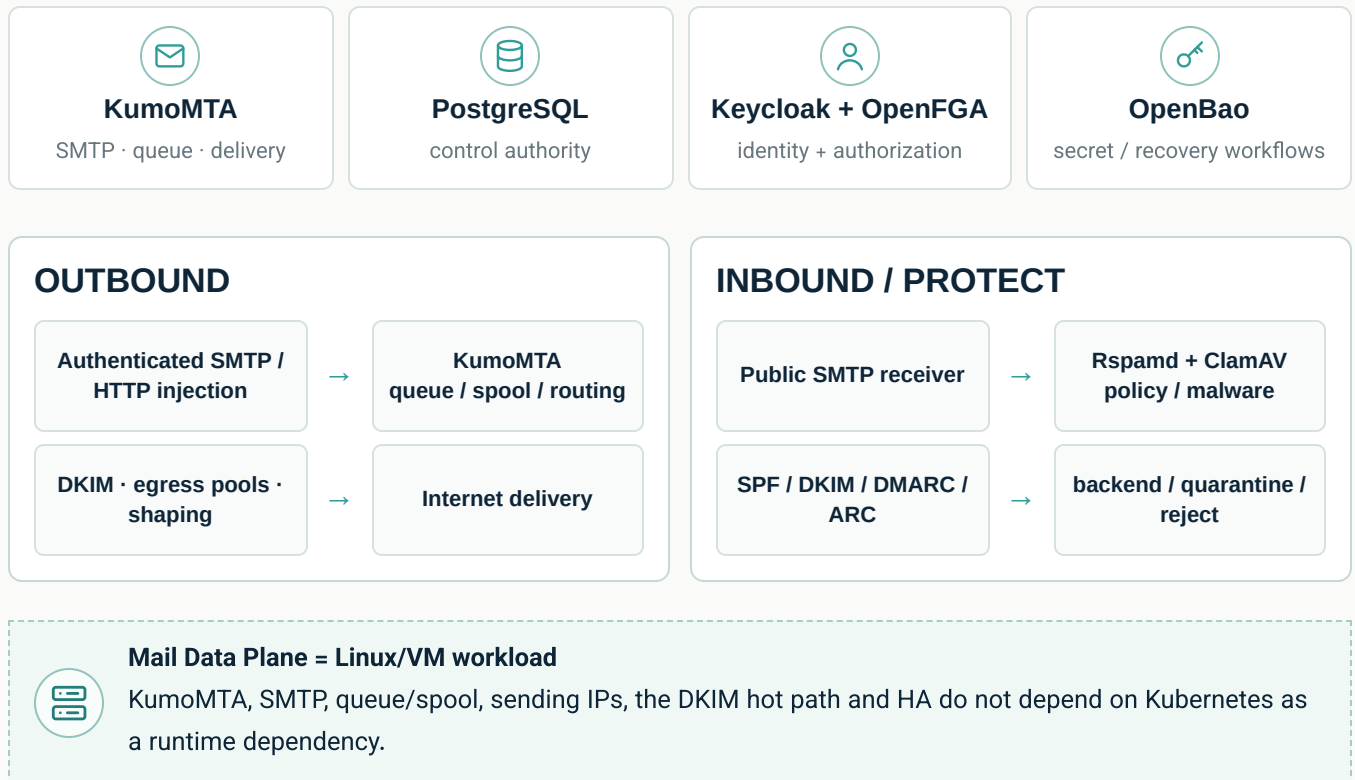


TECHNICAL BROCHURE · 4SO MAIL GATEWAY

4SO Mail Gateway

Self-contained Mail Server & Gateway Platform

A Linux/VM-first platform for high-volume sending, protected receiving, Queue/Spool, DKIM, routing, identity and durable operations, with a clear separation of the Mail Data Plane from the Control Plane.



Node-local spool

The spool is local to the Mail Node; no fictional shared spool is claimed as product architecture.

