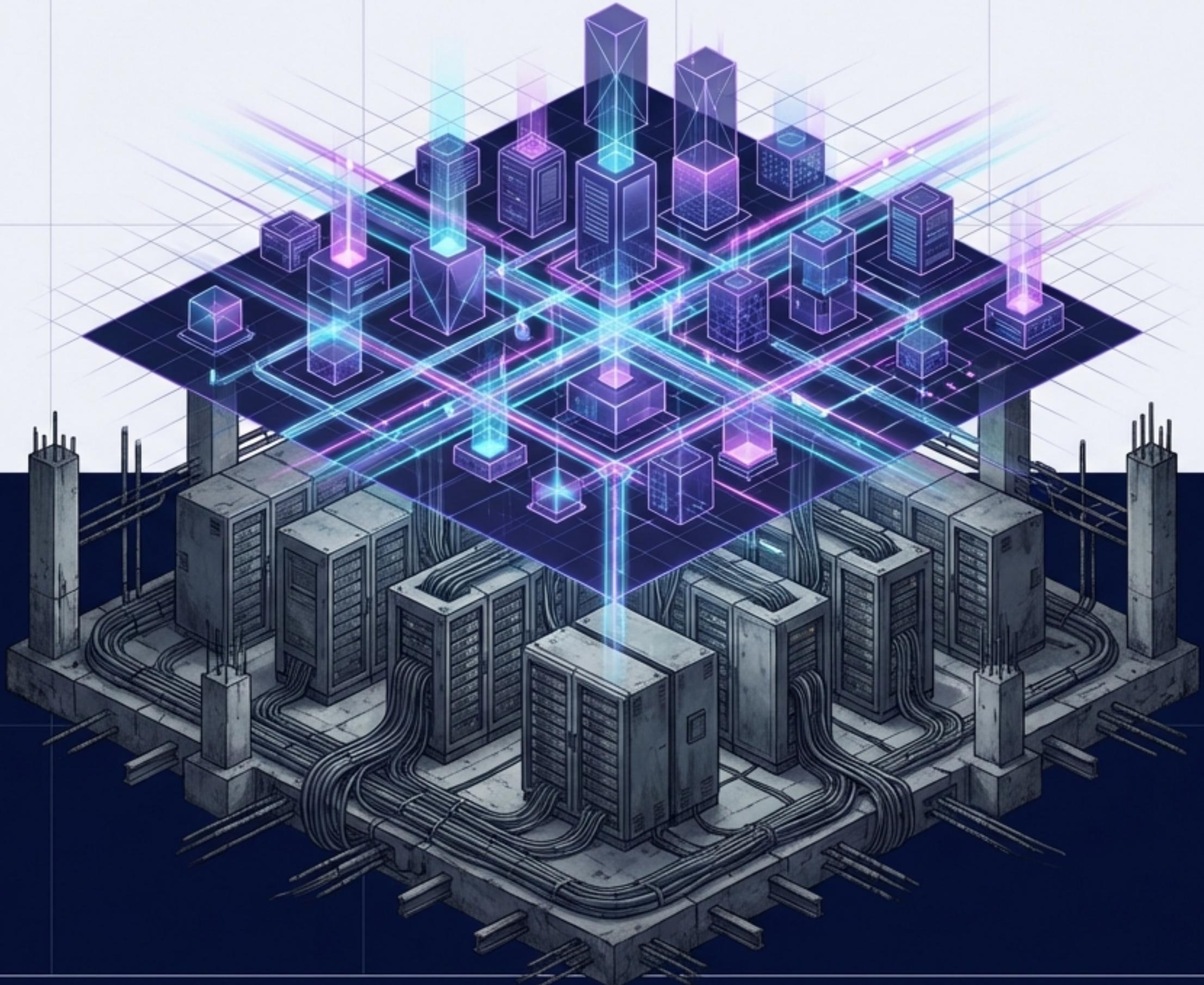


BUILDING THE INDUSTRIAL DATASPACE

A Provider's Guide: From Open Source Components to 'Dataspace-as-a-Service'



