

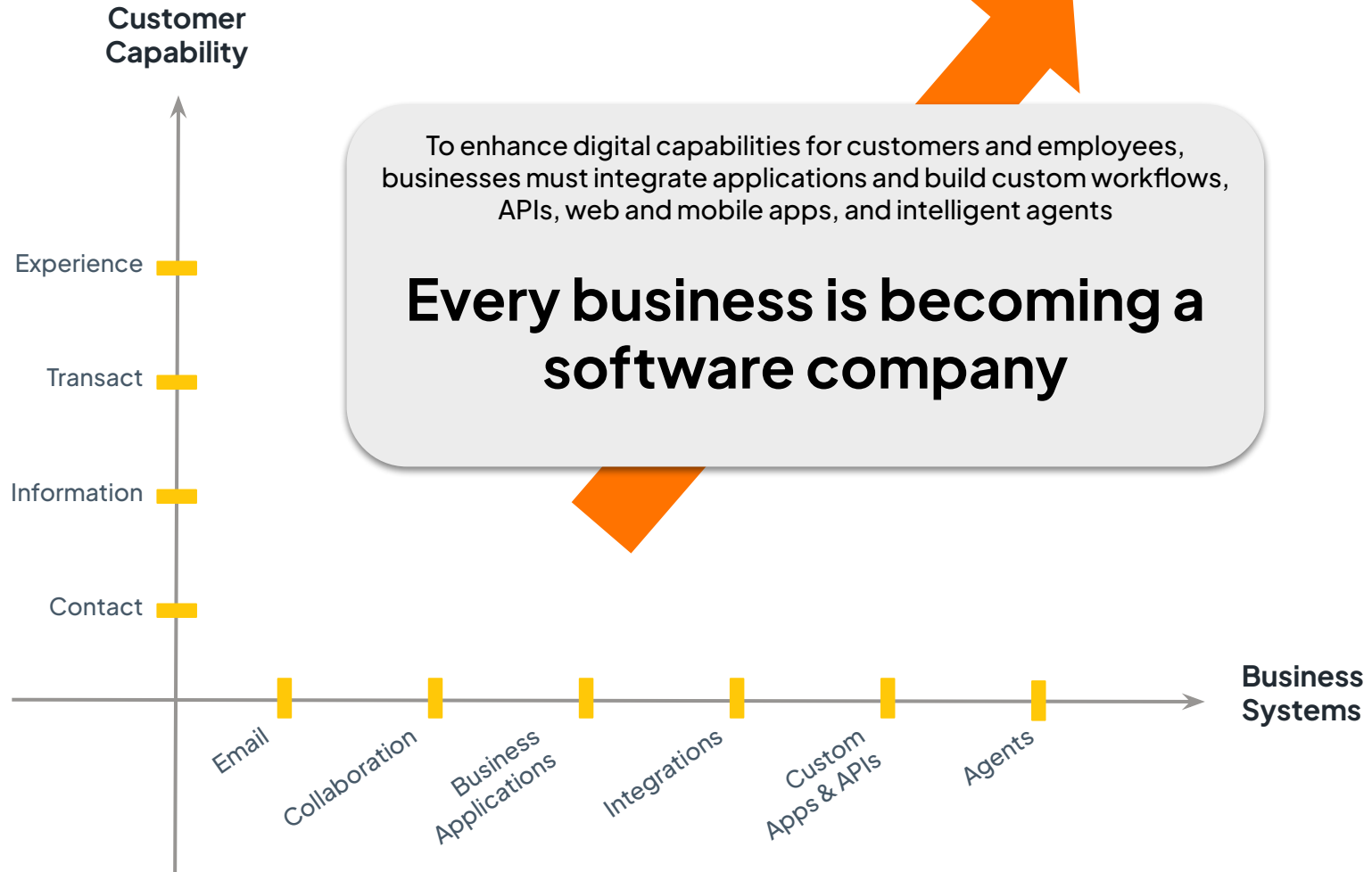
WSO2con2025

Accelerating Platformless Modernization With Choreo

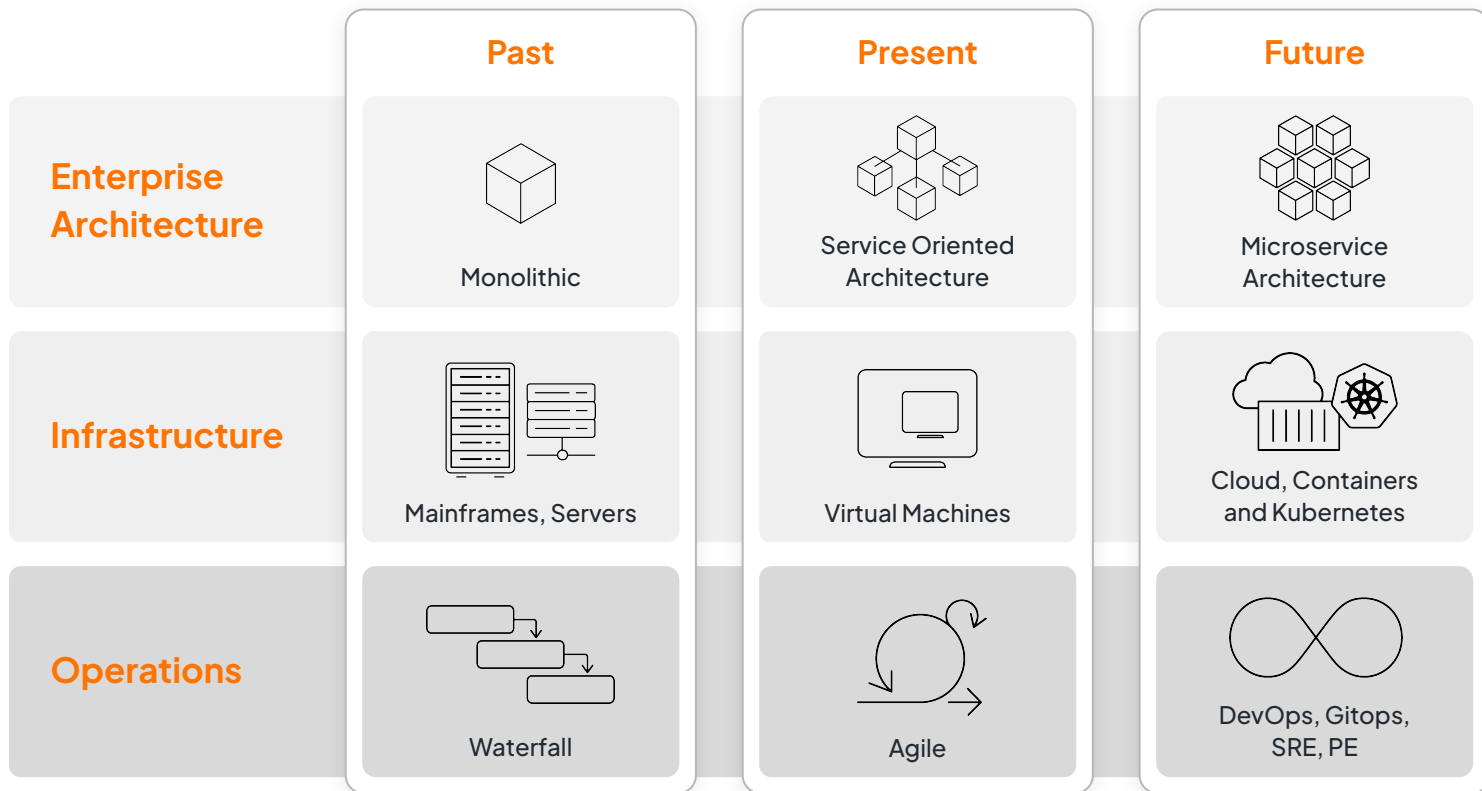


Nuwan Dias
VP and Deputy CTO
WSO2

Modernization is an ongoing journey—not just about migrating from legacy systems, but about continuously evolving, adapting, and pushing the boundaries of what's possible.



Modernising Applications – Past, Present, and Future

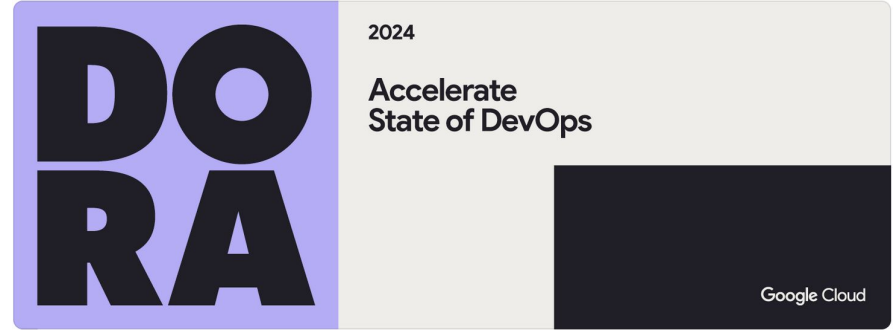


Modernization styles

Rehost
platform
architect
build
place

A diagram illustrating the components of the 'Re' modernization style. The word 'Re' is rendered in a large, bold, orange-to-brown gradient font. To its right, five terms are listed vertically: 'host', 'platform', 'architect', 'build', and 'place'. Each term is connected to the 'Re' by a thin orange line that branches from the 'e' and points to the corresponding word.

By using an Internal
Developer Platform
organizations witnessed,



↑ 8%

Individual
productivity

↑ 10%

Team
Performance

↑ 6%

Organizational
Performance

↓ 8%

Delivery
Throughput

↓ 14%

Change
Stability

Modernizing Infrastructure Management



Breaking Free from Infrastructure Complexity

Instead of managing VMs, wrestling with Kubernetes and untangling networks, Choreo enables Platform Engineers operate at higher levels of abstractions!



Automated Infrastructure

Choreo streamlines the provisioning and management of key infrastructure elements in the platform.

- Provisioning clusters (beta).

The screenshot shows the 'Create a Private Data Plane' interface in the Choreo console. It includes a sidebar with navigation icons, a top bar with the organization name 'ACME Org', and a main content area. The form has three sections: 'Select Infrastructure Provider' with buttons for Vultr, Azure, AWS, and GCP; 'Select Region' with buttons for Los Angeles, New York, Amsterdam, London, Singapore, and