


 EdgePatrol


 Brokers
 Tags

EdgePatrol > Brokers

 Brokers 

[+ New Broker](#)

Name	Host	Port	Filter	Status
DEV 2026-01	dev2016-01	1883	spBv1.0/#	✓ Connected
Mosquito	test.mosquito.org	1883	spBv1.0/#	✓ Connected
PRD 2026-IC	dev2016-01	1884	spBv1.0/#	✗ Disconnected

EdgePatrol > Tags

 Tags

Search metric, group, node, or device



Broker (Any) Group (Any) Node (Any) Device (Any)

1 2 3 4 5 6 7 ... 531 Page



Created Broker	Group Node	Device Metric	Value Data Type	Timestamp
17-April-2026 06:18 AM Mosquito	MyGateway MyNode	slave1 TEMP_2	28.5 Float	19-April-2026 07:05 AM
17-April-2026 06:18 AM Mosquito	MyGateway MyNode	slave1 TEMP_1	29.700 Float	19-April-2026 07:05 AM
17-April-2026 06:18 AM Mosquito	MyGateway MyNode	None Diagnostics/IPSec Connection 5 Status	Disconnected String	19-April-2026 07:04 AM
17-April-2026 06:18 AM Mosquito	MyGateway MyNode	None Diagnostics/IPSec Connection 4 Status	Disconnected String	19-April-2026 07:04 AM

 SAA\_Line\_3\_Pkg



Chemical

 **SAA-2101-Moisture-Sample-Weight** Sample Weight of Moisture  Automatic data retrieval failed

Delayed 2.975 3.000 3.025

 **SAA-2102-Moisture-Dried-Sample-Time** Moisture Dried Sample Time  Automatic



Delayed

 **SAA-2103-Moisture-Results** Moisture Results  Automatic

Delayed 28.00 36.00   %

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# Chapter 1: Introduction

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## Introduction

EdgePatrol™ is a service that enables PatrolSuite to retrieve data (e.g. process conditions, product measurements, or other information) from an MQTT broker and automatically add the data to the associated test method in QualityPatrol samples.

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## Access

EdgePatrol is accessed from the PatrolSuite™ homepage. To access the PatrolSuite homepage, obtain the URL and login credentials from your IT department.

 PatrolSuite module access is governed by both PatrolSuite and Active Directory security protocols. Therefore, users will see different homepage content and will have different access levels based on assigned roles. For assistance with security or permissions, contact your IT department.

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## Browser

PatrolSuite is accessed through a web browser. The platform and all its applications, including EdgePatrol, are certified for use with Google Chrome, Microsoft Edge, and Safari. To ensure full functionality and the best user experience, MAP strongly recommends using one of these supported browsers.

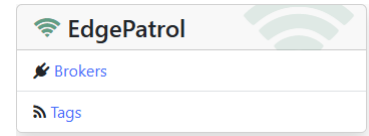
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## **NEW** Definitions

**Broker** – A software intermediary that manages the flow of messages between devices publishers and subscribers using the MQTT publish/subscribe protocol. It receives messages from publishers, filters them by topic, and distributes them to authorized subscribers, enabling decoupled, efficient communication. EdgePatrol enables PatrolSuite to subscribe to one or more MQTT brokers.

**Edge** – The physical or logical boundary of a network, specifically the computing infrastructure located close to where data is generated (sensors, devices, users) rather than in a centralized cloud or data center.

**MQTT** – Message Queuing Telemetry Transport (MQTT) is a lightweight, publish/subscribe messaging protocol designed for Internet of Things (IoT) devices. It acts as a standard for machine-to-machine (M2M) communication, connecting sensors and devices to a central broker for efficient distribution of data to subscribers.



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**Payload** – The actual data carried inside a message - the content being sent from one system to another.





**Sparkplug B** – A specification that defines how to use the MQTT messaging protocol for Industrial IoT (IIoT). It is not a replacement for MQTT, but rather an enhancement that standardizes payload structure, topic namespaces, and state management. It ensures interoperability and consistent communication between industrial devices, gateways, and ERP/MES/QMS/SCADA systems. Sparkplug B is the predominant specification for communication in industrial applications such as automotive, building automation/security, energy, manufacturing, and oil/gas.

**Tag** – A label or name given to a specific value coming from a machine, sensor, or system so it can be easily identified, tracked, and used. In QualityPatrol, tags are associated with test methods so that the correct values can be automatically retrieved from the MQTT broker and inserted into samples. Each tag must be unique as defined by group/node/device/metric.

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## Symbol Key

The following symbols are used in this user guide.

Typeface	Description
	Indicates a “required” data entry field within a UI.
	Indicates a new feature, or new information regarding existing functionality.
	Indicates rules regarding access security.
	Click the help icon to view additional information.

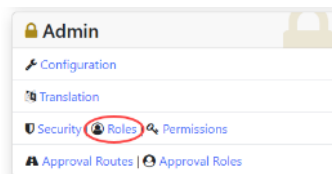
# Chapter 2: Security

## Introduction

To use EdgePatrol, a user must be placed into a PatrolSuite role that has the “EdgePatrol Admin” or the “EdgePatrol Viewer” permission activated.

