, loop=0 - Give me an info
[2018-05-18 01:44:28.106] WARN  net.xeraa.logging.LogMe [main] - session=79, loop=0 - Give me a warn f
or session '79'
[2018-05-18 01:44:28.115] ERROR net.xeraa.logging.LogMe [main] - session=79, loop=0 - Hit a runtime ex
ception
java.lang.RuntimeException: Give me an exception
        at net.xeraa.logging.LogMe.main(LogMe.java:31)
[2018-05-18 01:44:28.119] INFO  net.xeraa.logging.LogMe [main] - session=18, loop=1 - Give me an info
[2018-05-18 01:44:28.120] WARN  net.xeraa.logging.LogMe [main] - session=18, loop=1 - Give me a warn f
or session '18'
[2018-05-18 01:44:28.120] INFO  net.xeraa.logging.LogMe [main] - session=32, loop=2 - Give me an info
[2018-05-18 01:44:28.121] WARN  net.xeraa.logging.LogMe [main] - session=32, loop=2 - Give me a warn f
or session '32'
[2018-05-18 01:44:28.121] INFO  net.xeraa.logging.LogMe [main] - session=17, loop=3 - Give me an info
[2018-05-18 01:44:28.122] WARN  net.xeraa.logging.LogMe [main] - session=17, loop=3 - Give me a warn f
or session '17'
[2018-05-18 01:44:28.122] ERROR net.xeraa.logging.LogMe [main] - session=17, loop=3 - Hit a runtime ex
ception
java.lang.RuntimeException: Give me an exception
        at net.xeraa.logging.LogMe.main(LogMe.java:31)
[2018-05-18 01:44:28.123] INFO  net.xeraa.logging.LogMe [main] - session=15, loop=4 - Give me an info
[2018-05-18 01:44:28.124] WARN  net.xeraa.logging.LogMe [main] - session=15, loop=4 - Give me a warn f
or session '15'
```

```
$tail -f logs/java-logging.log
        at net.xeraa.logging.LogMe.main(LogMe.java:31)
[2018-05-18 01:44:28.135] INFO  net.xeraa.logging.LogMe [main] - session=40, loop=7 - Give me an info
[2018-05-18 01:44:28.135] WARN  net.xeraa.logging.LogMe [main] - session=40, loop=7 - Give me a warn f
or session '40'
[2018-05-18 01:44:28.136] INFO  net.xeraa.logging.LogMe [main] - session=16, loop=8 - Give me an info
[2018-05-18 01:44:28.137] WARN  net.xeraa.logging.LogMe [main] - session=16, loop=8 - Give me a warn f
or session '16'
[2018-05-18 01:44:28.138] INFO  net.xeraa.logging.LogMe [main] - session=94, loop=9 - Give me an info
[2018-05-18 01:44:28.139] WARN  net.xeraa.logging.LogMe [main] - session=94, loop=9 - Give me a warn f
or session '94'
[2018-05-18 01:44:28.141] ERROR net.xeraa.logging.LogMe [main] - session=94, loop=9 - Hit a runtime ex
ception
java.lang.RuntimeException: Give me an exception
        at net.xeraa.logging.LogMe.main(LogMe.java:31)
[2018-05-18 01:50:04.695] INFO  net.xeraa.logging.LogMe [main] - session=74, loop=0 - Give me an info
[2018-05-18 01:50:04.713] WARN  net.xeraa.logging.LogMe [main] - session=74, loop=0 - Give me a warn f
or session '74'
[2018-05-18 01:50:04.721] ERROR net.xeraa.logging.LogMe [main] - session=74, loop=0 - Hit a runtime ex
ception
java.lang.RuntimeException: Give me an exception
        at net.xeraa.logging.LogMe.main(LogMe.java:31)
[2018-05-18 01:50:04.722] INFO  net.xeraa.logging.LogMe [main] - session=87, loop=1 - Give me an info
[2018-05-18 01:50:04.723] WARN  net.xeraa.logging.LogMe [main] - session=87, loop=1 - Give me a warn f
```

```
$less +F logs/java-logging.log
```

gMe [main] - session=57, loop=2 - Give me a warn fogMe [main] - session=57, loop=2 - Give me a warn
r session '57'   or session '57'
2018-05-18 01:54:15.959] INFO net.xeraa.logging.L[2018-05-18 01:54:15.959] INFO net.xeraa.logging.
