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ALL THE WAF POWER TO THE DEVS

why it reduces friction... and where it backfires

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UNITED SECURITY PROVIDERS

ZERO TRUST UNIVERSE

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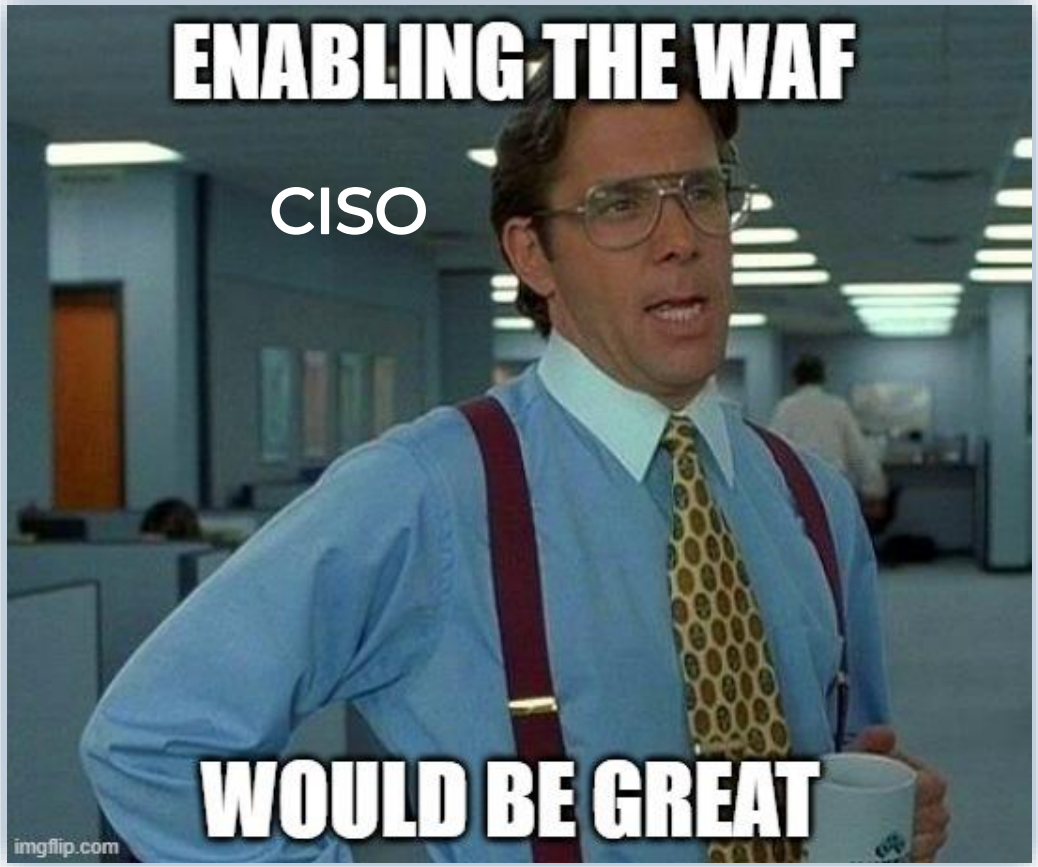
Web Application Firewall

CISOs LIKE WAFs



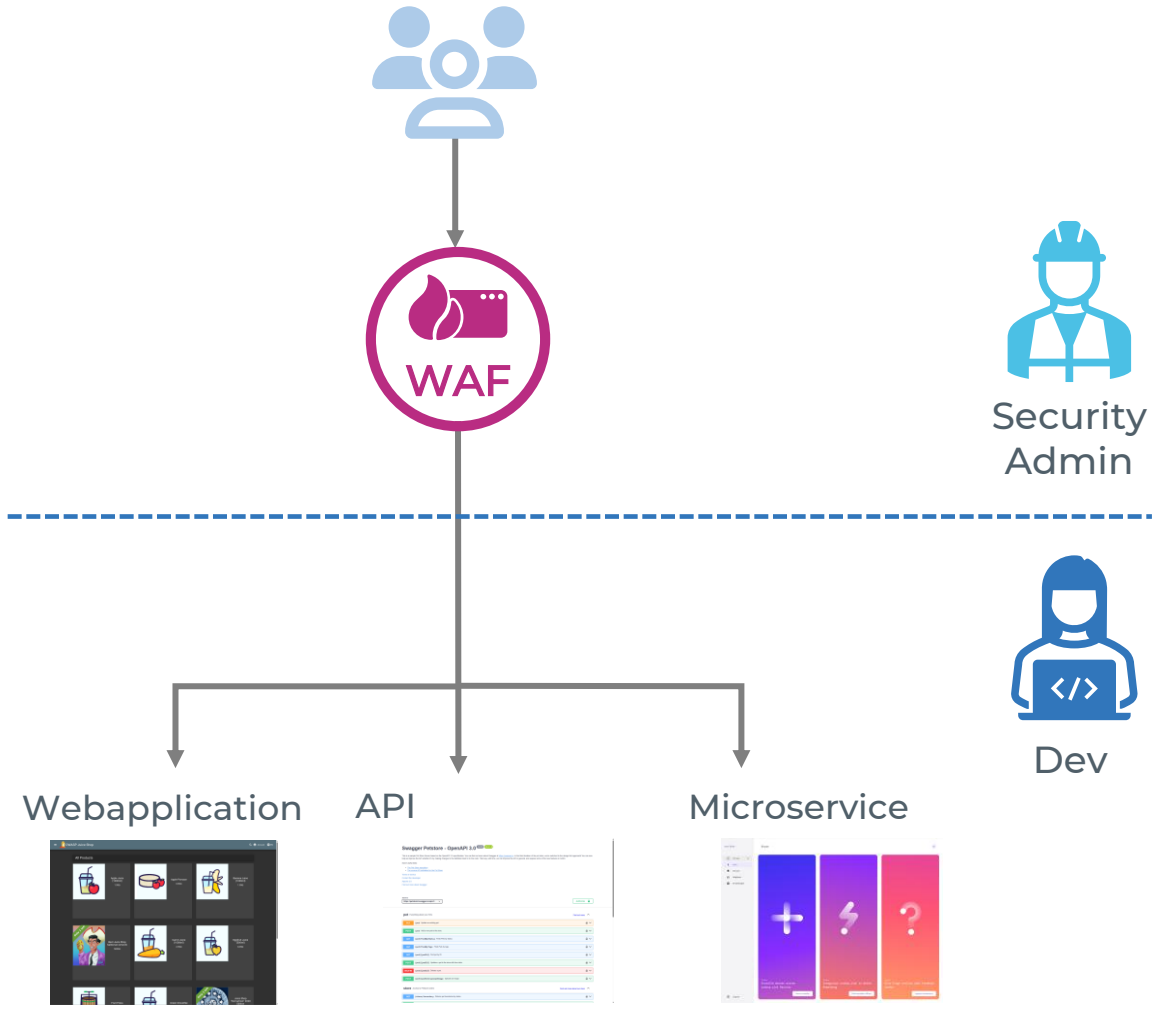

```
/?redirect_uri=%0d%0a%0d%0a<script>alert(document.domain)</script>]
```

```
/setextno.jsp?user_ids=(99999)+union+all+select+1,2,(md5(999999999)),4]
```

```
/../../../../../../../../../../../../../etc/passwd
```

