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DATASHEET



# Matrikon Data Broker

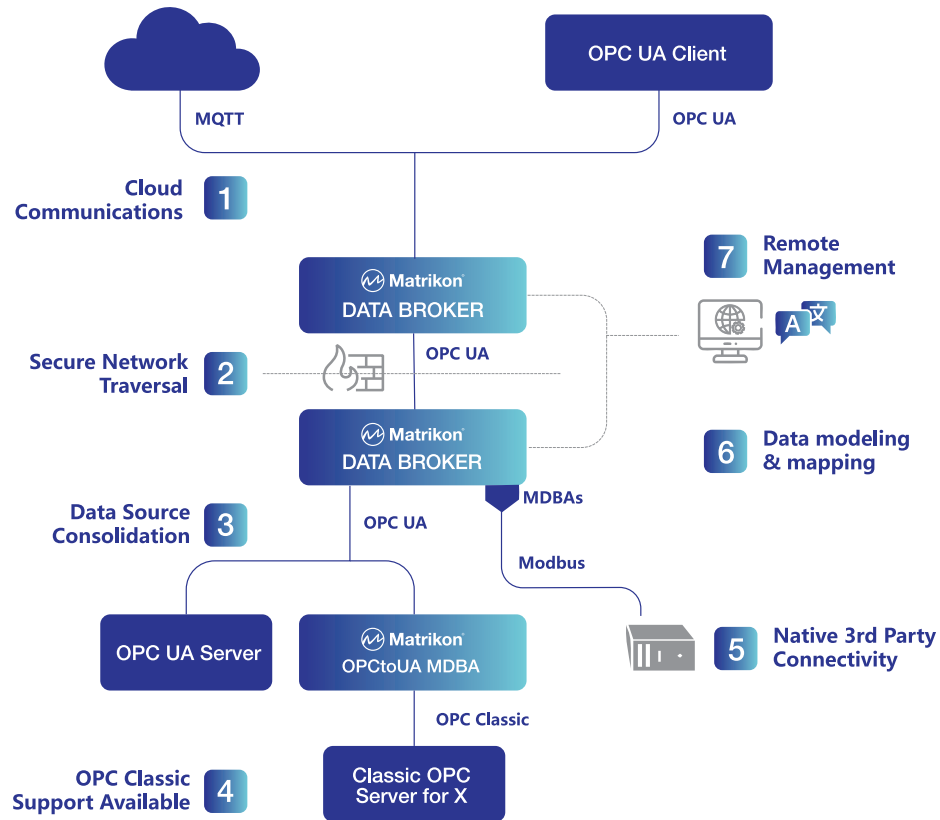
Version 2.5

Take charge of how you connect to, represent, and share your shopfloor data with Matrikon Data Broker (MDB). MDB is the one-stop platform for the setup and management of a Unified OT data Layer (UODL) for secure data connectivity throughout your OT networks, enterprise IT networks, and the cloud.



# Overview

Overcome complex IT and OT challenges out of the box using advanced Matrikon Data Broker (MDB) functionality that includes native and extended functionality:



## 1 Cloud Communications

Use the MDB MQTT Publisher extension to easily share your OT data to the cloud using MQTT or cloud provider-supplied tools. (Ex. Azure)

- ▶ Publish OPC UA Realtime, History, and Alarms and Events over MQTT

## 2 Firewall and DMZ traversal

Seamless, secure OPC UA-based connectivity across nested networks using firewalls and Demilitarized Zones (DMZ). Facilitates inside-out connectivity, a cyber security best practice (via UA Reverse Connect).

## 3 Consolidation

Federate multiple data sources into a single access point. Data source pre-browsing delivers rapid access to source address spaces.

## 4 OPC Classic support

Enabled using existing 3rd party OPC classic sources via the OPC to UA MDB Adapter.

## 5 Native 3rd Party Connectivity

Work directly with 3rd party data sources using MDB Adapters and native UA DA and HA.

## 6 Data modeling & mapping

Bring meaning to source data with user-managed data context.