## Roles

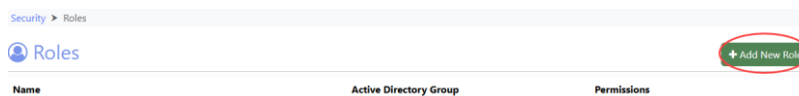
1. To access the PatrolSuite Roles, click on the Roles hyperlink in the Admin card on the PatrolSuite homepage.



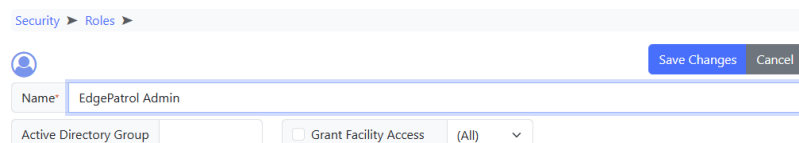
**Note:** MAP recommends creating the following EdgePatrol Roles:

EdgePatrol Admin	2	Active
EdgePatrol Viewer	1	Active

2. To create a Role, click on the ‘Add New Role’ button.



- a. Enter the name of the role and click ‘Save Changes’.



**Note:** Each PatrolSuite Role must be associated with a Microsoft Active Directory group.




3. To associate a PatrolSuite Role with an Active Directory group:
  - a. Contact your IT department and ask them to create an Active Directory group for the PatrolSuite Role. The Active Directory group name is typically the same as the PatrolSuite Role name.
  - b. Provide the IT department with the names of all users who need to be added into each Active Directory group.


c. Click on the desired Role name.

EdgePatrol Admin	2	Active
EdgePatrol Viewer	1	Active

d. Click on the 'Edit' button.

Security > Roles > EdgePatrol Admin


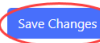

 EdgePatrol Admin  



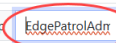
Granted	Permission	Description
---------	------------	-------------

e. Enter the name of the applicable Active Directory group and click 'Save Changes.'

Security > Roles > EdgePatrol Admin

 EdgePatrol Admin  




Name\* EdgePatrol Admin


Active Directory Group   Grant Facility Access (All) v

**Note:** Granting facility access is typically not done for an EdgePatrol Role. Accordingly, MAP recommends leaving the Grant Facility Access checkbox unchecked.

4. To see the users who are in the Active Directory group associated with the Role, click the 'View Users' button.

Security > Roles > EdgePatrol Admin

 EdgePatrol Admin  







Granted	Permission	Description
---------	------------	-------------

5. To remove a PatrolSuite role, click the 'Remove' button and click the 'Remove' button in the confirmation window.

**Note:** The 'Remove' button will not be actionable until all permissions are set to "no."

Security > Roles > EdgePatrol Admin

 EdgePatrol Admin  





Granted	Permission	Description
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## Permissions

Permissions are located on Page: {PatrolSuite URL}/Security/Permissions

There are two permissions that govern EdgePatrol access and use:



EdgePatrol	
Admin	 Allows users to edit EdgePatrol brokers and tags.
View	 Allows users to view EdgePatrol brokers and tags.

6. To grant permissions to a PatrolSuite Role, click on the desired Role name.



EdgePatrol Admin	2	Active
EdgePatrol Viewer	1	Active

- a. Scroll down to the EdgePatrol section and click on the 'No' button for the "View" permission. This will change the button to read 'Yes' which means the permission has been granted to the Role, and therefore to all users in the Role.

The **EdgePatrol Admin** Role is typically granted the following permissions:

EdgePatrol		
<input checked="" type="radio"/> Yes	Admin	 Allows users to edit EdgePatrol brokers and tags.
<input checked="" type="radio"/> Yes	View	 Allows users to view EdgePatrol brokers and tags.

The **EdgePatrol Viewer** Role is typically granted the following permission:

EdgePatrol		
<input type="radio"/> No	Admin	 Allows users to edit EdgePatrol brokers and tags.
<input checked="" type="radio"/> Yes	View	 Allows users to view EdgePatrol brokers and tags.

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# Chapter 3: Brokers

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## Introduction

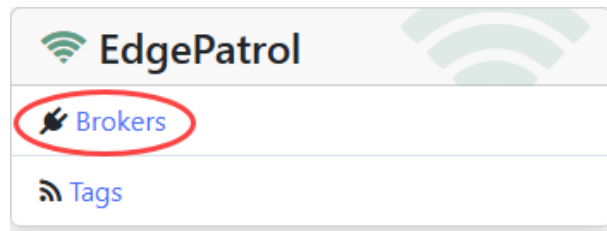
Configuring MQTT brokers is an advanced technical topic that should be performed by trained people from the IT department.

A broker is a software intermediary that manages the flow of messages between devices publishers and subscribers using the MQTT publish/subscribe protocol. It receives messages from publishers, filters them by topic, and distributes them to authorized subscribers, enabling decoupled, efficient communication. EdgePatrol enables PatrolSuite to subscribe to one or more MQTT brokers.

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## View Brokers

- To view the MQTT brokers, click on the “Brokers” hyperlink in the EdgePatrol card on the PatrolSuite homepage.