gMe [main] - session=93, loop=3 - Give me an info ogMe [main] - session=93, loop=3 - Give me an info
2018-05-18 01:54:15.959] WARN net.xeraa.logging.L[2018-05-18 01:54:15.959] WARN net.xeraa.logging.
gMe [main] - session=93, loop=3 - Give me a warn fogMe [main] - session=93, loop=3 - Give me a warn
r session '93'   or session '93'
2018-05-18 01:54:15.960] ERROR net.xeraa.logging.L[2018-05-18 01:54:15.960] ERROR net.xeraa.logging.
gMe [main] - session=93, loop=3 - Hit a runtime exogMe [main] - session=93, loop=3 - Hit a runtime e
eption   ception
ava.lang.RuntimeException: Give me an exception   java.lang.RuntimeException: Give me an exception
aiting for data... (interrupt to abort)   Waiting for data... (interrupt to abort)

gMe [main] - session=57, loop=2 - Give me a warn fogMe [main] - session=57, loop=2 - Give me a warn
r session '57'   or session '57'
2018-05-18 01:54:15.959] INFO net.xeraa.logging.L[2018-05-18 01:54:15.959] INFO net.xeraa.logging.
gMe [main] - session=93, loop=3 - Give me an info ogMe [main] - session=93, loop=3 - Give me an info
2018-05-18 01:54:15.959] WARN net.xeraa.logging.L[2018-05-18 01:54:15.959] WARN net.xeraa.logging.
gMe [main] - session=93, loop=3 - Give me a warn fogMe [main] - session=93, loop=3 - Give me a warn
r session '93'   or session '93'
2018-05-18 01:54:15.960] ERROR net.xeraa.logging.L[2018-05-18 01:54:15.960] ERROR net.xeraa.logging.
gMe [main] - session=93, loop=3 - Hit a runtime exogMe [main] - session=93, loop=3 - Hit a runtime e
eption   ception
ava.lang.RuntimeException: Give me an exception   java.lang.RuntimeException: Give me an exception
aiting for data... (interrupt to abort)   Waiting for data... (interrupt to abort)

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ogMe [main] - session=57, loop=2 - Give me a warn f

or session '57'

[2018-05-18 01:54:15.959] INFO net.xeraa.logging.L

ogMe [main] - session=93, loop=3 - Give me an info

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or session '57'

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ogMe [main]

ogMe [main] - session

'57'

[2018-05-18 01:54:15.

ogMe [main] - session

java-logging — bash /Users/philipp/Documents/GitHub/java-logging — less +F logs/java-logging.log — 51×12

java-logging — bash /User

java-logging — bash /Users

java-logging — bash /Users/philip

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ogMe [main] - session=93, loop=3

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ogMe [main] - session=93, loop=3 -

or session '93'

[2018-05-18 01:54:15.960] ERROR ne

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ogMe [main] - session=93, loop=3 - Give me an info

[2018-05-18 01:54:15.959] WARN net.xeraa.logging.L

ogMe [main] - session=57, loop=2 - Giv

or session '57'

[2018-05-18 01:54:15.959] INFO ne

ALL THE THINGS!