Sydney; and 'Select PDP size' with two options: 'Small' (up to 20 components, up to 60m transactions per month, \$500/month) and 'Medium' (up to 50 components, up to 150m transactions per month, \$1000/month). The 'Small' option is selected. At the bottom, there are 'Cancel' and 'Create' buttons, along with a link to contact support.

The screenshot shows the 'Data Planes' page in the Choreo console. It includes a sidebar with navigation icons, a top bar with the organization name 'ACME Org', and a main content area. The page title is 'Data Planes'. A message states: 'A new private data plane is being provisioned. This may take up to an hour. You can leave this page and check back at any time.' Below this, there is a table with two data planes:

Name	Type	Status
choreo-vke-y7ol-96g2gtddmh	Private Data Plane	Provisioning
Choreo Cloud US Dataplane	WSO2 Cloud Data Plane	Active

At the bottom of the page, there are links for 'Terms of Use', 'Privacy Policy', and 'Support'. On the right side, there is a sidebar titled 'Provisioning Your New PDP On Vultr' with a progress bar showing '28% Completed' and a list of steps:

- ☒ Provisioning a Dedicated Cloud Account
- ☒ Generating Infrastructure-as-Code (IaC) for the PDP
- ☒ Initializing IaC State
- ☒ Bootstrapping Infrastructure and Setting Up Kubernetes
- ☐ Installing Vault and the Flux System
- ☐ Registering the New PDP in the Choreo Control Plane
- ☐ Injecting Choreo System Secrets to the Vault
- ☐ Installing the Choreo System Components on the Cluster
- ☐ Installing Cilium CNI and Configuring Network Policies
- ☐ Verifying System Installation
- ☐ Setting up Health Monitors for the PDP
- ☐ Finalizing the PDP Provisioning Process

Automated Infrastructure

Choreo streamlines the provisioning and management of key infrastructure elements in the platform.

- Creating environments.
- Configuring deployment pipelines.