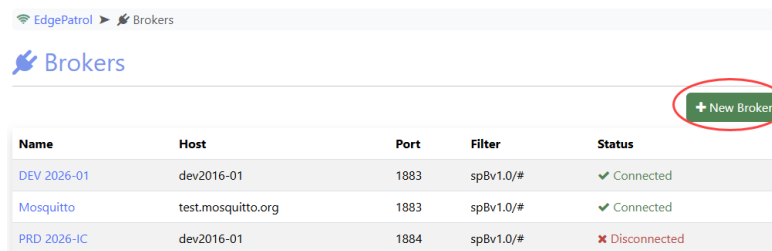


The Brokers page displays a list of the MQTT Brokers available on the network, including the connection status between the broker and EdgePatrol. Contact your IT department if you do not see a desired broker.

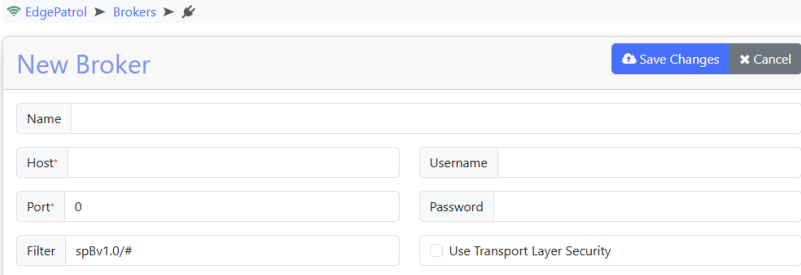
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## Add New Broker

- To add a new broker, click the ‘New Broker’ button.



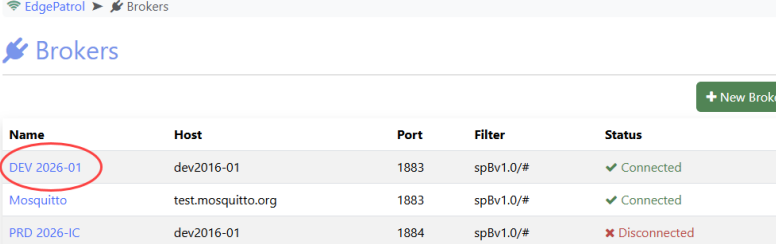
- Enter the broker information and click 'Save Changes.'
  - Name.** Name of the MQTT broker.
  - Host.** Name of the MQTT host responsible for receiving messages, filtering them by topic, authorizing clients, and distributing messages to subscribers in an IoT publish/subscribe model.
  - Port.** Number of the specific TCP/IP endpoint (usually 1883 or 8883) where the MQTT broker listens for incoming client connections.
  - Filter.** Enter the expression used by clients in subscription requests to match and receive messages from one or more topics. The filter allows selective data consumption by using wildcards to match hierarchies, enabling a client to subscribe to multiple similar topics simultaneously rather than just one.
  - Username.** If needed to enable PatrolSuite to access the broker, enter the applicable username.
  - Password.** If needed to enable PatrolSuite to access the broker, enter the applicable password.
  - Use Transport Layer Security.** Check this checkbox if communication between MQTT clients (devices) and the MQTT broker (server) is encrypted using TLS.



The screenshot shows the 'New Broker' form in the EdgePatrol interface. The form has a title bar with 'New Broker' and buttons for 'Save Changes' and 'Cancel'. The form fields are: Name (empty), Host\* (empty), Username (empty), Port\* (0), Password (empty), Filter (spBv1.0/#), and a checkbox for 'Use Transport Layer Security' which is unchecked.

## Edit Broker

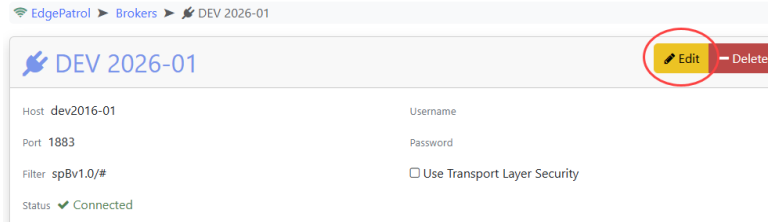
- To edit a broker, click the Broker Name hyperlink.



The screenshot shows the 'Brokers' list in the EdgePatrol interface. The list has a table with columns: Name, Host, Port, Filter, and Status. The 'Name' column contains 'DEV 2026-01', 'Mosquitto', and 'PRD 2026-IC'. The 'Host' column contains 'dev2016-01', 'test.mosquitto.org', and 'dev2016-01'. The 'Port' column contains '1883', '1883', and '1884'. The 'Filter' column contains 'spBv1.0/#', 'spBv1.0/#', and 'spBv1.0/#'. The 'Status' column contains 'Connected', 'Connected', and 'Disconnected'. The 'DEV 2026-01' name is circled in red.

Name	Host	Port	Filter	Status
DEV 2026-01	dev2016-01	1883	spBv1.0/#	Connected
Mosquitto	test.mosquitto.org	1883	spBv1.0/#	Connected
PRD 2026-IC	dev2016-01	1884	spBv1.0/#	Disconnected


- Click on the 'Edit' button.