Developer Advocate

elastic
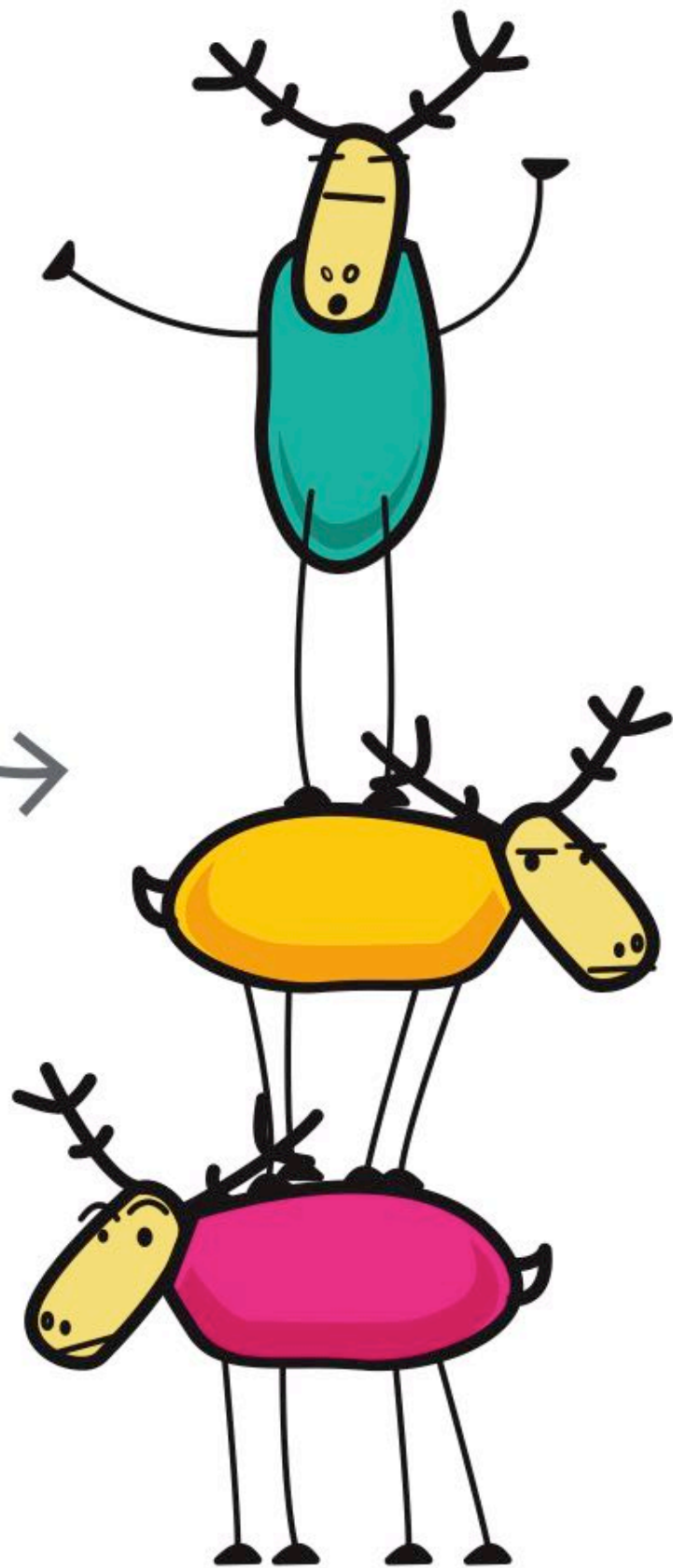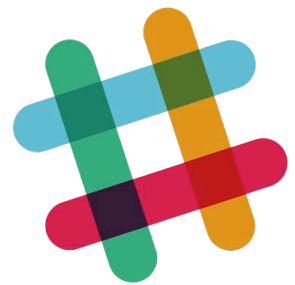
Apparently, I'm an
ELKB personality.
