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Platform Engineering: The Glue Holding Chaos Together

Who We Are

- **$3.8B Credit Union**
- **85 Avg NPS**
- **Branches in IL, MI, WI**

"Welcome all regardless of wealth; provide outstanding value and exceptional service; work with members experiencing financial challenges; and remain financially strong."

Digital Strategy

- Feature parity and ability to do banking in the channel members choose
- Unify experience with staff and members
- Leverage fintech partners to get further faster
- Build custom APIs for leveraging key digital assets

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Our current tech stack

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VM Deployments: Pain Points

CI/CD TO VMS
(BOTH ON-PREM/LIFT-AND-SHIFT CLOUD VMs)

APP POOL RECYCLES, CONFIG TRANSFORMS, CLICK-OPS CONFIG DRIFT BETWEEN ENVIRONMENTS

LIMITED OBSERVABILITY ACROSS ENVIRONMENTS

LOGS SCATTERED ACROSS SERVERS, NO CENTRALIZED OBSERVABILITY

SCALING = PROVISIONING ENTIRE SERVERS

EXTREMELY DIFFICULT TO SCALE JUST ONE SERVICE; OVERPROVISIONING OVERKILL

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Decisions, decisions...

Simple deployment model

Built-in CI/CD integration

Limited container orchestration

Expensive at scale

Simplest container option

Per-second billing

Limited scaling features

Limited networking capabilities

Full power of Kubernetes

Extreme flexibility

Steep learning curve

Operational overhead

Serverless with built-in KEDA scaling

Abstracted Kubernetes

Limited control over underlying infra

Learning curve

New to market

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Our proposed solution: Azure Container Apps

CI/CD to VMs

NOW

The app carries its entire runtime. No more config drifts between environments.

- ✔ Immutable containers
- ✔ Infrastructure as code

Troubleshooting often requires direct server access

NOW

Centralized logs, metrics, and traces.

- ✔ Single pane of glass
- ✔ OpenTelemetry built-in

Scaling means provisioning entire servers

NOW

Azure Container Apps allows us to scale individual services on demand.

- ✔ Auto-scaling (no manual intervention)
- ✔ Rolling upgrades with no downtime

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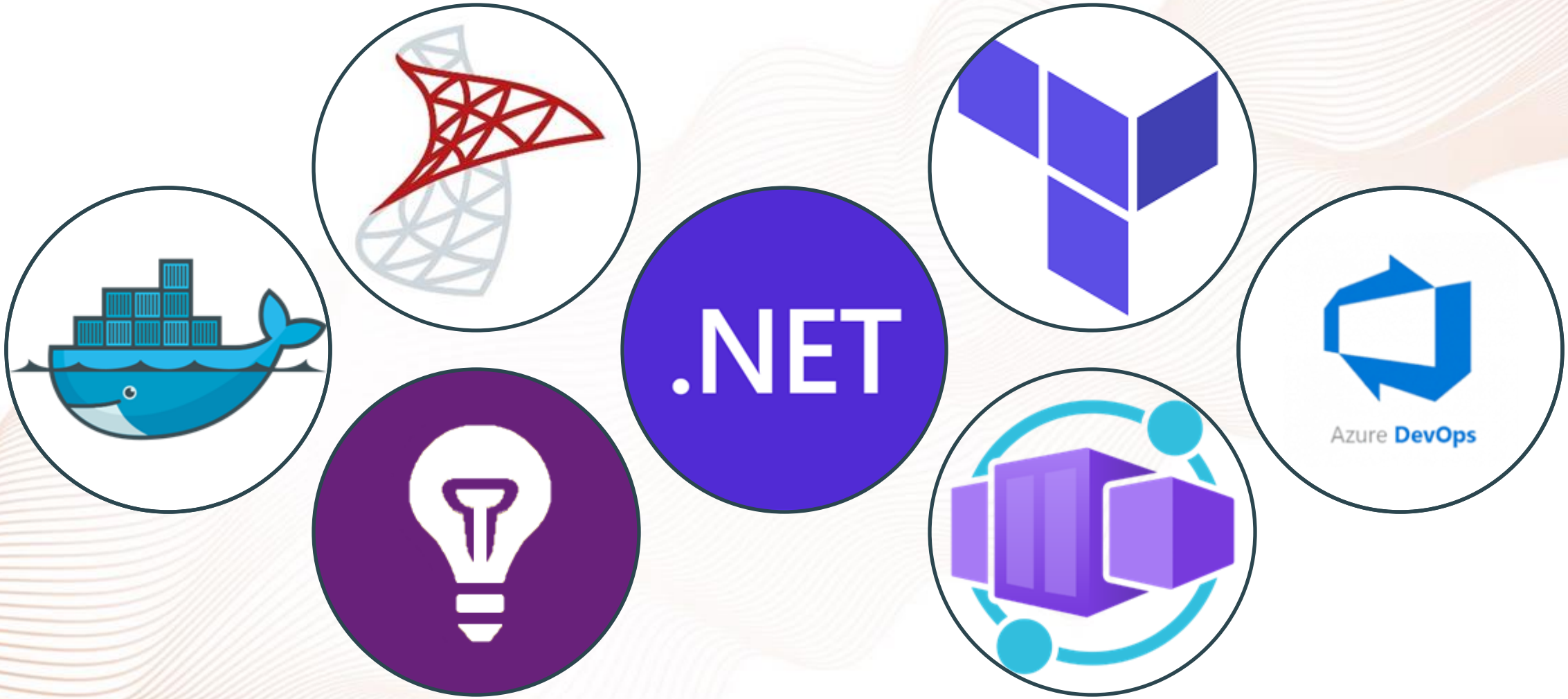
Our updated tech stack