The screenshot shows the 'Edit Broker' form in the EdgePatrol interface. The form has a title bar with 'DEV 2026-01' and buttons for 'Edit' and 'Delete'. The form fields are: Host (dev2016-01), Username (empty), Port (1883), Password (empty), Filter (spBv1.0/#), and a checkbox for 'Use Transport Layer Security' which is unchecked. The status is 'Connected'.

- Change the broker information as desired and click 'Save Changes.'

EdgePatrol > Brokers > DEV 2026-01


 **DEV 2026-01** [Save Changes](#) [Cancel](#)

Name	DEV 2026-01		
Host*	dev2016-01	Username	
Port*	1883	Password	
Filter	spBv1.0/#	<input type="checkbox"/> Use Transport Layer Security	

## Delete Broker

12. To delete a broker, click the Broker Name hyperlink.


EdgePatrol > Brokers

 **Brokers** [+ New Broker](#)

Name	Host	Port	Filter	Status
<a href="#">DEV 2026-01</a>	dev2016-01	1883	spBv1.0/#	✓ Connected
<a href="#">Mosquitto</a>	test.mosquitto.org	1883	spBv1.0/#	✓ Connected
<a href="#">PRD 2026-IC</a>	dev2016-01	1884	spBv1.0/#	✗ Disconnected

13. Click on the 'Delete' button.

EdgePatrol > Brokers > DEV 2026-01

 **DEV 2026-01** [Edit](#) [Delete](#)

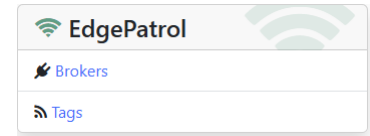
Host	dev2016-01	Username	
Port	1883	Password	
Filter	spBv1.0/#	<input type="checkbox"/> Use Transport Layer Security	
Status	✓ Connected		

14. Click the 'Delete' button.

**Delete Broker** [×](#)

To delete the broker, click the Delete button. Otherwise, click the Cancel button.

[Delete](#) [Cancel](#)



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# Chapter 4: Tags

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## Introduction

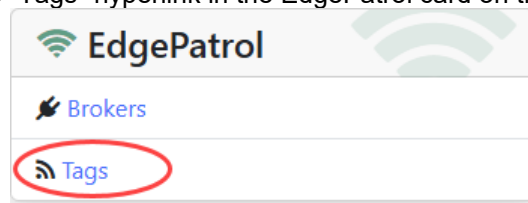
Configuring the tags in a manufacturing facility is an advanced technical topic that should be performed by trained people from the IT department. It is not unusual for a manufacturing facility to have tens of thousands of tags.

A tag is label or name given to a specific value coming from a machine, sensor, or system so it can be easily identified, tracked, and used. In QualityPatrol, tags are associated with test methods so that the correct values can be automatically retrieved from the MQTT broker and inserted into samples.

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## View Tags

15. To view the tags, click on the “Tags” hyperlink in the EdgePatrol card on the PatrolSuite homepage.



The Tags page displays a list of the tags available on the MQTT broker, including the **most recent value and the timestamp of that value**.

**Note:** EdgePatrol automatically identifies the tags available on each broker. Accordingly, tags do not need to be added to EdgePatrol.

**Note:** Use the Search cell or the filters to locate a tag of interest. Contact your IT department for information regarding the identification of tags and how they are organized by brokers, groups, nodes, devices, and metrics.

**Note:** Click on the column headers to sort the tags. For example, click on the Timestamp column name twice to see the most recent tag for which data was published.

EdgePatrol > Tags

Tags

Search metric, group, node, or device  Search

Broker (Any) Group (Any) Node (Any) Device (Any)

1 2 3 4 5 6 7 ... 531 Page

Created Broker	Group Node	Device Metric	Value Data Type	Timestamp
17-April-2026 06:18 AM <input type="button" value="CDT"/> Mosquitto	MyGateway MyNode	slave1 TEMP_2	14.25 Float	19-April-2026 12:03 PM <input type="button" value="CDT"/>
17-April-2026 06:18 AM <input type="button" value="CDT"/> Mosquitto	MyGateway MyNode	slave1 TEMP_1	85.800 Float	19-April-2026 12:03 PM <input type="button" value="CDT"/>
17-April-2026 06:18 AM <input type="button" value="CDT"/> Mosquitto	MyGateway MyNode	None Diagnostics/IPSec Connection 5 Status	Disconnected String	19-April-2026 12:03 PM <input type="button" value="CDT"/>
17-April-2026 06:18 AM <input type="button" value="CDT"/> Mosquitto	MyGateway MyNode	None Diagnostics/IPSec Connection 4 Status	Disconnected String	19-April-2026 12:03 PM <input type="button" value="CDT"/>

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# Chapter 5: Tags & Test Methods

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## Introduction

When a sample is initiated in QualityPatrol, data can automatically be obtained from the MQTT broker and saved to the appropriate test method. This is accomplished by associating test methods with tags.

