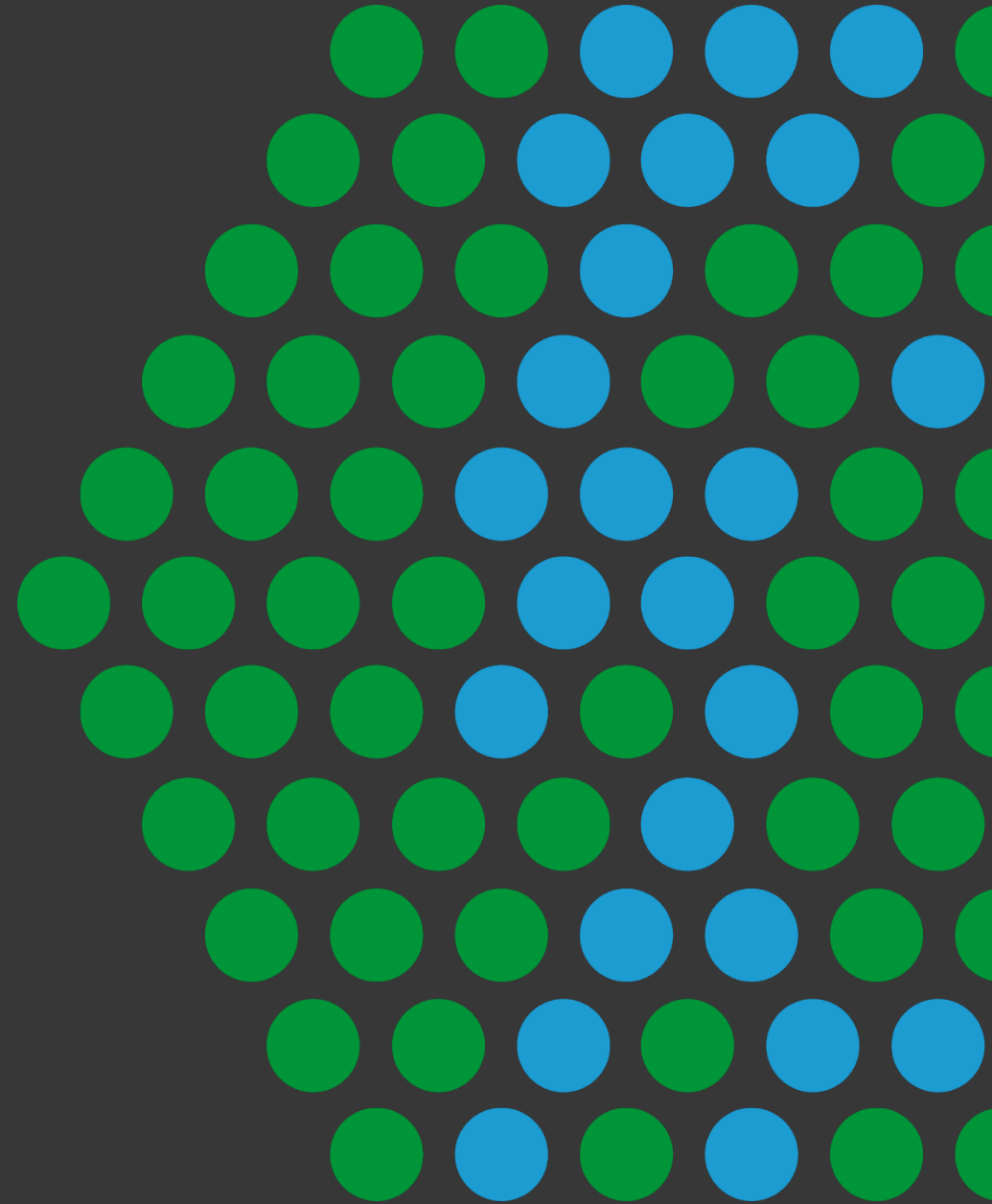




NGINX Application Platform

Jesse Goodier
NGINX Solutions Architect

November 3, 2020

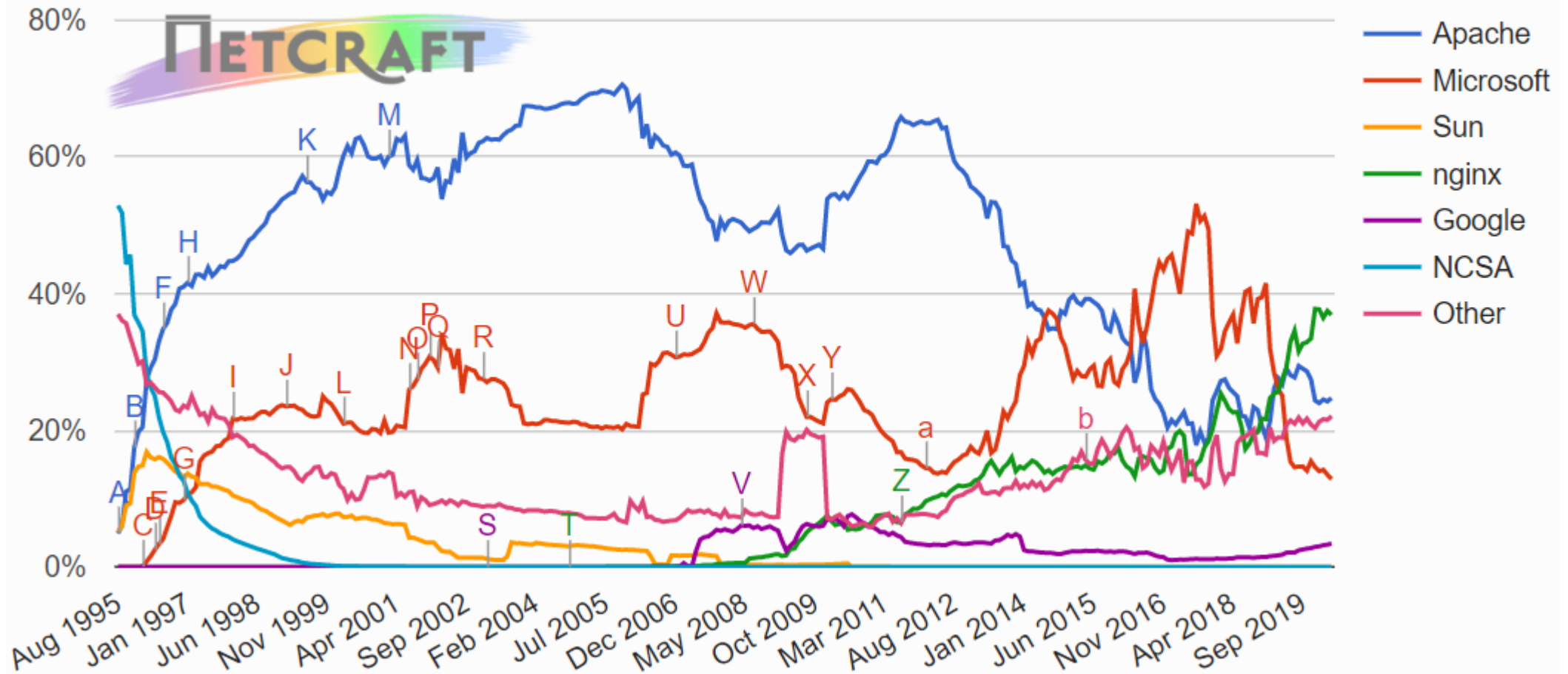


Agenda

1. NGINX Overview
2. Demo and overview of lab
3. Hands-on lab

NGINX

Web server developers: Market share of all sites



NGINX Application Platform

A suite of technologies to develop and deliver digital experiences that span from legacy, monolithic apps to modern, microservices apps.



NGINX Controller
Centralized monitoring and management



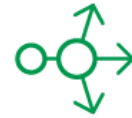
Analytics



Control



Policy



Load Balancer



Content Cache



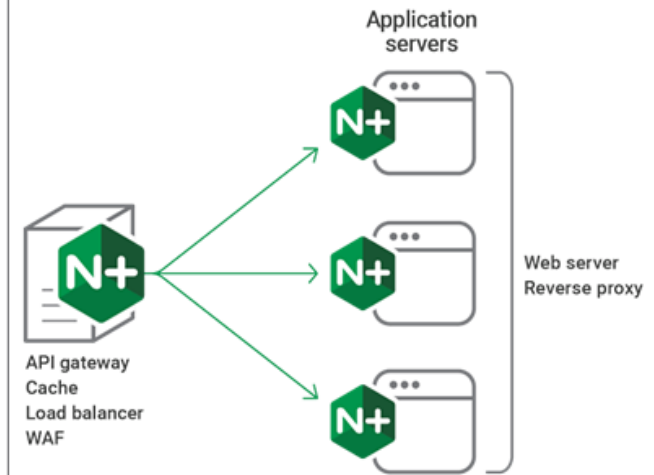
API Gateway



WAF



NGINX Plus
Application delivery



Cloud



Virtual Machine



Container



Bare Metal

Infrastructure – Multi-cloud versatility



```
set $month $2;
set $day $3;
}
chunked_transfer_encoding off;
client_max_body_size 10M;
client_body_buffer_size 8k;
client_body_in_file_only on;

set_formatted_local_time $timestr "%Y-%m-%d %H:%M:%S";
location / {
    proxy_pass http://127.0.0.1:8090;
    proxy_set_header Host $host:$server_port;
    proxy_set_header X-Real-IP $remote_addr;
    proxy_set_header X-Forwarded-For $proxy_add_x_forwarded_for;
    access_log logs/access_log_DVB.$year.$month.$day custom;
}
}
```

Some other times the error is not 'garbage' in the access.log, but the POST body itself is incomplete, or rather wrapped around/shifted in client_body_temp/.