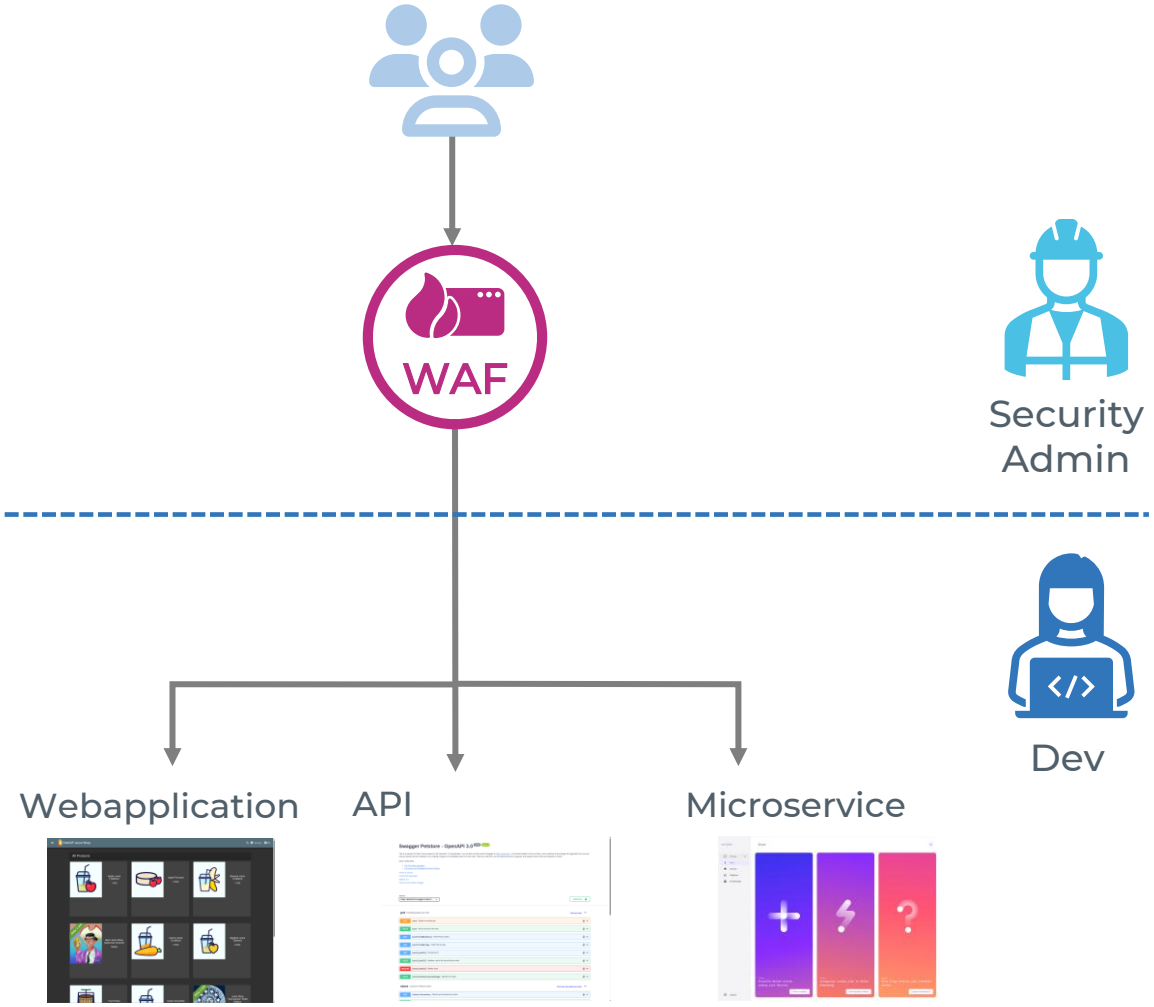
Customer installations with >100.000 of such requests per month