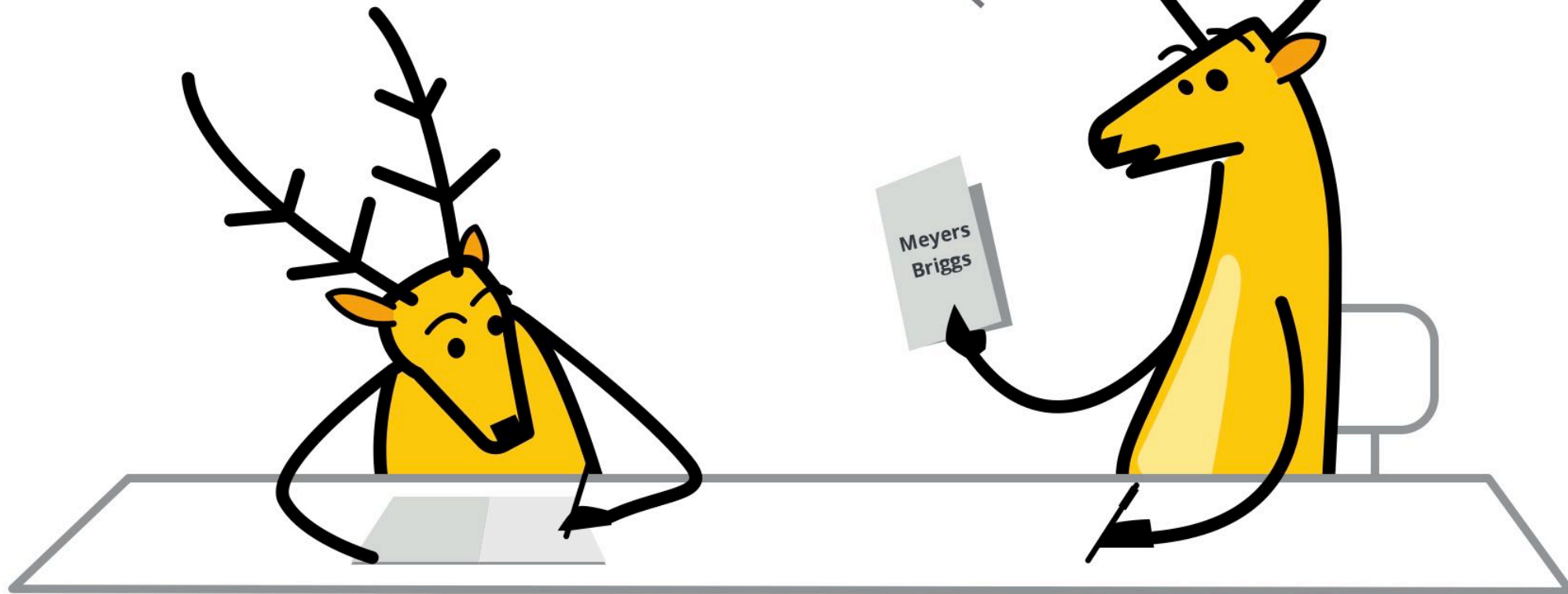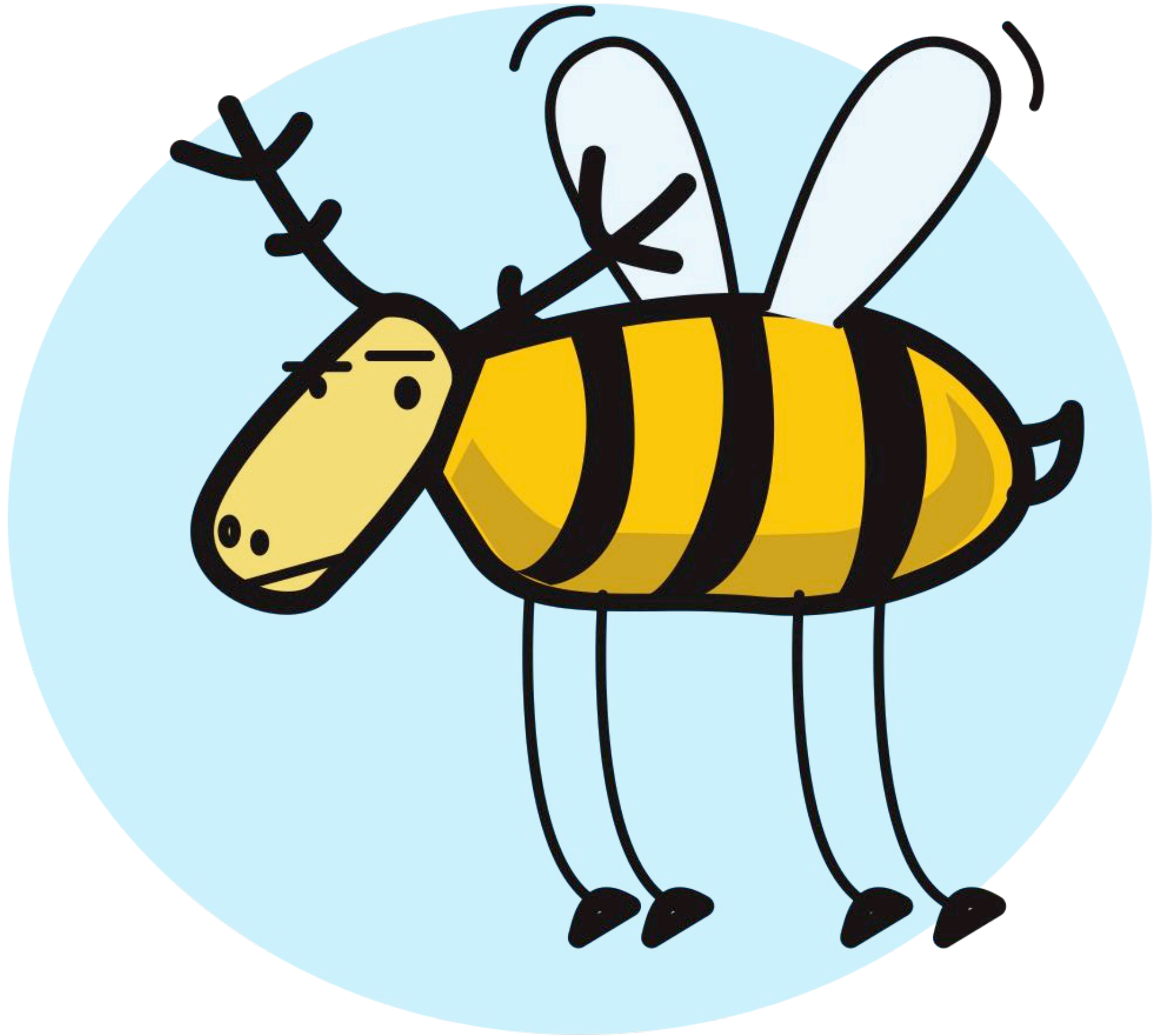
elastic stack

elastic

Apache License 2.0

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Disclaimer