Continuous Deployment Pipelines

Default US Deployment Pipeline Default

Development

Choreo Cloud US Dataplane



Staging

Choreo Cloud US Dataplane



Production Critical

Choreo Cloud US Dataplane

Hotfix Pipeline

Staging

Choreo Cloud US Dataplane



Production Critical

Choreo Cloud US Dataplane

Create Environment

Name

Staging

Data Plane

Choreo Cloud US Dataplane

DNS Prefix

stage-acme

DNS for the environment will be created as `82d26742-afe1-4ed2-bf5e-0034635f0a07-stage-acme.e1-us-east-azure.choreoapis.dev`. URL customization will be enabled for the new environment after provisioning, which can take about 5 minutes.

☐ Mark environment as a Production environment

Cancel

+ Create

Network Governance

Choreo provides a consolidated UI for enterprise network governance.

- Configure domains.
- Egress control (Allow/Deny rules).
- Create VPNs.

Egress Control Type

Allow All
Deny egress selectively

Deny All
Allow egress selectively

Add rules to allow egress traffic

Add Rule

Name	Destination	Date	Scope	Action
Storage Link	storage.acme.com	17/03/2025	Organization	

Add a Custom Domain

Provide Domain Details

1 Before verifying the custom domain, select an environment to view its CNAME Alias and use it for adding a DNS CNAME record at the domain registrar, mapping it to the specified CNAME Alias.

Domain Name

Environment

Type ☒ API ☐ Web App ☐ Developer Portal

Name	Type	Value
acme.com	CNAME	customdns.e1-us-east-azure.choreoapis.dev

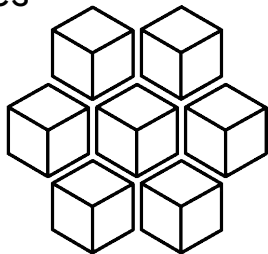
Back Verify

Modernizing Application Architecture

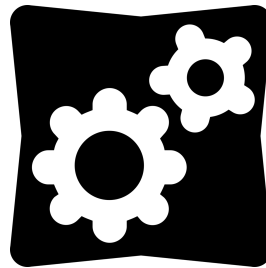
The background is a vibrant space-themed gradient transitioning from orange-red on the left to dark blue and purple on the right. It is filled with numerous small white stars and several larger, stylized planets. One large planet with a ring is visible in the lower-left, and a smaller one is in the lower-right. The text "Modernizing Application Architecture" is centered in a bold, white, sans-serif font.

Modernising application architecture

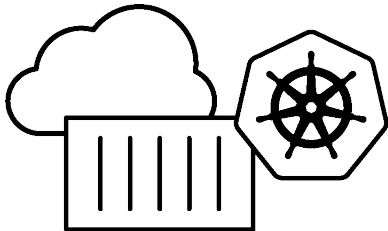
Microservices



API-First



Cloud-Native



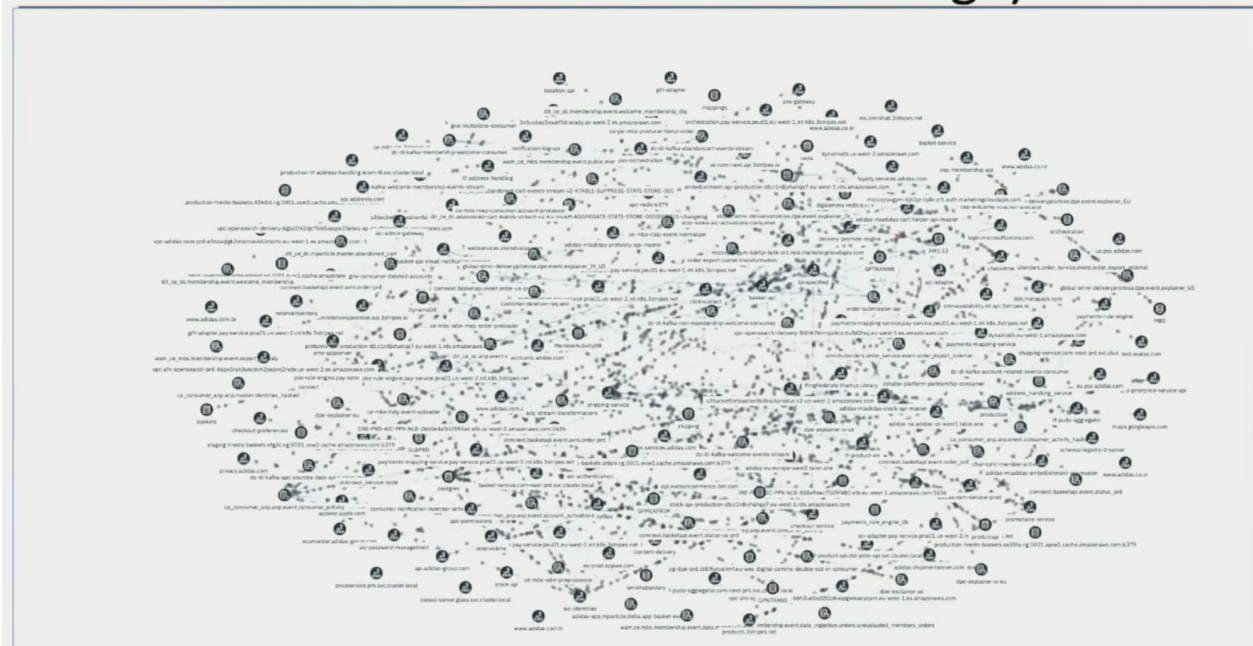
Headless



MACH Architecture: <https://macharchitecture.com/>

Microservices architecture at Adidas

Not an Electric overhead wiring :)