Bounded Control Plane

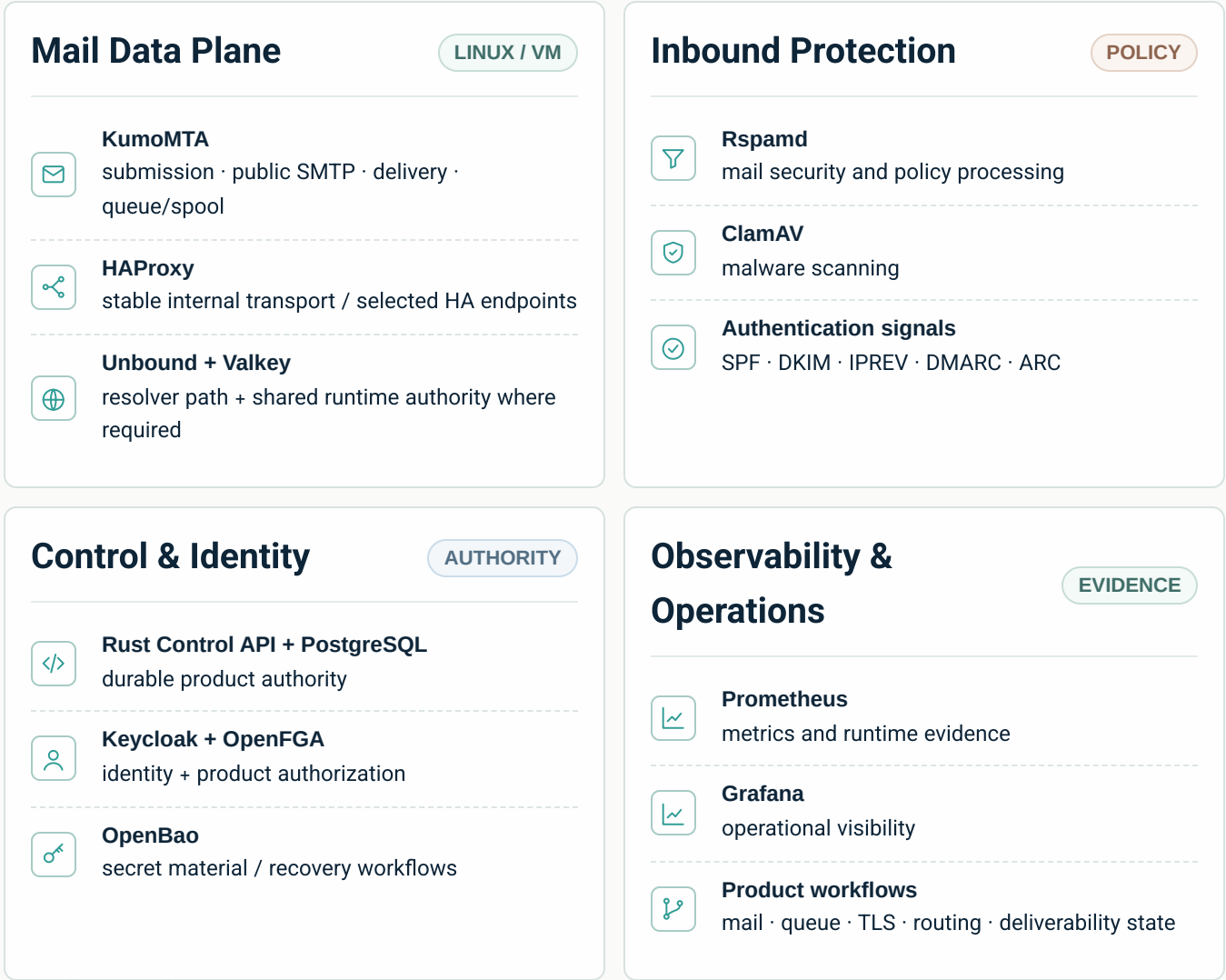
Rust Control API, PostgreSQL, Keycloak, OpenFGA and OpenBao own the identity, authorization and durable lifecycle paths.



PRODUCT BOUNDARY

Four layers; one product lifecycle

SMTP runtime, inbound protection, control/identity and observability each have a clear owner; the UI or MCP never replaces the primary authorities.