I build **highly** monitored Hello World apps

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Example: Java
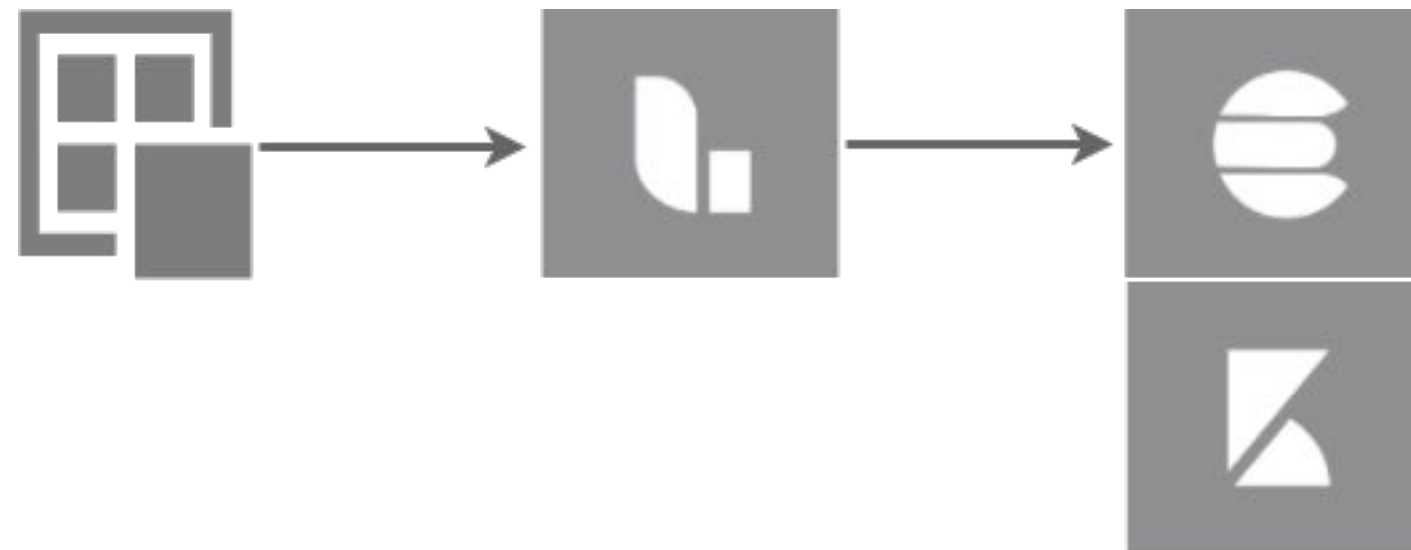
.NET: NLog

PHP: Monolog

JavaScript: Winston

...