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## Locate the Desired Tags

16. Select a quality plan of interest in QualityPatrol.
17. Identify the test methods for which you would like to automatically collect data.

**Note:** Don't overlook capturing process parameter data - such as speeds, temperatures, and weights - in QualityPatrol. When this data is collected at the time of sampling, DashPatrol will support both alarming and SPC for product characteristics (test results) and process parameters alike. In addition, consolidating process and product data in a single database - organized by manufacturing order and sample - enables **more accurate analysis and more efficient use by AI-driven applications**.

18. Seek assistance from your IT department, or possibly the plant's controls engineers who are familiar with the data sources (e.g. PLCs), to identify the tag file path for each desired test method. This requires a detailed understanding of the organization of the tags within the broker(s). Tags in a broker are organized like a network file path; each level (group, node, device, metric) narrows down where the data comes from until the specific value is reached. Generally speaking, the structure (from broad to specific) typically looks something like:

//UNC/Broker/Group/Node/Device/Metric

What each part means:

**UNC (Universal Naming Convention)**

The network location - like the "street address" of where the broker lives.

→ Example: //PlantNetwork

**Broker Name**

The specific data broker/server handling the tags.

→ Example: MainBroker

**Group**

A high-level category (area, plant, or function). [Group typically reflects the "Plant."](#)

→ Example: Atlanta, Beijing, Berlin, Chicago, Dallas, Mexico City, Tokyo

**Node**

A specific machine, PLC, or system within that group. [Node typically reflects the "Operation."](#)

→ Example: MixingLine, FillingLine, Packaging

**Device**

The actual equipment or subsystem on that node. *Device typically reflects the “Workcenter.”*

→ Example: ConveyorB , Mixer02, Oven5, PumpA, Tank3

**Metric**

The individual data point (the value itself). *Metric typically reflects the data source such as the “PLC.”*

→ Example: Temperature1, Temperature2, Speed3, Pressure1

A more concrete example of a typical full path:

//AcmeNetwork/ManufacturingBroker/Chicago/FillingLine/Tank3/Temperature1

**Note:** In practice, once the broker is added to EdgePatrol, the UNC and Broker ID are no longer relevant. Accordingly, the full tag path format used in EdgePatrol is **Group/Node/Device/Metric**. In PatrolSuite terms, this is typically **Plant/Operation/Workcenter/Metric**.

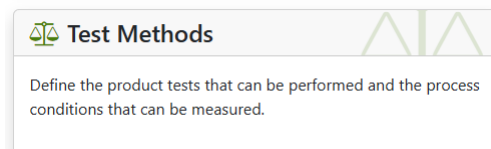
**Note:** If in your organization’s implementation of the MQTT messaging system **Group = Plant, Node = Operation, and Device = Workcenter**, then use PatrolSuite’s translation feature to localize the word Group to “Plant,” Node to “Operation,” and Device to “Workcenter.”

**Note:** “Device” is optional in EdgePatrol. When ‘DeviceId’ is null/empty, the path format uses a double slash: Group/Node//Metric

**Note:** As long as a metric resides on a broker that has been added to EdgePatrol, load balancing or otherwise moving a tag from one broker to another will not effect QualityPatrol’s ability to automatically obtain values.


## Associate the Quality Plan Test Methods with Tags

19. On the QualityPatrol Configure page, click on the Test Methods card.




20. Use the Search or filters to locate a test method for which data will be automatically collected from the broker. Click on the test method hyperlink.

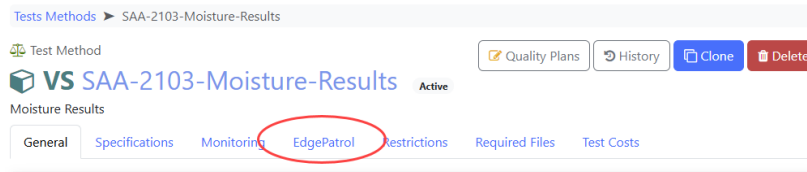
QualityPatrol

 **Test Methods** SAA-2103-Moisture

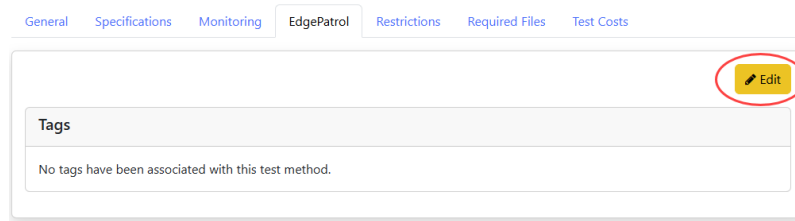
Test Property	Any	Data Type	Any
Facility	Any	Test Type	Any
Timing	Any	Status	Active
Operation	Any	Overview	Any
Workcenter	Any		

Type	Property	Test Method / Name	Units	Decimals	Cost
 VS	Chemical	<a href="#">SAA-2103-Moisture-Results</a> Moisture Results	Percent	2	0.00

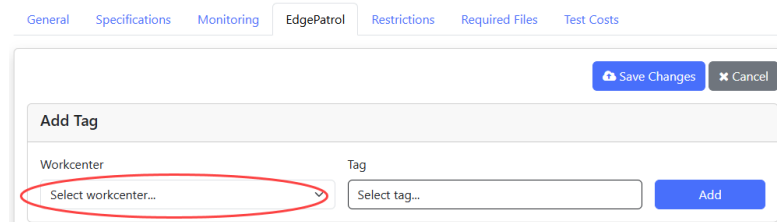
21. Click on the “EdgePatrol” tab.