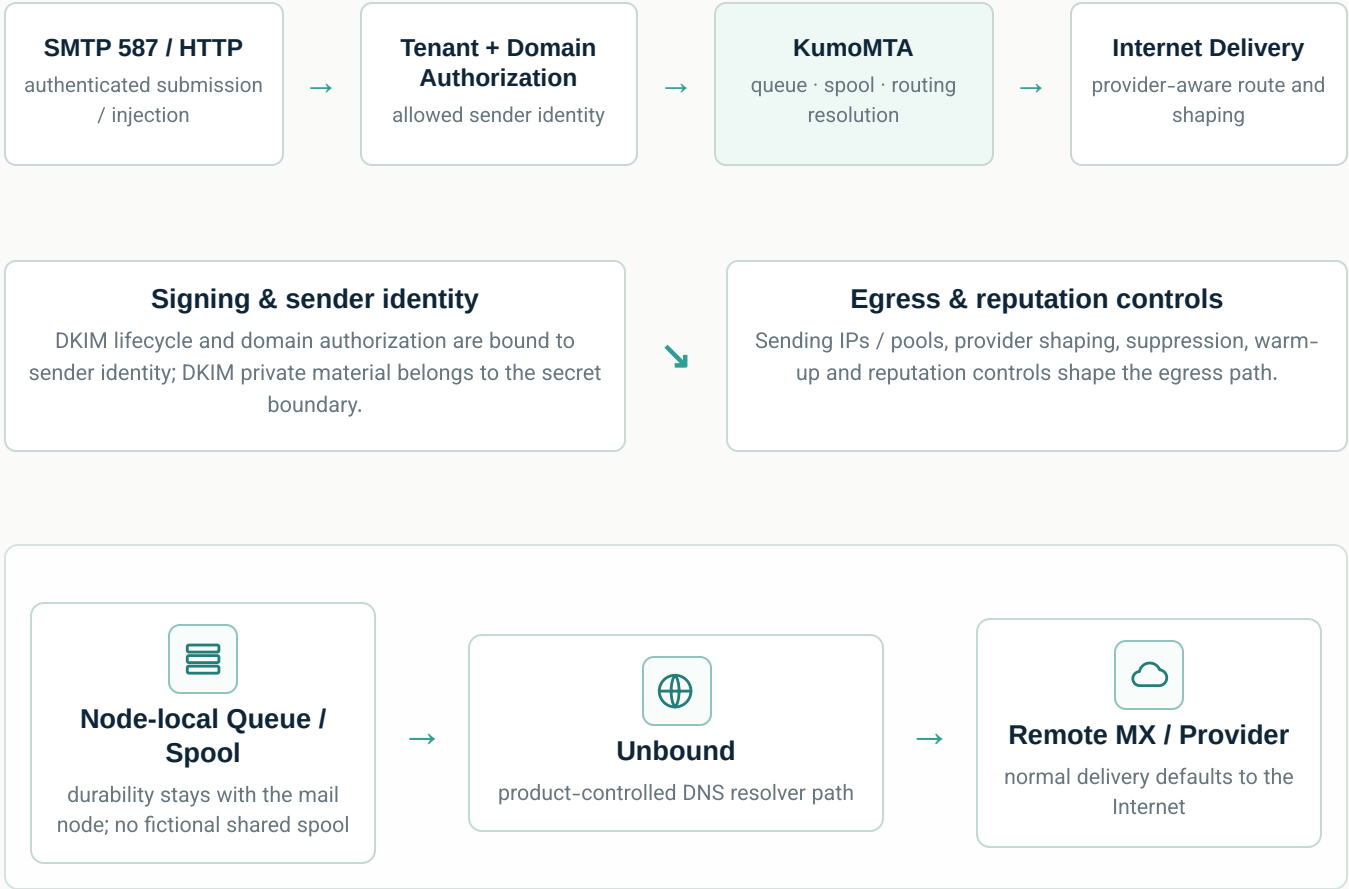


 **Ownership principle:** PostgreSQL holds the Control Plane authority; KumoMTA owns the mail hot path and the node-local queue/spool.

OUTBOUND PATH

From submission to Internet delivery

The outbound path is centred on KumoMTA; domain authorization, DKIM, egress pool and shaping take effect before delivery, while the spool stays on the same Mail Node.