- ▶ Bulk mapping functionality for thousands of items at a time. Now includes array to item mapping.

## 7 Remote management

Secure remote deployment and management. Uses Matrikon OPC UA Explorer as the user interface via UA Reverse Connect.

## Interface Localization

Download pre-made language localization files or create new ones to match your OS regional settings for MDB menus and labels.



Matrikon Data Broker defines a new software category, Data Technology (DT). DT eliminates IT/OT gaps and other complex data connectivity challenges under the hood. The use of DT enables the enterprise-wide creation of a **Unified OT data Layer (UODL)**; a single, scalable, and holistic data connectivity experience. MDB enables users across the enterprise to focus on extracting value from OT data instead of working on trying to access it



## New in MDB 2.5



### Data Mapping

MDB now supports the mapping of individual elements of a structure node to a variable node.



### Adapter Configuration

Change Password button has been added to the Adapter Configuration pages for the Modbus and OPCtoUA MDBAs.



### Redundancy

MDB 2.5 implements Data Source Redundancy, a robust mechanism for maintaining the uninterrupted flow of critical data from the data source to the destination.



### OPC UA Explorer

MDB 2.5 includes the latest version of OPC UA Explorer, which now includes configuration for OPC UA data source redundancy.



### MQTT Publisher

The latest version of the MQTT Publisher extension for MDB now includes Transaction Management for HA recovery and support for special characters in Tag Names.

## Use Cases

Matrikon Data Broker creates a UODL that facilitates data connectivity between OT systems and components on IT networks. MDB nodes may be used as spot solutions for specific data connectivity challenges or enterprise-wide OT-data infrastructure projects.

Matrikon Data Broker use cases include:

- **Rapid Proof of Concept (PoC) execution** where digitalization, Industrial Internet of Things (IIoT), and Industry 4.0 (I4.0) projects require real-time access to shopfloor data to succeed.
- **Infrastructure modernization (phased migration)** where existing production asset connectivity must be upgraded “in place” to meet growing IIoT/I4.0 era data requirements.
- **New site implementations** that must utilize open, sustainable, and future-proof data connectivity to be competitive for years to come.
- **Point solutions** where secure, seamless access to one or more data sources behind OT firewall(s) and De-militarized zones (DMZs) is needed.

### CASE STUDY: Chevron Phillips Chemical

Discover how CP-Chem used Matrikon Data Broker to enable enterprise-wide OT data.

[Download Case Study](#)

# Solution Benefits and Advantages

## Data Context Enhancement and Data Sharing

- **Data Modeling:** MDB puts the power of data modeling into your hands without programming. Use custom and standardized UA Companion Specifications (CS) created by joint working groups such as VDMA, umati, MT Connect, MDIS, and all other compliant CSs.
- **Data-Source to Data-Source Mapping:** Simplify infrastructure by eliminating the need for additional applications when routing data between data sources. MDB can route data between all federated data sources.
- **Data-Model to Data-Model Mapping:** Freely extend the value of new and existing CSs by mapping between them to create new data types that best reflect your applications.
- **Mass Data Mapping:** Easily configure bulk data source to destination data maps via Excel and CSV files.
- **Data-Source to Data-Model Mapping:** Breathe new life into data from your simplest, oldest data sources and enhance the context of new components by mapping items from those sources to new data model instances you create on the fly. This gives the rest of the enterprise an enhanced and consistent data context instead of the disparate and simpler contexts of the underlying data sources.
- **Better Data-Driven Insights-Faster:** Enriched data source context serves as a better data foundation for digital twins, cloud AI and ML applications, which translates to better analytics-based insights faster and with less effort.

## Secure and Reliable Cloud Connectivity

- MDB provides seamless, to-cloud data sharing from all your federated OPC UA sources and keeps you in control of what gets shared.
- Simplifies cloud integration with major 3rd Party cloud providers such as Microsoft Azure, AWS, and others.
- Data published using the MDB MQTT Publisher extension complies with the OPC UA PubSub JSON encoding format for maximum compatibility and minimal custom-format sustainability issues.
- Reliability Built-in: MQTT Publisher prevents data loss during intermittent network
- Security: Maximizes MQTT data security using commercial-strength TLS.
- Transfer blocks of historical data to cloud over MQTT with live progress monitoring and pause/resume functionality.