ARCHITECTURAL BRIEF | FEB 2026

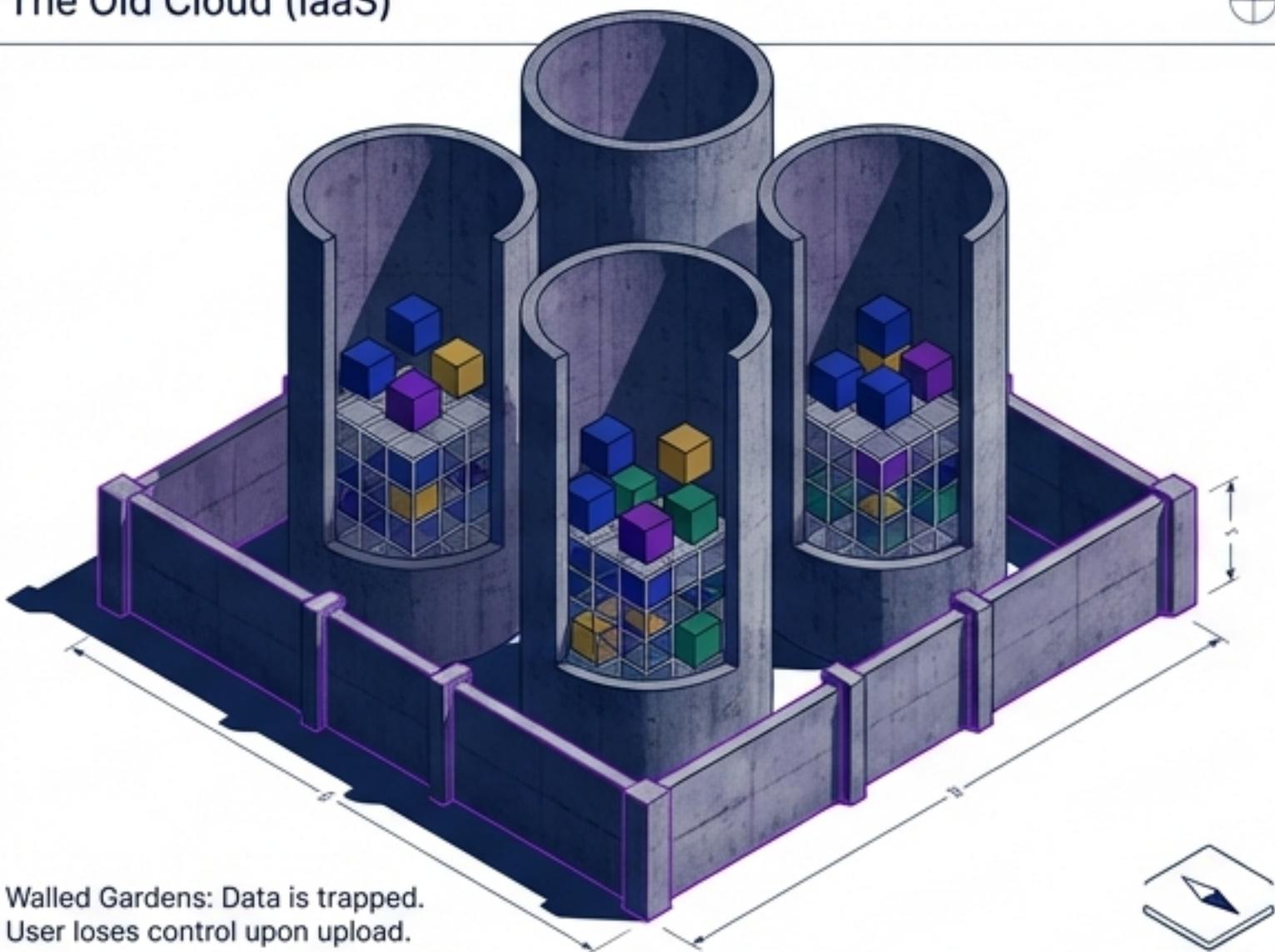
TARGET: ARUBA, OVH, STACKIT

STATUS: MADRID RELEASE CANDIDATE

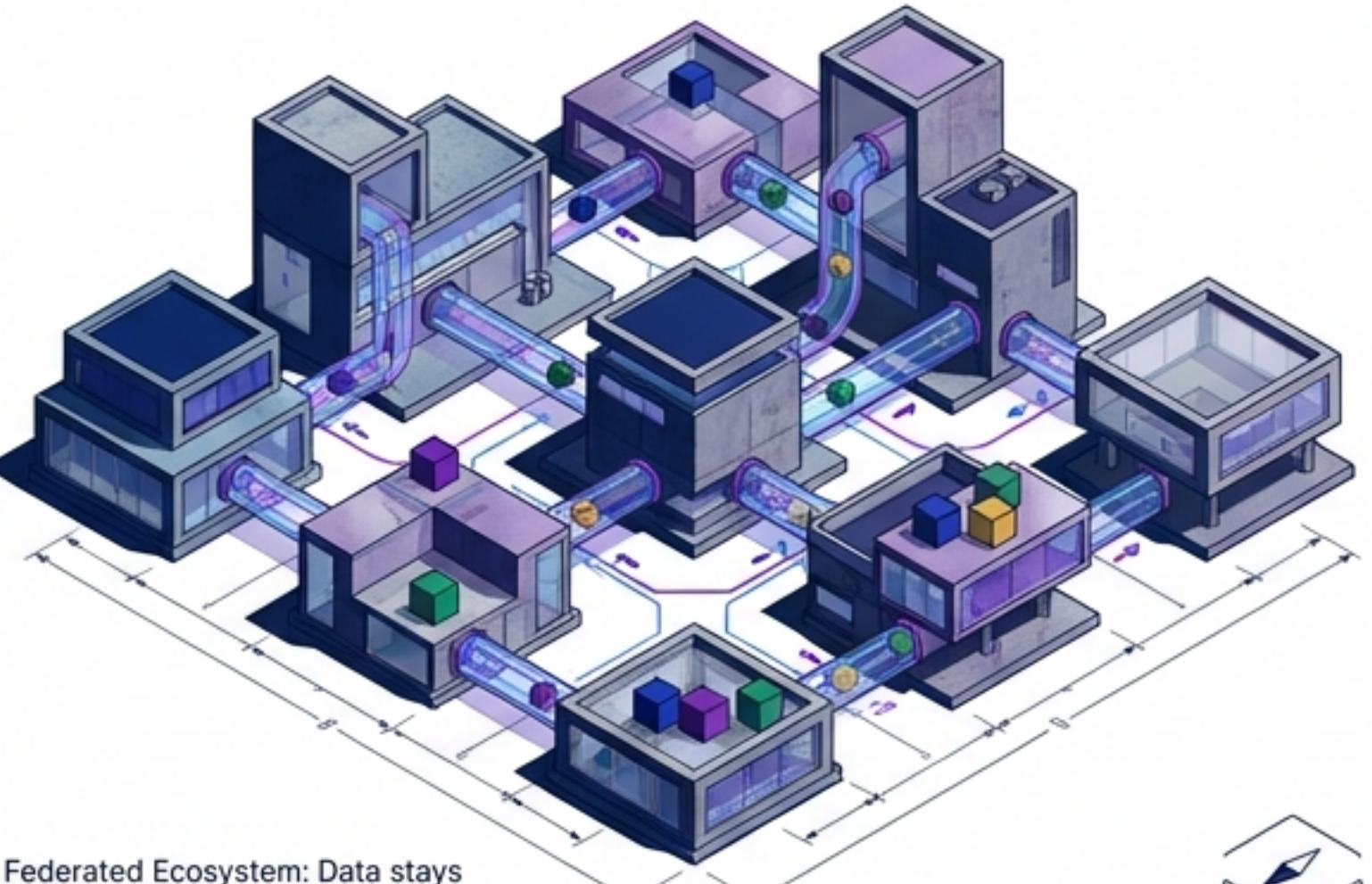


THE MARKET SHIFT: HOSTING VS. SHARING

The Old Cloud (IaaS)



