



THAT
CONFERENCE





Finding Your Way to a Microservices Architecture

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#WORKATNM



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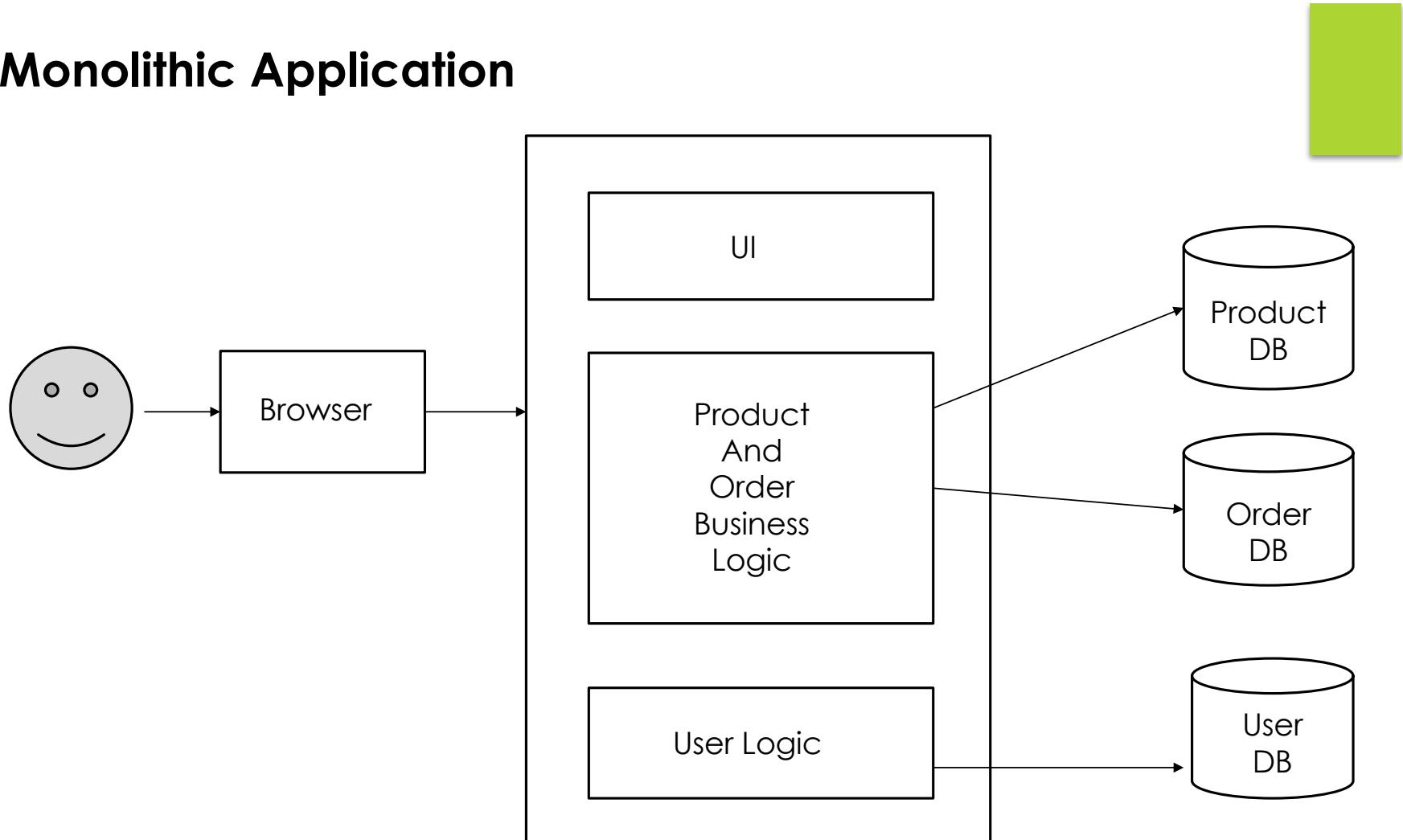
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What to Expect

- ▶ Why convert from a Mono
- ▶ What is a Microservice
- ▶ A Review of REST
- ▶ Micro SPAs
- ▶ Deployment Patterns
- ▶ Operation Mode

Monolithic Application



Scaling the Mono

- Development – Multiple Teams in ONE Repo
- Continuous Deployment – updates = outages, higher risk
- Increased Transactions – run more copies of the application?