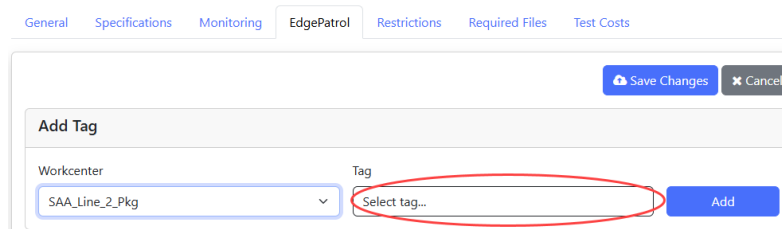
22. Click on the 'Edit' button.



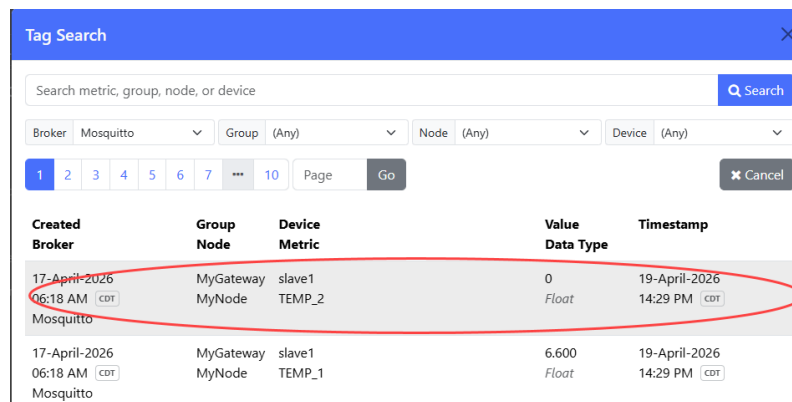
23. Click on the Workcenter dropdown and select the applicable Workcenter.



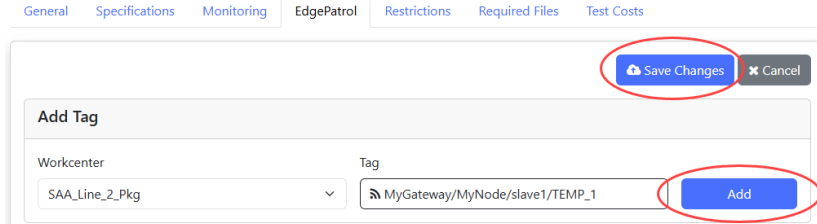
24. Click on the Tag cell.



25. In the tag picker, use the Search or the filters to locate the applicable tag. Click on the tag in the in the grid.



26. Click the 'Add' button, and then click the 'Save Changes' button.



General Specifications Monitoring **EdgePatrol** Restrictions Required Files Test Costs

Add Tag

Workcenter: SAA\_Line\_2\_Pkg Tag: MyGateway/MyNode/slave1/TEMP\_1

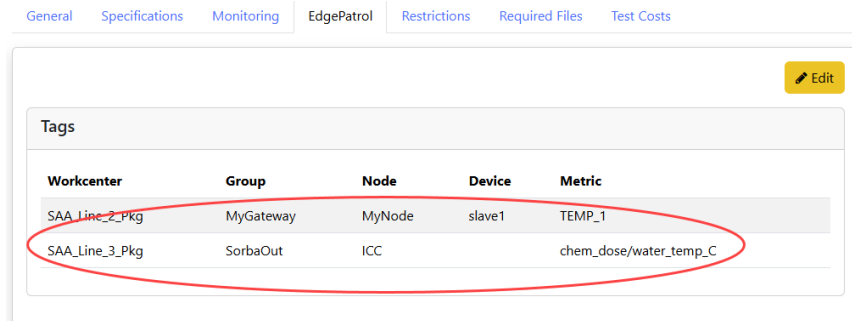
Save Changes Cancel

Add

The tag/workcenter will be added to the test method.

**Note:** Quality plans are defined at the **Operation level**, not the workcenter level - meaning a single quality plan may apply across multiple workcenters. The specific workcenter is determined at the time a sample is initiated.

Because MQTT tags are workcenter-specific, a given test method within a quality plan may need to pull data from tags associated with multiple workcenters. As a result, a test method can be linked to multiple tags, each mapped to a different workcenter, as illustrated below.



