**ADR 001: MuleSoft Deployment Model for Acme Insurance Transformation**

**Context**

Acme Insurance is undergoing a transformation driven by the following high-level business drivers:

* **Revenue Increase** – achieved through new sales channels (e.g., opening to aggregators).
* **Cost Reduction** – achieved via customer self-service and IT system standardization.
* **IT System Standardization** – aligning systems under a common technology architecture, with a preference for COTS solutions while reusing existing custom software where beneficial.

Constraints & requirements:

* Corporate IT mandates **standardization** to reduce complexity and operational costs.
* New owners expect measurable revenue and cost improvements within the next 12 months.
* The solution must support both **cloud-hosted** and **on-premises** runtimes to comply with regulatory needs and leverage existing infrastructure.
* Preference for managed services where possible, to reduce operational burden.

MuleSoft offers multiple deployment models combining **Control Plane** (MuleSoft-hosted vs. customer-hosted) and **Runtime Plane** (iPaaS-provisioned vs. manually provisioned). The main options considered were:

1. **Fully MuleSoft-hosted** (CloudHub/CloudHub 2.0, AWS public/VPC/GovCloud).
2. **Hybrid model** – MuleSoft-hosted control plane with customer-hosted runtimes (Kubernetes/Docker via Anypoint Runtime Fabric).
3. **Fully customer-hosted** (Anypoint Platform Private Cloud Edition).

**Decision**

Adopt a **Hybrid MuleSoft deployment**:

* **Control Plane**: MuleSoft-hosted (Anypoint Platform).
* **Runtime Plane**: Customer-hosted (Kubernetes cluster deployed on existing infrastructure, using Anypoint Runtime Fabric).

Reasons:

* Meets **IT standardization goals** while leveraging Kubernetes skills already in the organization.
* Supports **COTS preference** (Anypoint Platform) while enabling selective reuse of custom systems.
* Allows for **data residency and compliance** by keeping sensitive runtime workloads on-premises while using cloud-based management.
* Reduces operational complexity for the control plane while preserving flexibility for runtimes.

**Status**

**Accepted** – to be implemented in the next architecture release cycle (Q3 FY2025).

**Consequences**

**Positive**

* Aligns with strategic drivers (**revenue increase** and **cost reduction**) by enabling new digital channels quickly while reducing operational costs.
* Provides scalability and resilience via Kubernetes and Runtime Fabric.
* Minimizes upfront infrastructure costs for the control plane (cloud-hosted).
* Complies with regulatory requirements for sensitive data.

**Negative / Risks**

* Requires skilled Kubernetes/Docker operations team for runtime management.
* Integration between customer-hosted runtimes and MuleSoft-hosted control plane depends on stable network connectivity.
* Slightly higher complexity compared to fully cloud-hosted solutions.

**Dependencies**

* Kubernetes infrastructure capacity and monitoring.
* Network and security configuration for Runtime Fabric.
* MuleSoft subscription supporting hybrid deployments.

**Related documents**

* **Acme Insurance Motivation Model** – Strategic drivers and goals diagram.
* **MuleSoft Deployment Model Matrix** – Runtime and control plane combinations.
* **Corporate IT Standardization Policy** – Preference for COTS and reuse of software assets.
* **Regulatory Compliance Guidelines** – Data residency and hosting requirements.