Is this good enough? Is it working?



“Frustration, although quite painful at times,
is a very positive and essential part of success”
~ Bo Bennett



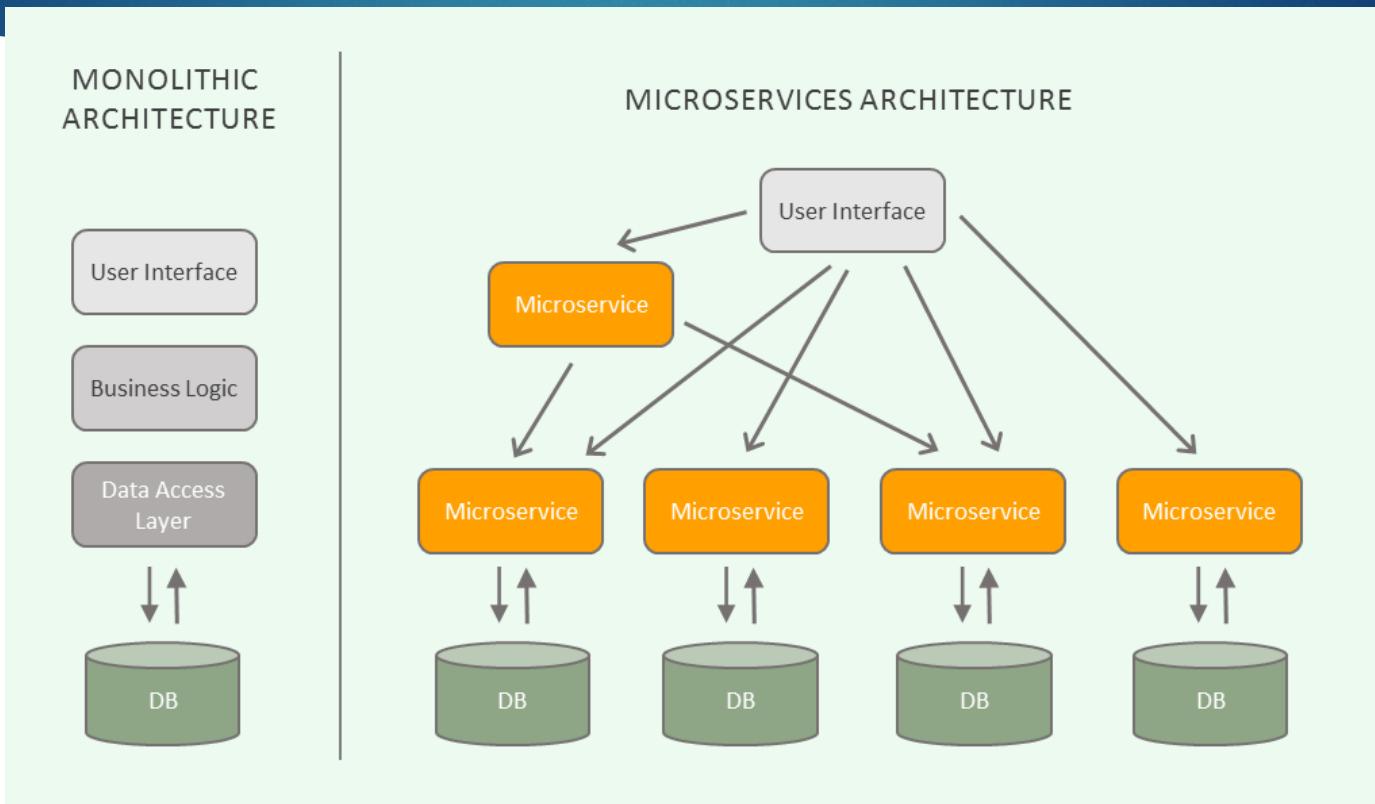
Software Microarchitecture

- ▶ Set of patterns used together to realize parts of a system
- ▶ Viewed as a building block for piecing together cohesive portions of an overall architecture
- ▶ Solves coarser grained, higher-level problems that cannot be solved by a single pattern
- ▶ Higher level abstraction than the individual patterns

Microservices

- ▶ is an architectural style that structures an application as a collection of loosely coupled services, which implement business capabilities.
- ▶ enables the continuous delivery and deployment of large, complex applications.
- ▶ enables an organization to evolve its technology stack.

