



MTConnect-OPC UA Driver 1.0 from GE Digital

Continuously collect real-time data from machine tool equipment for analysis and optimization

Industry-leading driver to increase connectivity and interoperability

The new MTConnect-OPC UA Driver from GE Digital is an industry first – a non-proprietary connectivity solution implementing MTConnect and OPC UA standards and continuously collecting real-time data without polling. This new driver enables HMI/SCADA, historian, and edge applications to capture data from CNC machines, robots, 3D printers, and other manufacturing equipment, providing a foundation for analysis and optimization.

The MTConnect-OPC UA Driver increases connectivity and interoperability. Manufacturers can achieve faster configuration, secure-by-design communication, and more complete data for analytics.

As an innovator in automation and the Industrial Internet, GE Digital teamed with the OPC Foundation, the MTConnect Institute, and GE Aviation to develop and test the MTConnect-OPC UA Driver, a connectivity solution for IoT-fueled efficiency and productivity.

Outcomes

- Increase connectivity and interoperability by leveraging the first driver that implements the full MTConnect spec (including methods like sample mode and events) and OPC UA, and provides continuous real-time data transmission
- Capture real-time data, without polling, from manufacturing equipment using non-proprietary, standards-based technology
- Speed configuration with a common set of semantic definitions in structured XML as well as autoconfiguration of equipment components
- Improve data security, scalability, and reliability through OPC UA
- Increase efficiency and productivity with a foundation for IoT analysis and production optimization
- Eliminate islands of machine tool information by connecting to equipment ranging from CNCs to robots to 3D printers and more

01 Faster configuration based on standards

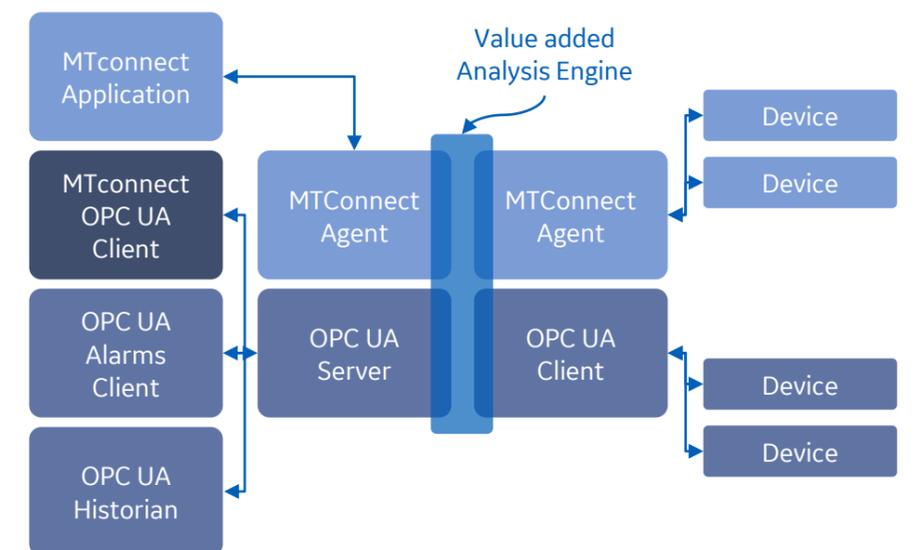
Developed via a joint working group, the MTConnect-OPC UA companion specifications enable manufacturing equipment to provide data based on a common set of semantic definitions in structured XML rather than proprietary formats. With uniform data, manufacturers can eliminate time-consuming data translation. Users benefit from domain-specific vocabulary and data models, extensibility, and integration with other standards by design. Additionally, autoconfiguration of equipment components with the Driver Configuration Tool speeds setup.

02 Increased connectivity and reliability across many machines with one driver

By applying the MTConnect data model to OPC UA, manufacturers benefit from increased connectivity and interoperability. Any software with an OPC UA client interface can access this driver. Data sources include production equipment such as milling machines, lathes, and grinders; sensor packages; and other hardware, with connectivity to many machines using one driver. Because GE Digital’s driver operates without polling, there is no loss of data – for higher reliability, continuous updates, and real-time information always available.