General Specifications Monitoring **EdgePatrol** Restrictions Required Files Test Costs

Tags

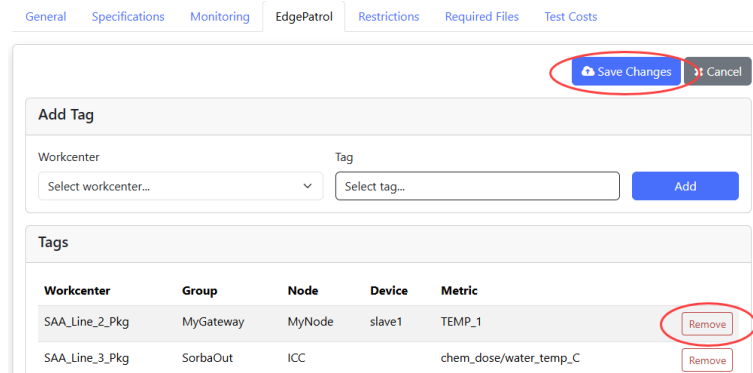
Workcenter	Group	Node	Device	Metric
SAA_Line_2_Pkg	MyGateway	MyNode	slave1	TEMP_1
SAA_Line_3_Pkg	SorbaOut	ICC		chem_dose/water_temp_C

Edit

**Note:** Once a test method is associated with a tag and workcenter, for **every** quality plan that includes that test method, QualityPatrol will attempt to auto-collect the data for **every** sample for that workcenter.

**Note:** If a sample is initiated for a workcenter that is not associated with a tag, then QualityPatrol will not attempt to auto-collect the data. This means that values for the same test method may be auto-collected for samples from some workcenters but require manual entry for samples from other workcenters.

27. To remove a tag from test method, click the 'Remove' button, then click the 'Save Changes' button.



General Specifications Monitoring **EdgePatrol** Restrictions Required Files Test Costs

Add Tag

Workcenter: SAA\_Line\_2\_Pkg Tag: MyGateway/MyNode/slave1/TEMP\_1

Save Changes Cancel

Add

Tags

Workcenter	Group	Node	Device	Metric
SAA_Line_2_Pkg	MyGateway	MyNode	slave1	TEMP_1
SAA_Line_3_Pkg	SorbaOut	ICC		chem_dose/water_temp_C

Remove

Remove

---

# Chapter 6: Sample Creation

---

## Data Types

When a sample is initiated in QualityPatrol, data can automatically be obtained from the MQTT broker for **alphanumeric**, **attribute**, and **variable single-input (VSI)** test methods.

### Note Regarding Variable Multi-input (VMI) Test Results:

EdgePatrol does not currently have the capability to process **payloads with a sample location** or **x-bar payloads** (multiple values belonging to one sample). Both approaches require a publishing system with the ability to structure the payload correctly. Both JSON and Sparkplug B payloads could be structured to do this. As an example of an x-bar payload:

#### JSON:

```
{
  "sampleId": "S12345",
  "ovenTemps": [401.2, 402.0, 400.8, 401.5, 401.0],
  "timestamp": "2026-04-19T10:15:00Z"
}
```

#### Sparkplug B (simplified):

```
SampleID = S12345
OvenTemp_1 = 401.2
OvenTemp_2 = 402.0
OvenTemp_3 = 400.8
OvenTemp_4 = 401.5
OvenTemp_5 = 401.0
```

Sending x-bar data such as five related temperatures for one sample requires additional logic at the edge to group the values together and label them correctly.

For a **single value**, the edge usually just:

- reads one value
- maps it to one metric/tag
- publishes it

For **N=5 sample data**, the edge must also:

- know that the 5 readings belong to **one sample**
- wait until all 5 values are available, or know when the sample is complete
- package them together in one message
- include context such as sample ID, timestamp, oven/workcenter, and sequence

---

## Add Sample

Once a tag/workcenter have been associated with a test method, the next time an applicable sample is initiated, the data will be automatically acquired from the broker when the user clicks the 'Add Sample' button.

QualityPatrol  
 + Add Sample Production  Startup  2113269

**Order Information**

Manufacturing Order 2113269  
 Unit Number 2113269-TH94YHYB  
 Manufactured 05-March-2019 18:00 PM CST  
 Facility Santa Ana

Line Item 1  
 Customer 007006 MARKET EXPRESS 365  
 Product 019 NFLTRD120/3.3Z

Manufacturing Previous Samples 109 Frequencies

## Sample Date/Time

User in a role that has been granted the following permission will be able to edit the sample date/time when adding a sample.

QualityPatrol

No Sample Edit Date  Allows users to change the date/time of a sample.

**Note:** The sample date/time cannot be changed after a sample has been added.

28. To edit the sample date when adding a sample, click on the date and enter the desired date using your keyboard, or click on the calendar icon and select the date.

**Manufacturing**

Sample Date/Time

04/19/2026  05:04:15 PM

Operation SAA-Line-3-Pkg

Workcenter SAA\_Line\_3\_Pkg

**Manufacturing**

Sample Date/Time

04/19/2026  05:04:15 PM

April 2026

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11

Operation SAA-Line-3-Pkg

Workcenter SAA\_Line\_3\_Pkg

29. To edit the sample time when adding a sample, click on the time and enter the desired time using your keyboard, or click on the clock icon and select the time.