Say What?



Reasons to Convert

- ▶ Decomposes complexity
- ▶ Developed independently
- ▶ Deployed independently
- ▶ Scaled independently
- ▶ Smaller deploys
- ▶ More frequent deploys
- ▶ Lower deployment risk

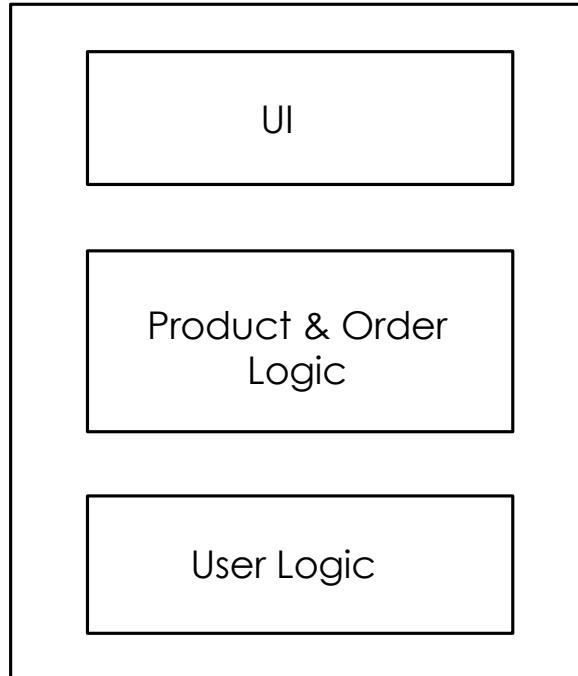


REST Review - Constraints

- ▶ Uniform Interface
- ▶ Client-server
- ▶ Stateless
- ▶ Cacheable
- ▶ Layered System
- ▶ Code on Demand