03 Improve data security while enabling analysis and optimization

OPC UA offers the security, scalability, and reliability required for industrial communications at all levels. With data available through enhanced connectivity and secure-by-design technologies,, manufactures can perform IoT-based analytics. Applications using MTConnect data provide more efficient operations, improved production optimization, and increased productivity.



The MTConnect-OPC UA Driver combines the OPC UA and MTConnect standards to provide a new industrial interoperability solution.



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Features

- Connect to data sources including machine tool equipment such as milling machines, lathes, and grinding machines; 3D printers; robots; and more
- Continuous transmission of new data from MTConnect agents without solicitation/polling for zero loss of data
- Data exposed to OPC UA clients in real time
- Share data with any software with an OPC UA client interface
- Ability to view data and transmissions through a web browser for viewing events and troubleshooting production
- Uses standards such as HTTP(S) based on TCP/IP for transportation and XML for encoding data
- Standard definitions for machine components and data items
- Driver Configuration Tool allows for easy setup with automatic input of equipment components from MTConnect agents
- Security with authentication, trust list, and certificates
- Built-in trace functionality allows users to log the MTConnect XML data streams received via HTTP from the agents. Tracing can be set individually for each agent
- Built-in simulation functionality allows users to provide the driver with file data streams instead of receiving MTConnect data streams via HTTP protocol. Simulation can be set individually for each agent
- Monitoring and basic status information provided

Software Requirements

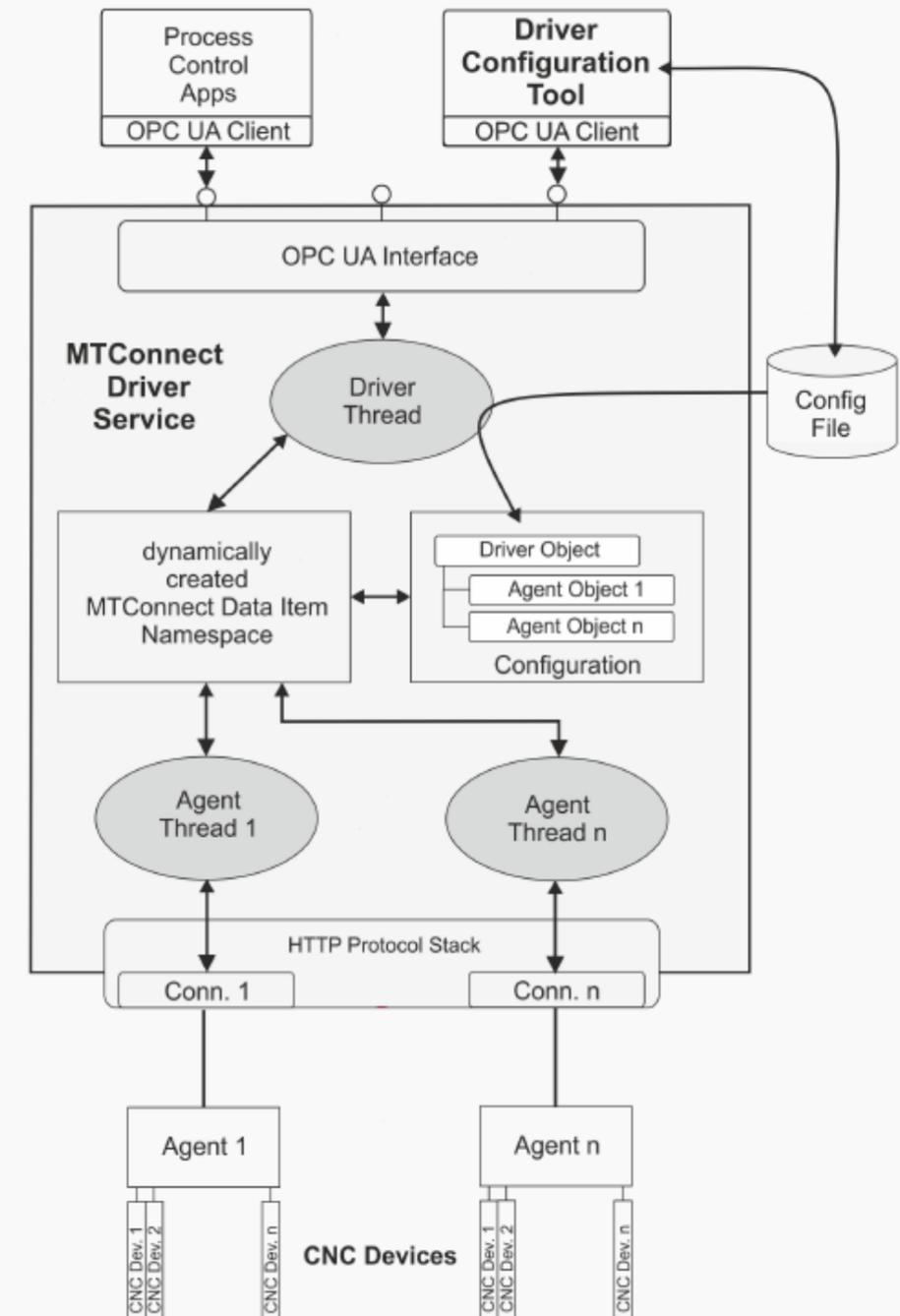
- Operating Systems: Windows Server 2019, Windows Server 2016, Windows Server 2012 R2 (64 bit), Windows 10, Windows 7 Professional SP1 (32/64 bit)
- Supports MTConnect standard 1.4.0
- Supports OPC UA specification 1.03 (not fully compliant). Any third-party software packages with an OPC UA client interface can access this MTConnect driver

