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Exploring the most used Low Code modules for Edge Analytics

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By Goran Appelquist, CTO at Crosser Technologies.

A survey by Yokogawa found that more than half of decision makers from global process industries are increasing their investments in industrial autonomy. Following a recent analysis of how its customers are using its visual

drag and drop Flow Studio, Goran Appelquist, CTO at edge analytics software company Crosser, provides insight into the five most popular analytics modules being used to create data flows in its platform.

One of Crosser's aims is to fight complexity with simplicity, and this is evident in the Flow Studio¹. Usually, monitoring an advanced data flow requires various skill sets to manage each input, but the Flow Studio minimizes the need for additional software developers and data science teams. Pre-built modules don't require written coding and the stream of the flow can be viewed together and can be managed by one individual. Low code solutions also ensure higher code quality because of the extensive testing that the combined user group is performing.

Let's examine the five most popular analytics modules.

Property Mapper

Described as the 'Swiss army knife' of data transformation, Property Mapper is the most commonly used module in the Flow Studio.

It's unlikely to receive usable data straight away, so this module restructures data into a required format, introduces structure if data is presented unstructured, aligns naming conventions and adds metadata. It only operates on the structures, without altering the values.

Property Mapper simplifies the processing of data by harmonizing it from multiple sources and treating designated data as one stream. It also supports the scenario of numerous outputs of data that are being sent to multiple destinations, which all require data in different formats, by restructuring data on the way out of the flow.

Python Bridge

All programmers are familiar with Python, the high-level programming language that optimizes code readability. However, this module enables Python code to run as part of a flow and install any third-party libraries. It also makes it easier to write Python in comparison to searching for an ideal pre-built module to execute what's required. Most Python modules can be used alongside transformations that the Property Mapper supports.

Python Bridge is perfect for running machine learning (ML) models because most are built and trained using one of the Python ML frameworks – to execute those models you need to replicate the same ML framework at the edge as a resource. This is an important part of the Edge MLOps strategy.

Text Template

There's no point in creating a data flow if you can't communicate the actions

associated with that information. Text Template creates dynamic text messages to combine static text with data from your messages. It has two key functions within a flow.

The first is that it creates human readable notifications for monitoring a condition. When that condition triggers, the notification informs a member of the team, who can act on that trigger.

It's second function is to combine multiple stream values into a single value. For instance, communication over APIs requires specific values based on multiple input values and data, including numerical values, must be sent as a string.

TimeStamp

When data is received, there is no record to confirm the time it was captured. In a data flow, it's important to monitor the waiting time during code execution, as well as measure the efficiency of your code. This is where the TimeStamp module is used to stamp data with the time of capture.

On occasion, time stamps are reported, but not in the appropriate format. TimeStamp can also convert incoming timestamps to the format required by the destination.

Array Split and Join

Array Split is the fifth most used analytics module in the Crosser Flow Studio, although Array Join is used in unison with Split. Arrays are the common format used when data is retrieved from multiple sensors of a PLC or API. Working with arrays is a very common operation within Industrial IoT.

This multisensory data is presented in one large message where sensor values are presented as an array. The Array Split module breaks up the array into individual messages and applies some processing, while Join does the opposite of recombining a stream of messages into an array.

Analyzing how customers use the Flow Studio gives great insight into the functions that matter most to them. IoT operations are complex, but with the perfect recipe of analytics modules, our Flow Studio removes the common complexity and allows a comprehensive understanding of how to create an advanced flow — without the need for surplus staff.

¹ The Crosser Flow Studio allows professionals working in any asset-rich, data generating environment, like that of a factory floor, to build advanced data flows. Choosing from hundreds of pre-built modules, flows are built using a simple drag and drop function. The Flow Studio is used to combine and configure modules into data flows that collect and process data close to the source it originated. This could be from a machine, mobile asset, local data center or cloud. The first step to building a flow involves the input module, which



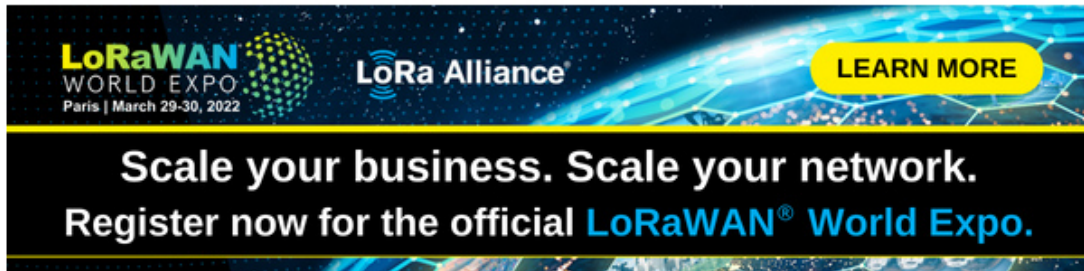
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local data center or cloud. The first step to building a flow involves the input module, which collects data from sources including programmable logic controller (PLC) sensors, databases or application program interfaces (APIs). It's uncommon to receive data in the format required, so often you need to transform, harmonize and structure the data before applying designated actions and integrations. The output module will then deliver the result back to the machine, system, service, database or cloud.

For more information about the Flow Studio or to discover Crosser's range of solutions, visit <https://crosser.io/>



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
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