

InfinID Technologies, Inc.

**AssetWorx MQTT
Quickstart Guide**

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1.0 AssetWorx Overview

1.1 Software Overview

AssetWorx is an RFID based asset management application. It works with barcodes, passive RFID, as well as InfinID Technologies' mesh network V-Tag technology.

1.2 AssetWorx MQTT Overview

MQTT is a lightweight publish/subscribe messaging protocol. AssetWorx lets users subscribe to various message types which allows users to receive immediate updates, rather than having to rely on periodic polling through HTTP APIs.

2.1 MQTT Overview

AssetWorx gives the user complete control over what types of messages are accessible for different user accounts.

To get started with testing out MQTT with AssetWorx, you can use any MQTT client. MQTT Explorer is a popular choice that is compatible with all major operating systems.

AssetWorx provides its own MQTT broker. An MQTT broker is an intermediary entity that allows clients to communicate. An MQTT broker receives messages published by clients, filters the messages by topic, and distributes them to subscribers.

3.0 Setup

3.1 Software Setup

The first step is to install the AssetWorx software applications that are needed. The web application will always be needed but to integrate with RFID hardware such as passive readers, the Alarm Monitoring Service will also need to be installed. Please refer to the [AssetWorx Software Installation Instructions](#) for more details.

3.2 Hardware Setup

After software has been setup, the next step is to install any hardware that is needed. Hardware devices usually consist of one of the following:

- Passive RFID Portals – These are portals which only read passive RFID tags. They are useful for setting up choke points throughout the enterprise.
- V-Tag Gateways – V-Tag Gateways facilitate communication with InfinID Technology mesh network V-Tags.
- V-Tag GPS Gateways – These Gateways support the outdoor GPS tags which have a range of up to 4 square miles.

4.0 Setting AssetWorx up with MQTT

After logging into AssetWorx, click Tools->Options, then go to the MQTT tab.

Make sure that the MQTT Server is enabled.

Format Options	Auto Trim Options	Asset Name Serialization	MQTT	Email Settings
<p>MQTT Server is used to allow InfinID VG200-1 V-Tag Gateways to connect to AssetWorx. MQTT clients can also subscribe to system topics to receive a stream of data from the server. Standard encrypted port for MQTT is 8883.</p> <p>MQTT</p> <p>Enable MQTT Server</p> <p>Yes</p> <ul style="list-style-type: none"><input checked="" type="checkbox"/> Enable MQTT Alarm Subscriptions<input checked="" type="checkbox"/> Enable MQTT Event Subscriptions<input checked="" type="checkbox"/> Enable MQTT Gateway Message Subscriptions<input checked="" type="checkbox"/> Enable MQTT Sensor Reading Subscriptions<input checked="" type="checkbox"/> Enable MQTT V-Tag Movement Subscriptions<input checked="" type="checkbox"/> Enable MQTT Tag Observation Subscriptions				

There are 6 basic message types that can be subscribed to. AssetWorx gives you complete control over which subscriptions are active in the system:

1. MQTT Alarm Subscriptions – Any Alarm registered in the system through an Alerting Action will show up through this subscription.
2. MQTT Event Subscriptions – Events are very low-level message used to log all sorts of information.
3. Gateway Message Subscriptions – The latest V-Tag Gateway VG200-1 supports MQTT connections. This allows the Gateway to connect directly to the AssetWorx MQTT broker. Gateway Message Subscriptions will show all messages coming in from a VG200-1 Gateway connected via MQTT.
4. Sensor Reading Subscriptions – Every V-Tag, by default, will report in with a Sensor Reading once an hour. These messages will show up through this subscription.
5. V-Tag Movement Subscriptions – Whenever a V-Tag is moved, it will automatically send in a movement report once per minute for 20 minutes.
6. Tag Observation Subscriptions – This represents passive RFID tags that are read by the Alarm Monitoring Service and relayed up to the web server via web service calls for processing.

4.1 Adding an MQTT Client to AssetWorx

Add an MQTT Client to give a user access to MQTT through AssetWorx.

Add/Edit MQTT Client

Username

Password

Generate Password

☒ Access Gateway Messages (topic: awrx/1/gatewaymsg)

☒ Access VTag Movements (topic: awrx/1/tagmovement)

☒ Access Tag Observations (topic: awrx/1/tagobservation)

☒ Access Events (topic: awrx/1/event)

☒ Access Alarms (topic: awrx/1/alarm)

☒ Access VTag Sensor Reports (topic: awrx/1/sensorreading)

OK

Cancel

AssetWorx allows you to give granual control over subscription permissions for each client.

At the end of each message checkbox, copy the exact topic value to subscribe to that message type. AssetWorx is very strict in only allowing a client to subscribe to the exact topics that they are designated to have access to. Multi level or wildcard topic subscriptions will be rejected.

5. Testing an MQTT Connection to AssetWorx

Any MQTT compatible client can be used to test MQTT connections with AssetWorx. A popular and easy to use one is called MQTT Explorer. To get started with MQTT Explorer, first install the software and run it.

The screenshot displays the MQTT Explorer application window. On the left, a sidebar titled 'Connections' lists several saved connections, with 'assetworx.infinidtech....' selected. The main panel, titled 'MQTT Connection', shows the configuration for this selected connection. The URL bar at the top indicates 'mqtt://assetworx.infinidtech.com:8883/'. Below this, there are toggle switches for 'Validate certificate' (disabled) and 'Encryption (tls)' (enabled). The configuration fields include: 'Name' set to 'assetworx.infinidtech.com', 'Protocol' set to 'mqtt://', 'Host' set to 'assetworx.infinidtech.com', and 'Port' set to '8883'. The 'Username' field is filled with 'mqttclient', and the 'Password' field is masked with dots. At the bottom of the main panel, there are four buttons: 'DELETE' (with a trash icon), 'ADVANCED' (with a gear icon), 'SAVE' (yellow), and 'CONNECT' (blue with a power icon).

Be sure to click Advanced to specify the topic subscriptions your client has been given access to in section 4.1.

When ready, click CONNECT to start listening to MQTT messages from AssetWorx.