Key elements of modernising application architecture

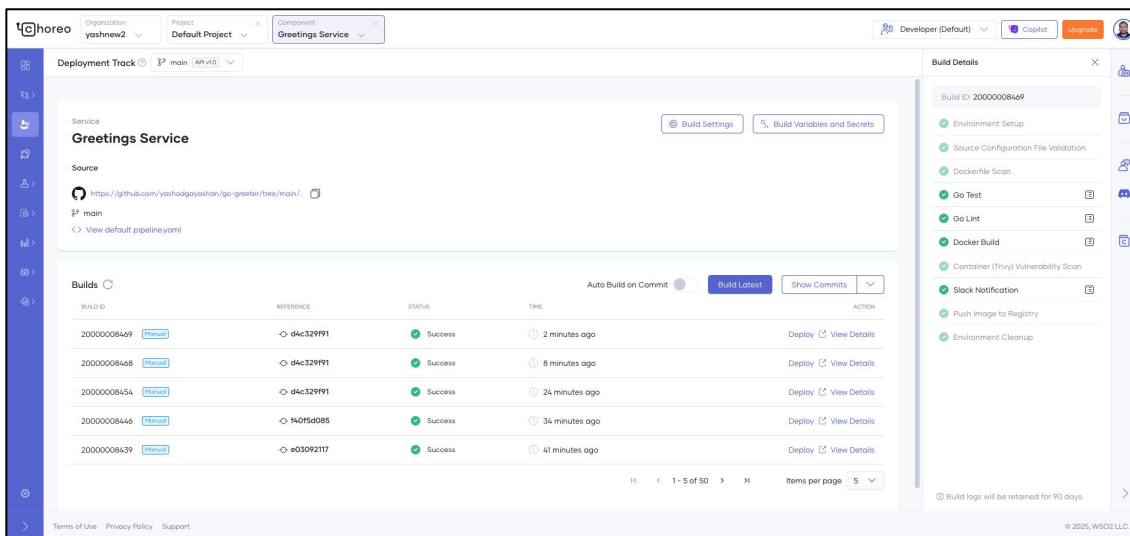
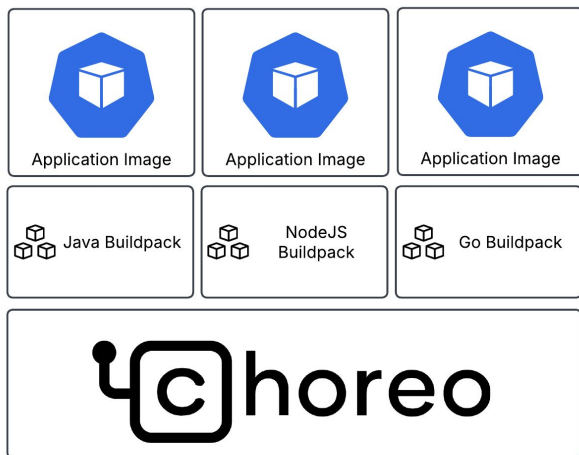
- Containerization.
- Automated deployments.
- Observability, resiliency and scale.
- API Management.
- Sharing and reuse.
- Decentralized governance with Cell Based Architecture.
- Cloud Native Data Management and Asynchronous Communication.



Containerization: Choreo CI and Buildpacks

Choreo uses Buildpacks to transform application code into container images.

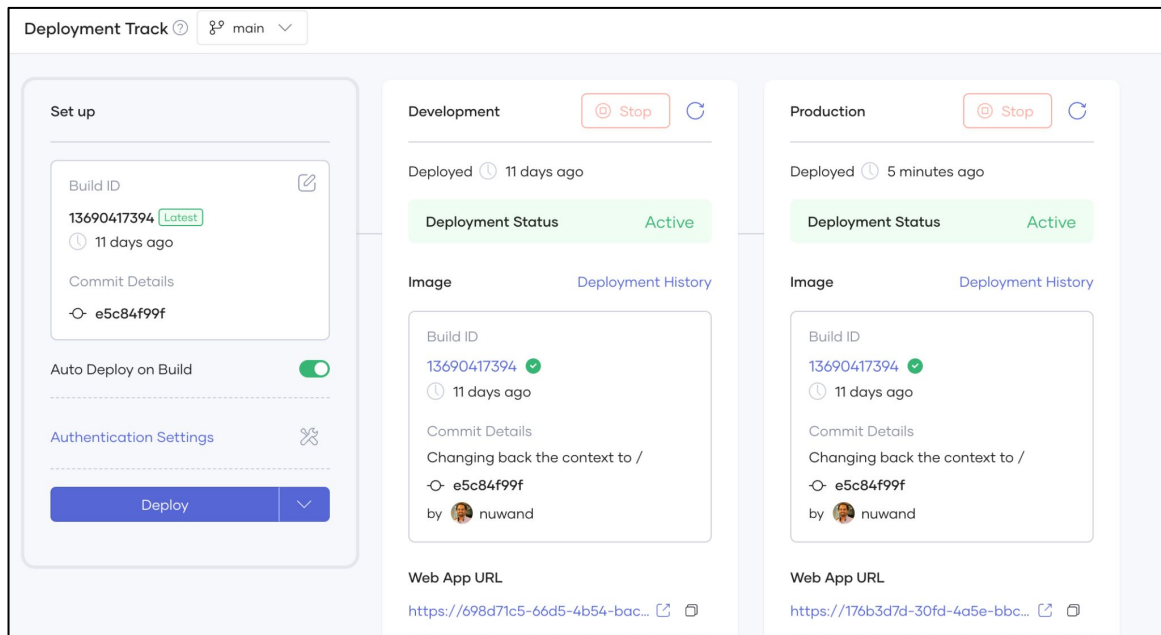
- Automatic builds on commit.
- Custom build steps.



Automated deployments: Choreo CD, with multiple deployment tracks and pipelines

Choreo automatically deploys code into Kubernetes. Developers are no longer required to implement pipelines.