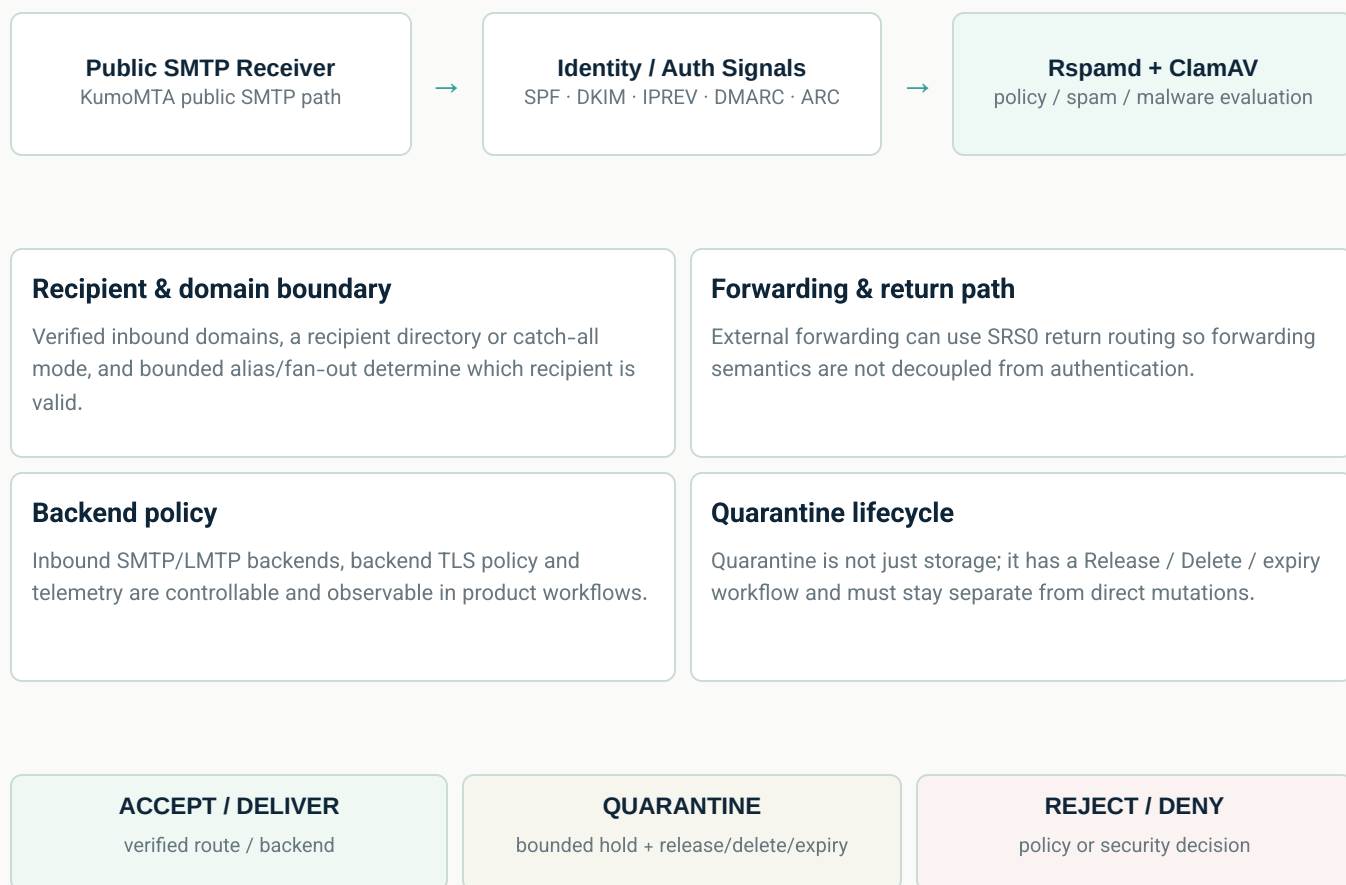


Stable transport ≠ shared spool
HAProxy is used for selected stable transport / HA endpoints, but the spool remains node-local and is not assumed to be a shared storage fabric.