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Parse 🔪

elastic
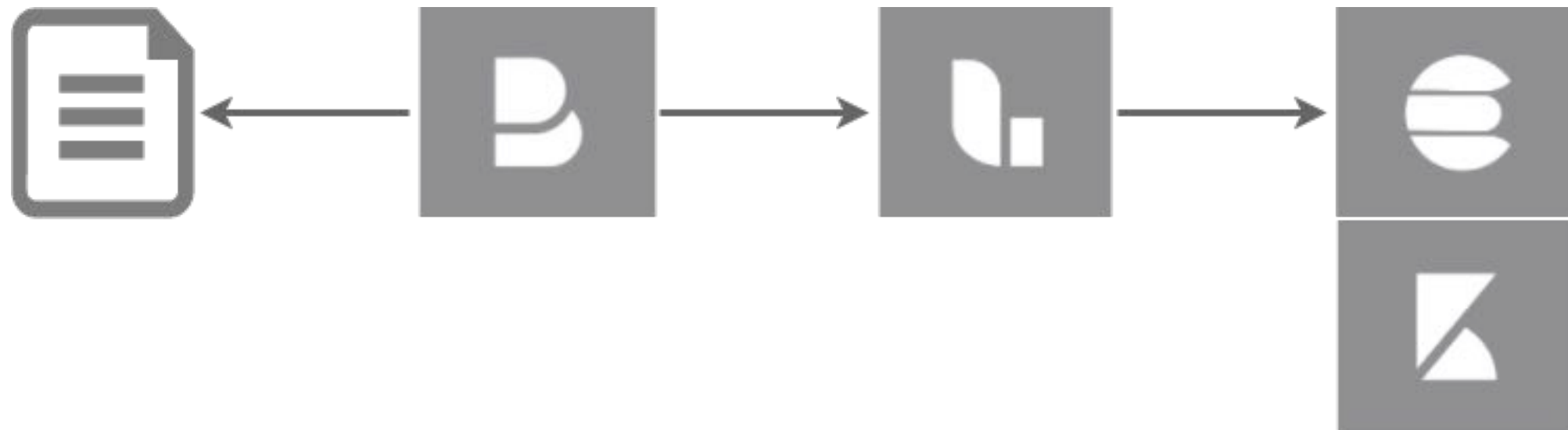
Pro: No change

Con: RegEx

elastic

Send ✉️

elastic

Pro: No more files

Con: Outages & coupling

elastic

Structure 🕸️

elastic

elastic