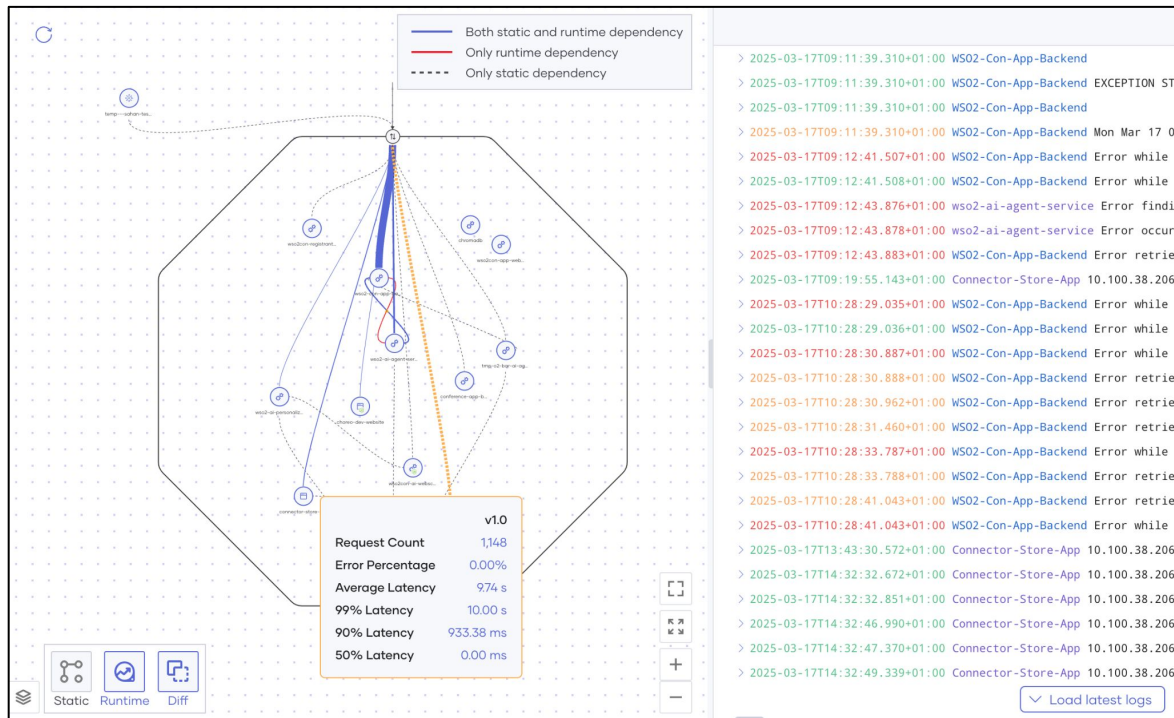
- Automatics deployments on builds.
- Multiple deployment tracks, for versions.
- Multiple deployment pipelines.



Observability, resiliency and scale: Prometheus, OpenSearch, Cilium, Keda...in one box

Choreo brings together key CNCF tools for Logs, Metrics, Scaling and more.

- Logs of components and projects at no cost.
- Metrics and request path tracing.
- Supports serverless mode with Keda.



API Management: Choreo's "Built-in" API Management

Choreo's API Management is "Built-in" as opposed to the regular "Bolt-on" approach.

- No longer required to worry about gateways and automations .
- Saves time, licensing fees and infrastructure.
- Fully featured with a developer portal, API analytics and more.

Endpoint Configurations

Note: Deploy the component after applying changes for the configuration to take effect.

Endpoints:

Security Scheme	Security Header
☒ API Key	api-key
☐ OAuth2	Authorization
☐ Pass end-user attributes to upstream	

Resources

GET	/appointment-types
GET	/appointments
POST	/create-appointment

Rate Limiting

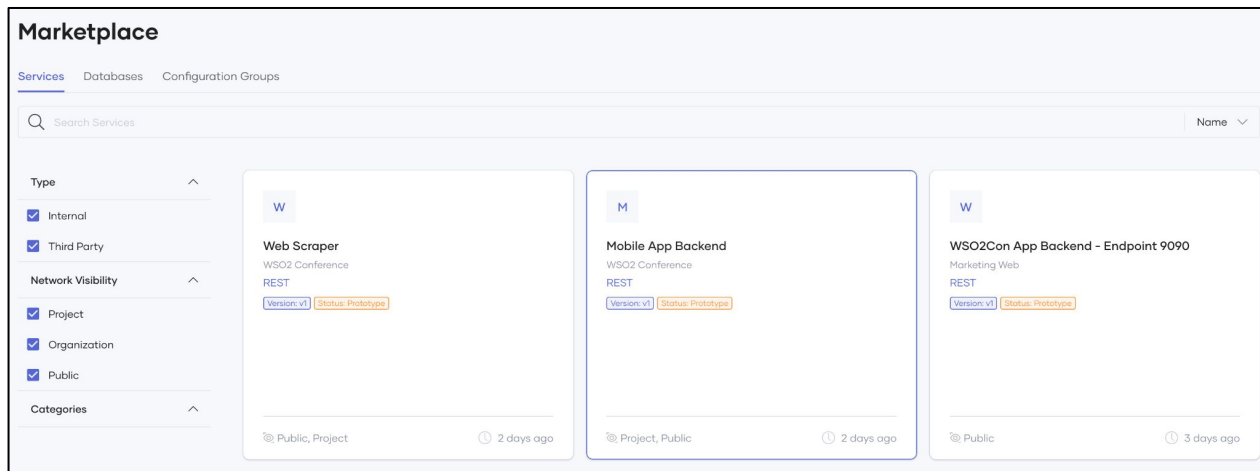
Rate Limiting Level: ☐ Unlimited ☐ API Level ☒ Resource Level

GET	/appointment-types	Request Limit: 100 Time Unit: Per Minute
GET	/appointments	
POST	/create-appointment	

Sharing and Reuse: Choreo Marketplace

Choreo's Marketplace is a single place of discovery of all reusable enterprise assets, including Services, Databases, Configurations, etc.