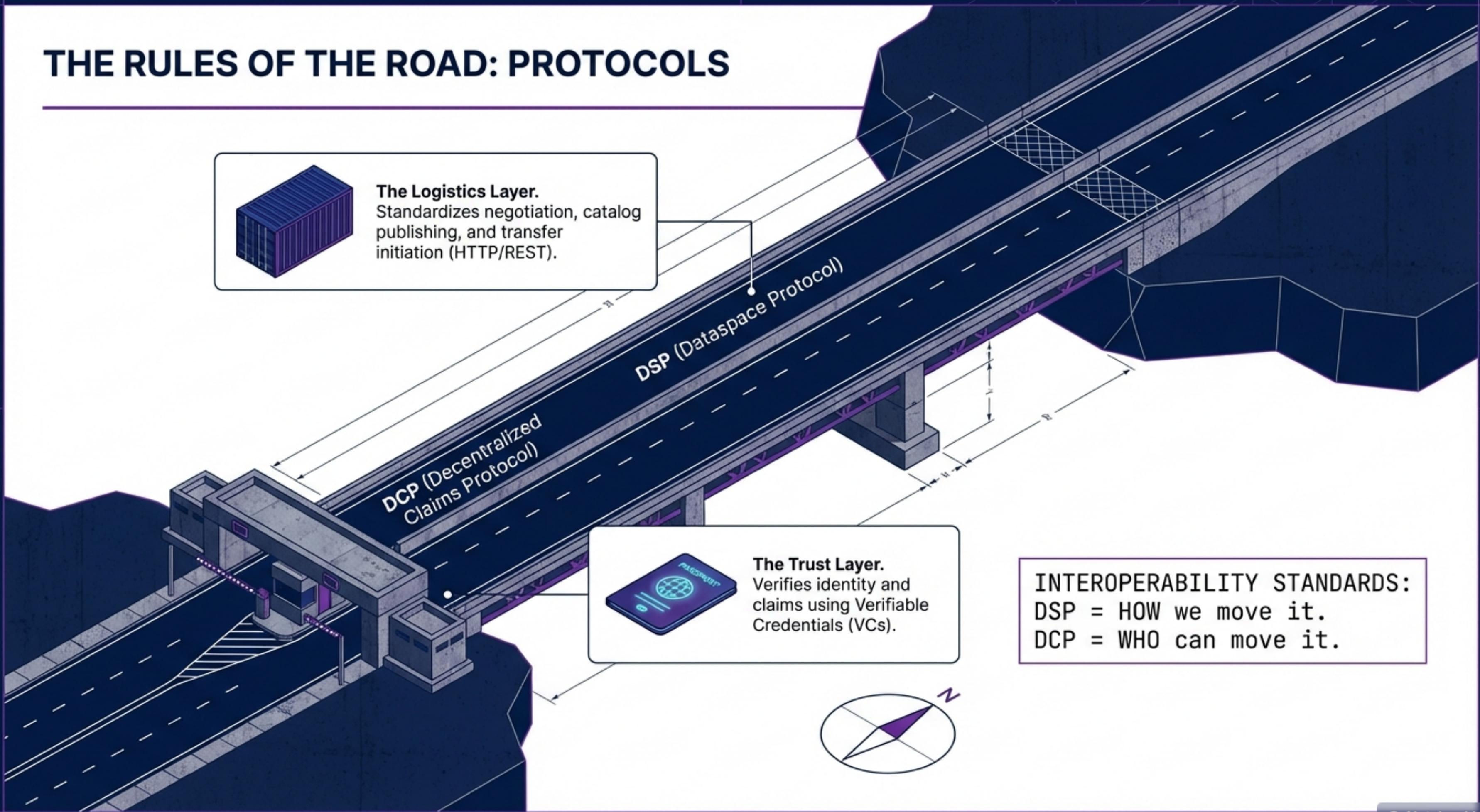
The Dataspace (Trust-as-a-Service)



The Opportunity:

Customers like Catena-X don't just want storage. They want sovereignty. Moving from "Renting Servers" to "Mediating Trust".

THE RULES OF THE ROAD: PROTOCOLS



THE TOOLBOX: ECLIPSE DATASPACE COMPONENTS (EDC)



Classic EDC Connector

The workhorse.
Combined Control & Data Plane.



IdentityHub

The Trust Anchor.
Holds DIDs and
Verifiable Credentials.



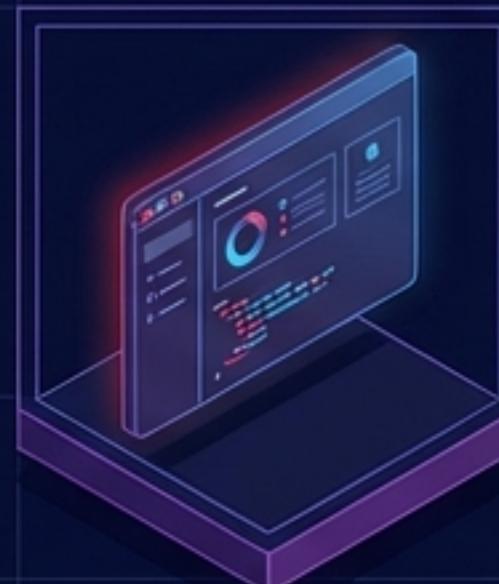
EDC Virtual Connector (EDC-V)

Cloud-native.
Virtualized Control
Plane for multi-tenancy.



Connector Fabric Manager (CFM)

The Orchestrator.
Manages tenant
lifecycles.



Redline

The User Experience.
Backend-for-Frontend API.