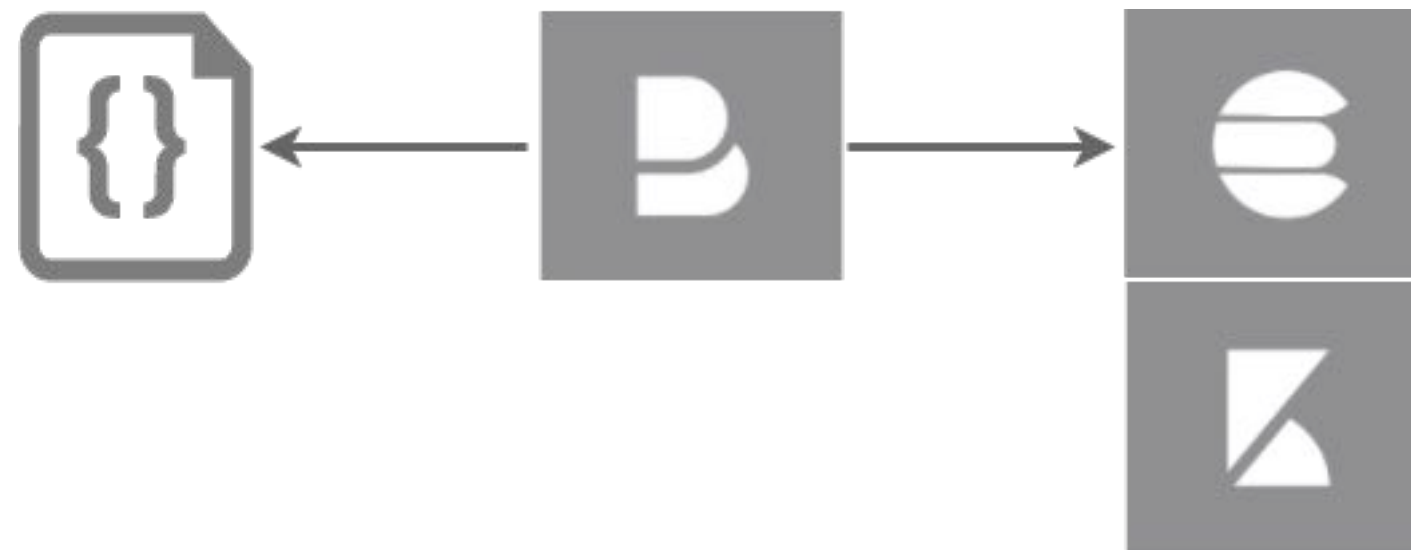
Pro: Right format

Con: Special log appender

elastic
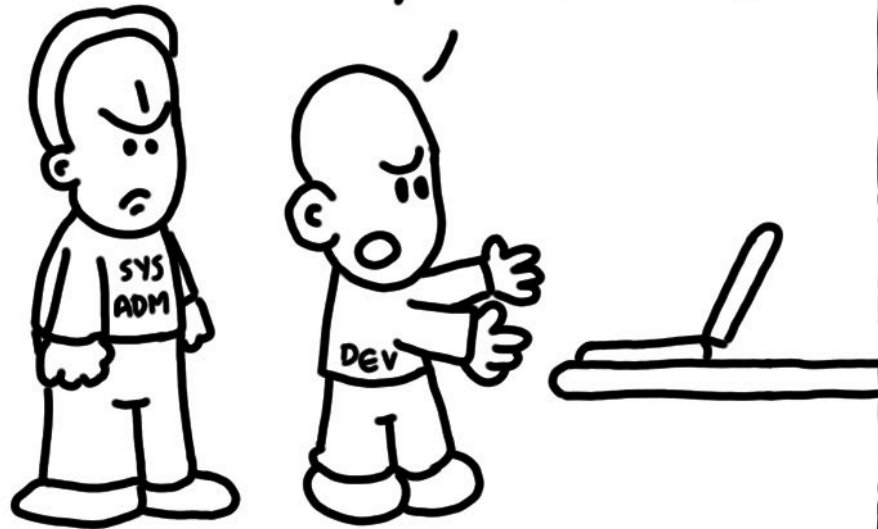
Containerize 📦
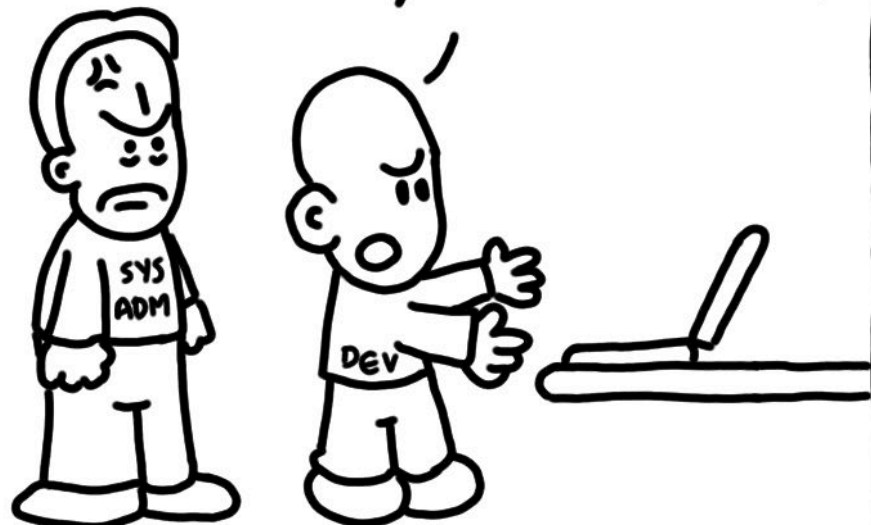
https://turnoff.us/geek/before-devops-after-devops/

Where to put Filebeat?