INBOUND PROTECTION

Reception, policy, malware and delivery decision

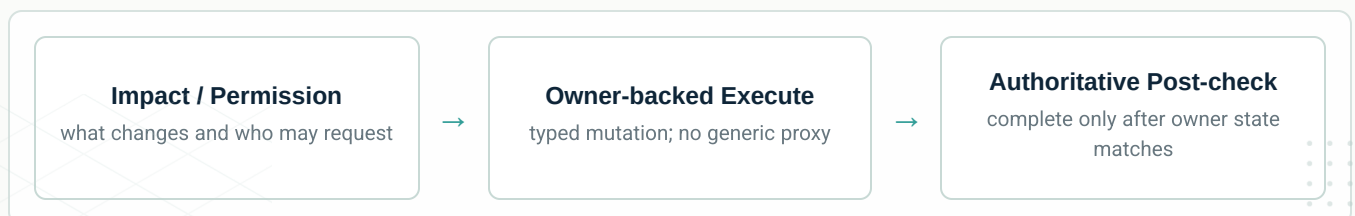
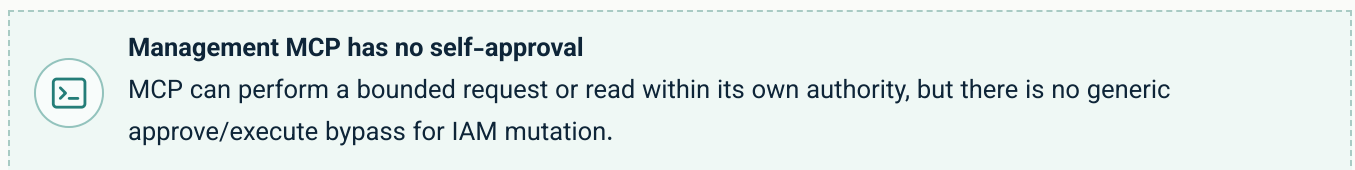
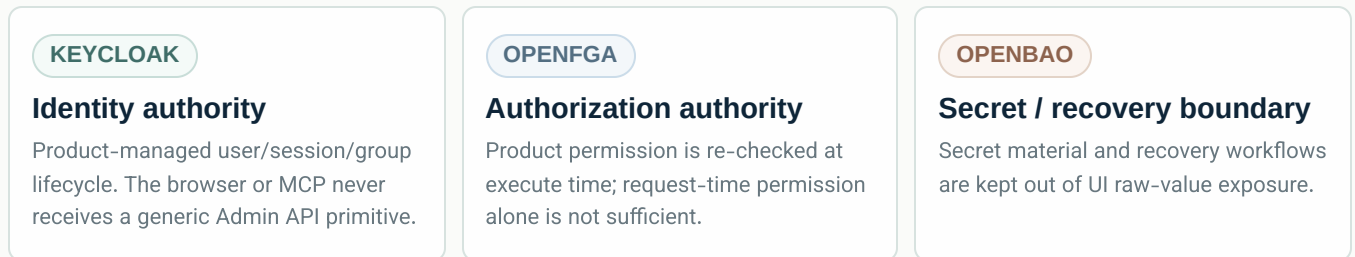
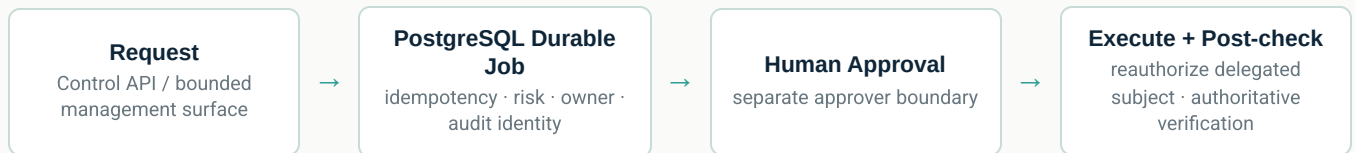
Beyond SMTP reception, the inbound path keeps authentication signals, anti-spam, anti-malware, backend policy and quarantine lifecycle in one observable path.