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Let’s do it…

How?

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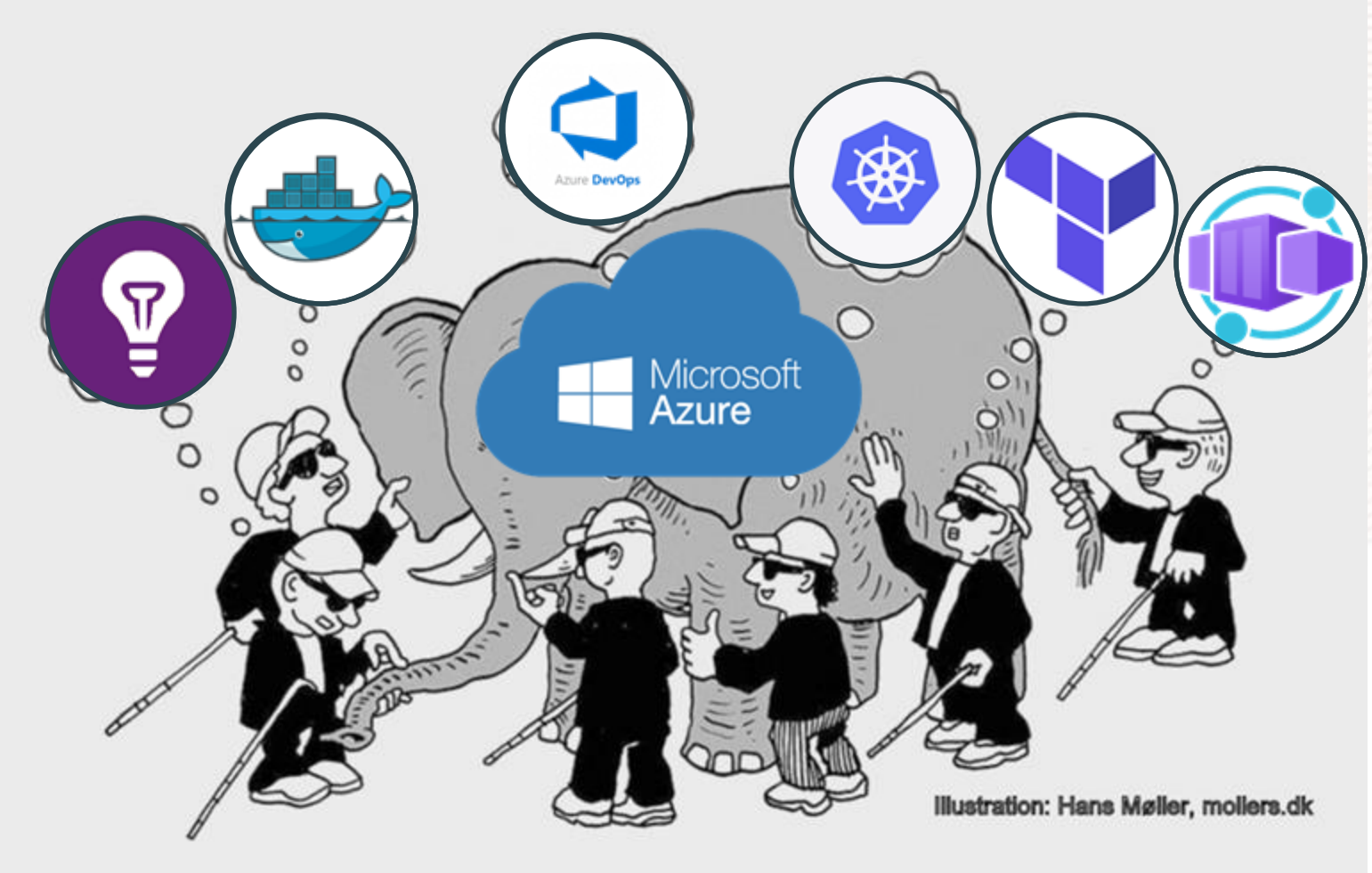
What is Platform Engineering?