I have not been able to reproduce this error, but when I do I will add it as well.

Attachments (1)

Change History (4)

Changed 4 months ago by mdounin

[comment:1](#)

Please provide **debugging log** for a connection with the error. Additionally, tcpdump of the connection might be helpful as well.

Changed 3 months ago by simon.verzijl.verzity.nl@...

- **Attachment** *error_capture.pcap* added

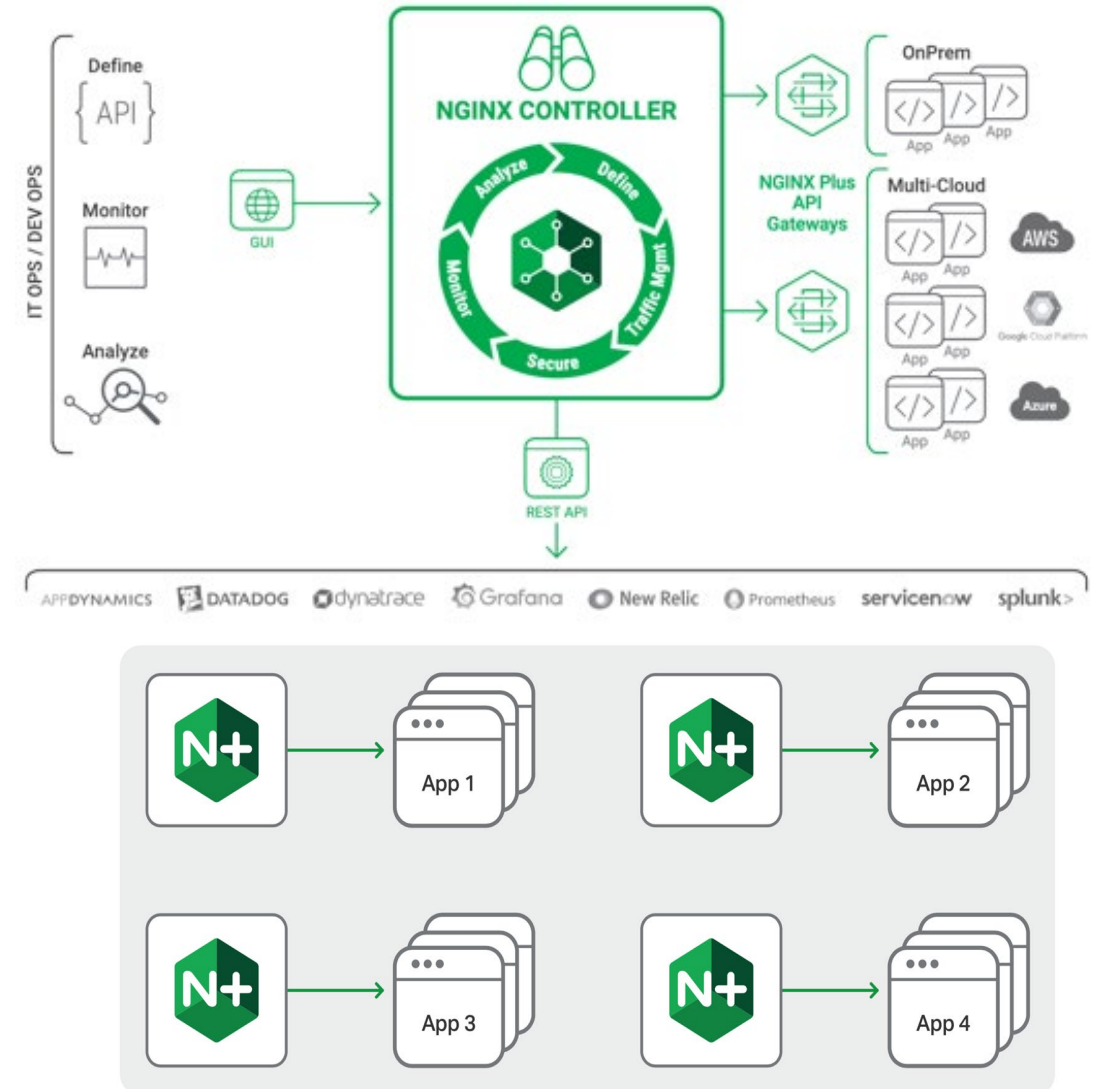
Changed 3 months ago by simon.verzijl.verzity.nl@...

[comment:2](#)

NGINX Plus

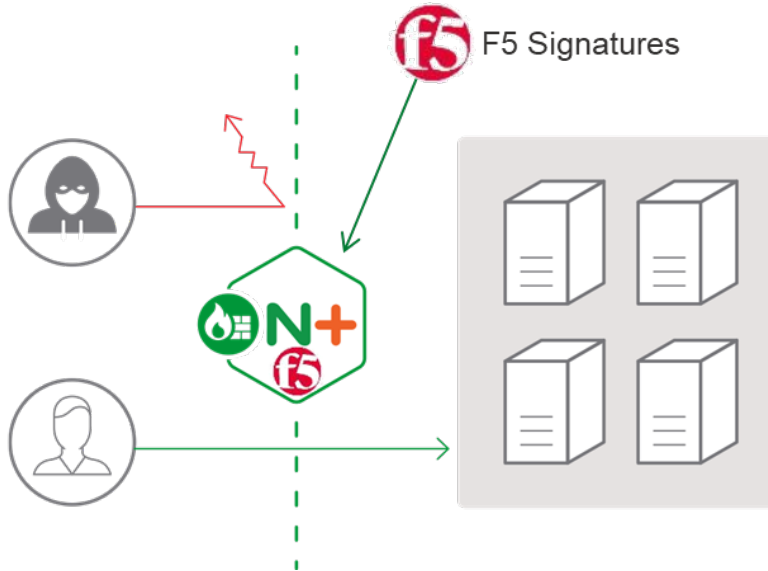
ENTERPRISE SOLUTIONS WITH DYNAMIC MODULES

- Enterprise class visibility with 90+ additional metrics
- JWT Authentication
- Native OpenID Connect support
- Active health checks on status code and response body
- Service discovery using DNS
- Key value store (dynamic IP black-listing, blue/green deployments)
- Dynamic reconfiguration—zero downtime
- Session persistence based on cookie



New From F5!

NGINX App Protect



- ✓ High performing
- ✓ Security protection beyond signatures
- ✓ Trusted Signatures from F5

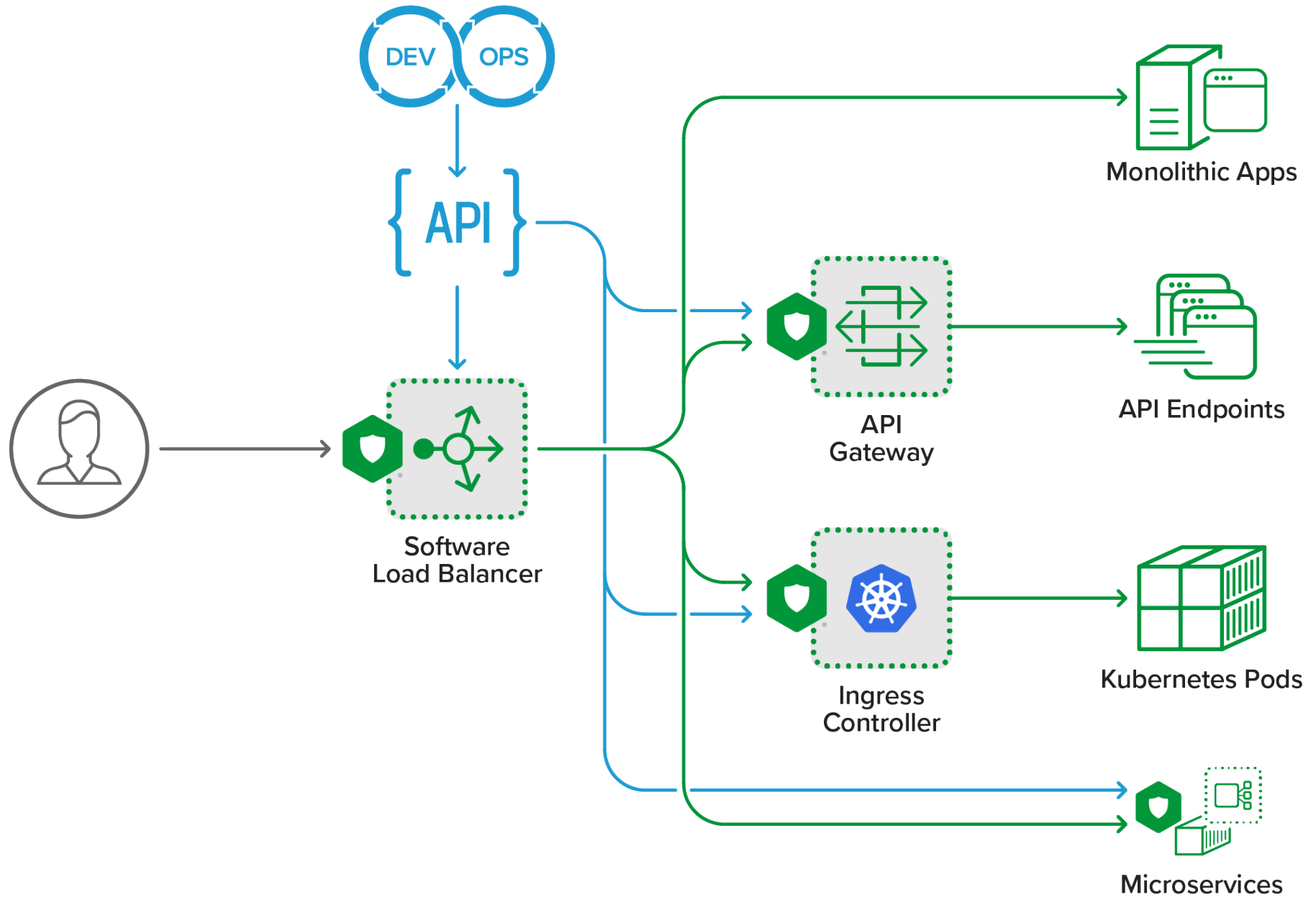


- ✓ Simple CI/CD integration
- ✓ Designed for modern infrastructures
- ✓ Rapid feedback loop for security remediations