Define Your Subdomain

Mono App



- ▶ e-Commerce Store
- ▶ Product
- ▶ Order
- ▶ User

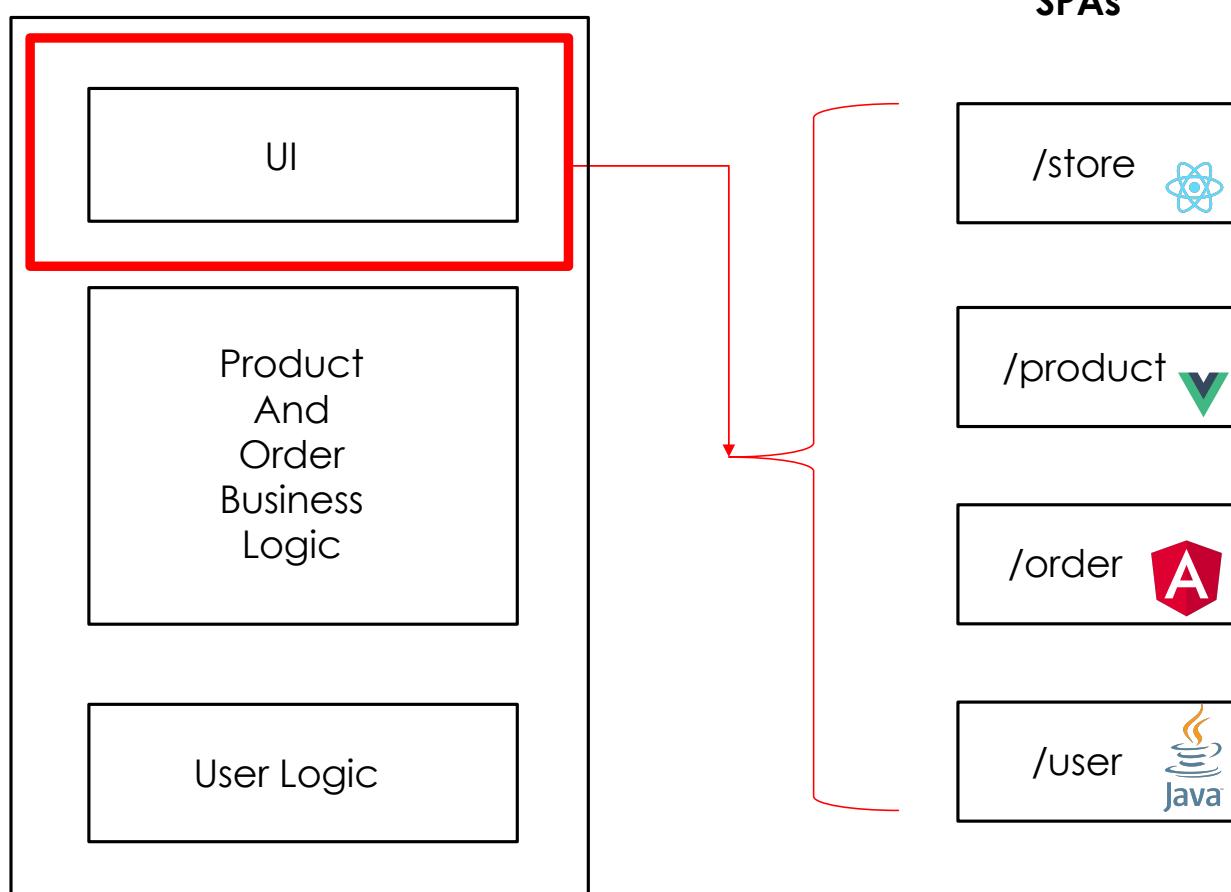
REST Review

- ▶ HTTP verbs – GET, POST, PUT, DELETE
- ▶ Sensible Resource Names
- ▶ XML and JSON
- ▶ Fine-grained Resources
- ▶ Idempotence
- ▶ Safety

REST Review

GET	/products	Get list of products
GET	/products/:id	Find product by ID
GET	/products/:id/name	Get name of product by ID
POST	/products	Create new product
PUT	/products	Update existing product
DELETE	/products	Delete existing product