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What is Platform Engineering?

- Improves developer experience and productivity
- Provides self-service capabilities
- Provides a curated set of tools, capabilities and processes
- Create “**paved roads**” that simplify and accelerate development

The goal of Platform Engineering is to simplify a platform/process for easier consumption.

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The focus of platform engineering

With platform engineering we focus on:

- **Developer productivity**: less time on infra, more time on building features
- **Self-service**: no tickets, no waiting, deploy when ready
- **Curated tooling**: decisions already made with guardrails in place
- **Paved roads**: the easy path is the right path

Make the right thing the easy thing.

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Isn’t That Just DevOps?

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How Do They Differ?

DevOps is for faster, more reliable delivery.

Platform engineering makes delivery a solved problem.

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How Do They Differ?

DevOps

Assemble It

Platform Engineering

Order It

End Goal

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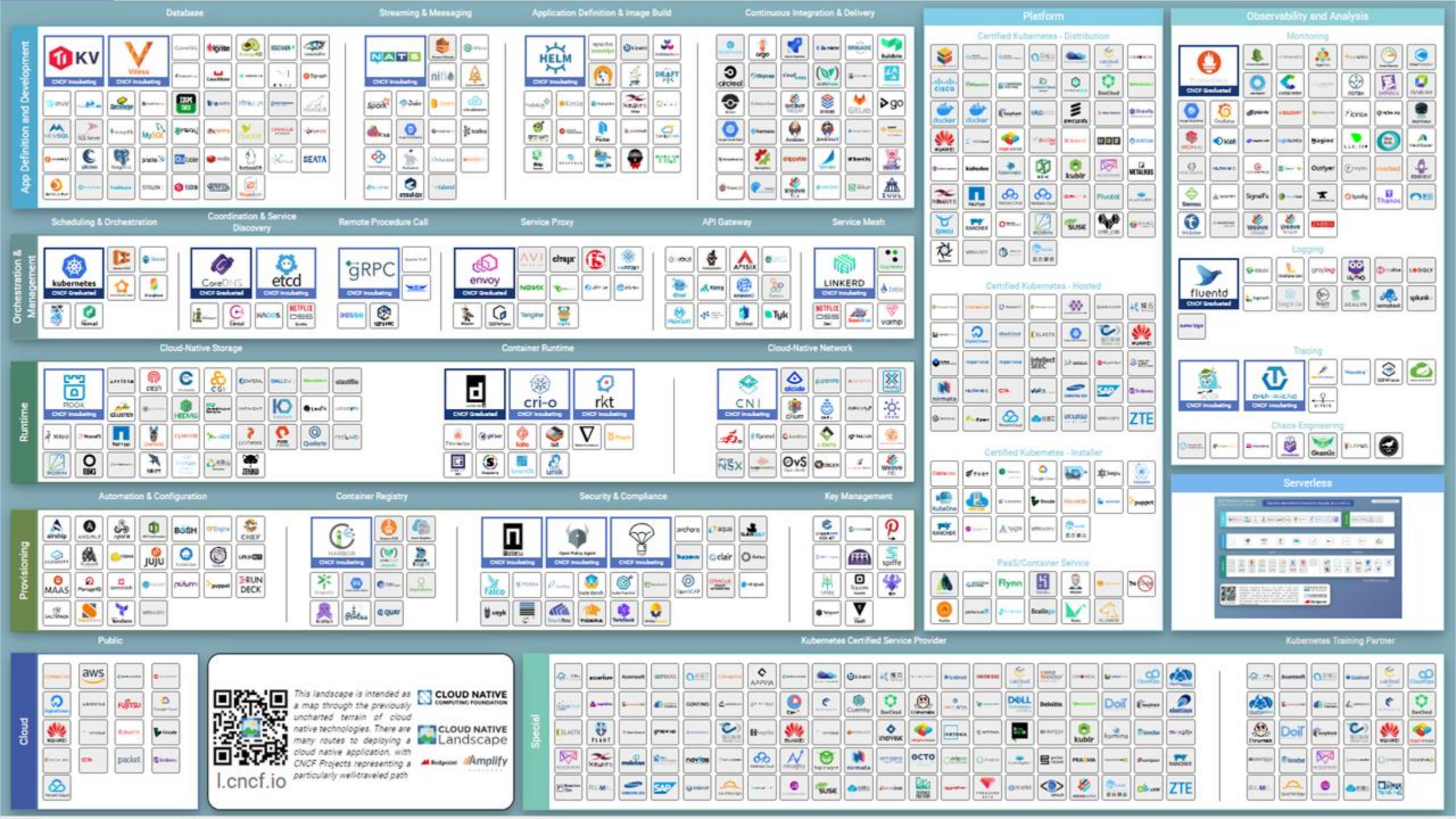
App Definition and Development
Database
Streaming & Messaging
Application Definition & Image Build
Continuous Integration & Delivery
Orchestration & Management