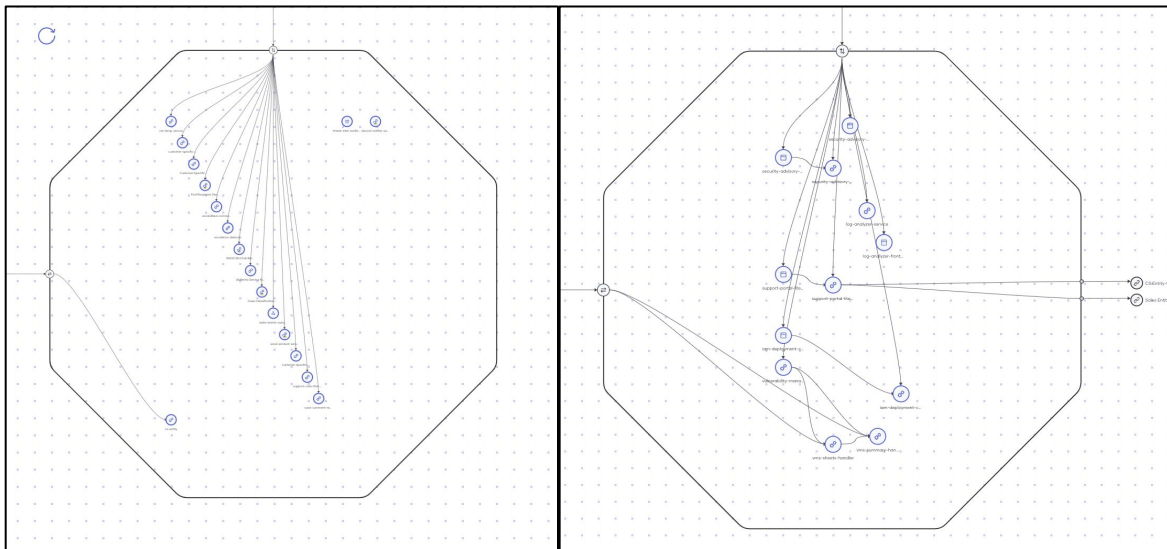
- Prevents rework and promotes reuse.
- Increases self-service by reducing dependencies.
- Implements governance over assets.



Decentralized Governance: Choreo Projects (cells)

Organizing your work into projects gives you freedom to iterate, maintain permissions, policies and workflows in isolation.

- Independent releases.
- Independent permissions.
- Independent policies.
- Physical network boundaries.
- Independent operations.



Modernizing Operations



Security and Compliance Challenges

Cloud Native Applications require a Zero-Trust mode of operation.

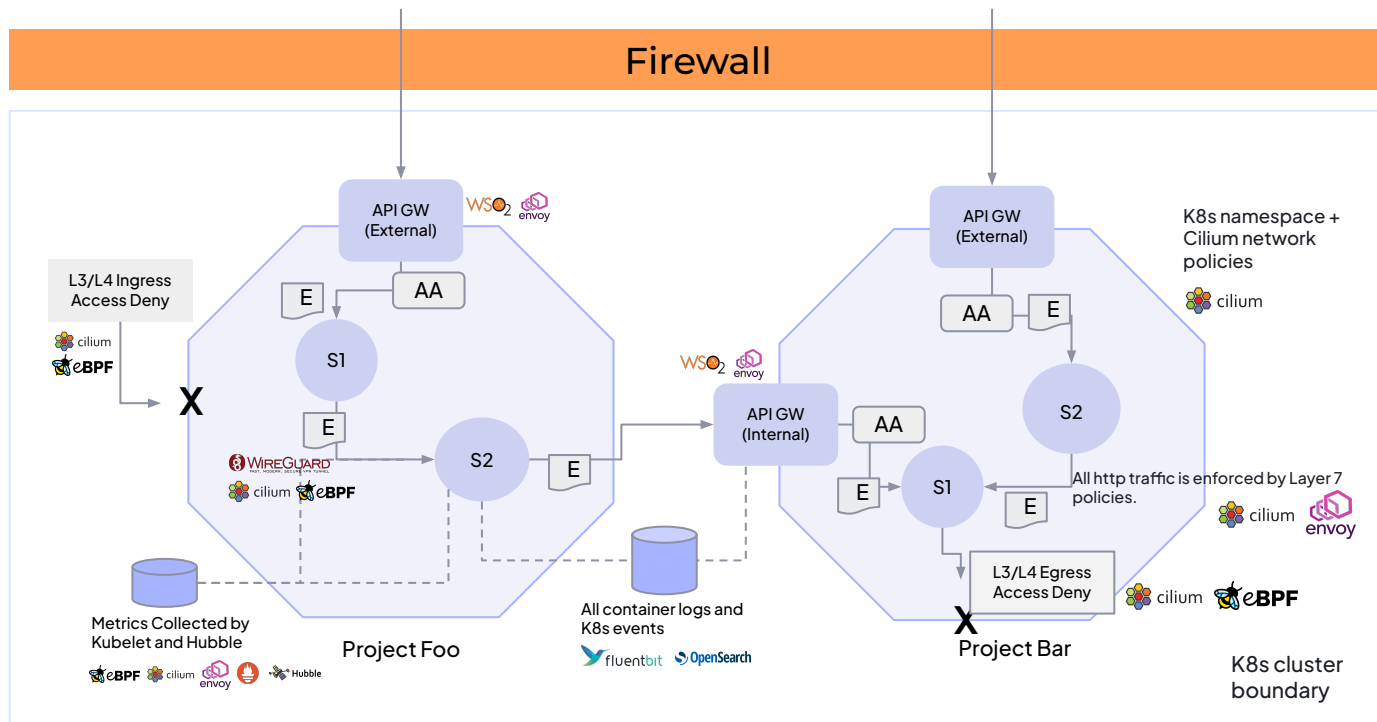
This involves thinking about security in every step.

- Vulnerabilities in code.
- Vulnerabilities in container images.
- North-South security.
- East-West security.
- Southbound security.
- Encryption of data at rest.
- Who can do what?
- Who did what?
- SIEM.



Choreo is a Zero-Trust Internal Developer Platform, with AI

- Secure CI.
- Secure CD.
- Ingress API Gateway.
- East-West API Gateway.
- Egress API Gateway.
- Cilium Service-Mesh.
- Choreo vault.
- Choreo permissions.
- Choreo audits.
- SIEM Integrations.