▶ For more information about the MDB MQTT Publisher extension, visit [matrikonopc.com/MQTTPublisher](https://matrikonopc.com/MQTTPublisher)

## Enterprise IT-Grade Administration

- **Enterprise Deployment:** Enables enterprise-wide deployment via silent container deployments and on-premises installations (Windows and Linux).
- **Centralized Configuration:** Easily configure and manage MDB securely from remote locations or on-site.
- **Enterprise Licensing:** Flexible cloud-based or local licensing with live license viewer via UA Explorer for simplified management.
- **Status & Logging:** Comprehensive status tags and user-friendly log messages provide a clear picture of the health of your system. Examples of the information supplied include:
  - Connection status
  - License status
  - System diagnostics

# Comprehensive Shopfloor Data Connectivity Options

- **NEW Data Source Redundancy:** Connects to and configures multiple data sources, ensuring continued access to critical data during network interruption.
- **Aggregation:** Simplifies data connectivity architectures by providing a single secure access point to all your UA DA and HA data (with full context) using OPC UA federation.
- **Performance & Scalability:** MDB is a scalable, high-performance application ready for all your data connectivity needs today and in the future. For example, MDB handles over 1 million transactions per second on a standard business PC.
- **MDB Adapters:** Native MDB connectors to 3rd party data sources simplify and secure existing data infrastructure by eliminating the need for older drivers and OPC Classic servers.
- **Network Traversal:** Simplifies and secures data connectivity across organizational network layers. Use OPC UA Reverse Connect to easily set up secure outbound server-to-client connections, keeping inbound firewall ports closed. MDB supports this between compliant OPC UA servers and OPC Classic servers via the MDB Adapters.
- **3rd Party Connectivity:** Maximizes useful life and ROI of existing infrastructure. MDB supports 3rd Party OPC Classic servers alongside new OPC UA components via OPCtoUA MDBA. This makes phased migration to OPC UA easy and effective. Supports less capable UA Clients for maximum flexibility.

## OEM MDB for OT Data Connectivity

MDB empowers automation suppliers and solution providers to seamlessly integrate OT data into their offerings through a robust, open-standards-based OEM licensing option. By leveraging MDB's enterprise-grade features, vendors can focus on their core competencies and deliver innovative solutions with confidence.

## Product Specifications

### System Requirements

#### Hardware Requirements (minimums)

Intel® i5 Processor

8 GB RAM

40 GB HDD recommended free space

#### Software Requirements

Microsoft Visual C++ 2015-2022 Runtime

(Installed by the MDB installation script)

#### Supported Operating Systems (64 Bit)

Microsoft Windows 10

Microsoft Windows 11

Microsoft Windows Server 2019

Microsoft Windows Server 2022

Microsoft Windows Server 2025

Red Hat Enterprise Linux 8.0

Centos 8.0

Ubuntu 18.04

Ubuntu 20.04

Ubuntu 22.04

### Supported Standards

#### OPC Unified Architecture Core

- UA Part 8: Data Access v1.04
- UA Part 11: Historical Access v1.04
- UA Part 14: PubSub v1.04
  - Publish Functionality
  - OPC UA PubSub compliant JSON encoding for seamless support of underlying OPC UA
  - Companion Specification-based data (i.e. standardized Information Models)

#### OPC UA Companion Specifications

OPC (Classic) Data Access v3.0 via OPCtoUA MDBA

MQTT v1.3 via the MQTT Publisher extension

## Videos

Visit the **Matrikon Videos YouTube channel** for clear instructions on configuring and working with MDB and other Matrikon products. For MDB-specific YouTube videos, click [here](#).

## Next Steps

Start Your Digital Transformation Today!

Download a free 30-day trial of **MDB** →

 MQTT

 OPC UA



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