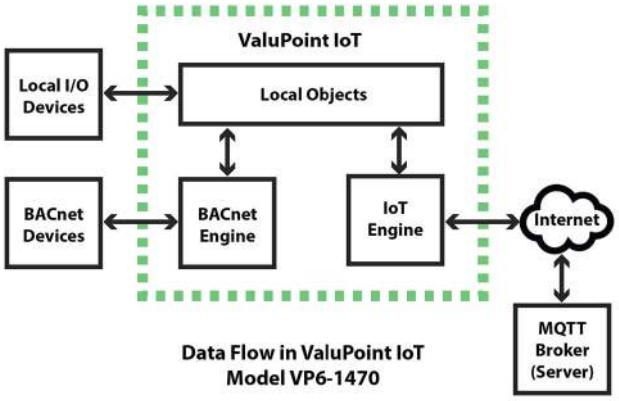
ValuPoint IoT
MODEL VP6-1470
IoT Edge Server

CONTROL SOLUTIONS MINNESOTA

MQTT Cloud Based or Stand Alone Remote Monitoring Using Local I/O or BACnet



Data Flow in ValuPoint IoT
Model VP6-1470

Control Solutions' ValuPoint® VP6-1470 IoT Edge Server connects physical I/O, e.g. sensors, to the Internet. In addition, the VP6-1470 turns any BACnet device into a Thing on the Internet of Things. The VP6-1470 features 12 universal inputs that may be configured as analog or discrete, and 2 Form A relay outputs. The VP6-1470 will use its communication ports to poll one or more BACnet devices, collecting data from the list of objects you provide. Based on rules you create, the VP6-1470 will decide if and when to publish that data to the MQTT broker (server). You can also configure the VP6-1470 to subscribe to data coming from the MQTT broker, which you can then write out to BACnet devices to manage setpoints and the like.

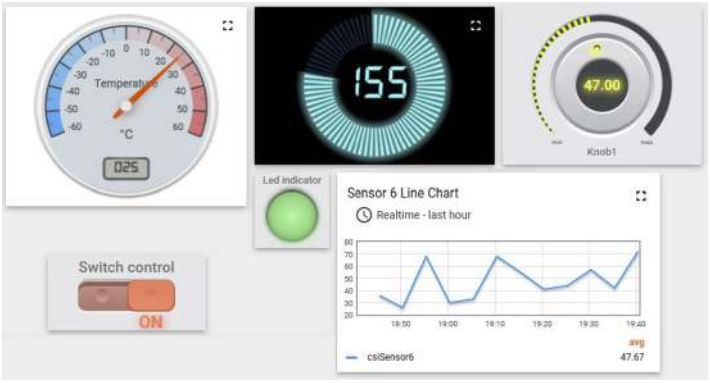
The MQTT "publish" action, in controls terms, is most closely associated with sensors. Your hardware has collected sensor data, and you want to send that sensor data to a server or to other control devices. To send that data, you "publish" it.

The MQTT "subscribe" action, in controls terms, is most closely associated with actuators. The "subscribe" action would also be associated with control setpoints. You can never force data into a device via MQTT. The device, in our case the VP6-1470, must subscribe to the source of data effectively asking to be informed of changes. Once you have subscribed to an MQTT source of data, then when received, you can use that data to control actuators or update setpoints.

The VP6-1470 supports the open source industry standard Mosquitto MQTT broker. The VP6-1470 includes additional features to support Amazon's AWS IoT Core as well as ThingsBoard.

One of the many things you can do with data that has been published to the AWS server by the ValuPoint VP6-1470 is analyze and visualize the data, and generate text messages automatically sent to your smart phone. Any data related service offered by Amazon Web Services is available once the VP6-1460 has published your data to the AWS server.

The VP6-1470 also supports interactive dashboards using ThingsBoard. The VP6-1470 includes features specific to ThingsBoard that allow MQTT interaction with graphic widgets on the dashboard. BACnet data published by the VP6-1470 can show up as real-time gauge indications or charts. Input from the dashboard such as knob adjustments or switch changes will be immediately reported to the VP6-1470 and those changes are immediately accessible as BACnet data.



The VP6-1470 is also a BACnet router, slave proxy, and client/server gateway that allows remapping objects from multiple slaves into one master. You can use the VP6-1470 as just a router, just a slave proxy, just a client/server, or all three at the same time. The VP6-1470 also includes BBMD support. The VP6-1470 includes all of the BACnet functionality of Control Solutions' BB3-7301.

The VP6-1470 as a BACnet Router will route IP to MS/TP and vice versa via its local ports, and supports full router capability for multi-hop internetworks including via NAT WAN routers. Routing is simple to set up. Routing can be used without any other gateway features enabled.

The VP6-1470 as a BACnet Client/Server Gateway will poll BACnet IP and/or BACnet MS/TP slaves or servers, and retain copies of selected object properties. Upstream BACnet clients may then query the VP6-1470 to receive data originating from multiple devices.

