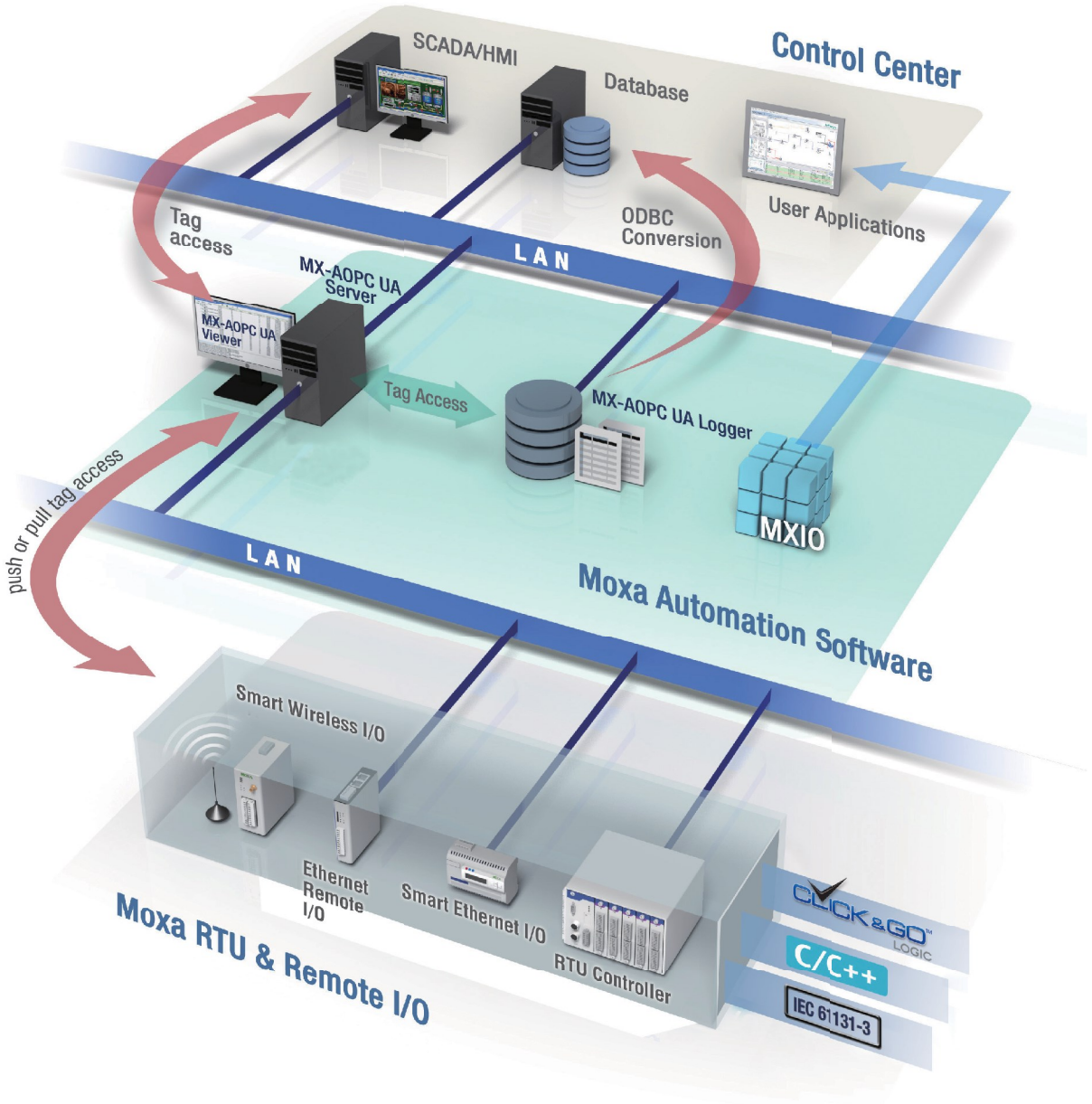
Introduction to Automation Software

Moxa's automation software includes the MX-AOPC UA Suite and the MXIO programming library. The MX-AOPC UA Suite consists of MX-AOPC UA Server, MX-AOPC UA Viewer, and MX-AOPC UA Logger; it is a unified architecture that brings together remote industrial control systems from discrete stations and unifies them under a single, centralized monitoring and control system. MX-AOPC UA Server expands upon Moxa's patented Active OPC monitoring technology, bringing Modbus protocol support, and providing a secure and reliable gateway between local devices and a remote SCADA system. MX-AOPC UA Viewer is an OPC client that allows users to easily view tag values and MX-AOPC UA Server status. MX-AOPC UA Logger is another handy client, which allows users to convert and upload data logs into a database. The MXIO Library offers a large repository of code for users to easily manage Moxa's RTU or remote I/O devices over an Ethernet network.



