

FoundationMQ

Sparkplug Aware MQTT brokers built
for industrial data.

FoundationMQ provides the secure, reliable message distribution layer between MQTT publishers and subscribers, helping industrial organizations connect edge systems, SCADA applications, and enterprise destinations without adding unnecessary complexity.

NEW





FoundationMQ

MQTT BROKER



Industrial teams adopting MQTT face a choice between open-source brokers with no support and enterprise platforms with too much overhead. FoundationMQ closes that gap with reliable message transport, sized and designed for OT, available in a tier for either need.

One broker family. Two deployment paths.

Choose the tier that fits the architecture you run today, with room to support what comes next

FoundationMQ



Essential MQTT broker capabilities for focused deployments.

- Reliable and secure message exchange
- Unlimited connections, tags and messages
- Easy to deploy and manage
- Ideal for small to mid-sized environments

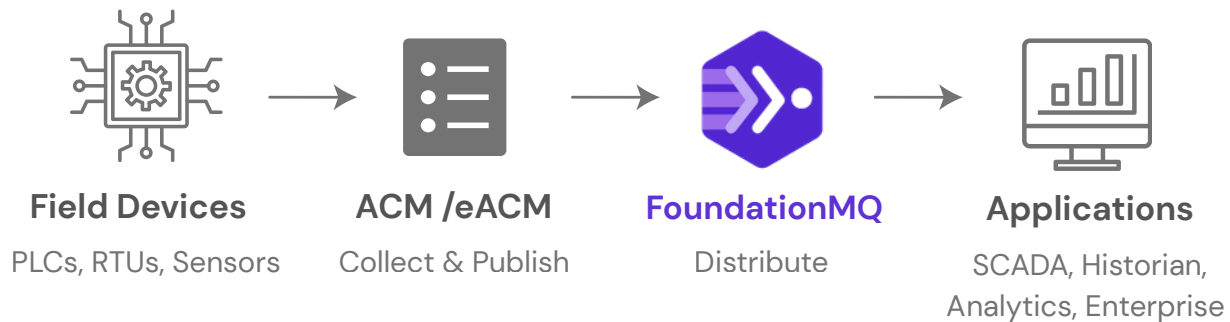
FoundationMQ+



Enterprise capabilities for environments that demand more.

- Advanced security and user management
- Federated clustering across data centers
- Enterprise grade monitoring
- Built for enterprise and mission-critical deployments

A simple architecture. A more connected operation.



KEY DESIGN PRINCIPLES



Built for OT, Not Adapted From IT:

designed for controlled networks, predictable behavior under load, clear operational boundaries.



Standalone and Deployable: no external cloud dependencies, no hidden platform coupling, install, configure, operate.



Standards-Based MQTT: clean adherence to MQTT specifications, no proprietary schemas, interoperable with any MQTT-compliant tool, client, or AUTOSOL product.

TYPICAL USE CASES



Modernize OT Messaging

Create a reliable MQTT backbone or replace unsupported open-source brokers.



Connect edge to enterprise

Move field data securely to SCADA, historians, analytics and cloud platforms.



Enable scalable architectures

Support edge-first deployments, Unified Namespace strategies and multi-site operations.

PROTOCOL & STANDARDS (both tiers unless noted)

MQTT Versions 3.1, 3.1.1, and 5.0. Simultaneous support; clients negotiate version at connect.

QoS Levels QoS 0 (at most once), QoS 1 (at least once), QoS 2 (exactly once).

TLS Support TLS 1.2 and TLS 1.3. Server-side TLS and mutual TLS (mTLS).

Topic Alias (MQTT 5.0) Configurable per listener (default 1,000). Reduces wire overhead on constrained links.

Sparkplug 3.0 Sparkplug v3.0 (namespace spBv1.0). Natively supported.

Sparkplug Aware Features Birth/death message tracking; automatic birth re-delivery to late-subscribing clients; Edge Node and Device descriptor management.

Metric Flattening Optional: each metric in a Sparkplug payload republished as an individual MQTT topic.

Sparkplug Client Compatibility Works with any Sparkplug-certified clients.

Compressed Payloads Sparkplug SPBv1.0_COMPRESSED payloads decoded natively.

RELIABILITY & PERSISTENCE (both tiers unless noted)

Retained Messages Full MQTT retained message support, last known value stored and delivered to new subscribers.

Persistence Engine Embedded key-value store, no external database; data survives broker restart.

Offline / Queued Messages In-flight message tracking with QoS 1 and QoS 2 queuing for reconnecting clients.

