MX-AOPC UA Suite

Cohesive, secure, and reliable connection between device, database, and SCADA

Features and Benefits

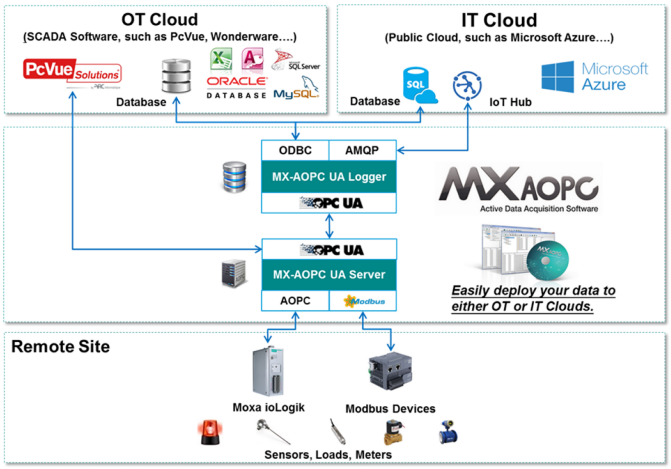
- Creates a secure data connection between OT and IT systems
- Efficient data acquisition through push-type transmission (report by interval or exception method)
- Automatic data updates from SD cards following network failures
- On-demand and on-schedule data supplement that is complementary to automatic data supplement

Introduction

The MX-AOPC UA Suite includes MX-AOPC UA Server, Viewer, and Logger, which are all based on the OPC UA (Unified Architecture) standard. OPC UA is the next generation OPC standard (IEC 62541), which provides a cohesive, secure, and reliable framework for accessing real-time and historical data. MX-AOPC UA Server not only inherits Moxa's patented active monitoring technology, but also supports Modbus protocol for polling data to provide a secure and reliable gateway bridging edge devices to the SCADA system. MX-AOPC UA Viewer is an OPC UA client that allows users to easily view tag values and server statuses. MX-AOPC UA Logger is another handy client for converting and uploading data logs to the central database. With Moxa's MX-AOPC UA Suite, users can now instantly receive alarms, real-time updates, and save historical data, allowing for both timely risk prevention and solid maintenance response.

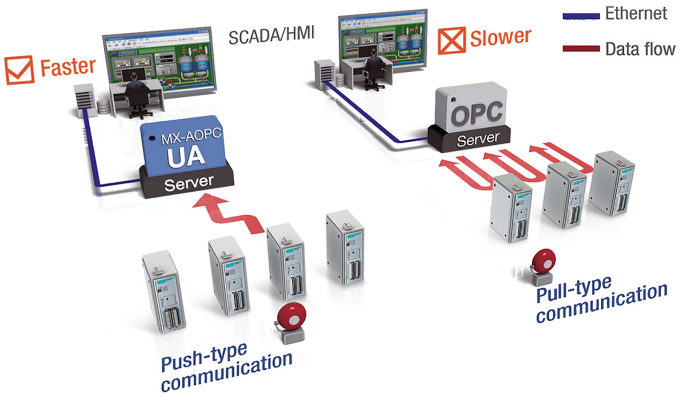
Create a Secure Data Connection between OT and IT Systems

Traditionally, it has been difficult for OT and IT engineers to write agent programs to poll the thousands of registers used for shop-floor data. The difficulty stems from the fact that shop-floor data is handled using fieldbus protocols, but the data needs to be written to an IT database. The difficulties are compounded considerably when it comes time to scale up a facility, particularly since the additional load created can put a tremendous strain on systems that rely on legacy data acquisition methods. MX-AOPC UA Suite can be used to collect data from shop-floor registers via a Modbus protocol. The data can then be provided to an OPC UA client, such as a SCADA system, or MX-AOPC UA Logger can be used to write the data to an IT database, all without the need for additional programming effort. As an added benefit, MX-AOPC UA Suite provides security policy options for encryption and certificate exchange to ensure the security of data connections and transmissions.