Micro SPAs





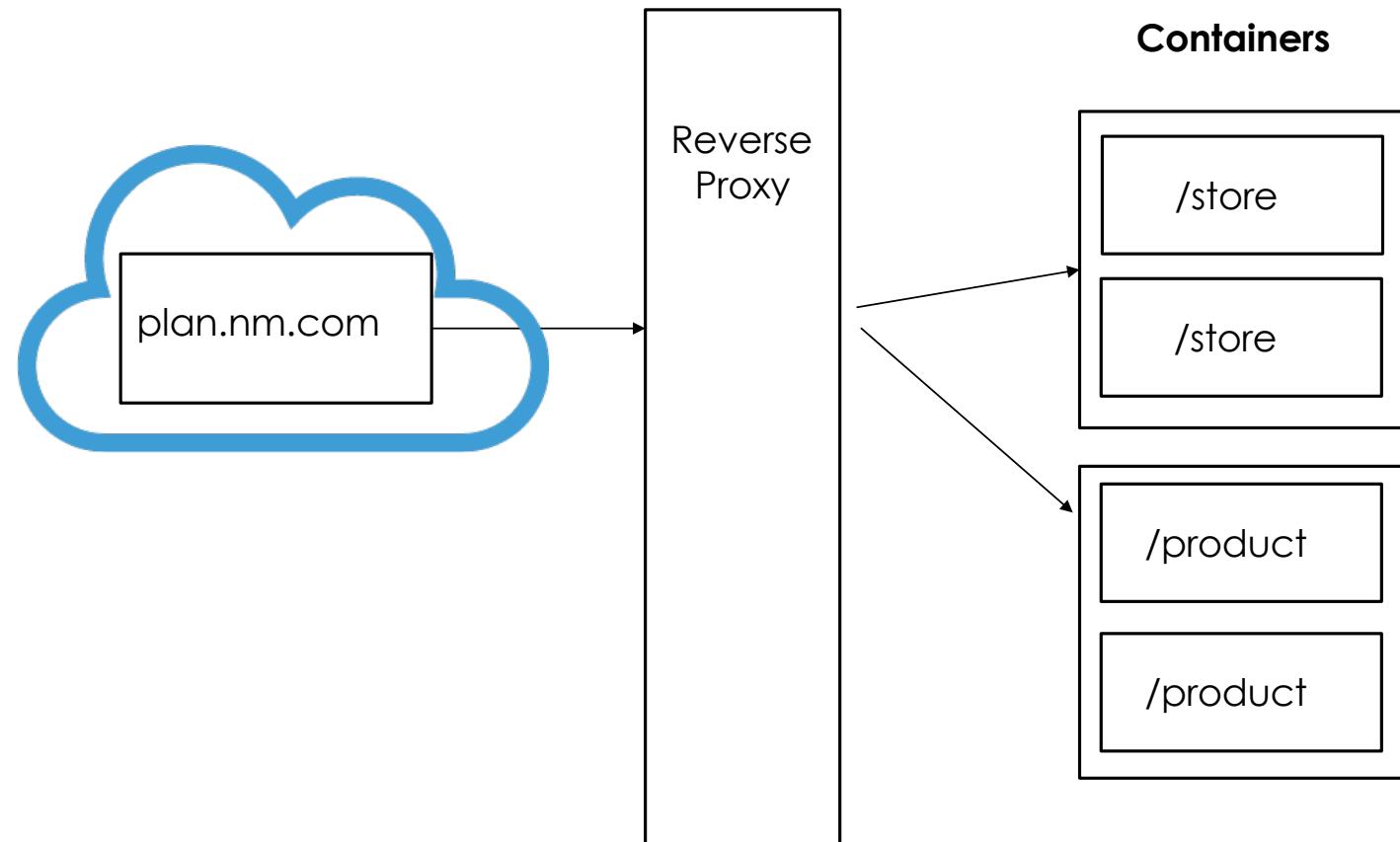
Deployment Patterns

- ▶ Multi service instances per host
- ▶ Service instance per:
 - ▶ Host
 - ▶ VM
 - ▶ Container
- ▶ Serverless deployment
- ▶ Service deployment platform