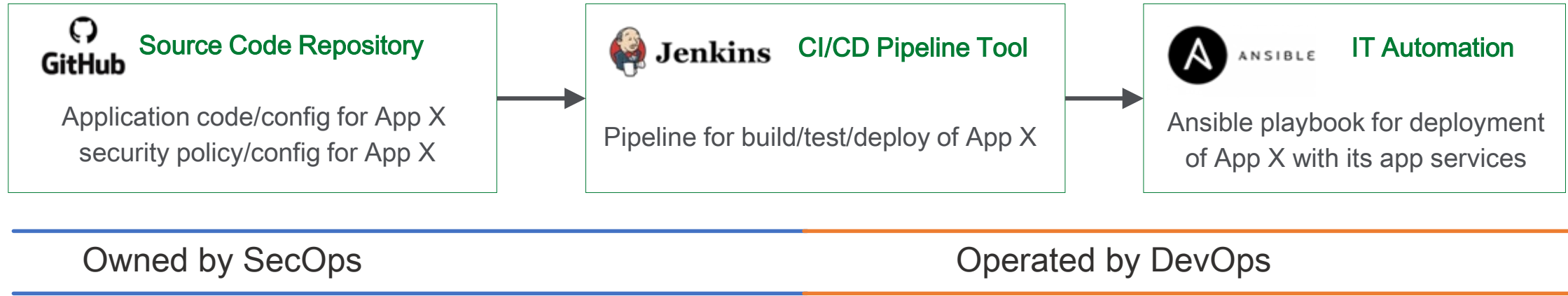
- ✓ Unified F5 declarative interface
- ✓ Security statistics via syslog
- ✓ Backed by F5 Support

Deployment options



Declarative Policy Helps CI/CD Motion

INFRASTRUCTURE AND SECURITY AS CODE



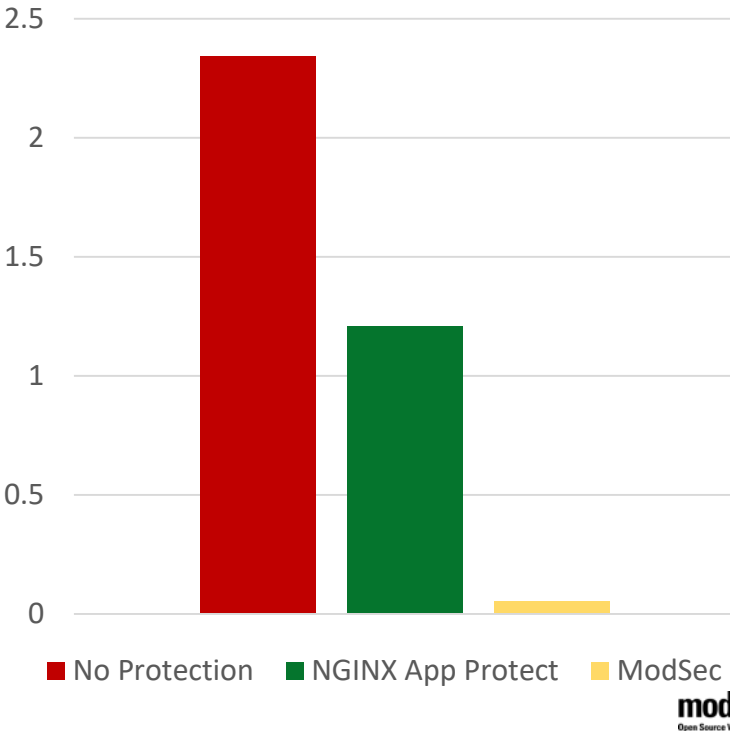
```
{
  "entityChanges": {
    "type": "explicit"
  },
  "entity": {
    "name": "bak"
  },
  "entityKind":
  "tm:asm:policies:filetypes:filetypestate",
  "action": "delete",
  "description": "Delete Disallowed File Type"
}
```

NGINX App Protect Performance

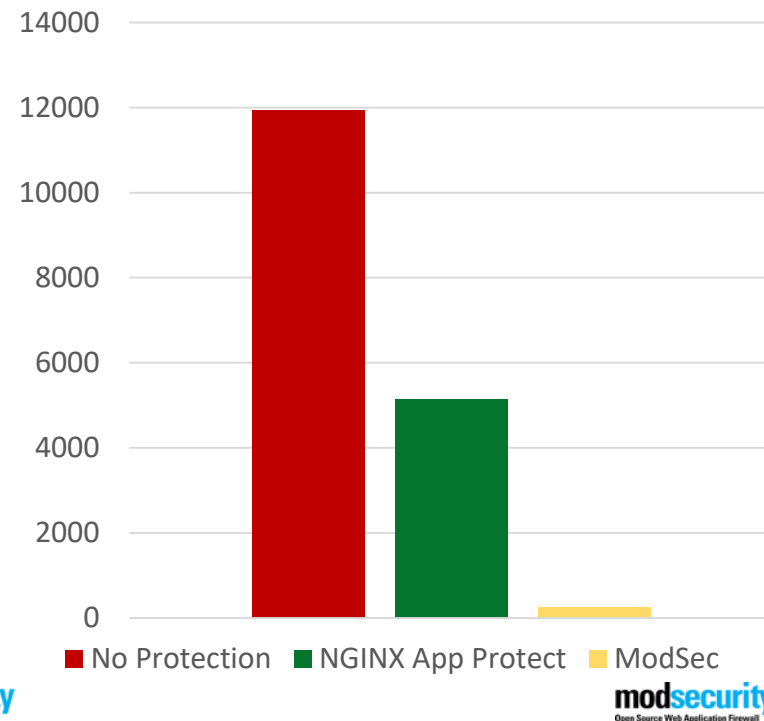
Comprehensive security policy has no impact on latency, and offers better throughput and requests/second when compared to ModSec

- ModSec Configuration: OWASP Top 10 (enable all CRS 3v rules)
- NGINX App Protect Configuration: OWASP Top 10 (Enable signatures), Evasion technique, Data Guard, Disallowed file types, HTTP protocol compliance

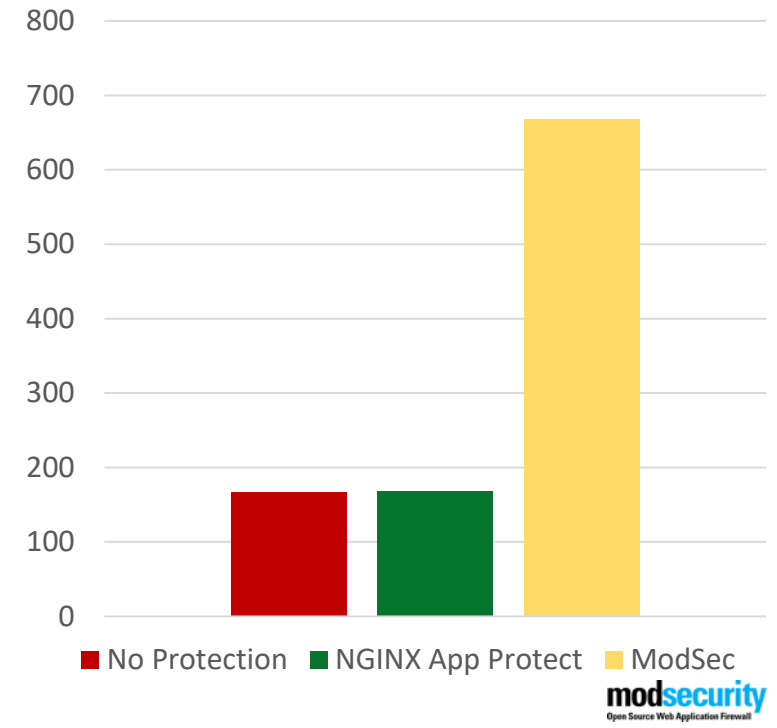
Throughput (MB/sec)