NOT EVERYONE LIKES THE WAF



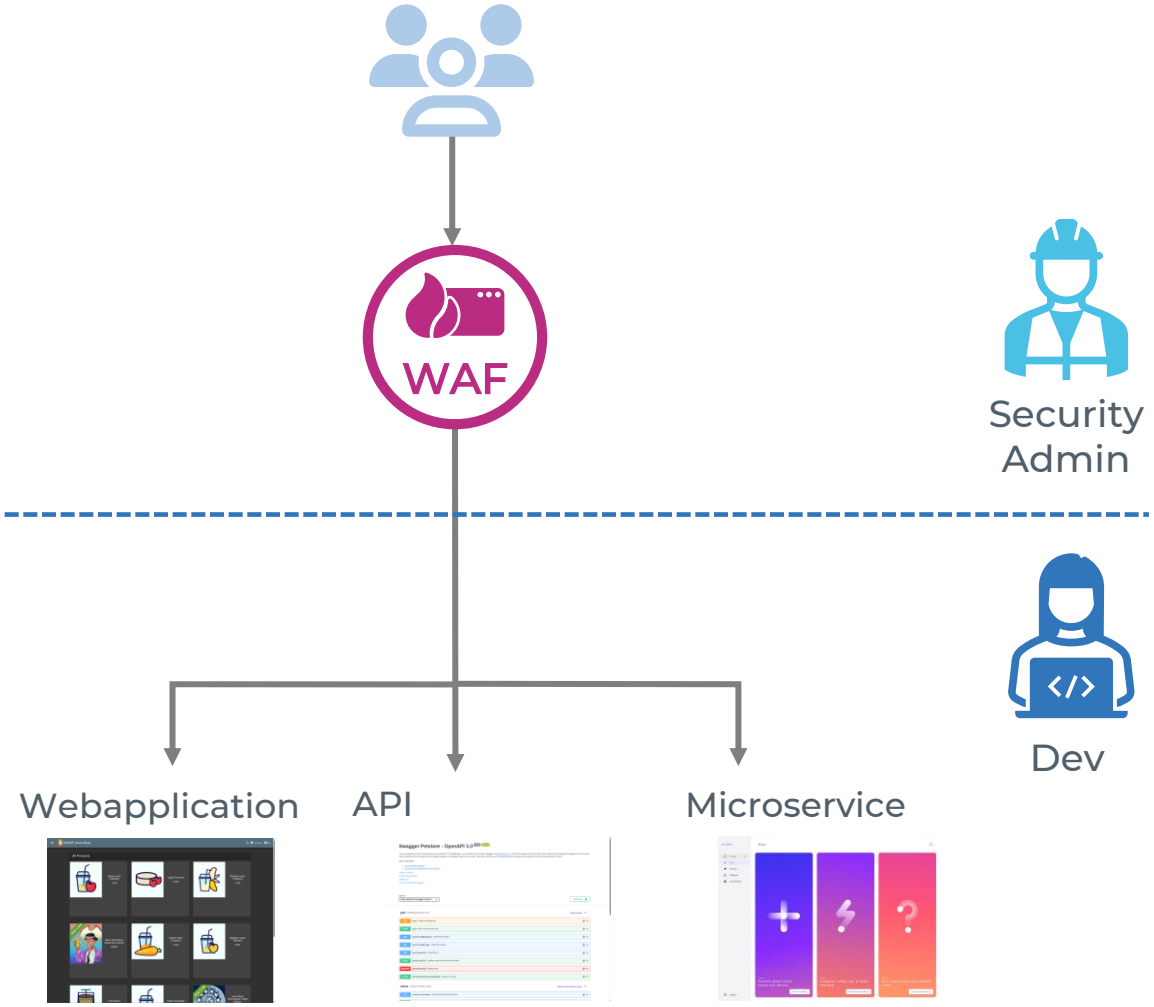
CHALLENGE IN PROCESS

- WAF comes **often late** into play and may **affect functionality** of the app



CHALLENGE IN PROCESS

- **Separated deployment process**, can't be integrated in CI/CD process
- **No visibility** because Dev and Ops are using **different tools**
- **Update paralysis**, difficult to judge the impact on the whole chain.



CHALLENGE IN TECHNOLOGY

- **Scalability & Availability** requirements for a hybrid cloud environment is not given