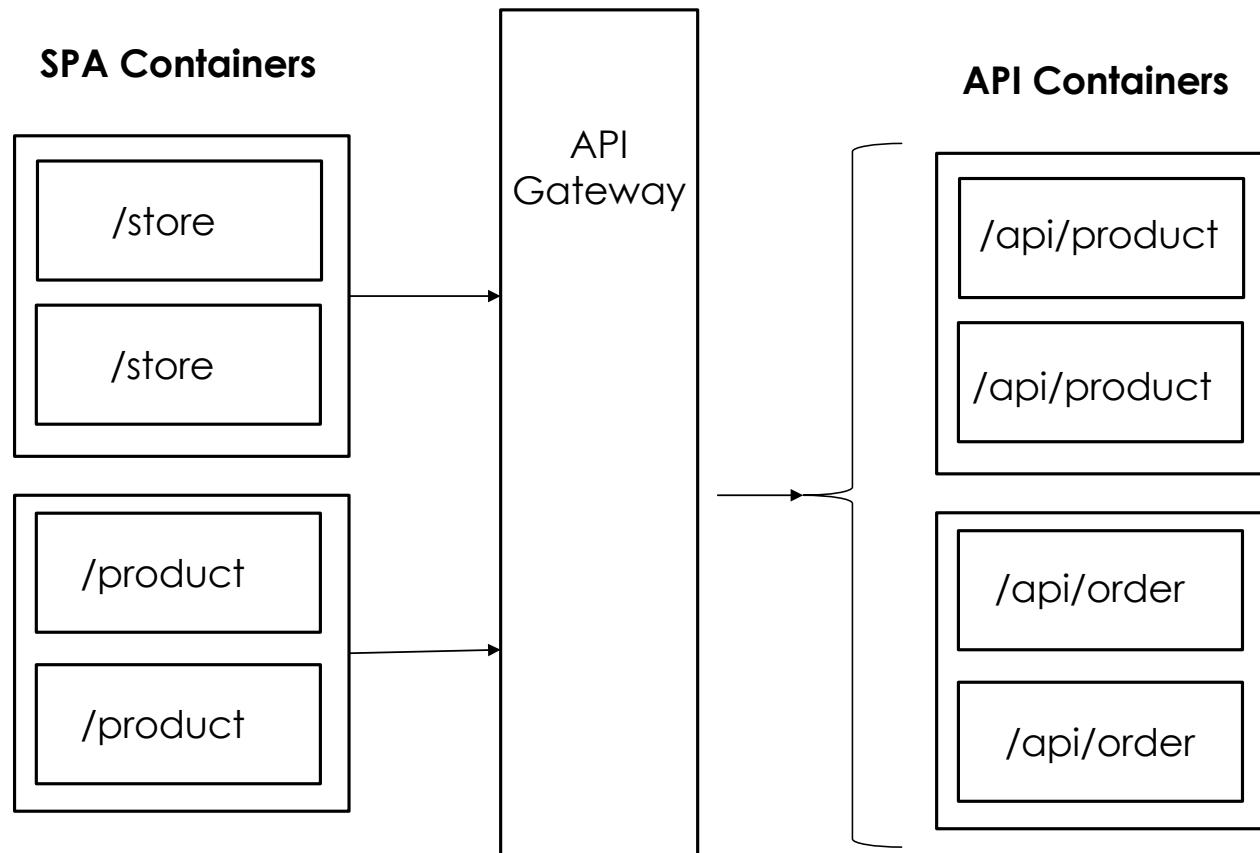
To the Cloud



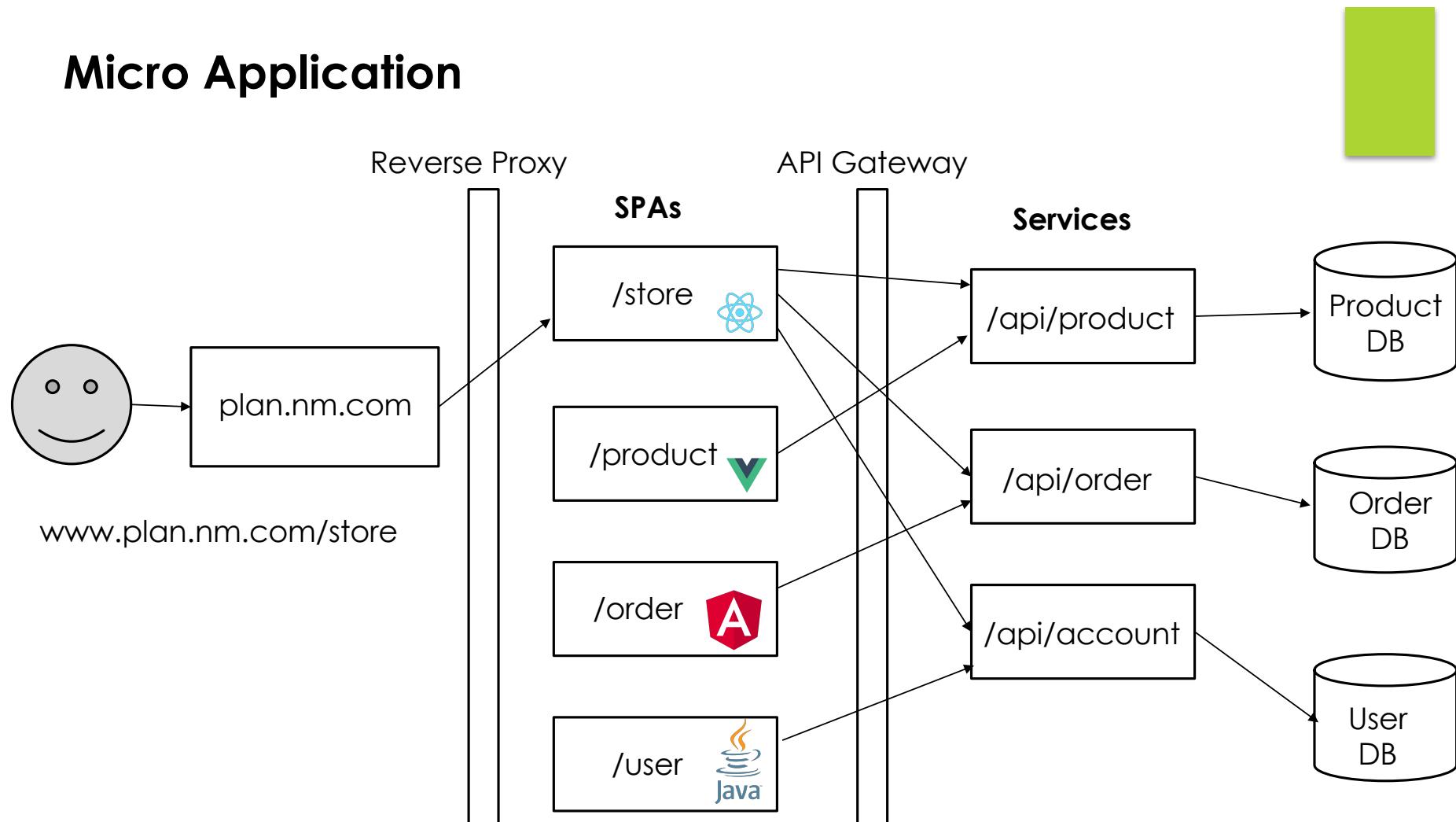