Requests/sec

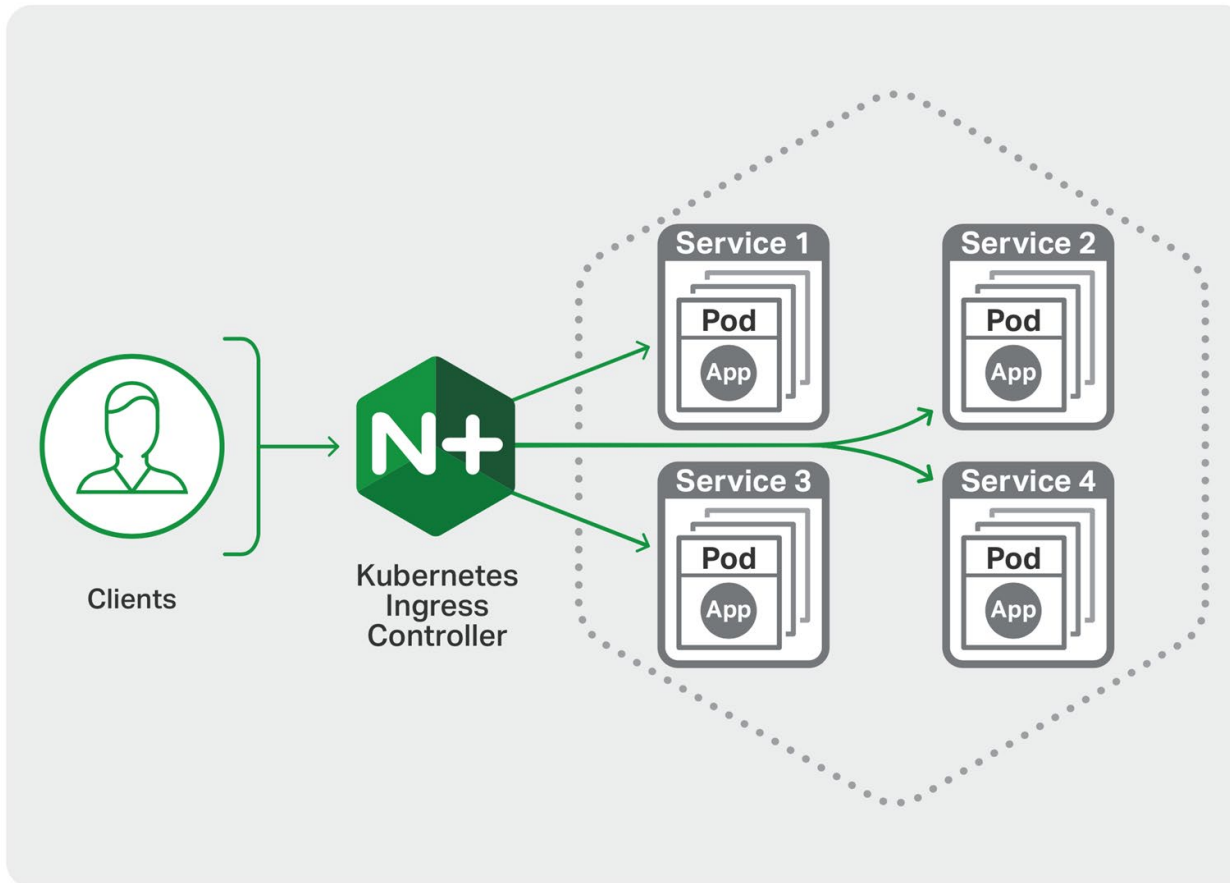


Latency (ms)



Kubernetes Ingress Controller

An advanced Layer 7 load-balancing solution for exposing Kubernetes services to the Internet



- NGINX commonly used as Ingress Controller
- Dynamic reconfiguration of endpoints (no configuration reloading)
- Additional metrics, provided by a streamlined Prometheus exporter
- Dedicated Helm chart repository
- Support for Custom resources to expose more (all) NGINX Plus features as an Ingress

Kubernetes Ingress Controllers

The Key Differences

The table below summarizes the key difference between `nginxinc/kubernetes-ingress` and `kubernetes/ingress-nginx` Ingress controllers. Note that the table has two columns for the `nginxinc/kubernetes-ingress` Ingress controller, as it can be used both with NGINX and NGINX Plus. For more information about `nginxinc/kubernetes-ingress` with NGINX Plus, read [here](#).

Aspect or Feature	<code>kubernetes/ingress-nginx</code>	<code>nginxinc/kubernetes-ingress</code> with NGINX	<code>nginxinc/kubernetes-ingress</code> with NGINX Plus
Fundamental			
Authors	Kubernetes community	NGINX Inc and community	NGINX Inc and community
NGINX version	Custom NGINX build that includes several third-party modules	NGINX official mainline build	NGINX Plus

<https://github.com/nginxinc/kubernetes-ingress/blob/master/docs/nginx-ingress-controllers.md>

Workshop Overview

Hands-On Workshop

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Use [chat](#) or come off mute if you have any questions and we can help you in a breakout room.

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Login to windows jump host as user/user

use web shell

su ubuntu

cd

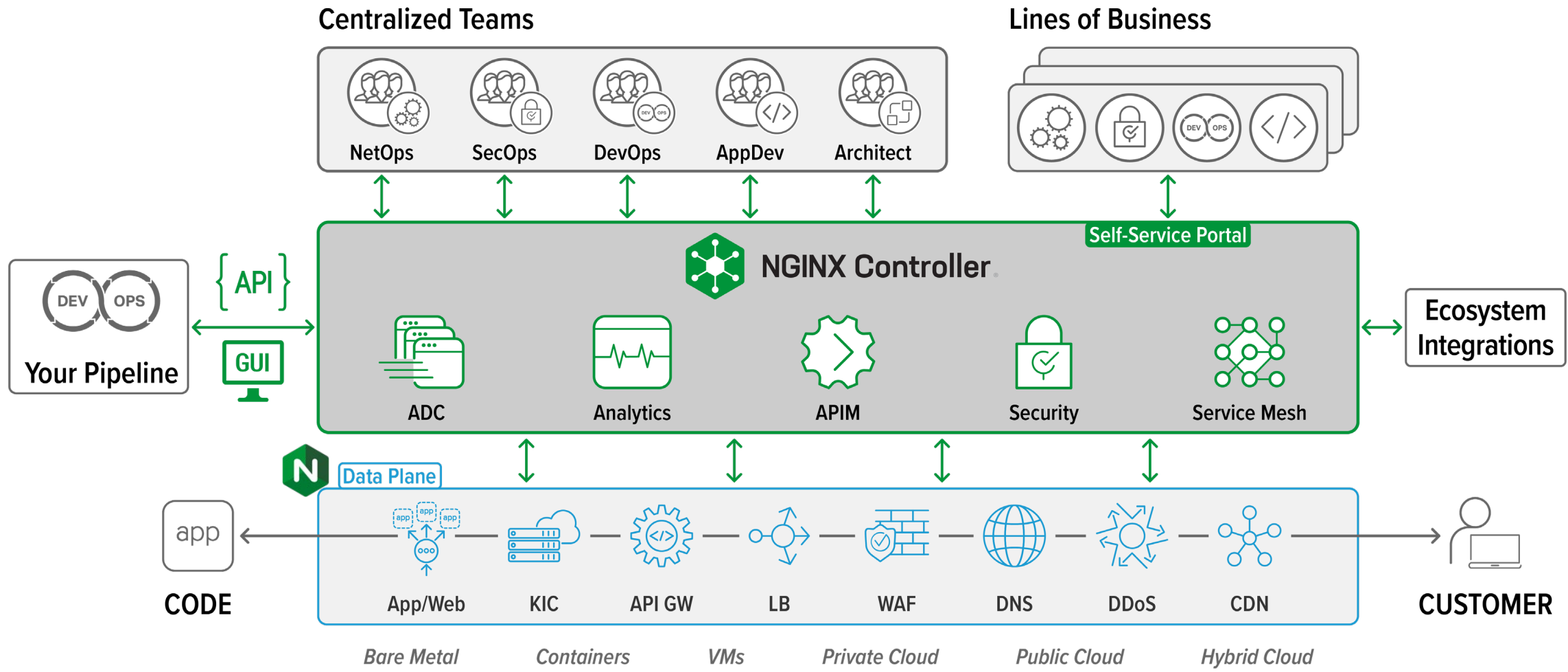
<ctrl><shift>v to paste on windows

What is NGINX Plus?

NON-FUNCTIONAL BENEFITS OF THE NGINX PLUS SUBSCRIPTION

- 1. Technical Support** – Award-winning (Stevie Gold, 9.7/10 customer sat)
- 2. Additional Features** – Enterprise focused, application delivery use case
- 3. Managed Feature Updates** – steady cadence (April, September, December)
- 4. Fully-tested software binaries** – Community-proven, additional NGINX testing
- 5. Certification** – Validated on certified OS and with certified 3rd Party Modules
- 6. Proactive Security Updates** – Bug Fixes/Hot Fixes
- 7. Help with Product Documentation** – advice, clarifications and deep-dive
- 8. Influence Product Direction** – advance roadmap, access to PM and PD
- 9. Indemnity and Compliance** – protection against IP infringement claims
- 10. Confidentiality** – get help in private, not on a public support forum

NGINX Controller 3.0+ Built for Modern App Teams



NGINX Controller



Services



guest user

← All Apps

Trading.ACMEFinancial.net

Overview

Components

ANALYTICS

Critical Analytics

Security Analytics

Security Events

RECENT APP COMPONENTS

Trading Referrals

Trading Transfers Component

Trading App - File Uploads

Trading API Secure

Trading API

Trading.ACMEFinancial.net Status: Configured

Last 6 hours

Compare to:

Prev day

[Go to Analytics](#)