MX-AOPC UA Suite

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

- First OPC UA server for industrial automation supporting both push and pull communication
- One-click active tag creation
- Efficient database uploads
- Automatic data updates from SD cards following network failures
- Simple and easy viewing of tag values and UA server status
- OPC UA: The next generation of interoperability, reliability, and security

Introduction

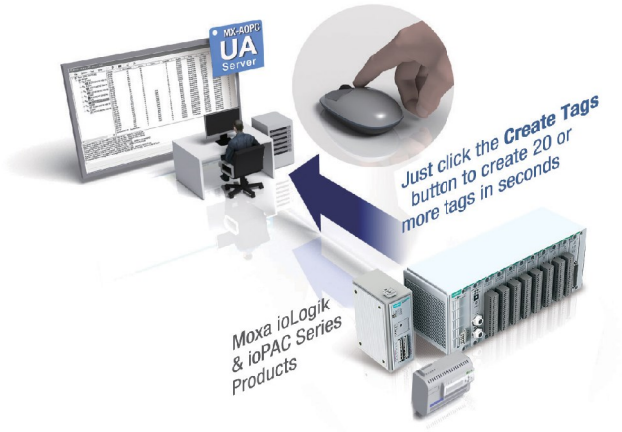
The MX-AOPC UA Suite includes MX-AOPC UA Server, Viewer, and Logger, which are all based on the OPC UA (Unified Architecture) standard. OPC UA is the next generation OPC standard (IEC 62541), which provides a cohesive, secure, and reliable framework for accessing real-time and historical data. MX-AOPC 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.

First OPC UA Server for Industrial Automation Supporting both Push and Pull Communication

Moxa has pioneered the concept of "active type" OPC software in the automation industry. The patented MX-AOPC UA Server offers both polling and non-polling architectures alongside the standard OPC UA protocol, giving users the alternative of pull- or 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.

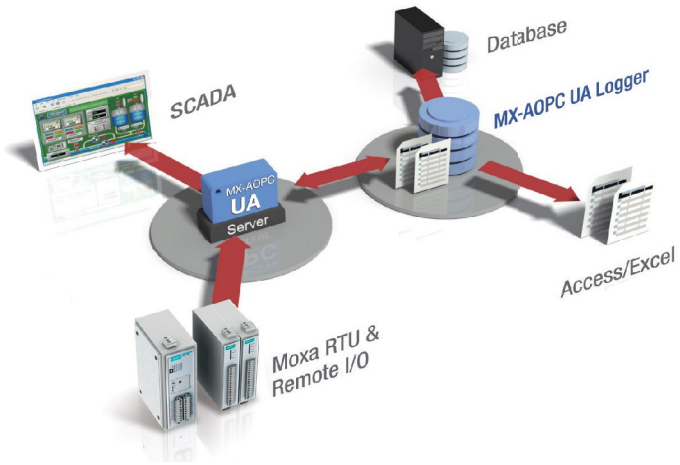
One-Click Active Tag Creation

MX-AOPC UA Server supports automatic tag generation, which eliminates the headache of specifying individual target IP addresses, I/O channels, and data formats, and does away with the need to edit and import configuration files. Working from Moxa's utilities, users only need to select specific tags, set the update criteria, and then click a single button for their active tags to be automatically generated and configured.



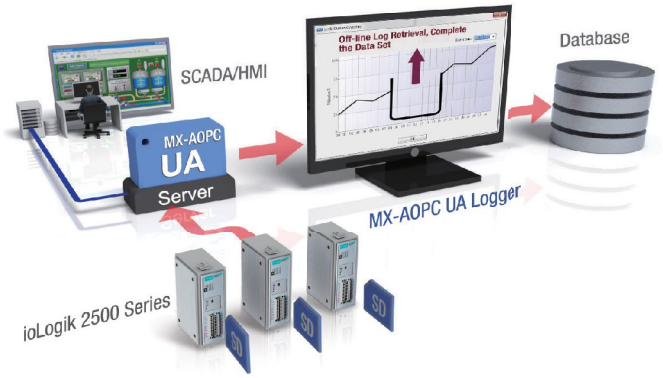
Efficient Database Uploads

With most remote data acquisition systems, during daily operations additional human resources are needed to collect data manually from remote storage devices for loading into a database. Even with RTUs remotely collecting data over the network, software must be developed to handle the task of converting and uploading these data logs. Moxa's MX-AOPC UA Logger not only makes real-time data collection much easier, it also simplifies the conversion of historical data into database-ready formats. MX-AOPC UA Logger interacts directly with our MX-AOPC UA Server, working as a bridge between field data and stored databases or spreadsheets. Furthermore, the MX-AOPC client converts and uploads data logs to the central database. The MX-AOPC UA Logger can collate tags from individual Moxa RTUs or remote I/O devices into the same database or spreadsheet, freeing users from the need to manipulate data after processing.



Automatic Data Updates 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.



Simple and Easy Viewing of Tag Values and UA Server Status

MX-AOPC UA Viewer is an OPC UA client that allows developers, testers, and integrators to easily view tag values and test MX-AOPC UA Server and connections. The viewer's intuitive user interface makes it easy to read data and server status. With this handy client tool, users can complete OPC server settings sooner than ever.