Reverse Proxy



API Gateway



Micro Application



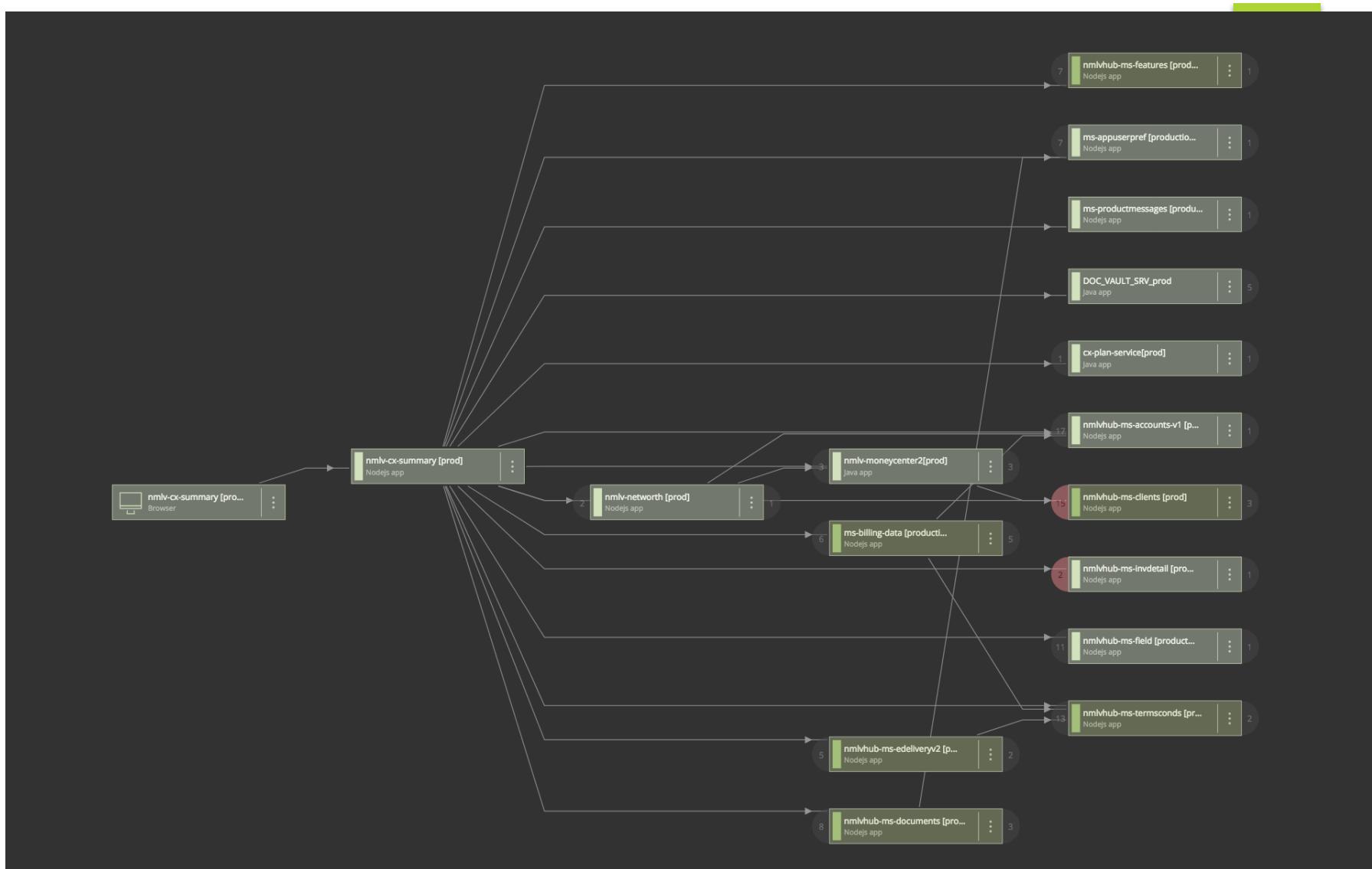
For Real...