SUMMARY METRICS LATENCY METRICS

HTTP 4XX Errors

624,168

↑1.82% Compare: 613,011

HTTP 5XX Errors

69

↓41.53% Compare: 118

Total Requests

13,948,413

↑0.93% Compare: 13,819,450

Bytes In

1.12 GBps

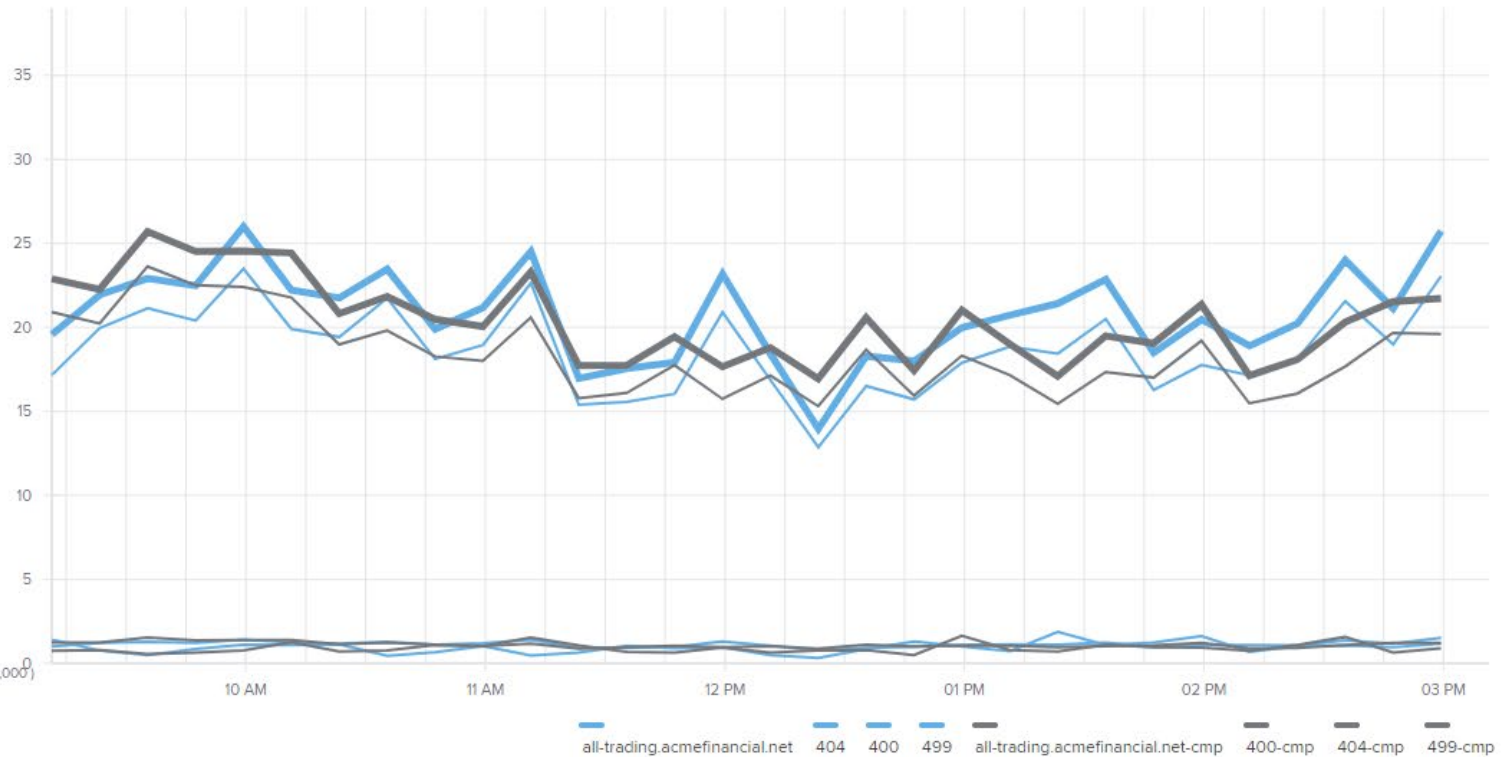
↑0.95% Compare: 1.11

Bytes Out

692.31 GBps

↑0.36% Compare: 689.8

HTTP 4XX Errors ↑1.82%



NGINX Controller

← All Apps

Trading.ACMEFinancial.net

- Overview
- Components

ANALYTICS

- Critical Analytics
- Security Analytics**
- Security Events

RECENT APP COMPONENTS

- Trading Referrals
- Trading Transfers Component
- Trading App - File Uploads
- Trading API Secure
- Trading API

Environments

Gateways

Apps

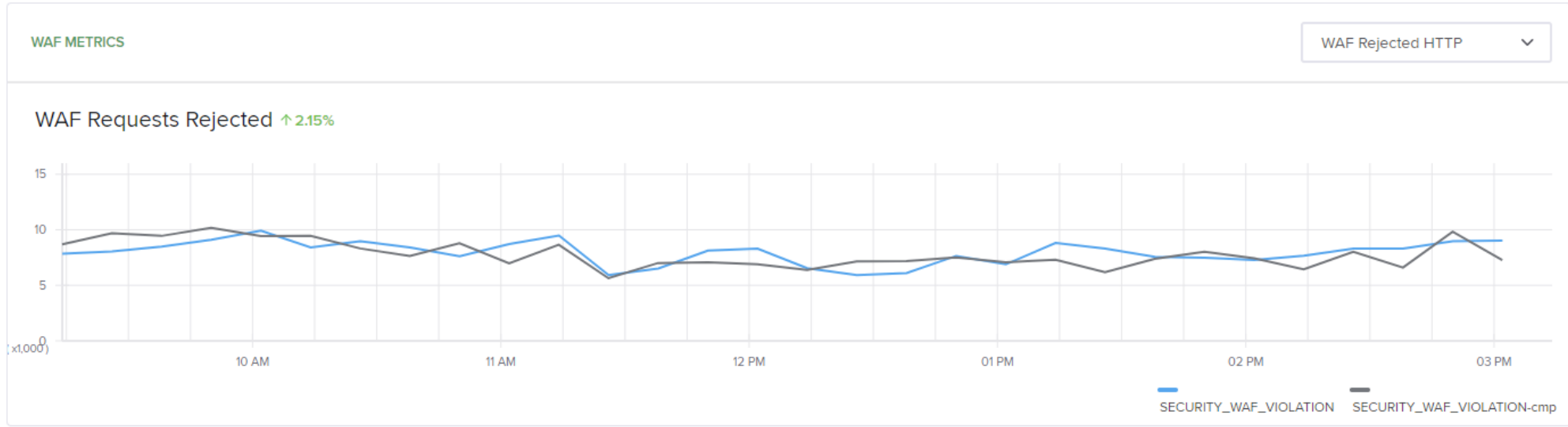
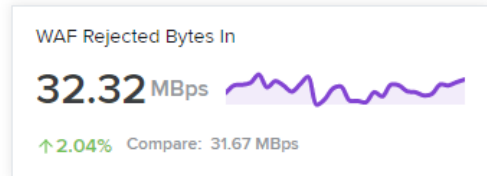
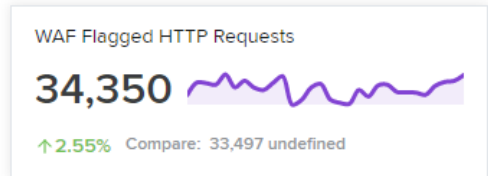
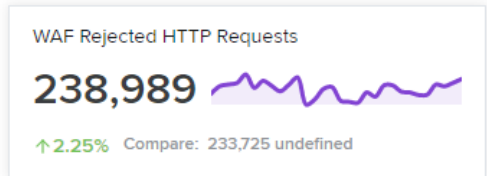
APIs

Certs

Identity Providers

Security Summary

Last 6 hours ▼ Compare to: Prev day ▼



NGINX Controller

← All Apps

Trading.ACMEFinancial.net

- Overview
- Components

ANALYTICS

- Critical Analytics
- Security Analytics
- Security Events**

RECENT APP COMPONENTS

- Trading Referrals
- Trading Transfers Component
- Trading App - File Uploads
- Trading API Secure
- Trading API