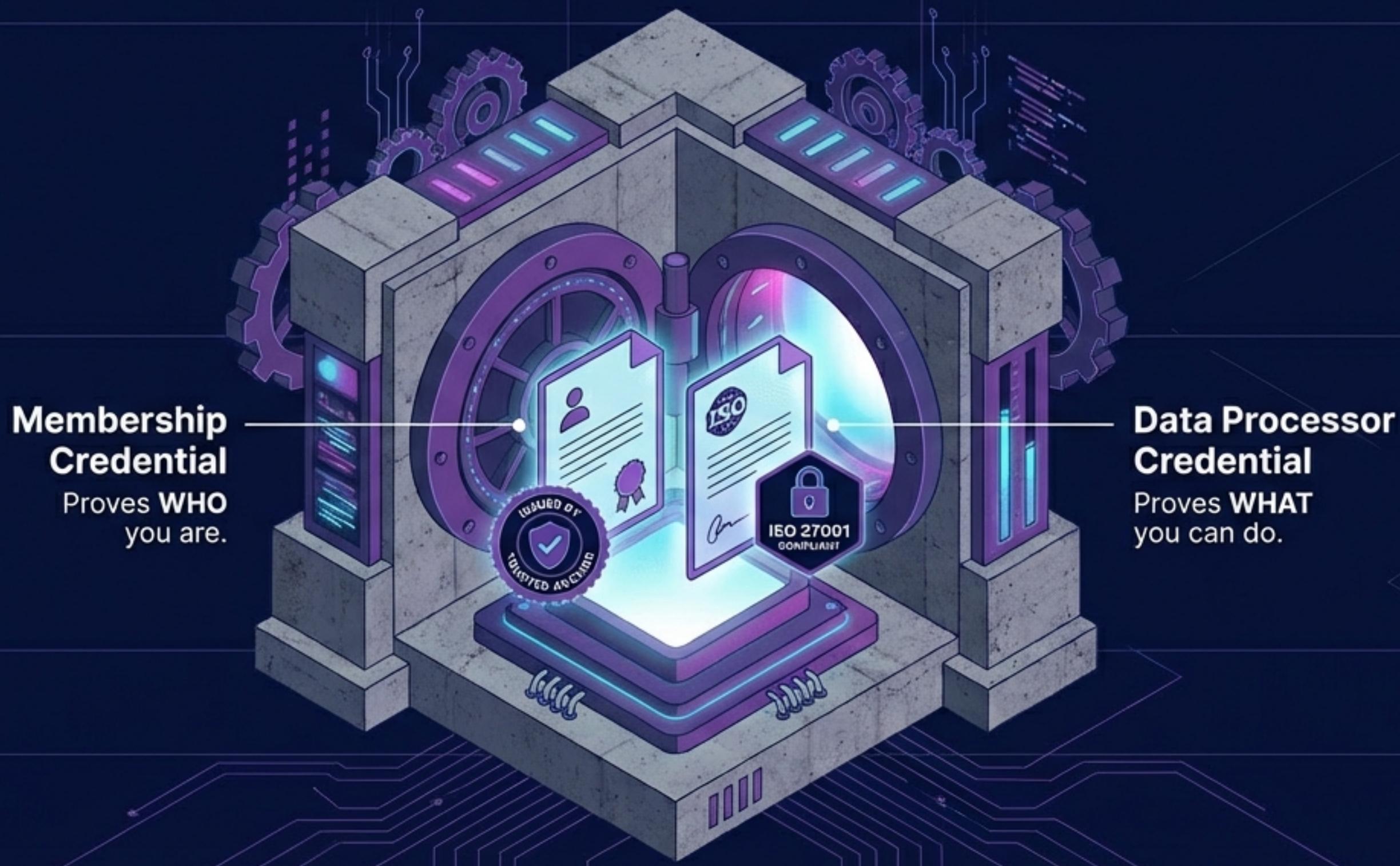


Data Plane Signaling (DPS)

The Protocol.
Connects Brains to
Muscles.



THE TRUST ANCHOR: IDENTITY HUB



Decentralized Trust:

Replacing central logins with cryptographic proof.

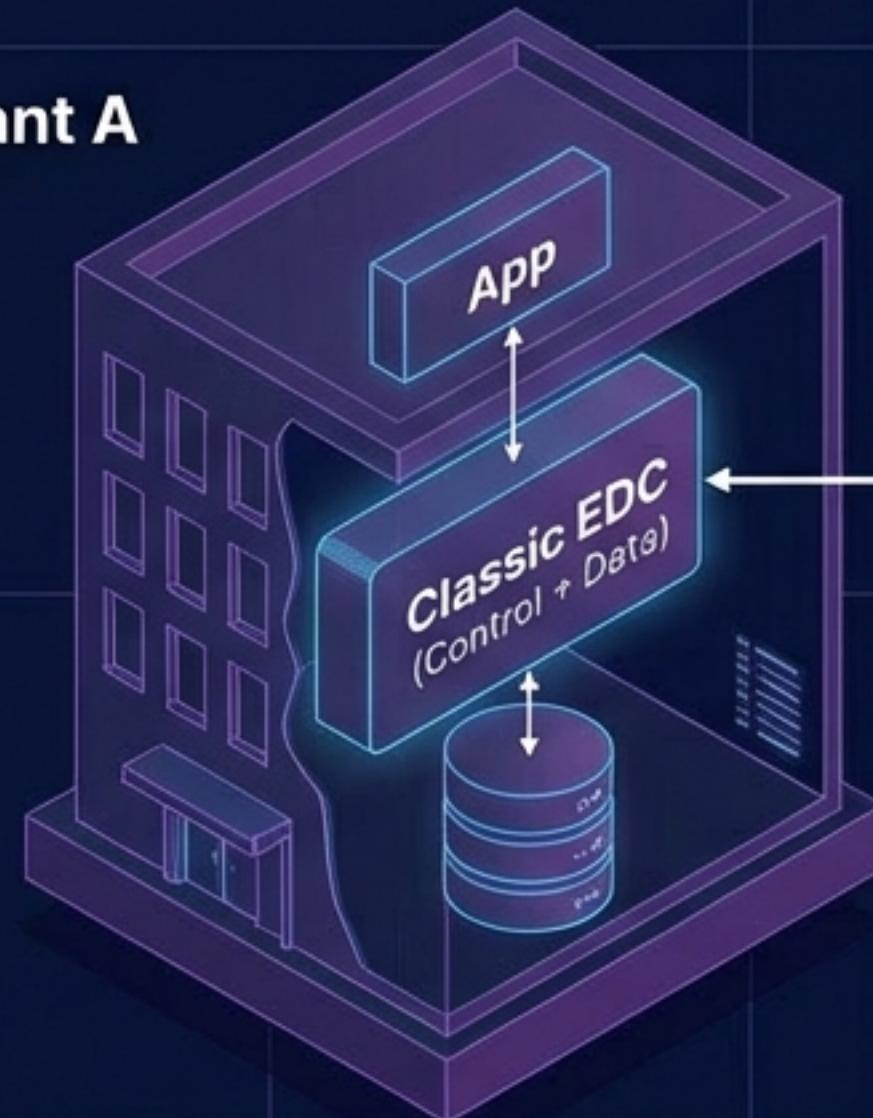
Madrid Context:

The core of the 'Certificate-Driven Trust' scenario. The Provider no longer manually verifies every transaction; the math does.