HIGH-RISK IAM

No shortcut for a sensitive change without the approval chain

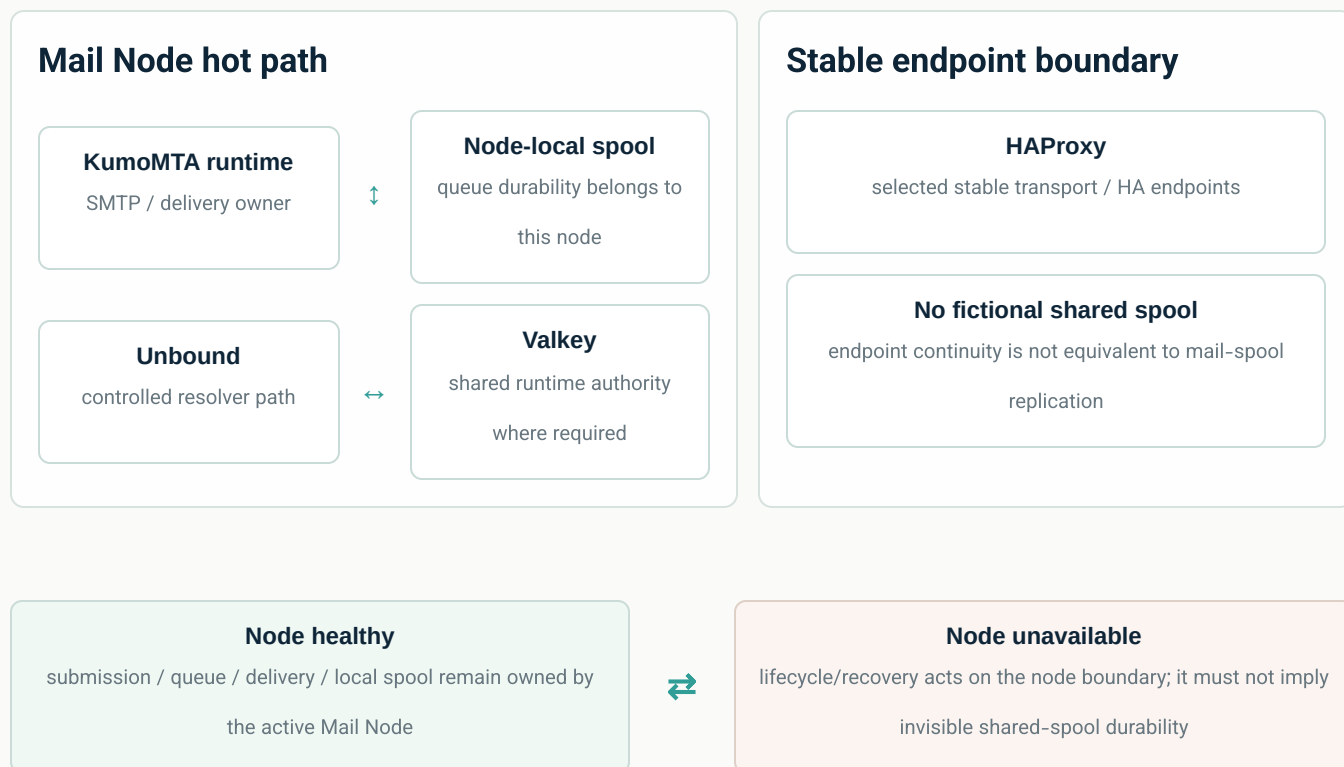
Sensitive identity and access mutations are bound to a durable PostgreSQL job, independent human approval, reauthorization at execution time and an authoritative post-check.



QUEUE, SPOOL & FAILURE BOUNDARY

The spool is local; continuity must preserve that boundary

A Mail Node failure cannot be hidden behind an assumed shared storage. The product-owned architecture keeps the spool node-local and separates the HA endpoint from data durability.