Environments

Gateways

Apps

APIs

Certs

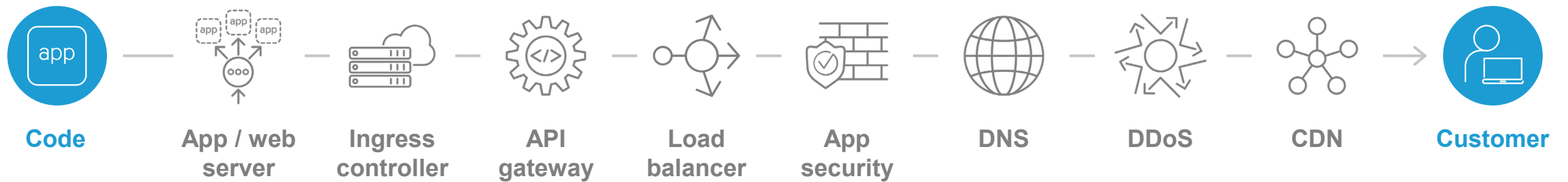
Identity Providers

Security Events

Show Filters Last 24 hours Refresh Filter

Time	Component	Remote Address	Outcome	Reason	Attack Type
2020-08-27T15:20:10Z	trading-main-cas	101.20.23	REJECTED	SECURITY_WAF_VIOLATION	Non-browser Client, Cross Site Scripting (XSS)
2020-08-27T15:20:10Z	trading-main-cas	101.20.23	REJECTED	SECURITY_WAF_VIOLATION	Non-browser Client, Abuse of Functionality, Cross Site Scripting (XSS)
2020-08-27T15:20:10Z	trading-main-cas	101.20.23	REJECTED	SECURITY_WAF_VIOLATION	Non-browser Client, Cross Site Scripting (XSS)
2020-08-27T15:20:10Z	trading-main-cas	101.20.23	REJECTED	SECURITY_WAF_VIOLATION	Non-browser Client, Cross Site Scripting (XSS)
2020-08-27T15:20:10Z	trading-main-cas	101.20.23	PASSED	SECURITY_WAF_FLAGGED	SQL-Injection
2020-08-27T15:20:10Z	trading-main-cas	101.20.23	REJECTED	SECURITY_WAF_VIOLATION	Non-browser Client, Cross Site Scripting (XSS)
2020-08-27T15:20:10Z	trading-main-cas	101.20.23	REJECTED	SECURITY_WAF_VIOLATION	Non-browser Client, Cross Site Scripting (XSS)
2020-08-27T15:20:10Z	trading-main-cas	101.20.23	REJECTED	SECURITY_WAF_VIOLATION	Non-browser Client, Abuse of Functionality, Cross Site Scripting (XSS)
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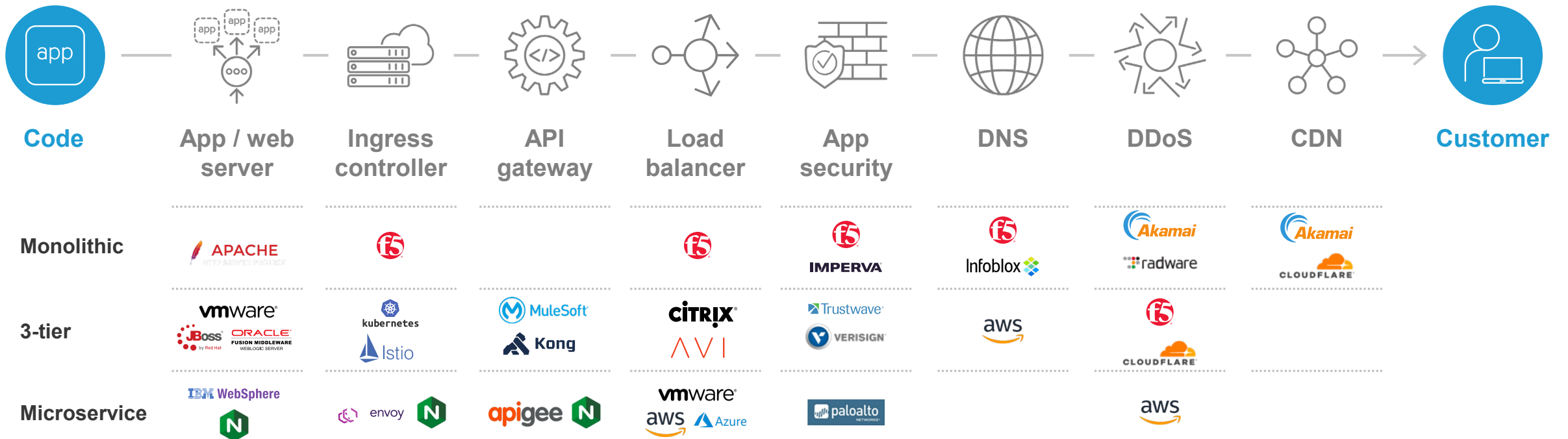
Customers have several services along the application data path



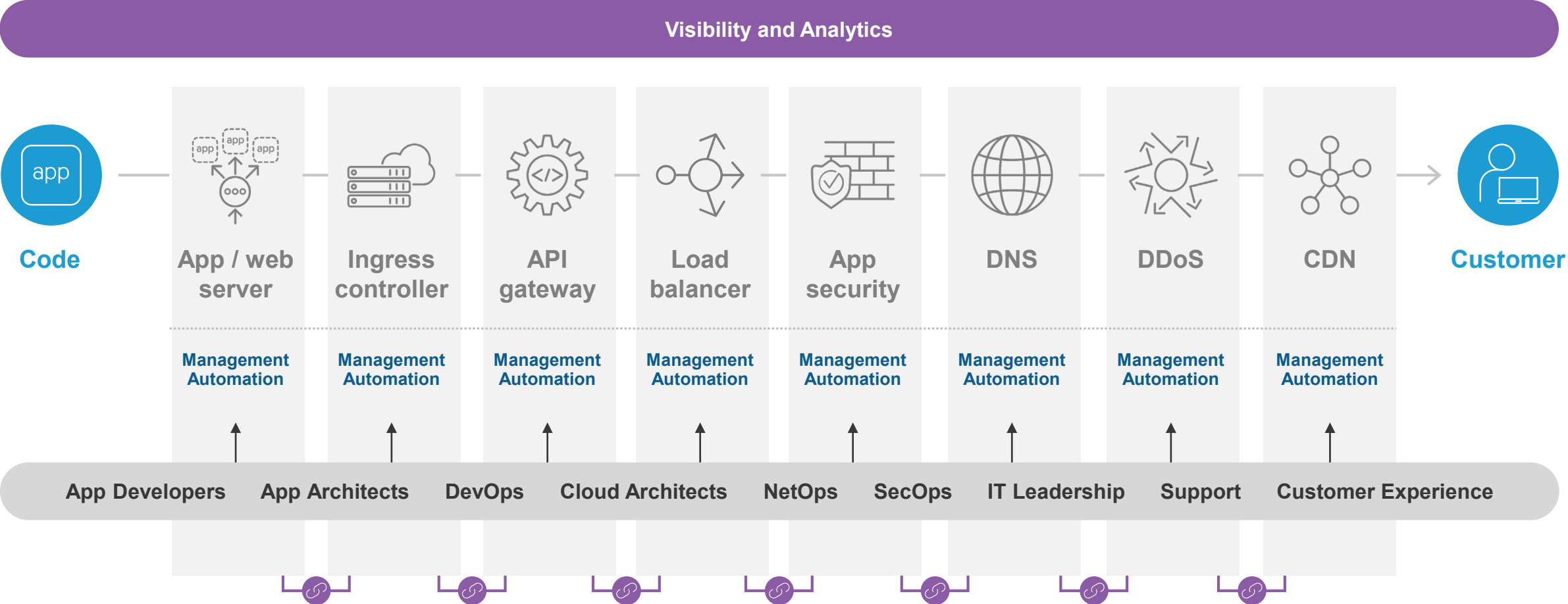
Different vendors for each application architecture