Scheduling & Orchestration
Coordination & Service Discovery
Remote Procedure Call
Service Proxy
API Gateway
Service Mesh
Runtime
Cloud-Native Storage
Container Runtime
Cloud-Native Network
Provisioning
Automation & Configuration
Container Registry
Security & Compliance
Key Management
Cloud
Public
Platform
Certified Kubernetes - Distribution
Certified Kubernetes - Hosted
Certified Kubernetes - Installer
PaaS/Container Service
Kubernetes Certified Service Provider
Observability and Analysis
Monitoring
Logging
Tracing
Chaos Engineering
Serverless
Kubernetes Training Partner
Special
This landscape is intended as a map through the previously uncharted terrain of cloud native technologies. There are many routes to deploying a cloud native application, with CNCF Projects representing a particularly well-traveled path
l.cncf.io
CLOUD NATIVE COMPUTING FOUNDATION
CLOUD NATIVE Landscape

Our execution plan

A cross-functional project team builds the foundation

Cross-functional by design: development, networking, security, cloud/infra working together

Small team = fast (and careful) decisions

Create a paved road

Make the new path easy with the “hard” infra/security decisions defined for them. The team adopts because it solves their problems, not because we force them to.

Adoption through attraction

New APIs = containers by default

All greenfield work is cloud-native. No more VMs for new services. We migrate legacy opportunistically.