OPC UA: The Next Generation of Interoperability, Reliability, and Security

Moxa's MX-AOPC UA Suite is designed based on the OPC Foundation's UA (Unified Architecture) specification. OPC UA is a new technology that features more secure and reliable data communication between OPC servers and clients. It ensures protection against unauthorized access or sabotage of process data, as well as against errors due to careless operation. In addition, OPC UA defines a robust architecture with reliable communication mechanisms, configurable timeouts, and automatic error detection/recovery mechanisms. By using Moxa's MX-AOPC UA Suite, users can enjoy more secure and reliable data exchange and control.

Specifications

Hardware Requirements

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

Software Requirements

Operating System: Microsoft Windows 7/8/10, Microsoft Windows Server 2003/2008/2012
Editor (optional): Microsoft Office 2003 (Access or Excel) or later
Database (optional): Oracle database, Microsoft SQL Server

OPC UA Server Specifications

OPC Unified Architecture: 1.01
OPC Data Access: 1.0a, 2.0, 2.05a, 3.0
Device Protocols: Moxa AOPC, Modbus/TCP (master), Modbus/RTU (master)

OPC UA Logger Specifications

OPC Unified Architecture: 1.01

Products that Support the AOPC Protocol

Series Names: ioLogik 2500 series, ioLogik E1200 series, ioLogik E1500 series, ioLogik E2200 series, ioLogik E4200, ioLogik W5300 series
Note: Please check Moxa's website for the most up-to-date list of supported products.

Ordering Information

Available Versions

MX-AOPC UA Server (trial version): 30-day trial version that supports up to 30 device connections (now available for download from Moxa's website)
MX-AOPC UA Server (free version): Free version that supports up to 30 device connections, with unlimited runtime operations (download trial version first; requires registering your PC User Code* on Moxa's website at http://license.moxa.com/)
MX-AOPC UA Server (paid version): Unlimited device connections and runtime operations (requires purchasing a registration code from Moxa)
MX-AOPC UA Logger (trial version): 30-day trial version that supports up to 1 MX-AOPC UA Server connection and up to 1 data logger (now available for download from Moxa's website)
MX-AOPC UA Logger (free version): Free version that supports up to 1 MX-AOPC UA Server connection and up to 1 data logger, with unlimited runtime operations (download trial version first; requires registering your PC User Code* on Moxa's website at http://license.moxa.com/)
MX-AOPC UA Logger (paid version): Up to 2 MX-AOPC UA Server connections and up to 10 data loggers and runtime operations (requires purchasing a registration code from Moxa)

***How to Obtain a PC User Code:**

1. Select the Help menu from MX-AOPC UA Server or Logger, and then click Licensing > License Info
2. After registering, save the license file to your PC.
3. Unzip the file and then import it into MX-AOPC UA Server or Logger from Help > Licensing > Add License File

MXIO Programming Library

For handy management of I/O devices

An Intuitive Method for Obtaining Remote I/O Data

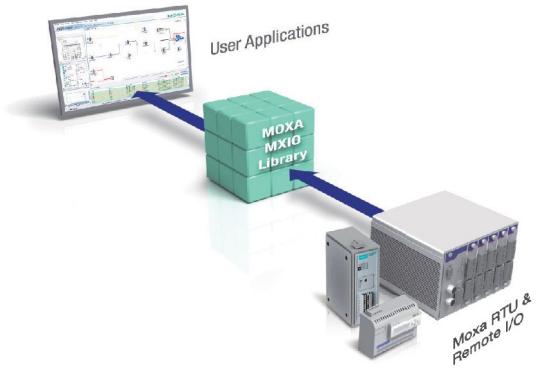
The MXIO Library is a set of programming tools for developing data management applications for use on Ethernet or RS-485 networks linking Moxa's RTUs and remote I/O devices. It includes direct I/O command sets that provide a more intuitive method for obtaining I/O data. Software developers no longer need to study the complex Modbus protocol to manage I/O monitoring and control functions, and engineers can obtain I/O data by using MXIO's direct I/O commands to access any I/O point or channel with ease.

Reduce Development Times with a Large Code Repository

The MXIO library includes many examples of sample code to help programmers reduce software development time and quickly get familiar with the API. Developers can call MXIO functions and demo programs as soon as they have installed the library.

Fully Exploit Active Communications

The MXIO Library provides active functions for receiving I/O configurations and status updates from Moxa's RTU and remote I/O products. With revolutionary push technology, users can benefit from faster and more accurate data collection than traditional polling servers.



Specifications

Hardware Requirements

CPU: Intel Pentium 4 or above
RAM: 512 MB (1024 MB recommended)
Network Interface: 10/100M Ethernet

Software Requirements

Operating System: Microsoft Windows 7/8/10, Microsoft Windows Server 2003/2008/2012, Linux Debian 7.8
Note: Please check Moxa's website for the most up-to-date supported operating systems.

Supported Products

Series Names: ioLogik 2500 series, ioLogik E1200 series, ioLogik R1200 series, ioLogik E1500 series, ioLogik E2200 series, ioLogik R2140, ioLogik E4200, ioLogik W5300 series
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