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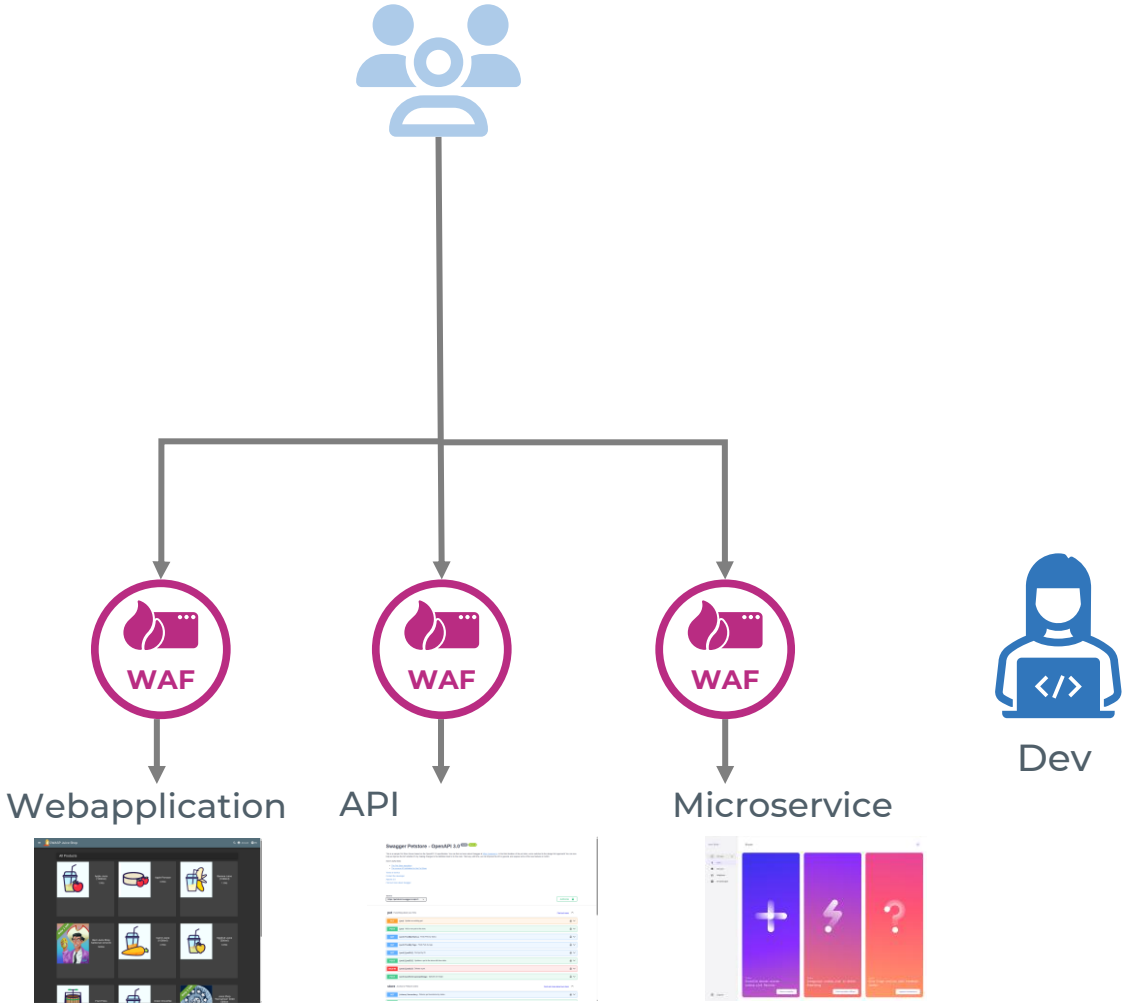
App-centric WAF

APP-CENTRIC VISION



SHIFT LEFT THE WAF

- It should be an **integral part** of the **development process**!
- Setup should allow easy **integration with CI/CD processes** to automate deployments.
- Fit into modern **cloud- & container-native architectures**
- **Agility & easy of use** without compromise in security