Hardware and software requirements are representative and may vary by customer deployment. Please consult the product documentation for more details.

Capture data across your machine tool equipment with the MTConnect-OPC UA Driver from GE Digital and deliver a more complete foundation for IoT-fueled efficiency and productivity.

LEARN MORE

MTConnect Driver Software Structure





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Services

In the world of Industrial Internet of Things (IIoT), organizations are able to optimize productivity, reduce costs, and achieve Operational Excellence. While this is an exciting time for opportunity and growth, it can also bring on new challenges, questions, and uncertainty. No matter where you are on your IIoT journey, GE Digital has the right services offering for you.

[Advisory Services](#) We can help you plan and start your IIoT journey in a way that aligns to your specific business outcomes.

[Managed Services](#) We can help you maintain your critical machines from one of our remote locations around the world using model-based predictive analytic technology.

[Implementation Services](#) Our experienced global Automation partners can implement a collaborative, multi-generational program that marries your existing investments to the right enhancements and technology.

[Education Services](#) We specialize in education services to ensure that you're leveraging our solutions to the fullest extent with our training and certificate programs.

[Acceleration Plans](#) Let us help by ensuring that your business continues to operate at its highest efficiency, all while mitigating risks to your investments.

[Cyber Security Services](#) Our solutions provide industrial-grade security for a wide range of OT network and application topologies.

Related Products

GE Digital's HMI and SCADA suite helps you precisely monitor, control, and visualize every aspect of your operations, enabling operators to make the best decisions faster.



[iFIX](#)

Gain visibility into your operations and secure agility for smarter decision making that drives results.



[CIMPLICITY](#)

Drive real-time visibility for smart operators with true client-server based visualization and control.



[Historian](#)

Optimize asset and plant performance through time-series industrial data collection and aggregation, leveraging Predix IIoT connectivity.

Continue your IIoT journey

Transforming your business requires foundational innovations that lay the groundwork for future success. It requires connecting assets and processes securely to drive operational efficiencies, reduce unplanned downtime and improve performance.



[Operations Hub](#)

Centralized environment for aggregating and visualizing contextual and situational information – supporting RAD and rich displays for faster operational response



[Plant Applications](#)

Maximize overall equipment effectiveness (OEE), improve production scheduling, and ensure product quality by leveraging real time production data



[Workflow](#)

Guide operators with dynamic, interactive electronic work instructions and eSOPs for more consistent operations and optimized processes.

About GE

GE (NYSE: GE) is the world's Digital Industrial Company, transforming industry with software-defined machines and solutions that are connected, responsive and predictive. GE is organized around a global exchange of knowledge, the "GE Store," through which each business shares and accesses the same technology, markets, structure and intellect. Each invention further fuels innovation and application across our industrial sectors. With people, services, technology and scale, GE delivers better outcomes for customers by speaking the language of industry.

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