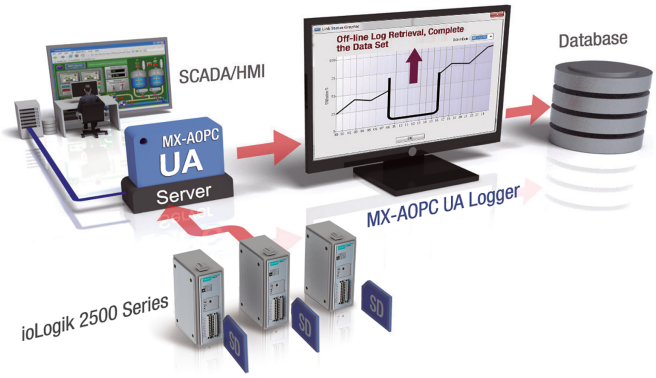
Efficient Data Acquisition through Push-Type Transmission (report by interval or exception method)

Moxa has pioneered the concept of “active type” OPC software in the automation industry. Our patented MX-AOPC UA Server offers both polling and non-polling architectures alongside the standard OPC UA protocol, giving users the alternative of using push-based communication from Moxa’s devices. With push technology, I/O status is updated to MX-AOPC UA Server only when there is an I/O status change, a pre-configured interval is reached, or when a request is issued by a user. This application of push technology cuts metadata overhead, resulting in faster I/O response times and more accurate data collection than traditional pull-based architectures. With Moxa’s “active technology” advantage, users can now instantly receive alarms and real-time updates, allowing for timely risk response.



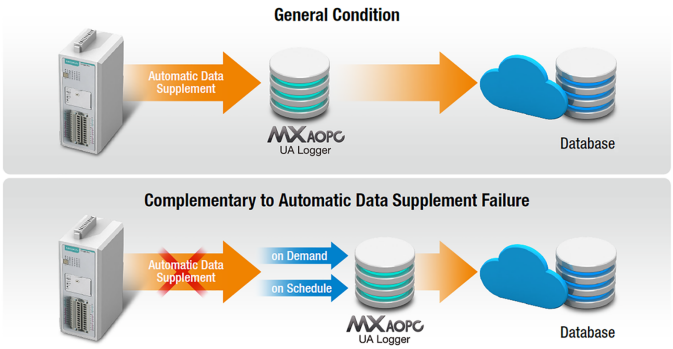
Automatic Data Supplement from SD Cards Following Network Failures

One of the benefits of using RTUs is that data can be collected over a network from a central site. In an ideal operation, following a network failure, RTUs should be able to transmit data logs that were collected while the network was offline. Moxa’s MX-AOPC UA Logger makes this not only possible, but easy. MX-AOPC UA Logger provides a standard OPC interface that interacts with MX-AOPC UA Server for real-time data collection. After each network connection, MX-AOPC UA Logger will compare historical data stored on the SD cards located in individual devices with the real-time data it has already stored locally, and then supplement any missing data by requesting that the RTU retransmit the lost data.



On-Demand and On-Schedule Data Supplements as a Complement to Automatic Data Supplements

Automatic data supplements could fail due to unstable network conditions or a failure to access the database. To help avoid these problems, MX-AOPC Logger also supports “on-demand” and “on-schedule” data supplements. “On-demand data supplements” allow users to manually trigger a data supplement at any time, whereas “on-schedule data supplements” allow users to specify a fixed time point for MX-AOPC Logger to automatically execute a data supplement every day.



Specifications

Ethernet Software Features

Industrial Protocols	MX-AOPC UA Server: Modbus TCP Client (Master), MX-AOPC UA Server: Moxa AOPC (Active Tag)

Serial Software Features

Industrial Protocols	MX-AOPC UA Server: Modbus RTU Client (Master)

OPC Specifications

OPC UA (Unified Architecture)	MX-AOPC UA Logger: 1.02 MX-AOPC UA Server: 1.01
OPC DA (Data Access)	MX-AOPC UA Server: 1.0a, 2.0, 2.05a, 3.0

Hardware Requirements

Communication Interface	Ethernet interface Serial interface
CPU	Intel Pentium 4 or above
RAM	512 MB (1024 MB recommended)

Software Requirements

Cloud (optional)	MX-AOPC UA Logger: Microsoft Azure
Database (optional)	MX-AOPC UA Logger: Microsoft SQL Server (x86) MX-AOPC UA Logger: MySQL (x86) MX-AOPC UA Logger: Oracle database (x86)
Editor (optional)	MX-AOPC UA Logger: Microsoft Office 2003 (Access or Excel) or later
Microsoft .NET Framework	v3.5 Service Pack 1
Operating System	Microsoft Windows 7/8/10 Microsoft Windows Server 2003/2008/2012

Ordering Information

Model Name	Device Connections	MX-AOPC UA Server Connections	Database Connections	Runtime Operation Days	Purchasing Registration Code	Registration Required at license.moxa.com
MX-AOPC UA Server	Unlimited	–	–	Unlimited	✓	✓