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App-Centric WAF by Example

CORAZA WAF FOR KUBERNETES

coraza
WEB APPLICATION FIREWALL

CRS

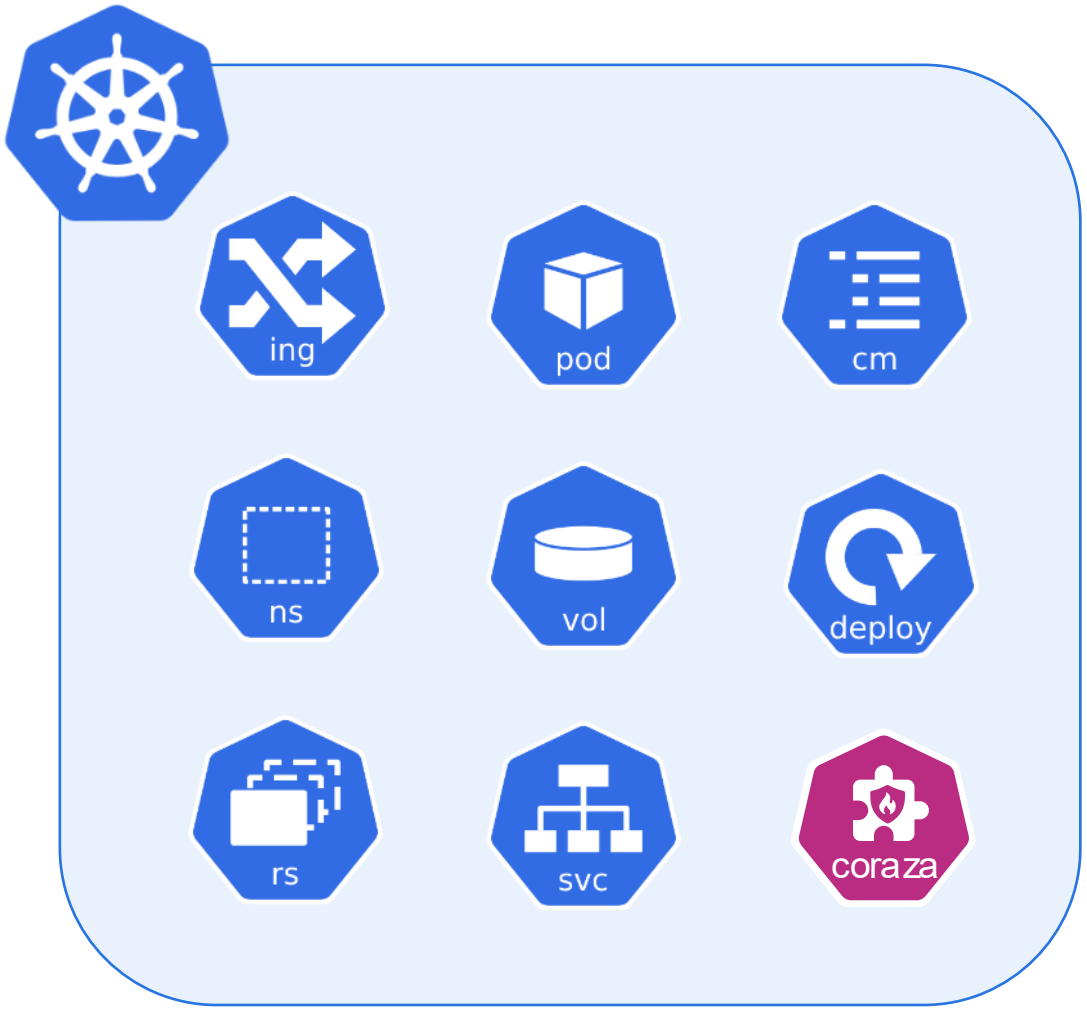
envoy

Dataplane

Controlplane

Simplified Management using
Coraza WAF K8s Operator

CORAZA WAF OPERATOR




```yaml
---
apiVersion: oss.u-s-p.ch/v1alpha1
kind: CorazaWaf
metadata:
  name: app-centric-waf
  namespace: default
spec:
  backend:
    hostname: "juice-shop"
    port: 8000
  crs:
    enabledRequestRules:
      - REQUEST_911_METHOD_ENFORCEMENT
      - REQUEST_913_SCANNER_DETECTION
      - REQUEST_920_PROTOCOL_ENFORCEMENT
      - REQUEST_921_PROTOCOL_ATTACK
      - REQUEST_922_MULTIPART_ATTACK
      - REQUEST_930_APPLICATION_ATTACK_LFI
      - REQUEST_931_APPLICATION_ATTACK_RFI
      - REQUEST_932_APPLICATION_ATTACK_RCE
      - REQUEST_933_APPLICATION_ATTACK_PHP
      - REQUEST_934_APPLICATION_ATTACK_GENERIC
      - REQUEST_941_APPLICATION_ATTACK_XSS
      - REQUEST_942_APPLICATION_ATTACK_SQLI
      - REQUEST_943_APPLICATION_ATTACK_SESSION_FIXATION
      - REQUEST_944_APPLICATION_ATTACK_JAVA
    paranoiaLevel:
      detecting: 2
      enforcing: 1
```