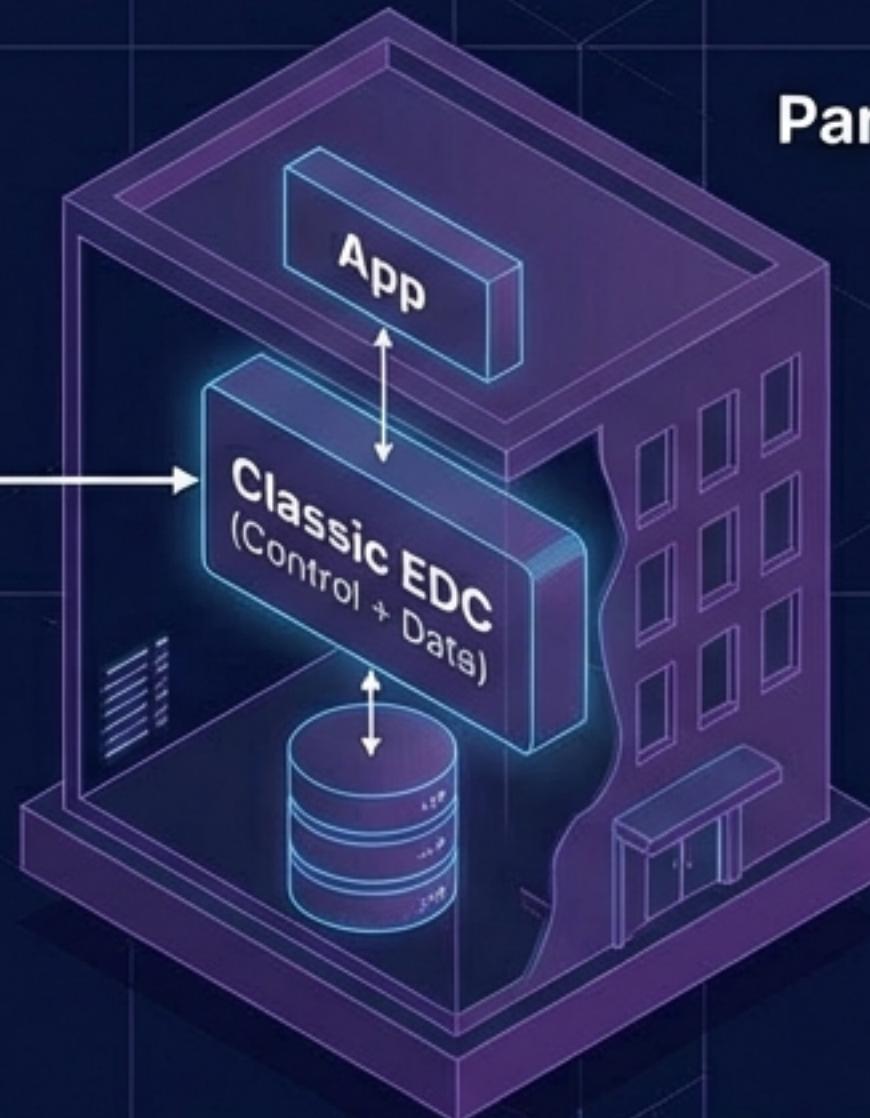


MATURITY LEVEL 1: PEER-TO-PEER (CLASSIC)

Participant A



Participant B



Architecture:

1 Control Plane + 1 Data Plane per participant.

Pros:

Simple isolation. Proven (Catena-X legacy).

Cons:

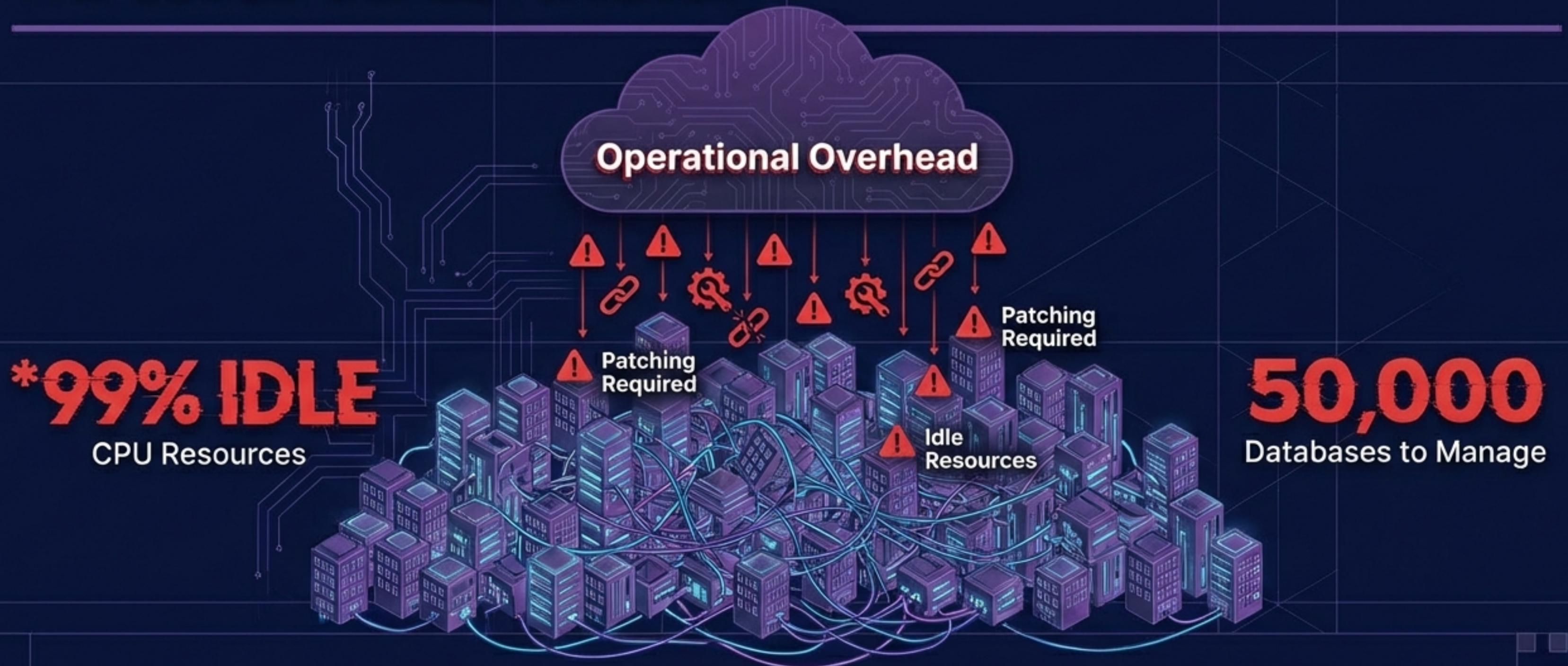
Resource Heavy. Scaling to 10,000 SMEs requires 10,000 full Java processes.

Verdict:

Ideal for Enterprise self-hosting. Bad for Cloud Providers.