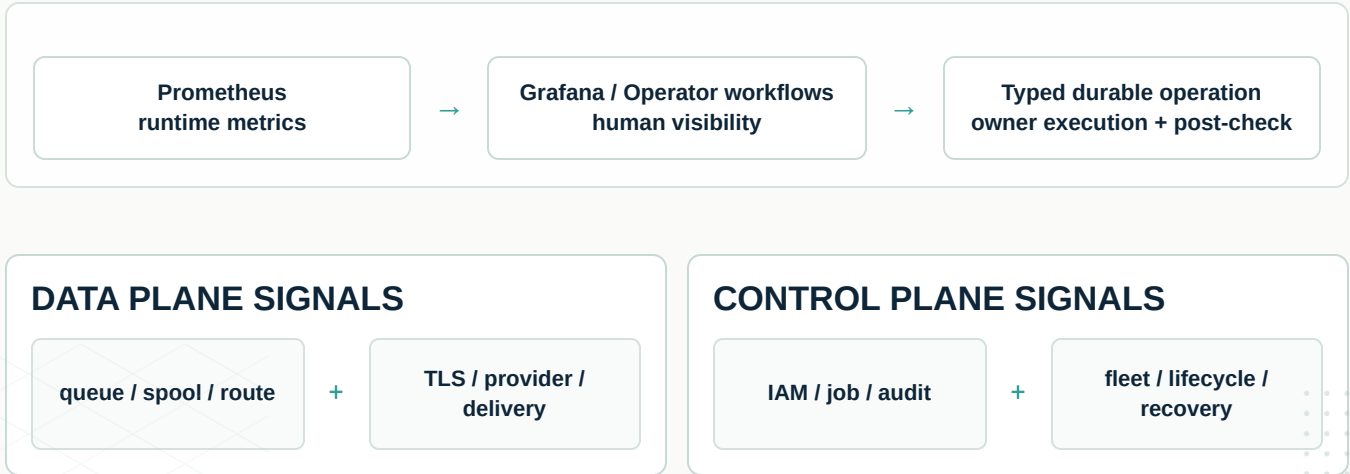
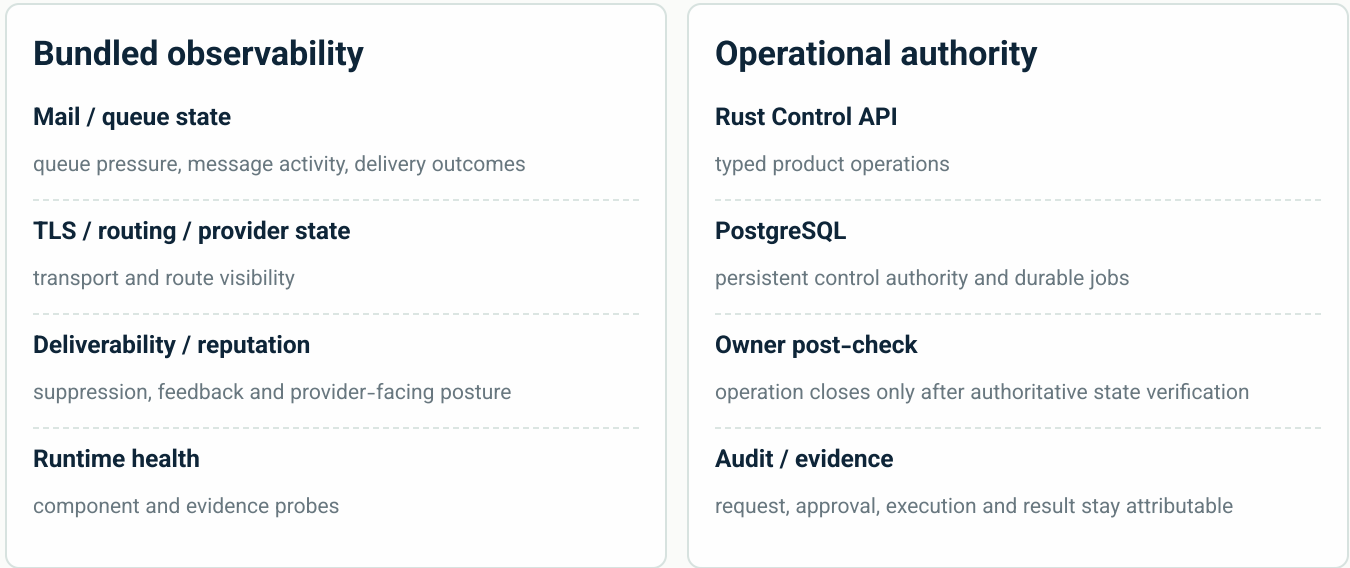
Kubernetes is not Mail Data Plane runtime authority

Kubernetes may be used in other parts of the delivery infrastructure, but KumoMTA / SMTP / spool / sending IP / DKIM hot path and HA remain Linux/VM-first.

OBSERVABILITY & CONTROL LOOP

Mail state must turn into actionable operations

Prometheus and Grafana provide visibility; owner APIs and durable operations close mutation and recovery. Monitoring authority never replaces runtime authority.



ACTION & OPERATIONS CATALOG

The Mail lifecycle, from the message path to the identity path

