

## What you will do

Connect a Wx100 PLC (Firmware >= F94.1) to the HiveMQ public MQTT broker using the available sample program.

## Assumptions and Prerequisites

The TRiLOGI programming software is installed and running. [See here for startup instructions](#)

**\*\* Note that MQTT is supported on TRiLOGI 7.5 and higher**

The Wx100 is connected to a WiFi network with Internet. [See here for connection instructions](#)

You have a general understanding of the MQTT basics. [See here for the essentials from HiveMQ](#)

## Connect Wx100 to HiveMQ!

### Step 1 - Open Sample Program

Open the sample program “MQTT\_Demo - HiveMQ\_Public.PC7” from the folder:

“C:\TRiLOGI\TL75\usr\samples\Wx\_Specifics\MQTT\”

### Step 2 - Transfer Program to PLC

Choose “Program Transfer to PLC” from the Controller menu and follow the steps to complete the transfer.

[Refer to the online programmers reference manual for details.](#)

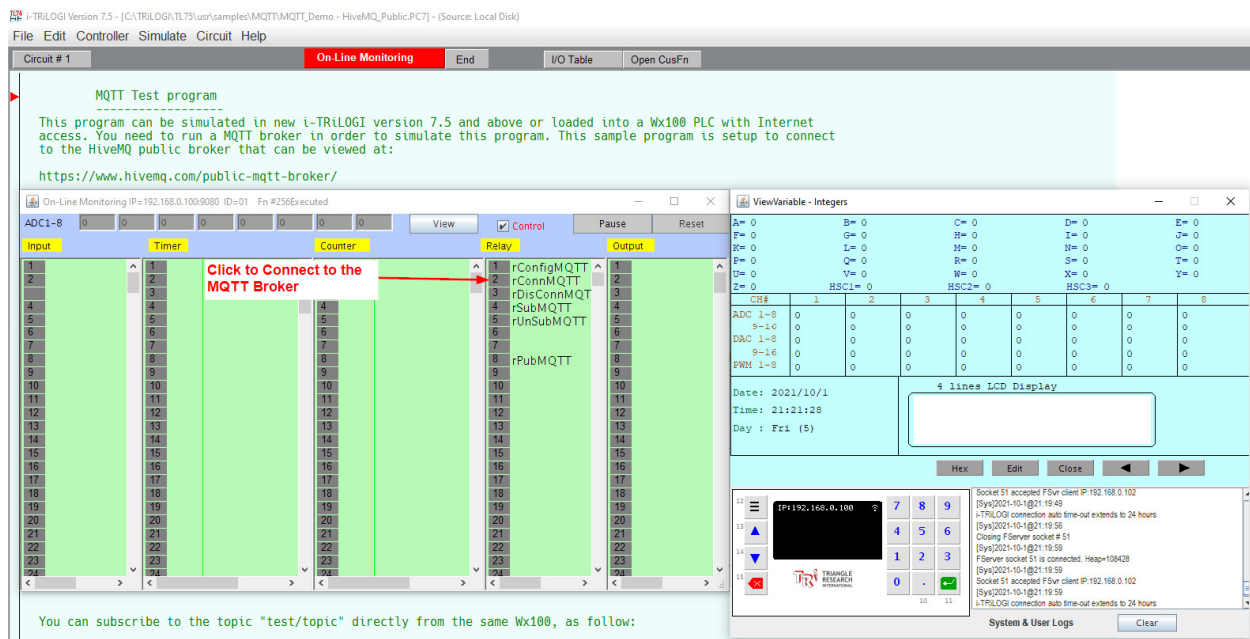
### Step 3 – Start Online Monitoring

1. Choose “On-Line Monitoring” from the Controller menu and the monitoring window will open.
2. Click “View” or press ‘v’ to open the view variables window.

[Refer to the online programmers reference manual for details.](#)

### Step 4 – Connect to Broker

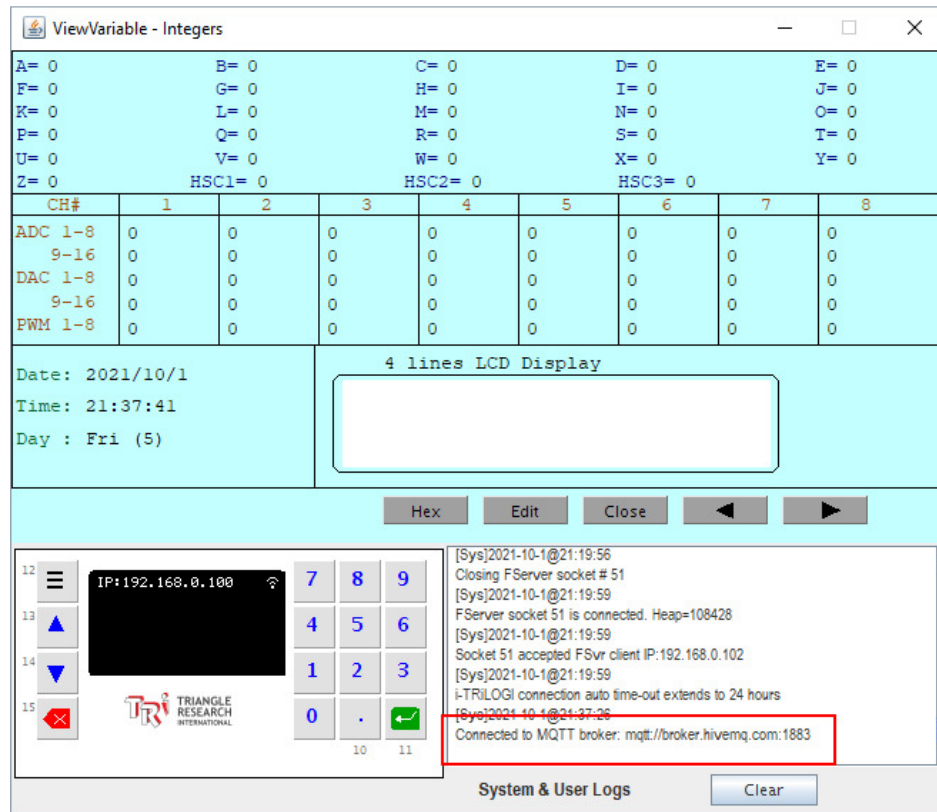
You should now have the following monitoring windows open:



Click on Relay bit #2 “rConnMQTT” to initiate a connection to the HiveMQ Public MQTT Broker.

When the connection completes, the following message will appear in the System and User Logs window:

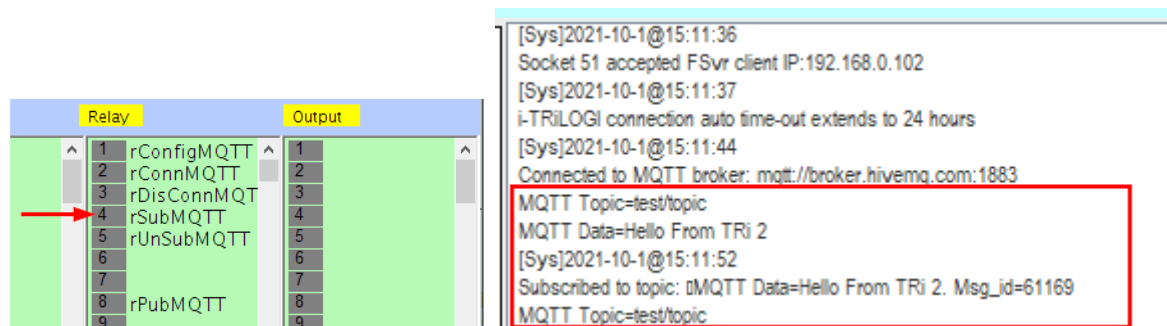
**“Connected to MQTT broker: mqtt: broker.hivemq.com:1883”**



### Step 5 - Subscribe to Topic

Click on Relay bit #4 “rSubMQTT” to subscribe to the topic “test/topic”.

The System and User Logs window will now display the subscription information:



### Step 6 - Publish to Broker

Click on Relay bit #8 “rPubMQTT” to publish test data to the HiveMQ public broker using the topic “test/topic”.

**\*\* Note:** Left-clicking the bit will do a single publish and right-clicking the bit to latch it will publish data periodically using the clock pulse bit.

### Step 7 – Receive Subscription Messages

The System and User Logs window will now display the subscription information as data is published.

The data seen below is returned back from the HiveMQ public broker:

Relay		Output	
1	rConfigMQTT	1	
2	rConnMQTT	2	
3	rDisConnMQTT	3	
4	rSubMQTT	4	
5	rUnSubMQTT	5	
6		6	
7		7	
8	rPubMQTT	8	
9		9	

MQTT Data=Hello From TRi 1
MQTT Topic=test/topic
MQTT Data=Hello From TRi 2
MQTT Topic=test/topic
MQTT Data=Hello From TRi 3
MQTT Topic=test/topic
MQTT Data=Hello From TRi 4
MQTT Topic=test/topic
MQTT Data=Hello From TRi 5

### Simulate Additional MQTT Clients to Publish/Subscribe to the Wx100

Real MQTT applications would consist of at least two clients so that one can publish data and the other can subscribe (or both could do both). So far in this guide only one client (the Wx100 PLC) has been setup, but a second client can be setup using the TRiLOGI version 7.5 (or higher) simulator that supports MQTT network connections.

#### Step 1 – Open Another TRiLOGI Instance

Start by opening another instance of the TRiLOGI software and repeating [Step 1](#) to open the sample program.

#### Step 2 – Run the Simulator

1. Choose “Run (All I/O Reset)” from the Simulate menu and the simulated monitoring window will open.
2. Click “View” or press ‘v’ to open the view variables window.

[Refer to the online programmers reference manual for details.](#)

#### Step 3 – Connect and Subscribe

Repeat [step 4](#) to connect to the HiveMQ public broker from the simulator and [step 5](#) to subscribe to the topic “test/topic”.

Now any new data published by the Wx100 will be received in the simulators System and User Logs window.

```
MQTT Topic=test/topic
MQTT Data=Hello From TRi 7
```

System & User Logs