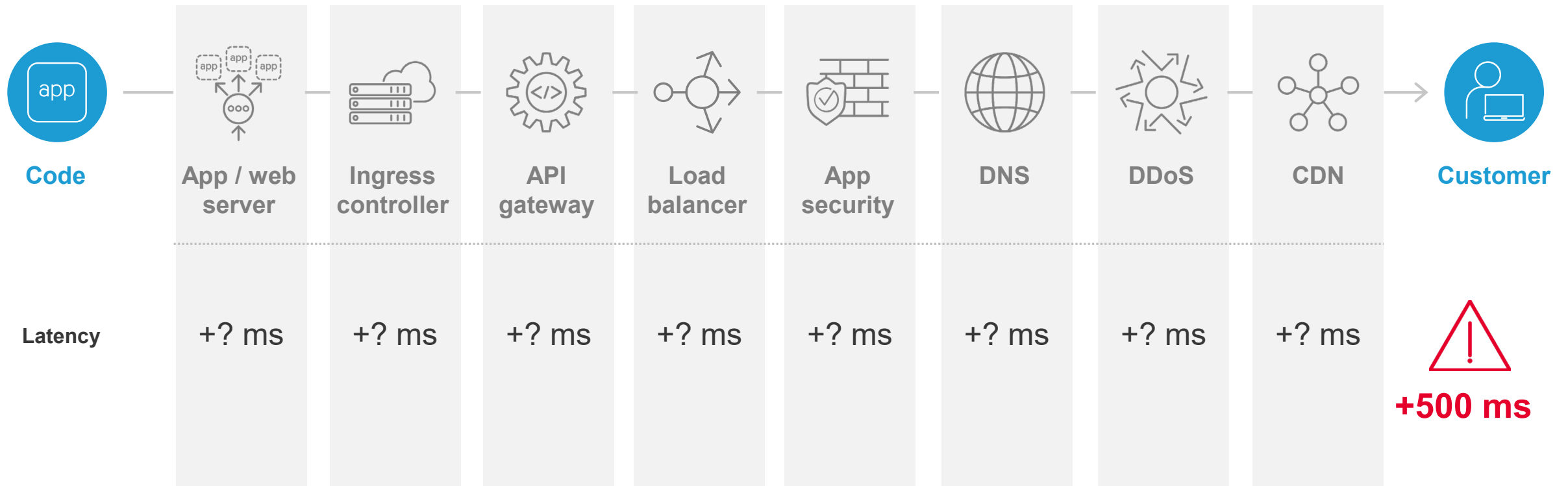
Visibility and Analytics



Limited orchestration across the data path



And unable to easily pinpoint issues

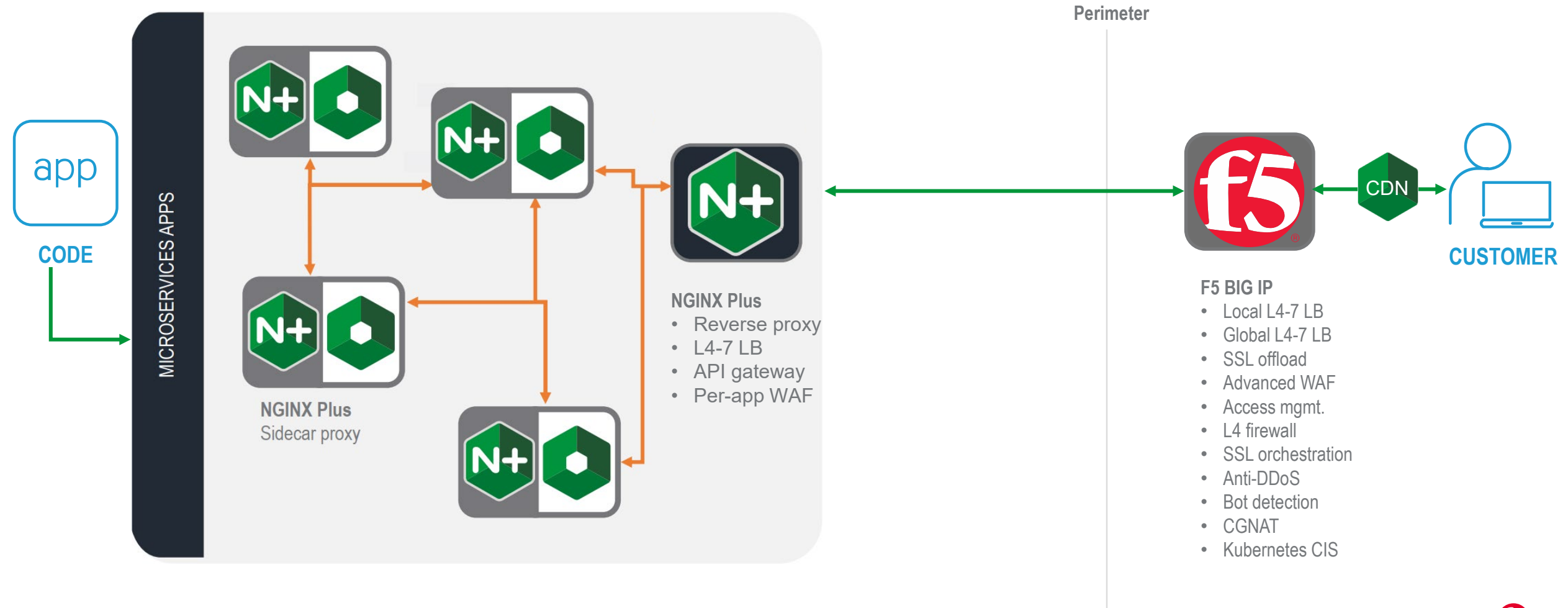




Modern Application Architecture

Scale ADCs Across Multi-Cloud

Consistent, Secure and Portable Apps

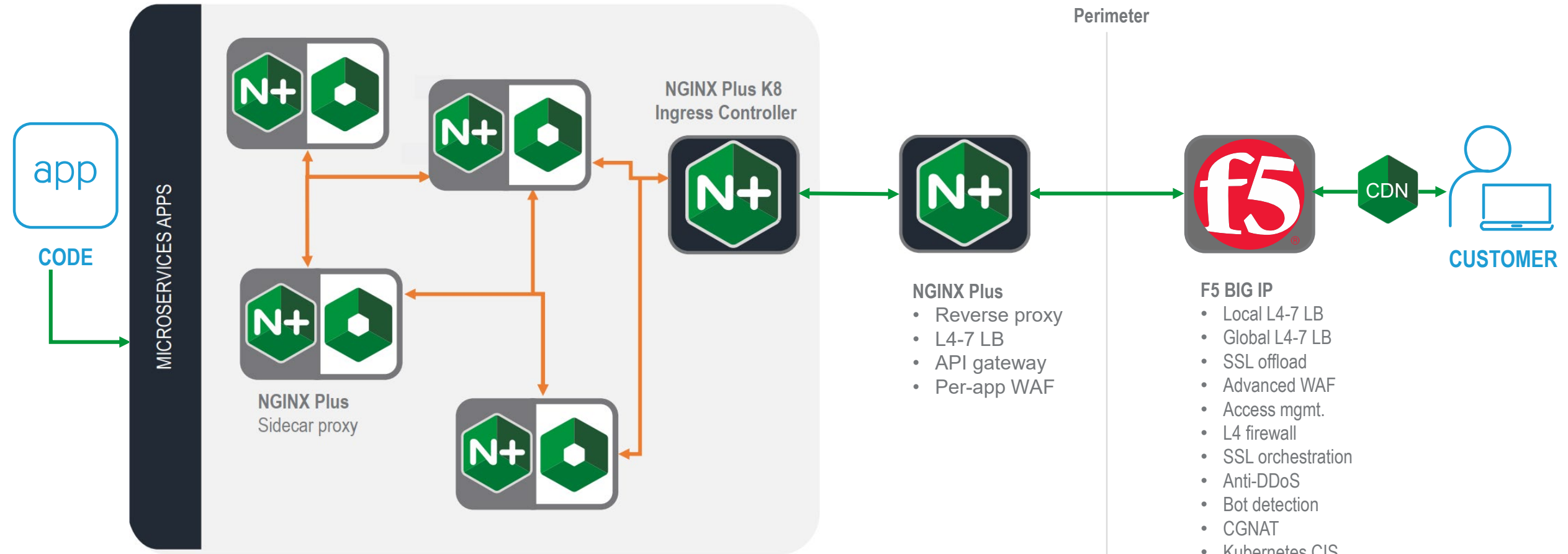




Modern Application Architecture

Scale ADCs Across Multi-Cloud

Consistent, Secure and Portable Apps



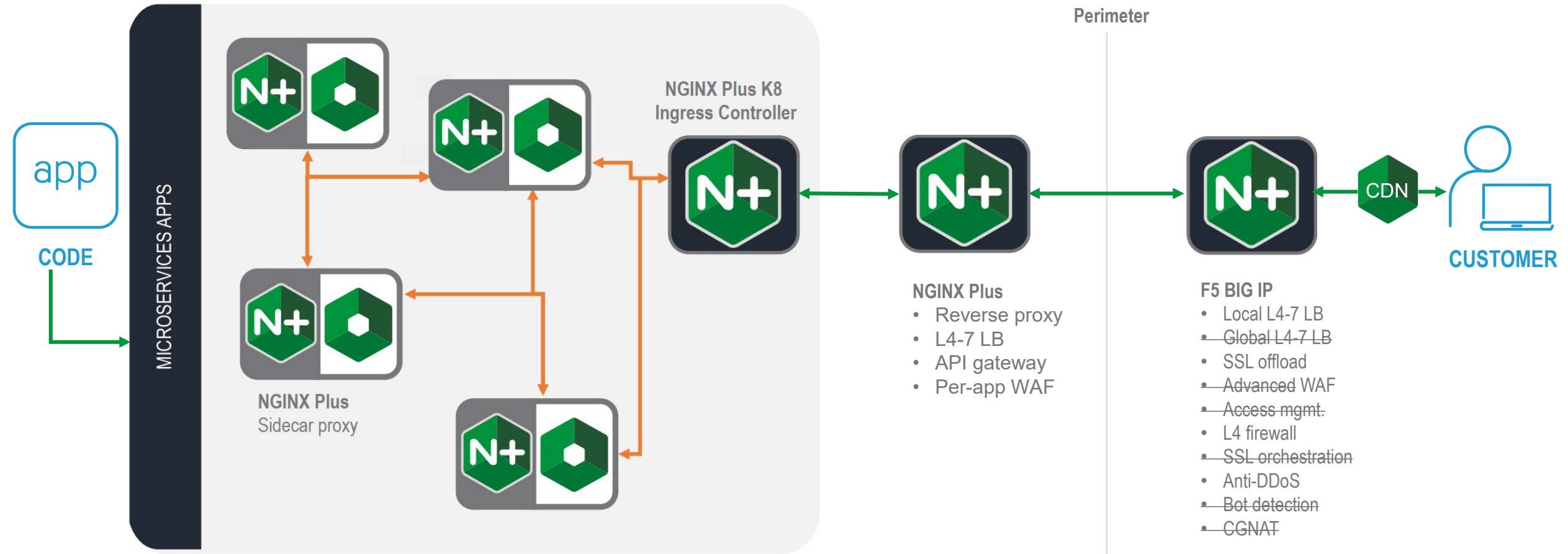


Modern Application Architecture

Scale ADCs Across Multi-Cloud

Consistent, Secure and Portable Apps

Perimeter



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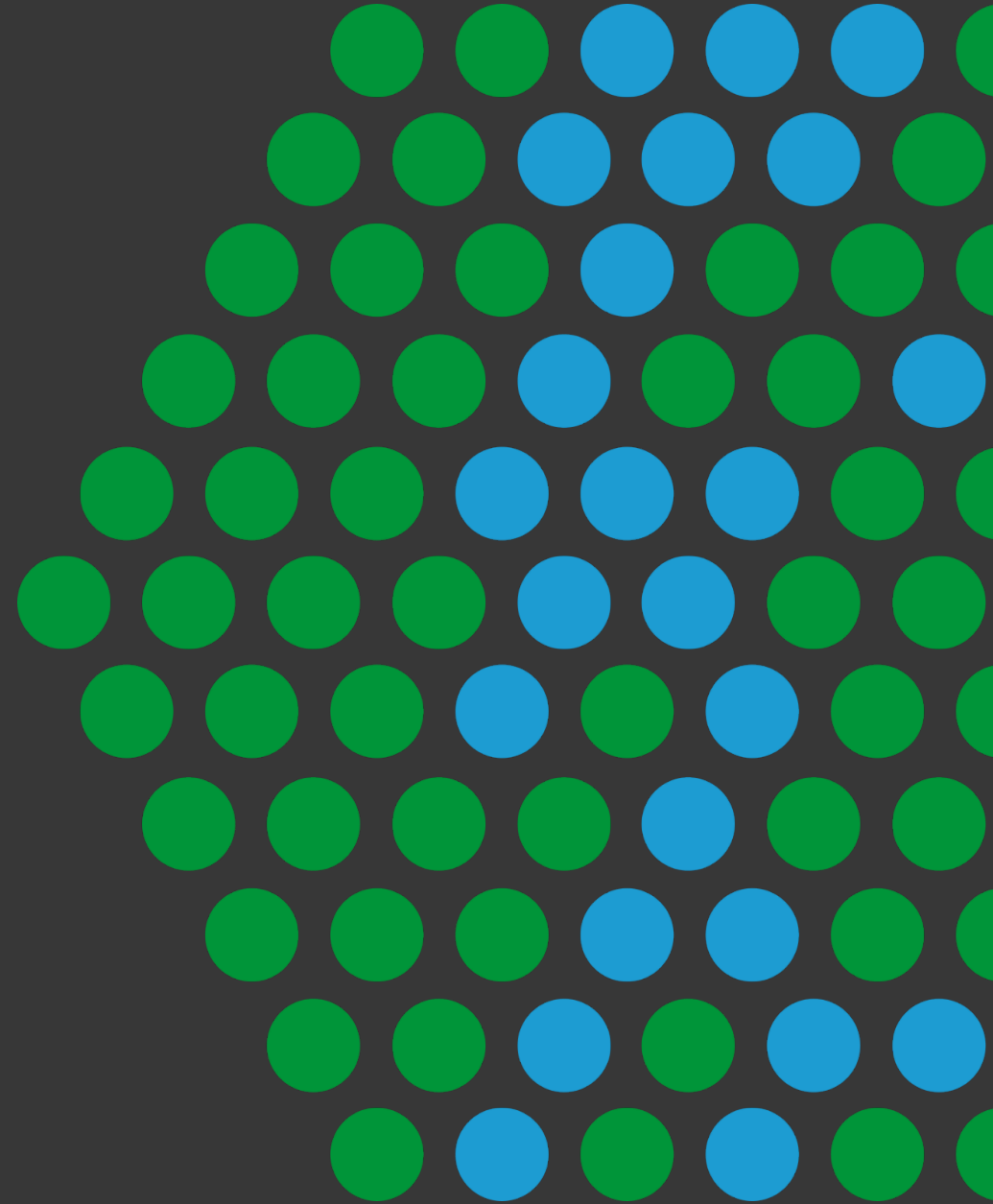
su ubuntu