BEFORE

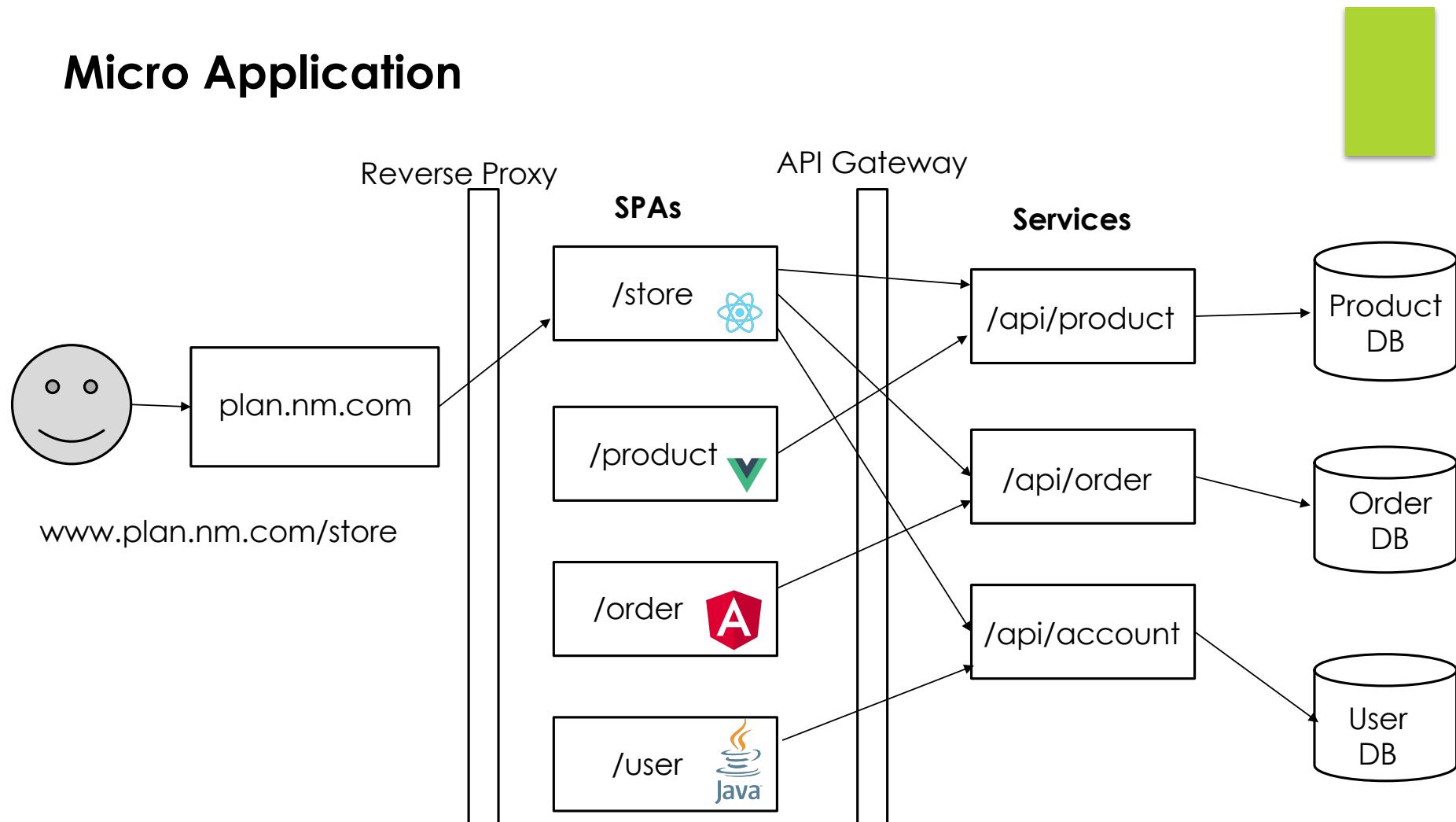
- ▶ 5 dev teams – 1 mono app
- ▶ Quarterly-Bi-monthly deploys
- ▶ Prod deploy downtime
- ▶ Code freezes
- ▶ Change management meetings

AFTER

- ▶ 8 dev teams – 20 SPAs, 20 services
- ▶ Daily deploys
- ▶ Zero prod deploy downtime
- ▶ Constant development
- ▶ Proven, low risk change record



Micro Application



Questions?



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SEE YOU NEXT YEAR!

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