AA Authn & Authz
WSO2 envoy

E Network traffic encrypted
cilium WIREGUARD eBPF

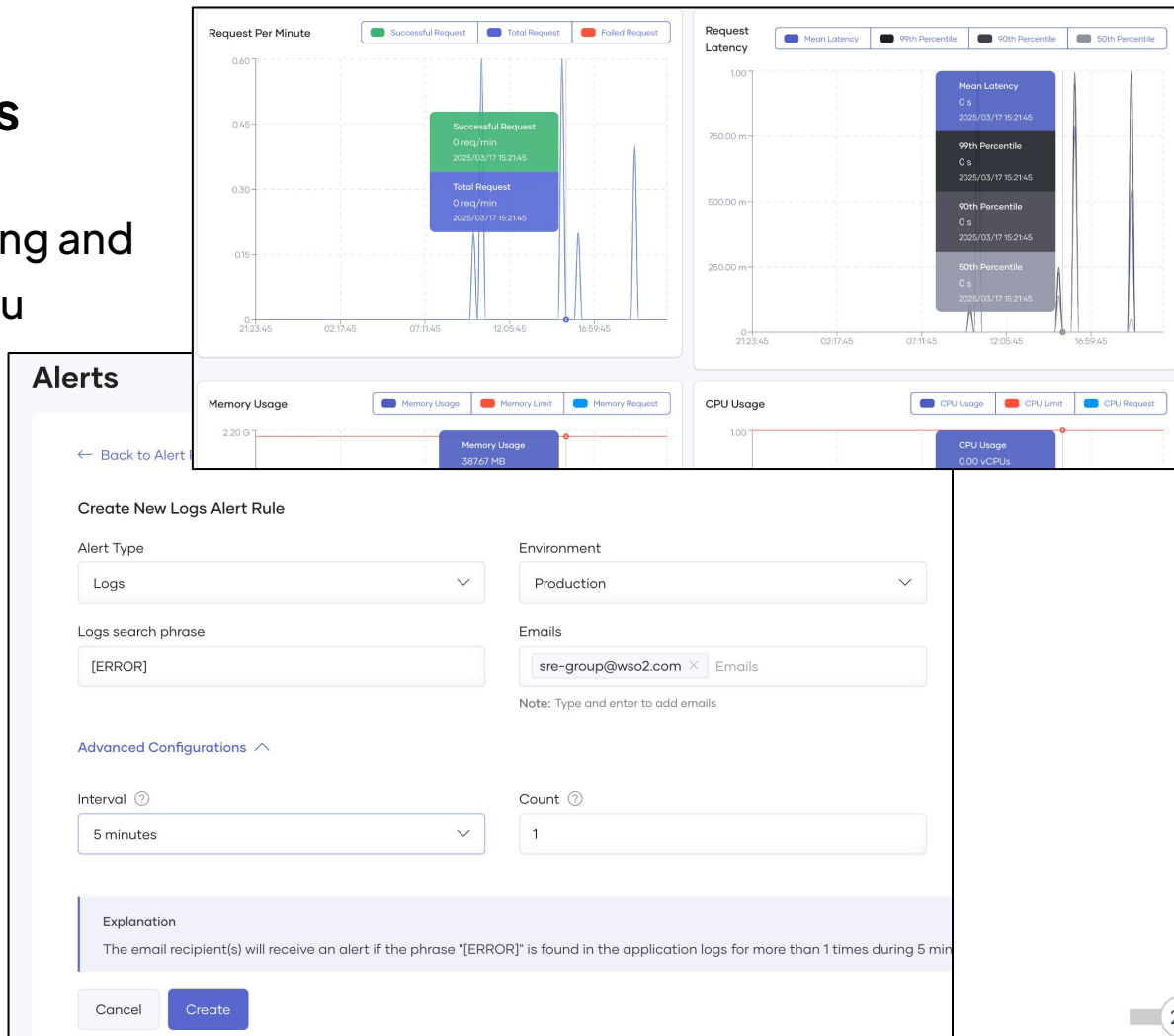
L3/L4 Access Deny

Ingress and Egress traffic control
cilium eBPF

Monitoring and alerts

Choreo's built-in monitoring and alerting systems keeps you informed at all times.

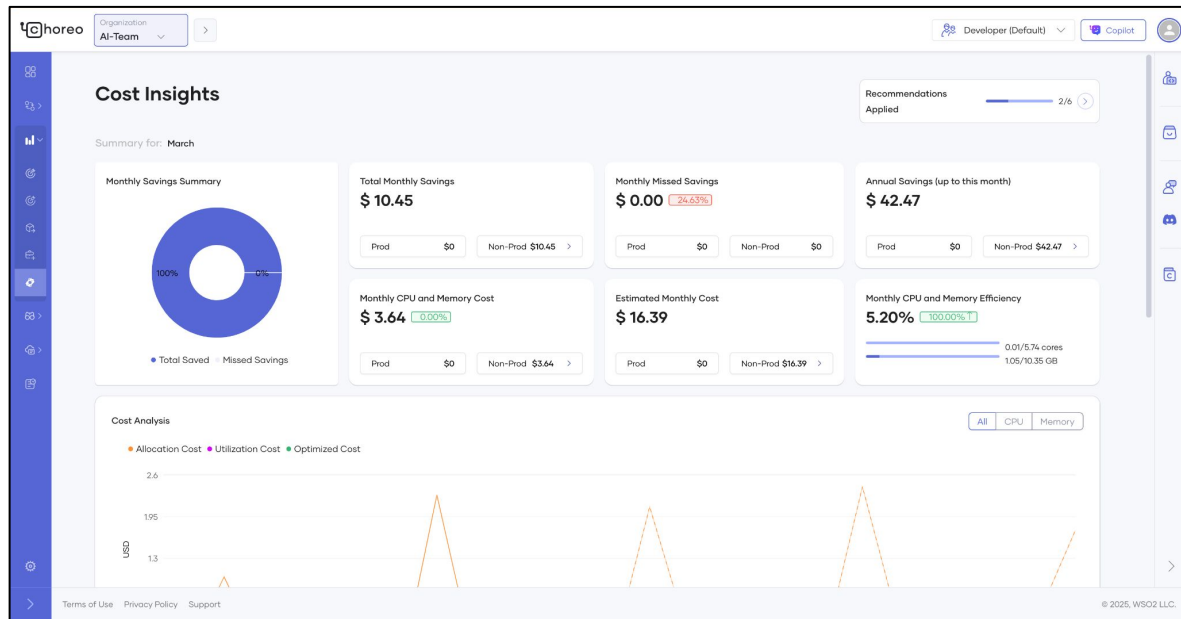
- Alerting based on various aspects such as logs, metrics resource usage, etc.
- Continuous monitoring, scaling and auto-healing to reduce downtimes.



Cost visibility

Choreo's AI powered cost analyzer for FinOps of your platform.

- Reports running costs and savings.
- Detects wastages and sub-optimal resource allocations.
- Applies suggestions for optimal operations automatically.



AI capabilities, coming soon!