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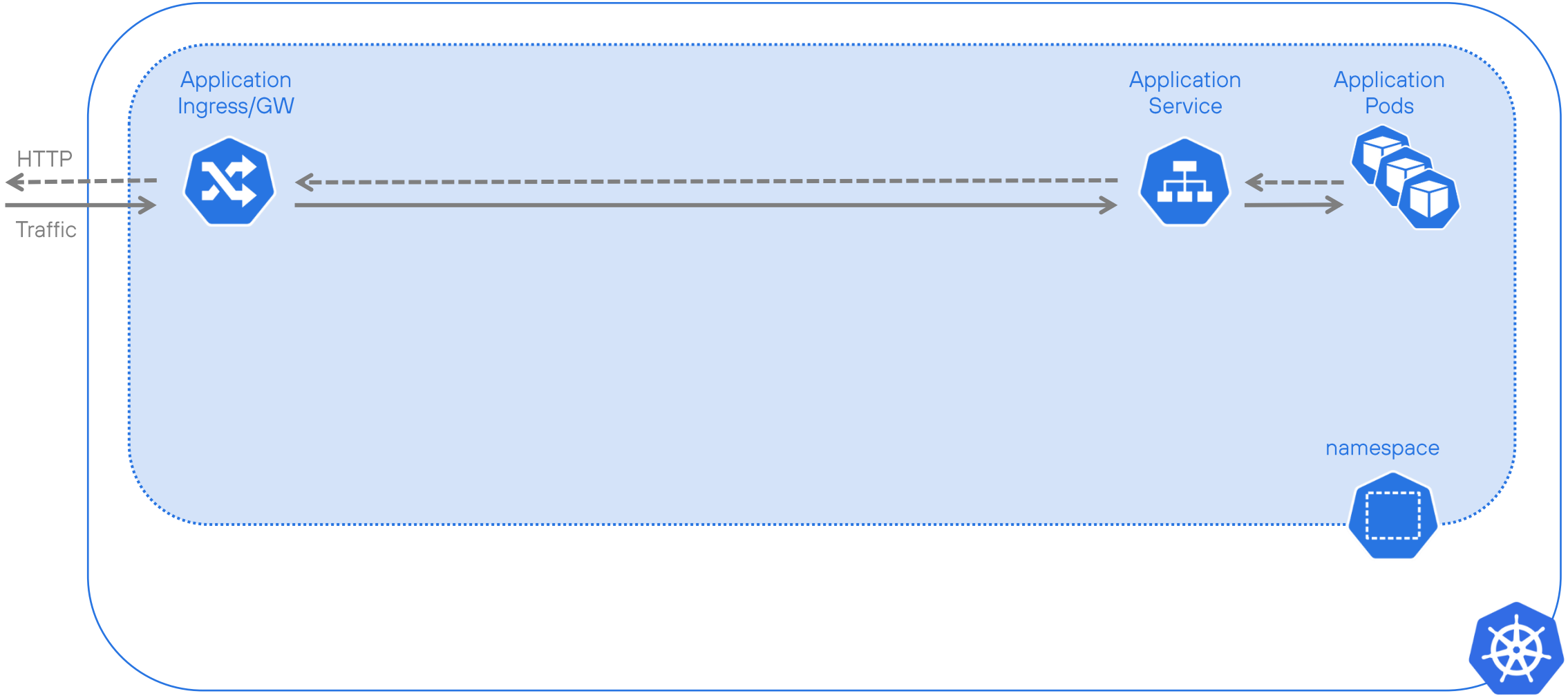
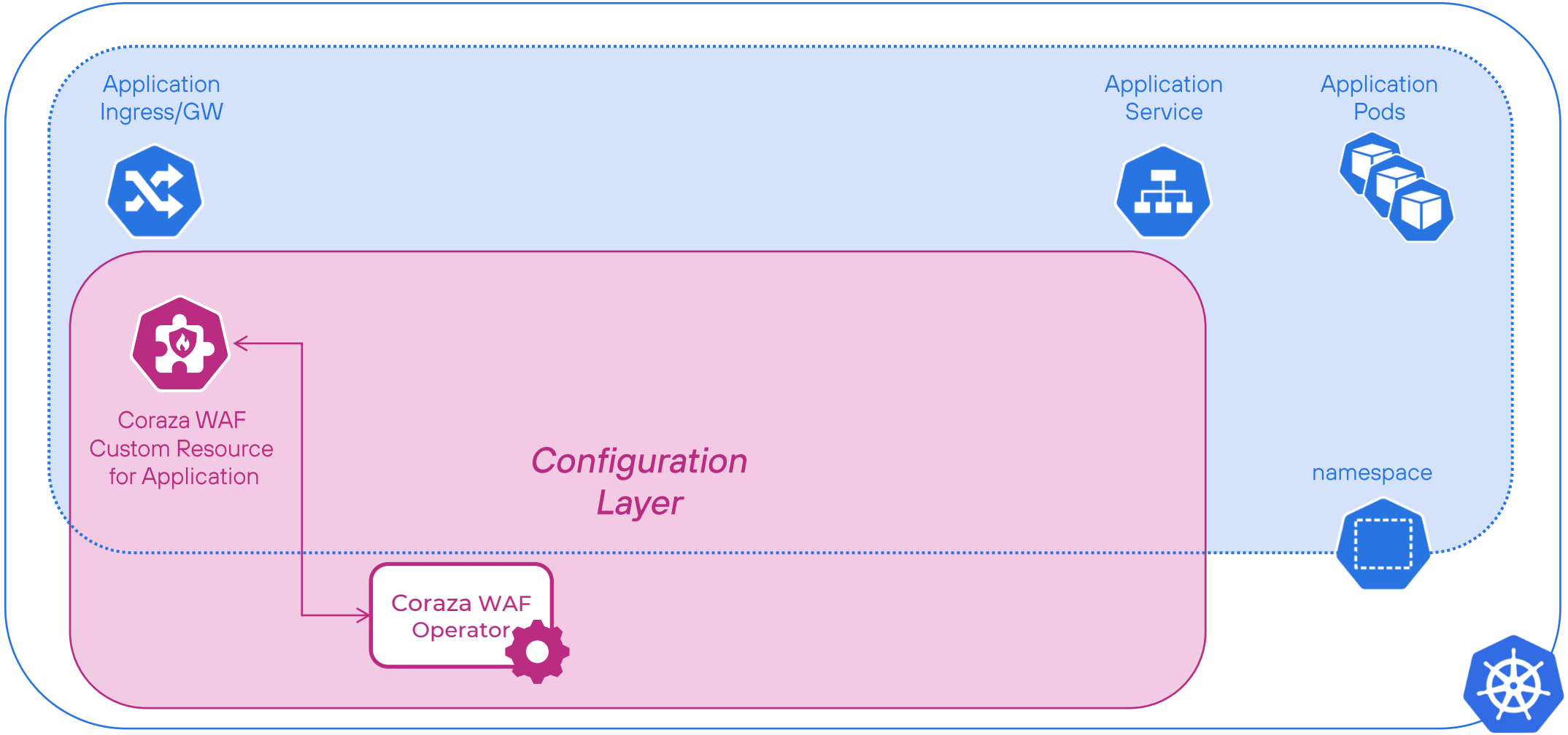
KUBERNETES DEPLOYMENT



