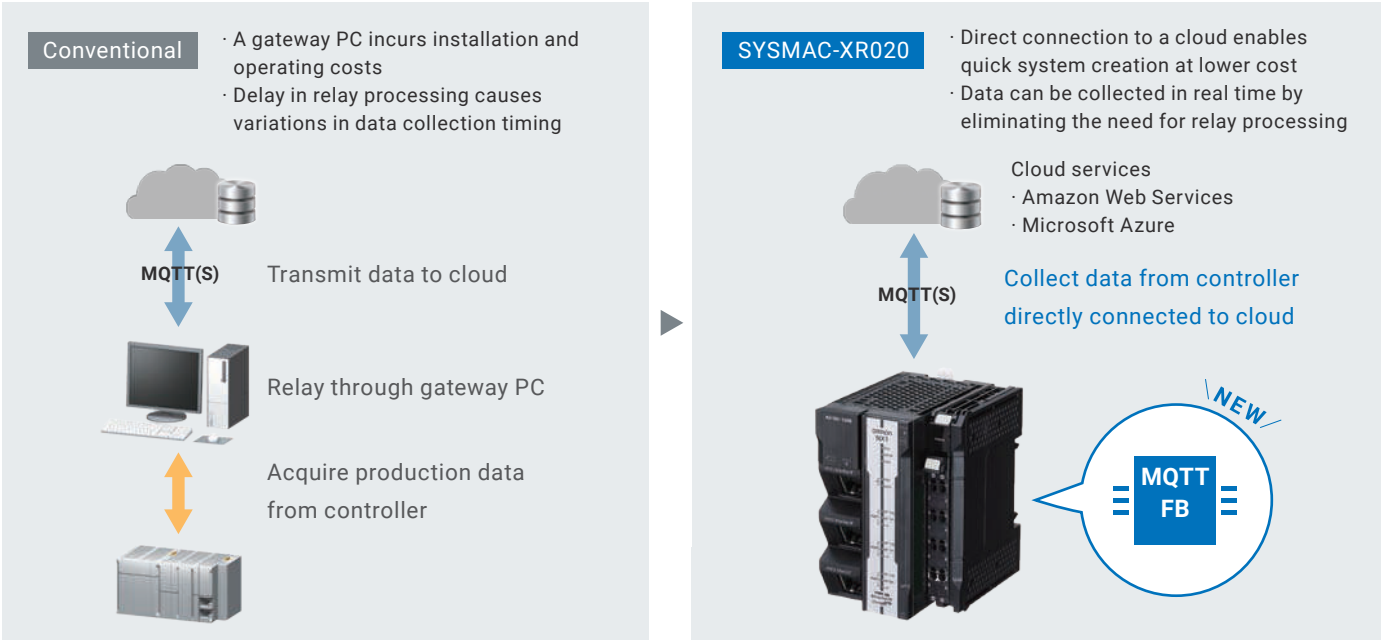
Direct connection to a cloud facilitates quick and secure data collection

Easy·Quick

Collect real-time data with minimal cost, without the need for any gateway device

The use of the MQTT Communications Library enables direct connection between a controller and cloud.
This eliminates the need for a gateway PC or relay device, reducing system building time and design and operating costs.
Data relay processing is also not required, which allows you to create a real-time data collection system.



Secure

Protect production data with encrypted MQTT communications

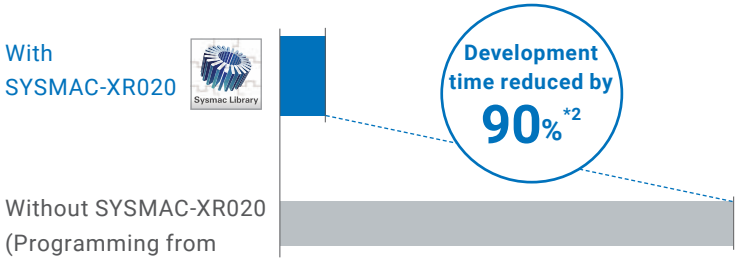
An encrypted MQTT protocol (MQTTS) protects production data from access and manipulation by unauthorized persons.



Easy

Significantly cut the time required to develop communication programs with MQTT Function Blocks

The Function Blocks (FBs) perform the required processing for MQTT communications*1. You don't need to program complex MQTT communication protocols from scratch, greatly reducing programming and debugging time.



*1. Conforms to MQTT 3.1.1 specification.
*2. Based on Omron investigation.

Compatible Models

Name	Model	Version
Machine Automation Controller NX CPU Unit	NX502-□□□□	Version 1.60 or later
	NX1P2-□□□□□□□(1) NX102-□□00	Version 1.46 or later
	NX102-□□20[*1]	Version 1.37 or later
Automation Software Sysmac Studio	SYSMAC-SE2□□□	Version 1.46 or higher

*1. This Library is not available for NX102-□□20-DH (products equipped with time series data collection system).

Supported Cloud Services

Name	Remarks
Amazon Web Services	AWS IoT
Microsoft Azure	Microsoft Azure IoT Hub

Note: For the connection procedure and restrictions for each cloud service, refer to the manual for this product.

Function Block (FB) Specifications

Name	FB name	Description
MQTT Client	MQTTClient	Controls connection with the MQTT server to send the messages generated by the instances of MQTTPubString, MQTTPubAryByte, MQTTSubAryByte, MQTTSubString, and MQTTPing, and receive the messages from the MQTT server.
Data Publication in MQTT Byte Array	MQTTPubAryByte	Generates a PUBLISH message of the message specified in BYTE array, and sends it to the MQTT server via the MQTTClient instance.
MQTT Character String Message Publication	MQTTPubString	Generates a PUBLISH message of the message specified in STRING data type, and sends it to the MQTT server via the MQTTClient instance.
Data Subscription Request in MQTT Byte Array	MQTTSubAryByte	Subscribes to the specified topic, and reads out the message part of a PUBLISH message in the received specified topic in BYTE array.
MQTT Character String Message Subscription Request	MQTTSubString	Subscribes to the specified topic, and reads out the message part of a PUBLISH message in the received specified topic in STRING data type.
MQTTPing Packet Send	MQTTPing	Sends a PING packet via MQTTClient, and measures the time it took for a response to be returned from the MQTT server.

Sysmac Library

Collection of software functional components
Sysmac Library

Packed with Omron's rich technical know-how.
Various software components help reduce programming time.

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This product includes cryptographic software written by Eric Young (eay@cryptsoft.com).
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Note: Do not use this document to operate the Unit.

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