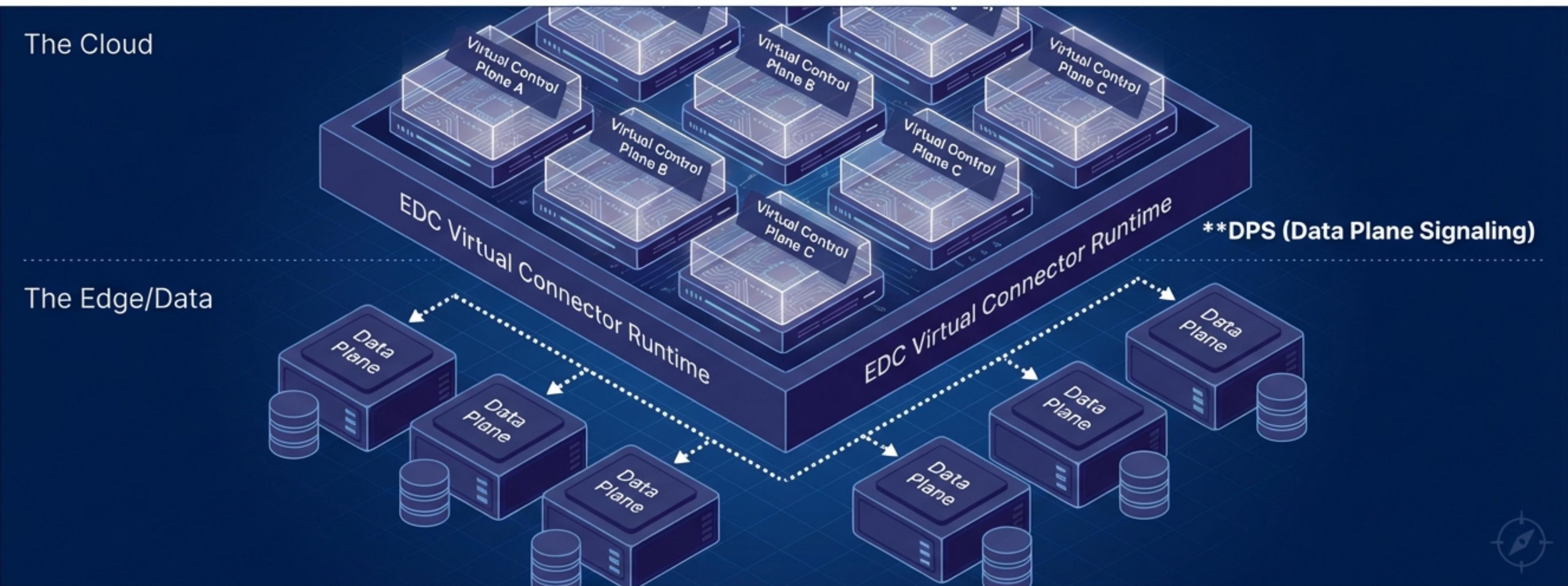


THE CLOUD SCALE PROBLEM



If OVH or Aruba onboards 50,000 SMEs using Level 1, the infrastructure collapses under its own weight. We need to separate the Brain from the Muscle.

MATURITY LEVEL 2: VIRTUALIZATION (EDC-V)



Density:

Run thousands of tenants on minimal hardware.



Innovation:

Decoupled Control & Data Planes.



Status:

Madrid Green. Virtual Control Planes ready; classic data planes used for stability.



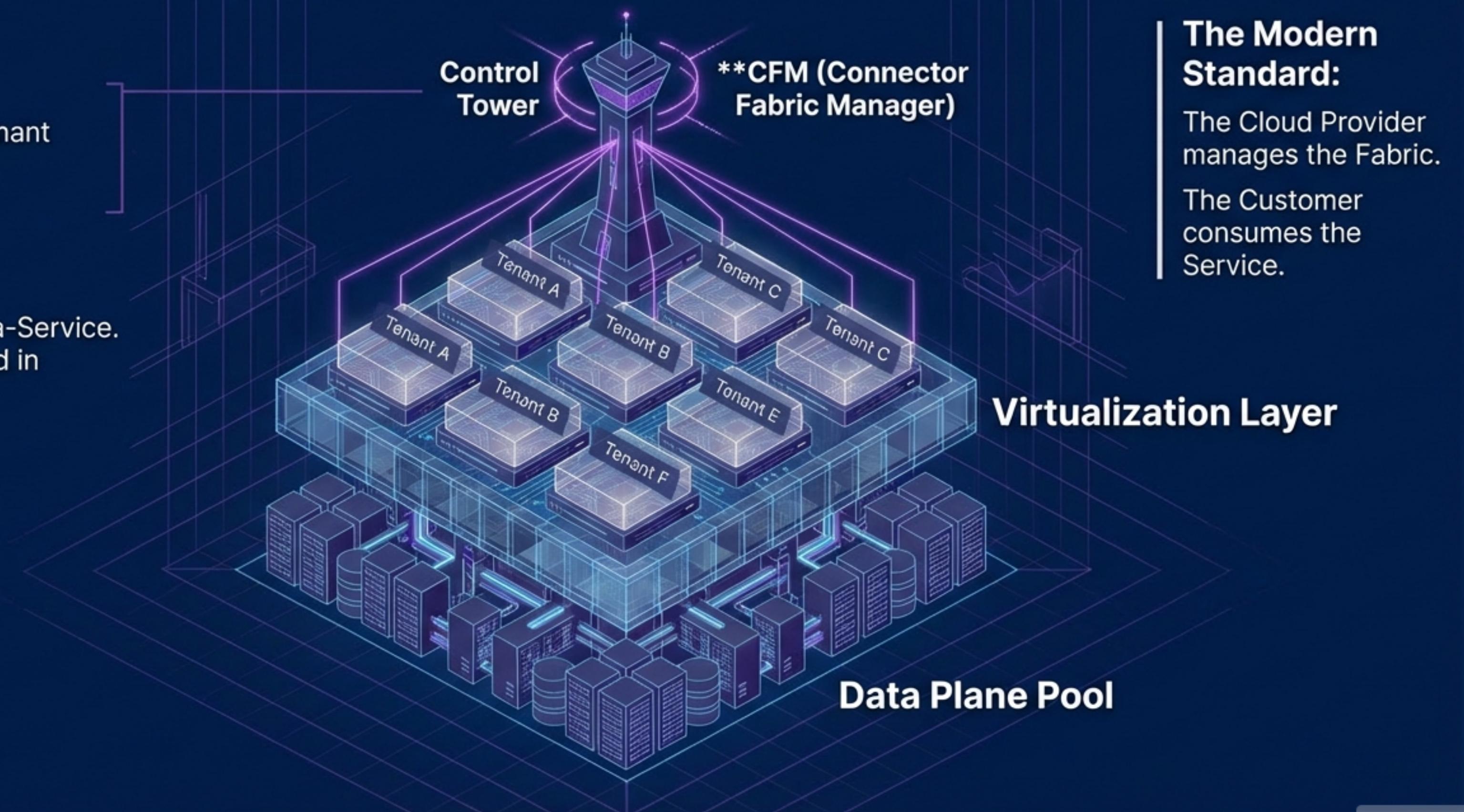
MATURITY LEVEL 3: THE CONNECTOR FABRIC

CFM Role:

1. Provision Tenant
2. Config DNS
3. Issue Wallet

Result:

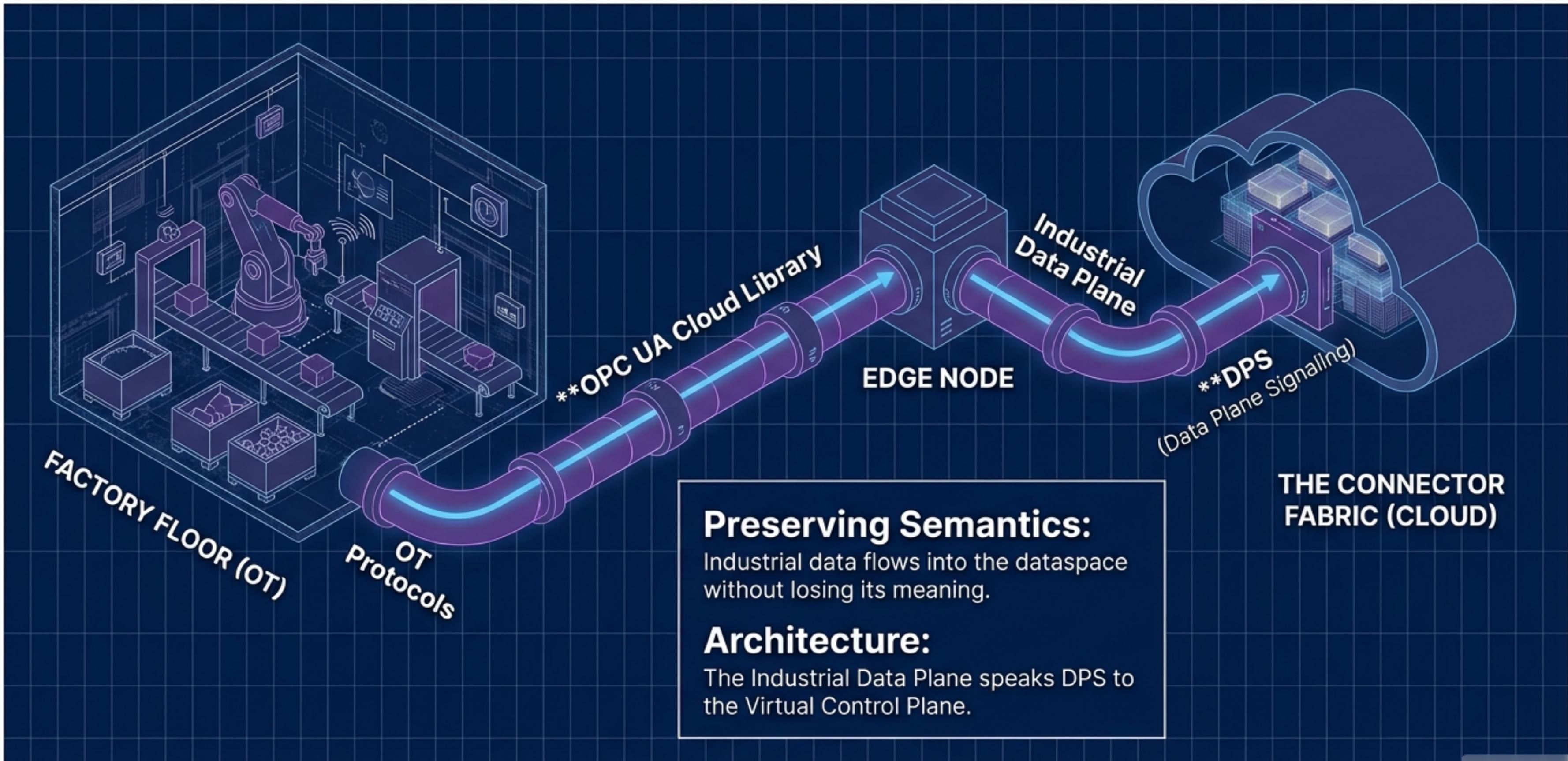
Connector-as-a-Service.
Tenants created in
seconds.



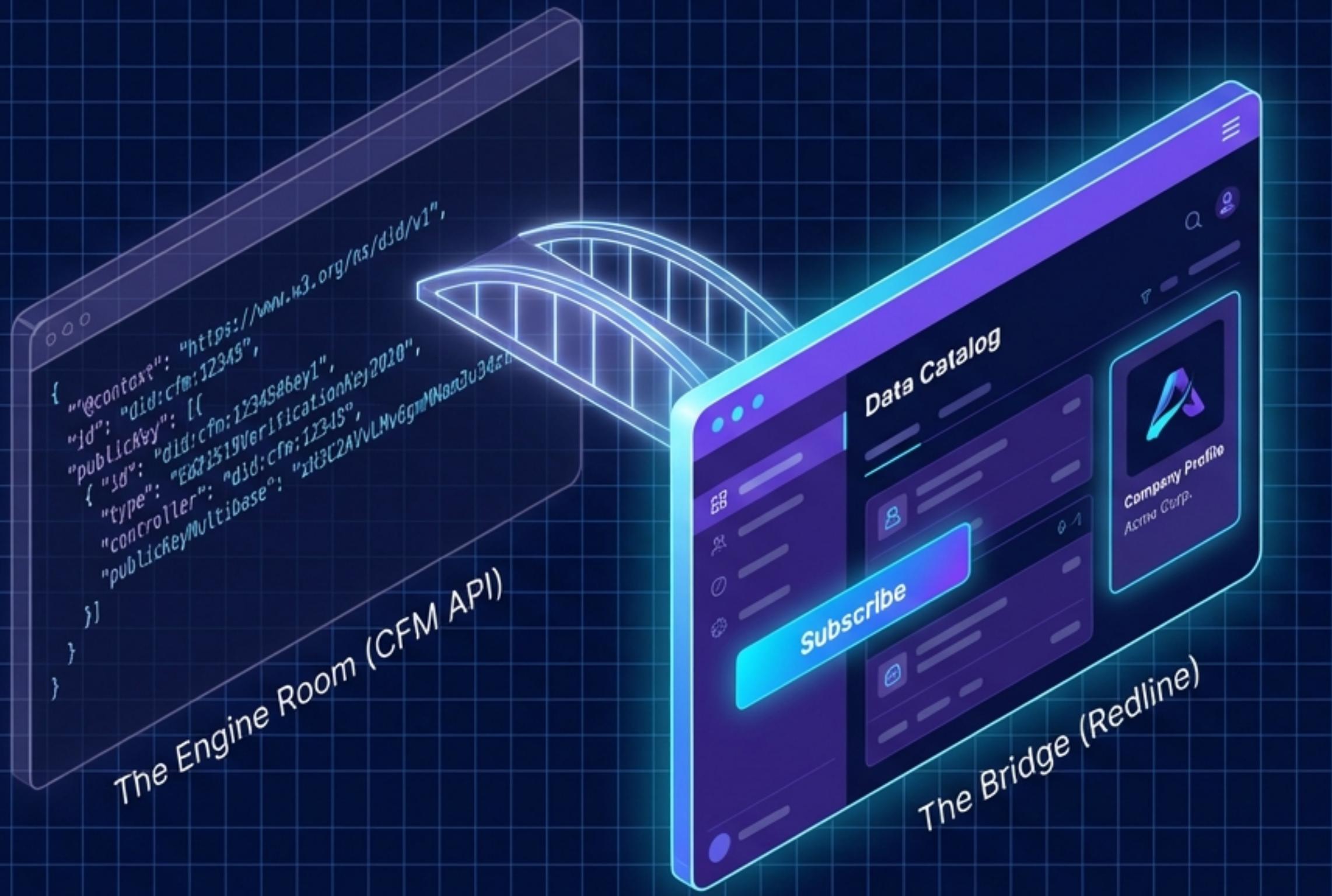
The Modern Standard:

The Cloud Provider manages the Fabric.
The Customer consumes the Service.