Legend: *Kubernetes

APPLICATION-CENTRIC CONFIGURATION



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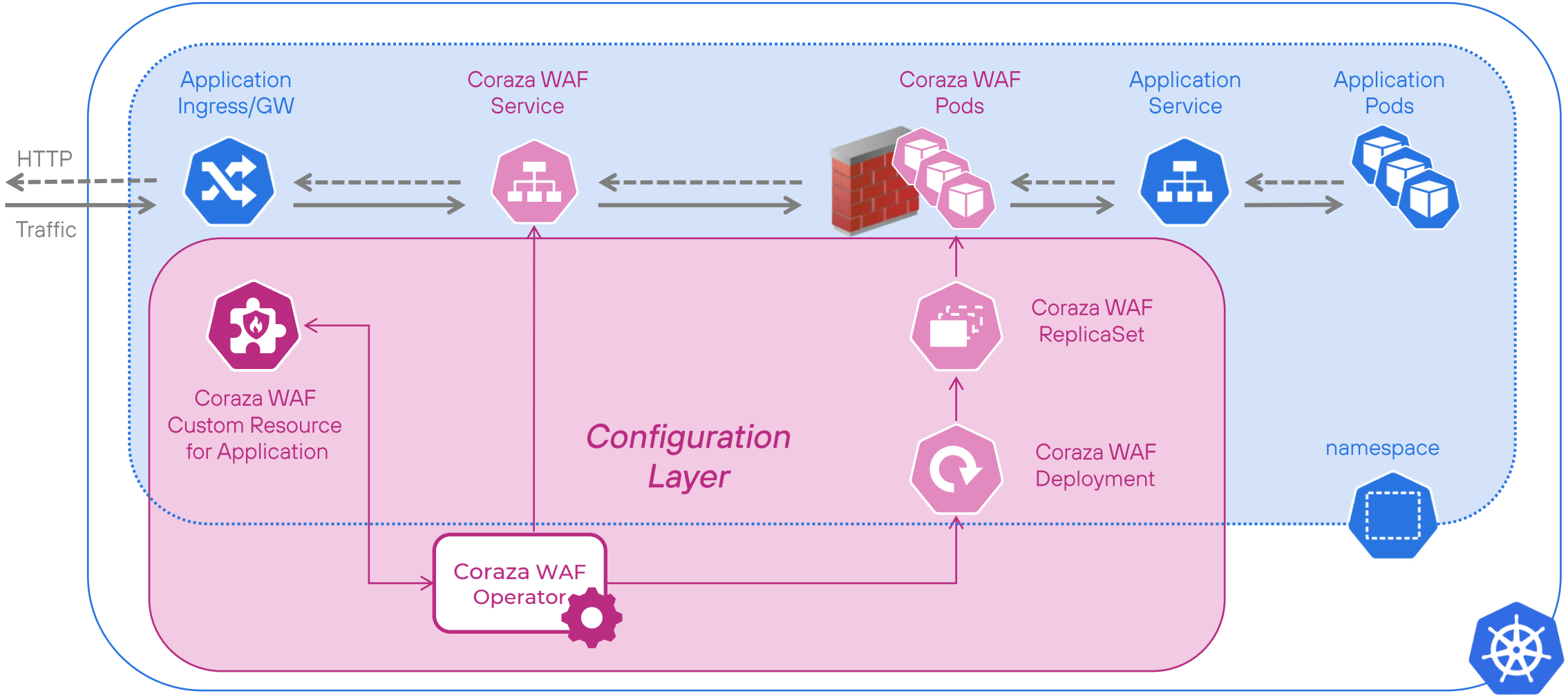
APPLICATION-CENTRIC – NEW WAF SERVICE



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OWASP Coraza Envoy Go-filter