ValuPoint IoT
MODEL VP6-1470
IoT Edge Server

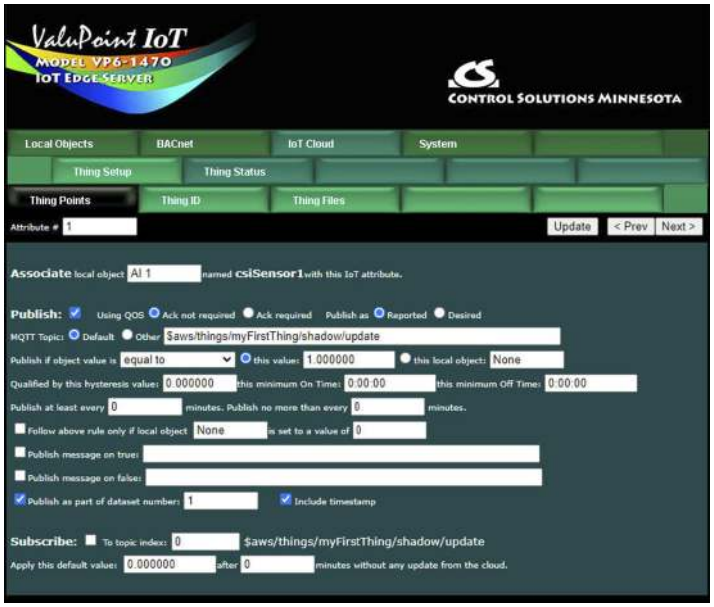
CONTROL SOLUTIONS MINNESOTA

VP6-1470 Stand-Alone Remote Monitoring

The VP6-1470 includes a secure local email client that will directly email you notifications of alarm events. The event rule template has all of the same power and flexibility as the MQTT publish template. The email message template lets you fully customize the message that is sent. The template includes variables which insert real time data from the VP6-1470 as the email is sent.

The VP6-1470 includes local data logging capability that can be used instead of sending data to the cloud. You select which data points are logged to a local CSV file. This file is then emailed to you periodically. You select logging rate and when files should be sent. You also have the option of logging at a slower rate most of the time, but then log faster when an event of interest is in progress.

The VP6-1470 includes a real time scheduler for scheduling daily events or one time events on a given date and time. The scheduler also includes exceptions for holidays.



The MQTT publish and subscribe "rules" are created with an easy to use template. A diagnostic page is also provided where you may view the most recently published data, and publish arbitrary JSON formatted data for testing purposes. The entire configuration is saved in the internal Flash file system in XML format. This file may be exported to replicate additional copies of the configured device, or for backup.

FEATURES

- 12 Analog/universal inputs, software selectable types
  - 0-10VDC, thermistor, discrete, dry contact, pulse
  - 0.1% reference,12-bit resolution
  - Non-volatile totalizing count inputs
  (to 2Hz on all channels, to 1kHz on 4 channels)
- 2 Discrete outputs
  - Form A relay
  - 2A @ 120VAC
  - 2A @ 30VDC
- Battery backed real time clock/calendar
- MQTT Client supports AWS IoT Core, Mosquitto MQTT, ThingsBoard
- Simple template based setup of MQTT Publish and Subscribe
- Secure local email client for local alarm notifications
- Local data logging for remote monitoring without any cloud
- Real time event scheduler
- BACnet IP to MS/TP Router , IP over Ethernet 10/100BaseT
- Slave proxy to support MS/TP slave-only devices
- Client/Server gateway for remapping BACnet objects
- Read/Write any standard BACnet objects as a Gateway
  - Up to 1,000 objects, up to 100 mapped to IoT
  - Analog, Binary, Multi-State object types
  - Input, Output, Value objects
- BBMD, COV support
- Commandable BACnet objects implement priority array
- Bidirectional data exchange between BACnet and IoT
- Configure via web pages, HTTP and/or HTTPS
- Flash file system for XML configuration files, SSL certificates
- Online help, Quick Help section at bottom of every web page
- Password protection for web log-on and ftp
- DHCP or static IP address, IPv4 and IPv6 support
- Isolated BACnet MS/TP port, 9600, 19200, 38400, 76800 baud
- Powered by 18-30VDC or 24VAC 50/60 Hz Class 2, 0.3A max.
- DIN rail mounting, 100mm H x 70mm W x 60mm D
- Pluggable screw terminal block for power & RTU network
- Operating temperature -40°C to +80°C; Humidity 5% to 90%
- FCC Class A, CE Mark
- Listed to UL 916 and (Canadian) C22.2 No. 205-M1983

Visit our web site for
- *Full details*
- *User Guides & Software Downloads*
- *Pricing & On-Line Ordering*

www.csimn.com

CONTROL SOLUTIONS MINNESOTA
PO BOX 10789
ST. PAUL, MN 55110-0789
VOICE (651) 426-4410 • FAX (651) 426-4418
TOLL FREE 1-800-872-8613