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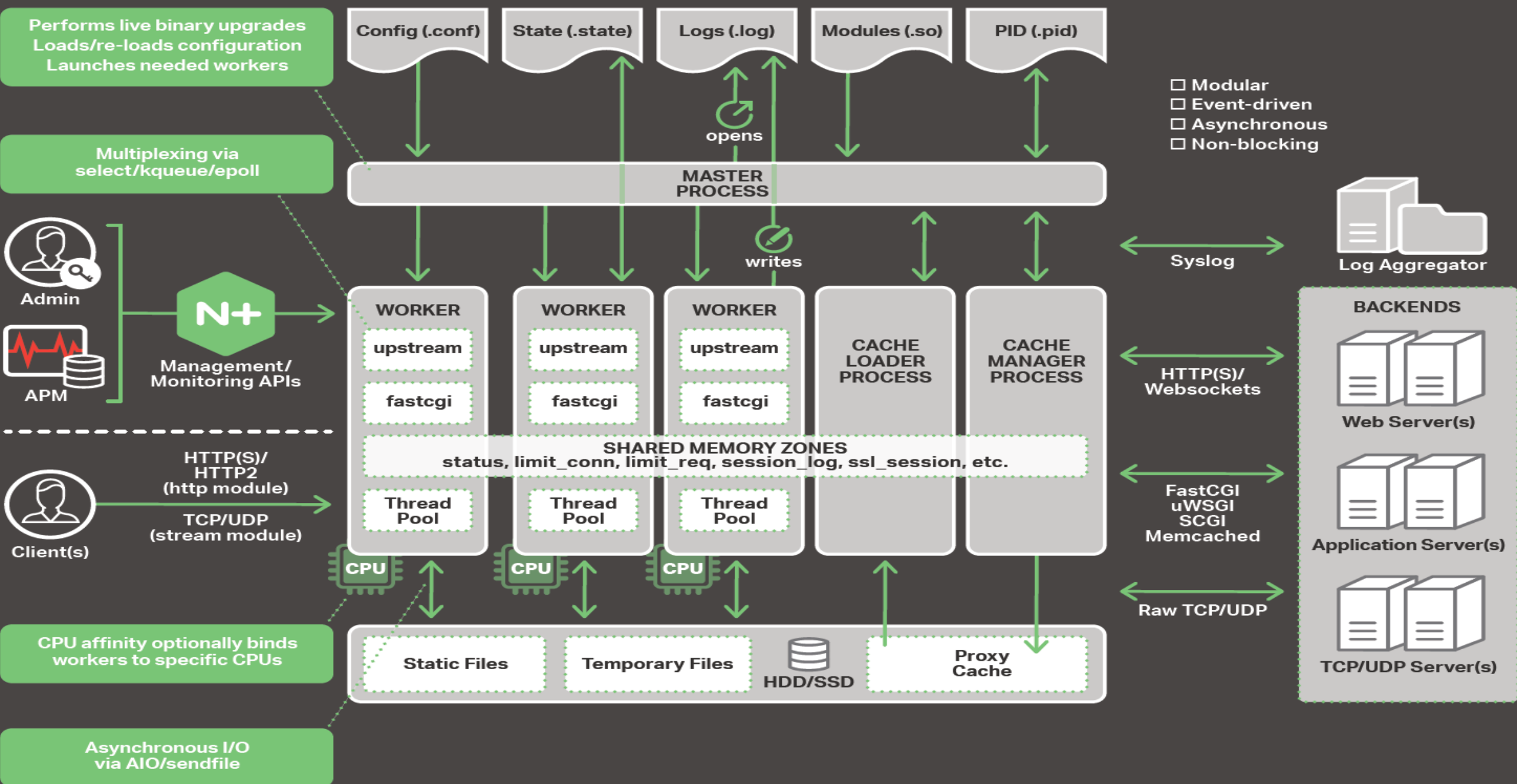
<ctrl><shift>v to paste on windows



Thank You



The Powerful and Efficient Architecture of NGINX



What is an API?

CONNECTIVE TISSUE OF THE DIGITAL WORLD

API: – Application Programming Interface

API clients or consumers such as a mobile app invoke API calls to deliver functionality.

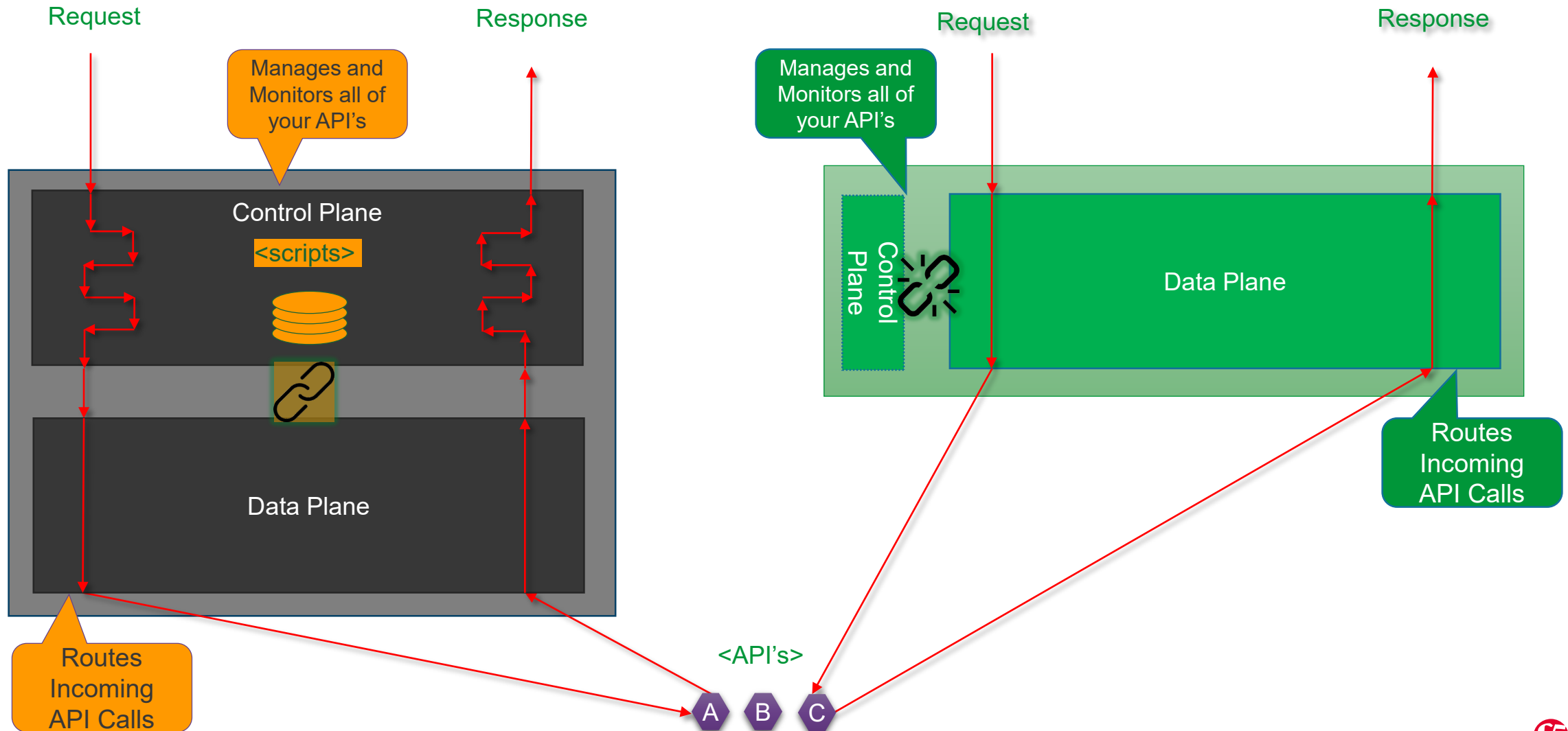
Examples:

- Uber uses Google Maps APIs
<https://maps.googleapis.com/maps/api/directions/json?origin=Disneyland&destination=Universal+Studios+Hollywood>
Uber spent \$58 million on it over three years
- Dropbox:
https://api.dropboxapi.com/2/file_requests/count:
Returns the total number of file requests owned by this user. Includes both open and closed file requests.
{ "file_request_count": 15 }

NGINX API Management under the covers

Traditional API Management

NGINX API Management



NGINX Controller Terminology

NGINX Controller, NGINX Plus, and F5

Environment

Collection of Apps; RBAC

App

Collection of Components

Gateway

FQDN; TLS; HTTP Methods

Component

- URI
- Backend Workload Group
- Backend Workload URI

server; Virtual Server

location; iRule Path

upstream; Pool

upstream server; Pool Member