https://github.com/united-security-providers/coraza-envoy-go-filter

Kubernetes App-centric Coraza WAF Operator

https://github.com/united-security-providers/coraza-operator-oss

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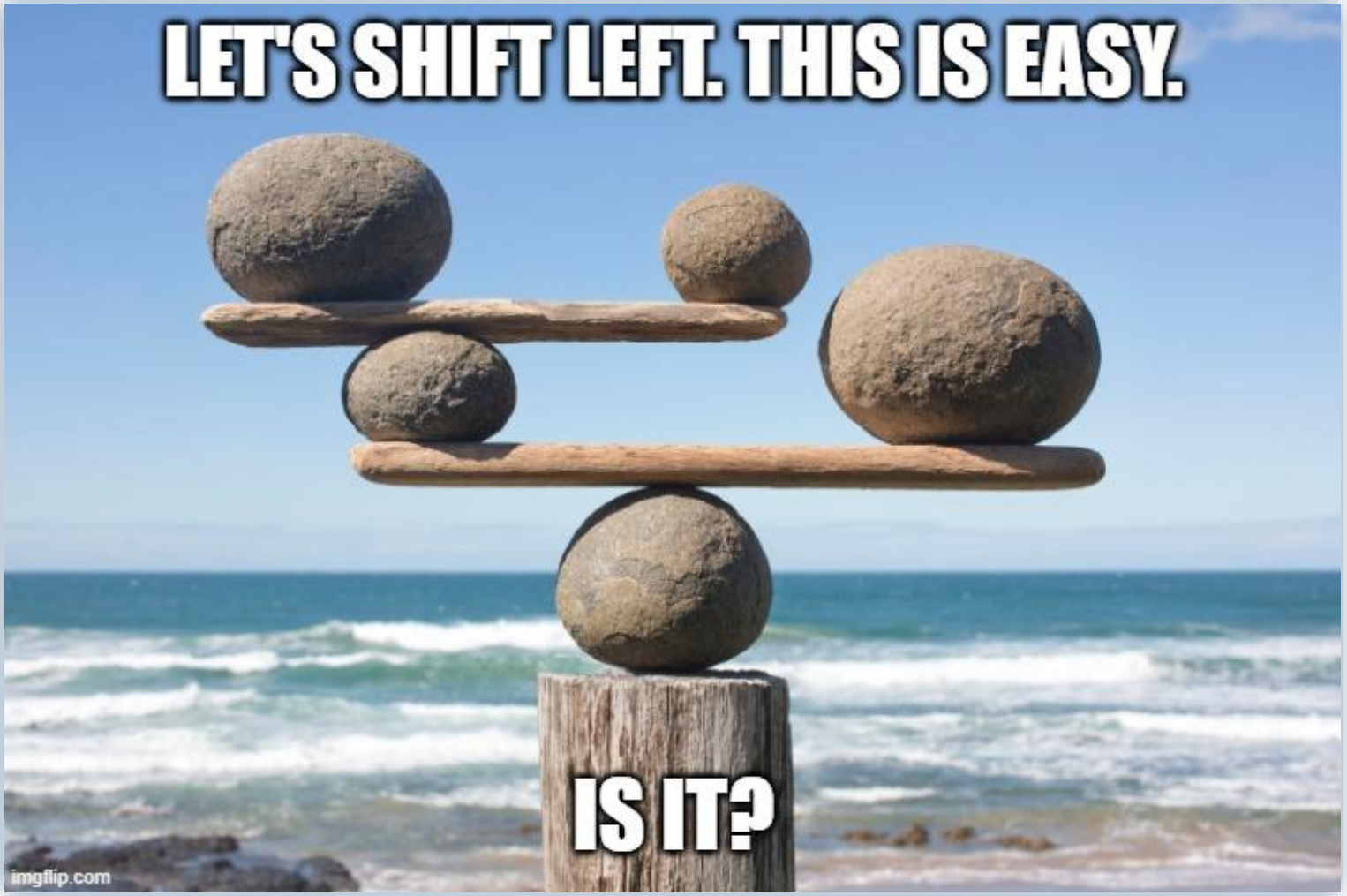
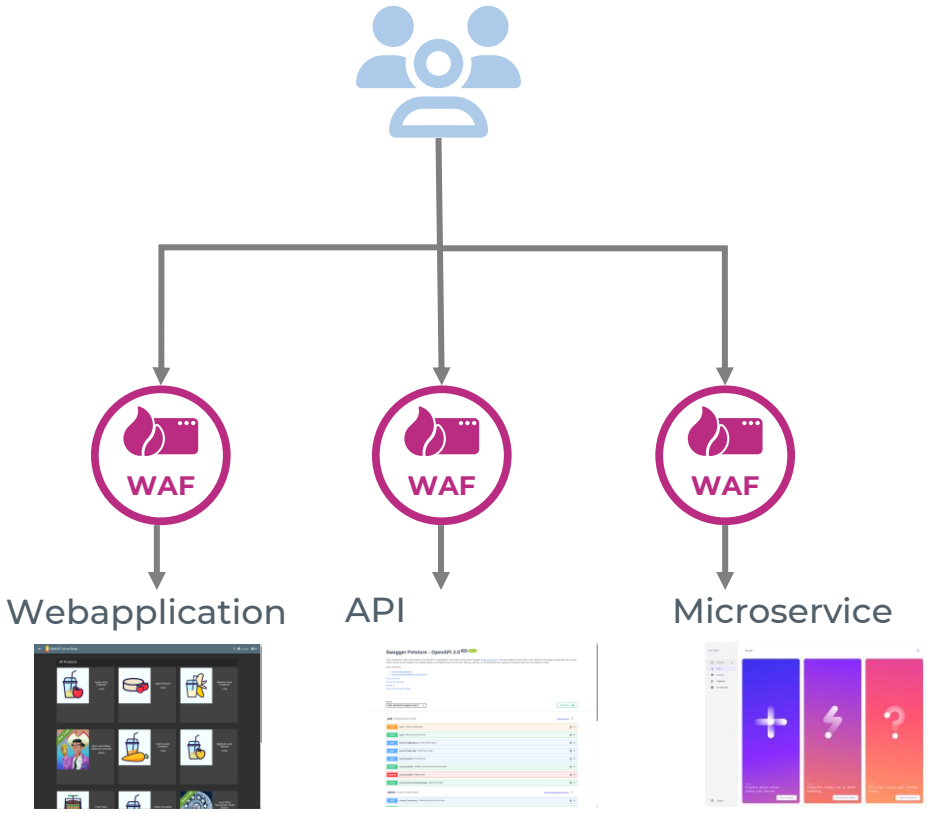
Lessons learned

LESSONS LEARNED

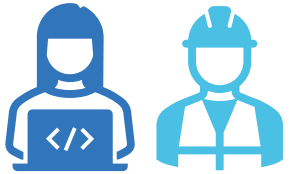


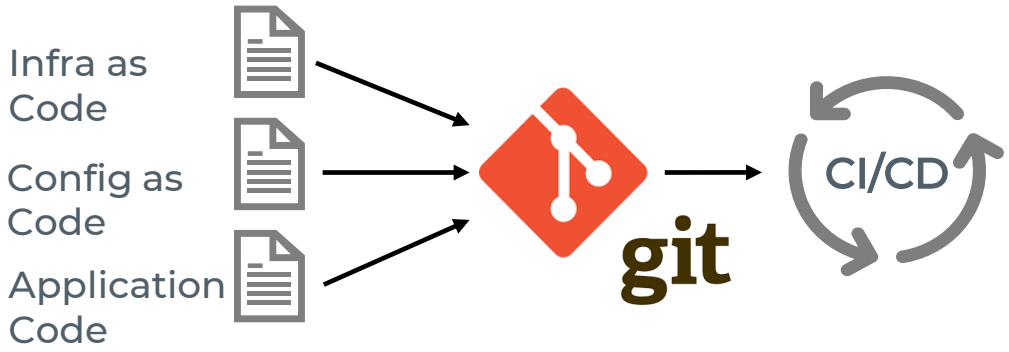
ACHIEVEMENT

Bringing the WAF closer to the application



Using a uniform tool chain throughout the entire process





LESSONS LEARNED

Developers and WAF Admins are not used to working like this

Separation of duty

- Get familiar with **the new process**
- **Connect** developers with the WAF Expert and implement **review processes**
- “**Managed Service**” by the WAF experts
- **Ease of use** is important!

TOPICS TO ADDRESS

It's not on the perimeter!

- **TLS Termination & IP-address related security features** typically not part of the app-centric WAF

Global Virtual Patching is cumbersome!

Global Policy Enforcement

- Use of a **policy engine** to enforce a minimal company policy for the WAF configuration
- **NetworkPolicies** should in be in place, so traffic is always routed through the WAF

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THANK YOU!