New work, new way

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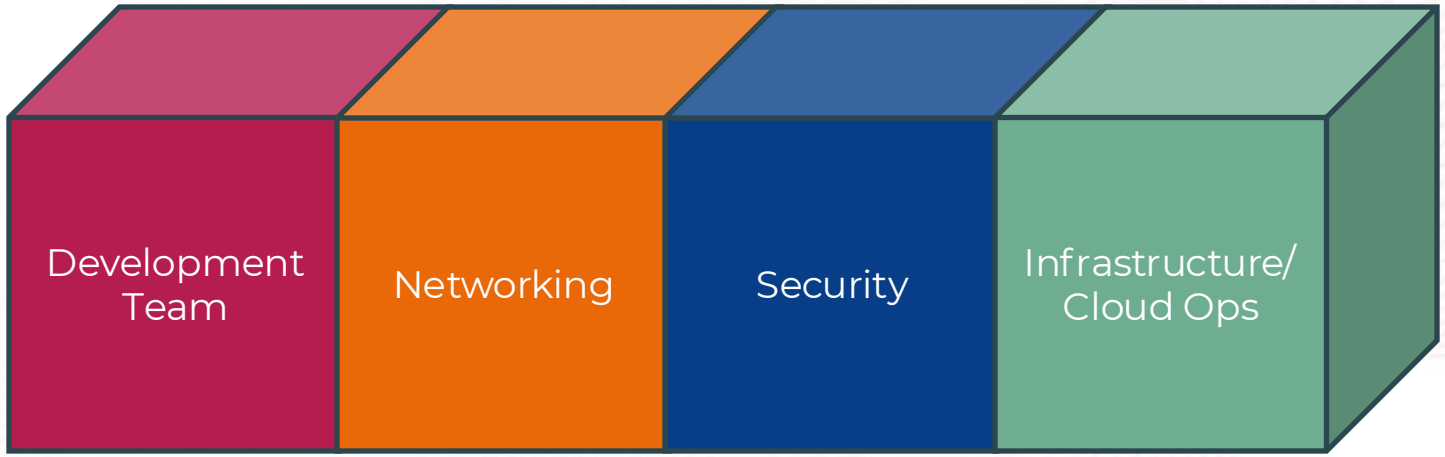
Our project team



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“Perfect is the enemy of good”

~ Origins attributed to Voltaire (François-Marie Arouet)

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Crawl – Walk – Run

Crawl – Deliver real value, using Thinnest Viable Platform (TVP)

Walk – Deliver an improved version with key features

Run – Open up innovation, improve visibility and performance

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What we shipped

STEADY STATE AVERAGE UNDER HEAVY LOAD

10x performance improvement

DEVELOPER PIPELINE: THREE LINES

```
- template: stages.yml@TerraformModules
  parameters:
   variableGroupName: 'MyApi Variables'
   appName: 'myapi'
```

BEFORE

Inconsistent IIS deployments

Config drift

Logs scattered across DBs/VMs

Scale = provision servers

AFTER

Quick, predictable deployments

Immutable containers

Centralized observability

Auto-scaling services on demand

Included out of the box:

- OpenTelemetry
- KEDA scaling
- Managed identities
- Key Vault integration
- Rolling deploys
- Guardrails

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What’s next

- Broader reach for web apps, and batch jobs
- Adopt more Azure services
- Unified observability for “a single pane of glass”
- A guided developer experience
- Sandboxes for developers to experiment

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Lessons Learned

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Security

- Involve security teams from Day One
- They saw how apps were built and deployed, not just the end result
- We avoided rework because issues were caught early

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Cross-functional teams

- **A key to the project's success**: have everyone in the room
- We solved problems before they became huge blockers
- With a part-time team we saw a longer timeline, but everyone owned the outcome

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Scaling the platform

- Start engaging developers early – we built this platform so they can be successful!
- Encourage feedback
- Focus on making onboarding as easy as possible

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Questions?

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