Sparkplug Value Retention Configurable. Flattened per-metric topics can be retained independently of the original Sparkplug payload.

Session Persistence Client sessions and subscription state persisted across broker restarts.

SECURITY & AUTHENTICATION (both tiers unless noted)

Client Authentication Username / password.

Certificate-Based Auth Client certificate authentication via TLS client certificates (mTLS).

Mutual TLS (mTLS) Broker verifies client certificates; clients verify broker certificate. Full two-way verification.

Topic-Level ACL Per-client publish and subscribe permissions enforced in-broker. Configurable via embedded ACL store.

Anonymous Access Configurable, disabled by default.

Certificate Management Certificates loaded from local disk, or optionally retrieved from Azure Key Vault where cloud integration is already in use.

Credential Storage Same as above.

PERFORMANCE & CAPACITY

Throughput High-throughput design benchmarked against industry leaders.

Concurrent Connections Scales with available system resources; no hard-coded connection ceiling (outside of OS-related ceilings).

Publish-to-Subscribe Latency Low-latency in-process message routing.

Contact AUTOSOL for application-specific sizing, validated capacity figures, and benchmarks under representative OT load profiles.

DEPLOYMENT & INFRASTRUCTURE

Operating Systems Windows (Server & Desktop), Linux (Debian, Ubuntu, compatible distributions).

CPU Architectures x86-64 (amd64), ARM64 (WIP).

Container Support Official Docker image (distroless base); Kubernetes-ready via standard container orchestration.

Cloud / VM Deployment Runs on any cloud VM or edge appliance. No cloud platform dependency required.

Hardware Requirements Minimum recommended: 8 GB RAM, 8 GB free disk space. Disk usage grows with concurrent connections; session cache expands proportionally to connection count and session state volume.

HIGH AVAILABILITY (FoundationMQ+)

Single-Node Mode Fully standalone. No cluster infrastructure required for typical OT edge deployments.

Clustering Distributed cluster mode with node discovery and consensus-based leader election (requires at least 3 nodes per cluster). See Flag 1 above on current shipping status.

Failover Cluster nodes handle client reconnects automatically; consistent distributed state ensured. See Flag 1 above.

Federated Clustering Cluster-of-clusters, geographically distributed synchronization across data centers. FoundationMQ+ only.

WHY NOT THE ALTERNATIVES

Open-Source & Free? Easy to start. No support. No accountability. No roadmap input. Works until it doesn't, and when it doesn't, you're on your own at 2 AM.

Proprietary Ecosystem Brokers Built to pull you into a larger platform. Proprietary schemas and topic conventions create architectural commitment you didn't plan for.

Enterprise IT-Native Platforms Built for cloud scale and IT patterns. Assumes connectivity, maturity, and licensing budgets that most OT environments don't have.

WHAT YOU GET THAT OTHERS CAN'T MATCH

On-Call Support The same responsive, accountable support model as every AUTOSOL product. A real team, available when your operations need them.

Integration Support We support the full integration, not just broker installation. Historians, SCADA, AUTOSOL products. We've been connecting these systems for nearly 40 years.

Responsive Roadmap When your operation has a requirement the broker doesn't yet meet, that's a conversation, not a dead end. We actively respond to feature requests.



- ✓ BEST FIT. Smaller or distributed OT
- ✓ SCALE MODEL. Independent brokers feeding central systems
- ✓ CAPACITY. No artificial caps on connections, tags, or messages
- ✓ CLUSTERING. Designed for deployments that do not require enterprise clustering
- ✓ GEOGRAPHIC RESILIENCE. Straightforward deployment at focused sites
- ✓ COMMERCIAL APPROACH. Purpose-built capability without unnecessary enterprise complexity



- ✓ BEST FIT. Centralized data across the business
- ✓ SCALE MODEL. Enterprise broker across sites and data centers
- ✓ CAPACITY. Built for high availability and growth at enterprise scale
- ✓ CLUSTERING. Preserves Sparkplug message order across a cluster
- ✓ GEOGRAPHIC RESILIENCE. Federated clustering across data centers
- ✓ COMMERCIAL APPROACH. Flat, predictable pricing designed for enterprise planning

AUTOSOL Connected Ecosystem

Built to work together. Designed for connected possibilities.



AUTOSOL Connected Ecosystem help industrial organizations unlock the value of their data with software that connects across devices, systems, and people. Our products are purpose-built, field-proven, and designed to work together, so you can solve today's challenges and be ready for what's next.