INDUSTRIAL INTEGRATION: THE OT/IT BRIDGE

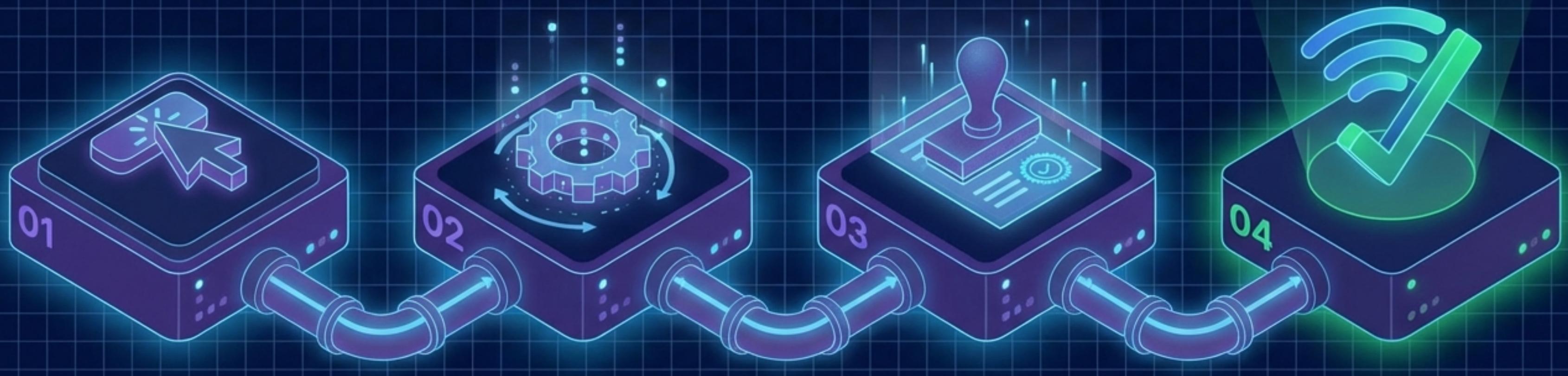


THE EXPERIENCE LAYER: REDLINE



- **COMPONENT:** Redline (Backend-for-Frontend).
- **MISSION:** Translate JSON-LD and DIDs into a human-readable SaaS experience.
- **AUTH:** Keycloak integration mapping corporate logins to Dataspace Identities.

THE ONBOARDING JOURNEY



REQUEST

User clicks "Join" in
Portal (Redline).

PROVISION

CFM spins up
"Tenant Context" &
"IdentityHub."

ISSUE

IssuerService sends
"Membership Credential"
to IdentityHub.

READY

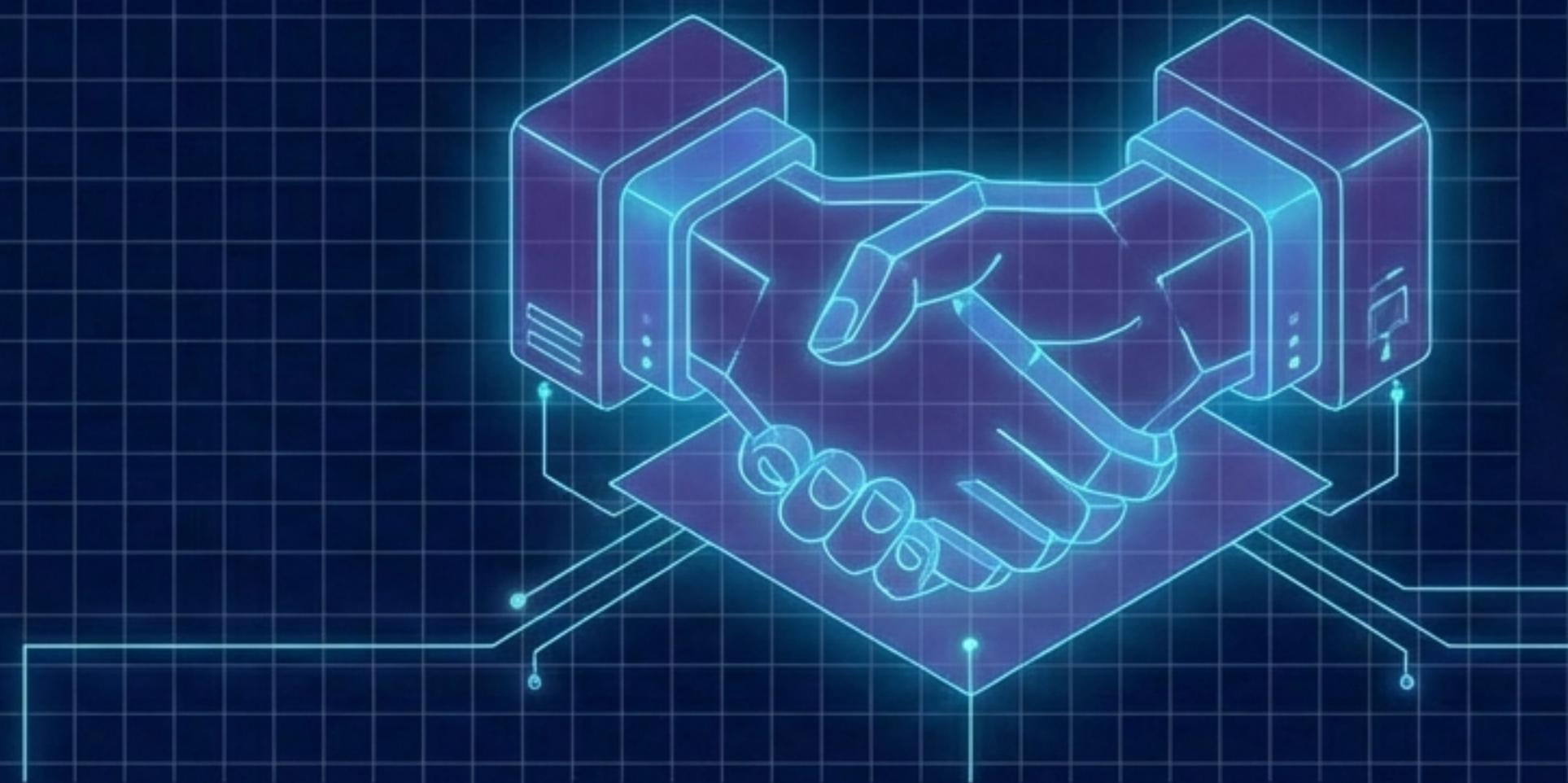
SME is live.
DID: did:web:identi-
tyhub.aruba07...

Based on Aruba PoC Architecture.

VALUE FOR CLOUD PROVIDERS



VALUE FOR YOUR CUSTOMERS



SIMPLICITY:

Zero installation. No Java runtimes or databases to manage. Just a web portal.

TRUST:

Automated IdentityHub handles complex verifiable credentials and compliance proofs.

TRUST:

Automated IdentityHub handles complex verifiable credentials and compliance

REACH:

Instant discoverability. Connect to the entire federated network immediately.

Based on Aruba PoC Architecture.

THE ROADMAP: TODAY & TOMORROW