With AI, Choreo is the platform that sees everything, understands everything and verifies everything.

- Choreo chief architect.
 - Detect architectural smells.
 - Reports violations of guidelines.
- Choreo chief governance officer.

The screenshot displays the Choreo AI Agent interface. At the top, it shows the organization 'Jane Smith' and the project 'Finance Man...'. The main section is titled 'Architecture Diagram' and features a complex graph with nodes and edges. To the right of the diagram, there is a section titled 'Architecture Smells' which displays 8 errors and 10 warnings. Below the diagram, a 'Summary' section provides a quick overview of the system's components and APIs.

Category	Count
Component	30
Internal APIs	15
Deployments	98
External APIs	15

Architecture Smells:

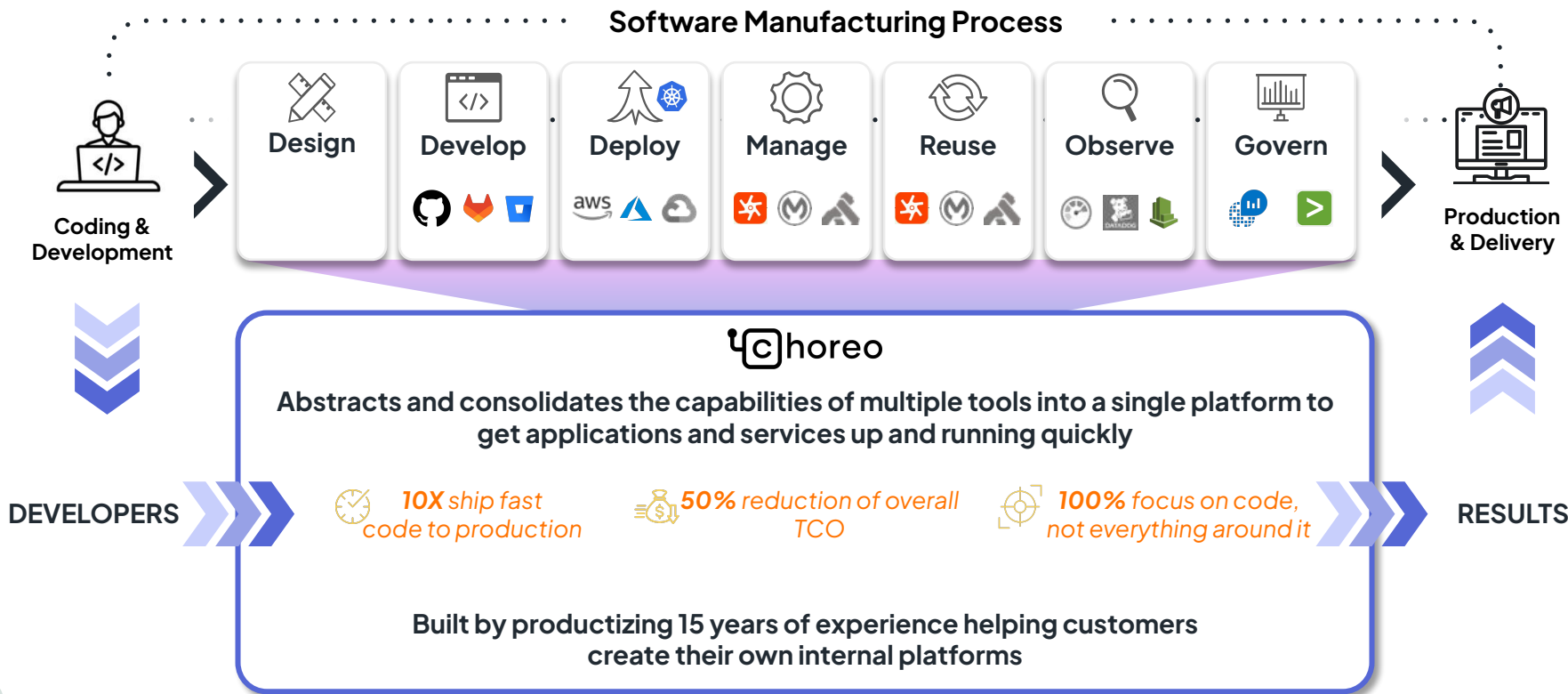
- 8 Error
- 10 Warning
- Finance Entity service API is not secured
- Sales force entity service is a possible single point of failure
- User Management API Missing Role-Based Access Control (RBAC)
- Travel-invoice-service has reached 70% of CPU limit
- Project has 30 components created
- Payment Gateway API Lacks TLS Enforcement
- Unwanted external API call is generated by finance entity service
- Invoice automated service is using over 85% of allocated memory
- Netsuite-sync has been idle for 30 days

View Details →

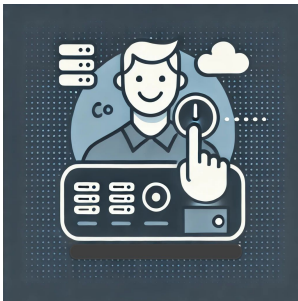
© 2025, WSO2 LLC

Choreo: Solving cloud native software challenges

Choreo consolidates the capabilities of multiple tools that customers stitch together to build these platforms



Cost benefits with Choreo



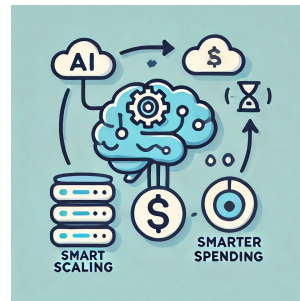
No upfront costs

Zero Setup, Zero Headaches



Savings from licensing

Open Source alternatives brings more savings



AI-driven efficiency

Smart Scaling, Smarter Savings

**Platforms enable
modernization, platformless
simplifies it, and intelligence
accelerates it**

**Platformless
Modernization**

Question Time!



The background is a dark, deep blue space filled with a vibrant, multi-colored nebula or galaxy. Numerous 3D cubes of various sizes are scattered throughout the scene, some appearing to float and others as if they are falling or moving. The cubes are rendered with a blue-to-red gradient, giving them a three-dimensional appearance. A large, dark blue sphere is visible on the left side of the frame. The overall composition is dynamic and futuristic.

Thank you!

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