Sidecar

elastic

Default JSON log

```
filebeat.prospectors:
- type: log
  paths:
    - "/var/lib/docker/containers/*/*.log"
  json.message_key: log
  json.keys_under_root: true
  processors:
  - add_docker_metadata: ~
```

elastic

Metadata

```json
{
  "host": "10.4.15.9",
  "port": 6379,
  "docker": {
    "container": {
      "id": "382184ecdb385cfd5d1f1a65f78911054c8511ae009635300ac28b4fc357ce51",
      "name": "my-java",
      "image": "my-java:1.0.0",
      "labels": {
        "app": "java"
      }
    }
  }
}
```

elastic

Mount log path

```
my-java:
  container_name: my-java
  hostname: my-java
  build: ${PWD}/config/my-java
  networks: ['stack']
  command: java -jar my-java.jar
  volumes:
    - ./logs/my-java/:/opt/my-java/logs/

filebeat:
  container_name: filebeat
  hostname: filebeat
  image: "docker.elastic.co/beats/filebeat:${ELASTIC_VERSION}"
  volumes:
    - ./logs/my-java/:/var/log/my-java/
    - ./docker-compose/filebeat.yml:/usr/share/filebeat/filebeat.yml:ro
  command: filebeat -e
  networks: ['stack']
```

elastic

Configuration templates

```
filebeat.autodiscover:
  providers:
    - type: docker
      templates:
        - condition:
            equals:
              docker.container.image: redis
          config:
            - type: docker
              containers.ids:
                - "${data.docker.container.id}"
              exclude_lines: ["^\\s+[\\-`('.|_]"]  # Drop asciiart lines
```

elastic

Pro: Hot 💩

Con: Complexity

elastic

Orchestrate 🎻

Where to put Filebeat?

DaemonSet

elastic

Metadata

```
processors:
- add_kubernetes_metadata:
    in_cluster: true
```

elastic

Metadata

```json
{
  "host": "172.17.0.21",
  "port": 9090,
  "kubernetes": {
    "container": {
      "id": "382184ecdb385cfd5d1f1a65f78911054c8511ae009635300ac28b4fc357ce51",
      "image": "my-java:1.0.0",
      "name": "my-java"
    },
    "labels": {
      "app": "java",
    },
    "namespace": "default",
    "node": {
      "name": "minikube"
    },
    "pod": {
      "name": "java-2657348378-k1pnh"
    }
  },
}
```

elastic

Configuration templates

```yaml
filebeat.autodiscover:
  providers:
    - type: kubernetes
      templates:
        - condition:
            equals:
              kubernetes.namespace: kube-system
          config:
            - type: docker
              containers.ids:
                - "${data.kubernetes.container.id}"
              exclude_lines: ["^\\s+[\\-`('.|_]"]  # Drop asciiart lines
```

elastic

Customize indices

```
output.elasticsearch:
  index: "%{[kubernetes.namespace]:filebeat}-%{[beat.version]}-%{+yyyy.MM.dd}"
```

elastic

Pro: Hot 💩💩💩

Con: Complexity++

elastic

Conclusion

Examples

https://github.com/xeraa/java-logging

Parse 🔪

Send ✉️

Structure 🕸️

Containerize 📦

Orchestrate 🎻

Questions?

Philipp Krenn

@xeraa

elastic