**Manufacturing**

Sample Date/Time

04/20/2026  05:04:15 PM

Operation SAA-Line-3-Pkg

Workcenter SAA\_Line\_3\_Pkg

**Manufacturing**

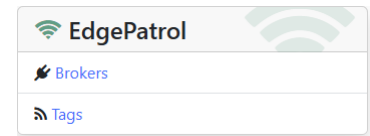
Sample Date/Time

04/20/2026  05:04:15 PM

05	04	15	PM
06	05	16	AM
07	06	17	
08	07	18	

Operation SAA-Line-3-Pkg

Workcenter SAA\_Line\_3\_Pkg



---

**Note:** If the sample date/time is adjusted during sample addition, QualityPatrol will retrieve the values from the MQTT broker for the adjusted time (not the actual time the sample was added).

**Note:** The MQTT broker is not a database; it does not store historical values. EdgePatrol does store the values, but the values are stored in memory (not in a database). Accordingly, the amount of data stored is time-limited to 24 hours. Therefore, when adjusting the sample date/time, QualityPatrol cannot retrieve MQTT values older than 24 hours ago.

---

### Case Study: Timestamp Misalignment Between Manual Sampling and MQTT Data Collection

A manufacturing operator correctly collects a physical product sample at 12:00 PM. However, instead of immediately entering the sample into QualityPatrol, the operator leaves for lunch. Upon returning at 12:45 PM, the operator inputs the sample into QualityPatrol without adjusting the timestamp.

At the moment the sample is entered (12:45 PM), QualityPatrol queries the MQTT broker and retrieves current values for:

- **Process parameters** (edge-collected): RPM, line speed, oven temperature
- **Product characteristics** (edge-collected): Viscosity and product temperature

Meanwhile, QC technicians complete laboratory testing on the physical sample, generating results for:

- **Product characteristics** (lab measured): Solids, pH, color, and flavor

This results in a critical timestamp misalignment:

- **12:00 PM (physical sample time):** Lab results reflect product conditions at the time of sampling
- **12:45 PM (edge data retrieval time):** MQTT values reflect process and product conditions at the time of sample creation in QualityPatrol

#### Impact

Because the lab data and MQTT data represent different points in time, any analysis - whether performed by human engineers/statisticians or AI applications - that attempts to correlate product characteristics with process parameters will be inherently flawed. The datasets are not temporally aligned, leading to inaccurate conclusions and potentially incorrect operational or quality decisions.

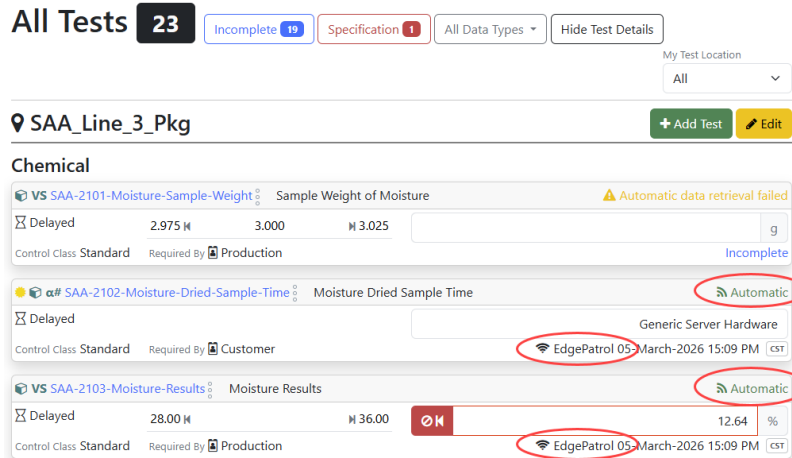
#### Bottom Line

In environments where high-frequency, time-precise data can be collected from the edge, it is essential to align timestamps with the *actual moment of physical sampling*. When combining automated data collection with manual sampling and lab testing, failure to synchronize timestamps introduces systemic error into both human analysis and AI-driven insights. Accordingly, it is important to leverage the ability to adjust the sample date/time when adding samples to ensure alignment between the physical sample date/time and the date/time of sample creation.

## Chapter 7: Samples & Testing

### Automatically Obtained Values

Test results obtained from the MQTT broker are identified within samples with the “Automatic” icon, and the user who entered the value is recorded as “EdgePatrol.”



**Note:** Automatically collected values are recognized as the source of truth and are **not editable**.

### Failed Automatic Retrieval

Automatic retrieval of values from the MQTT broker can fail for many reasons:

- Network connection is slow or down (could be temporary)
- EdgePatrol service is slow or down (could be temporary)
- MQTT broker is slow or down (could be temporary)
- PLC or sensor has failed (could be temporary)
- Edge logic has failed
- Test method is not configured correctly
- Attribute value retrieved from the broker does not match any attribute options defined for the test method. If this happens, no value will be recorded for the test method.

**Note:** EdgePatrol has a 5-second timeout for HTTP calls to the broker. If the broker is slow to respond, then sample creation will proceed with failed auto-collection values.

When automatic retrieval fails, a notification appears across the test results header and the actual test results that failed are identified within samples with the “Automatic data retrieval failed” message.

The screenshot shows the EdgePatrol interface for a test. At the top, there are tabs for 'Test Results' (5), 'Comments' (0/4), 'Units', and 'Quality State'. Below this is a 'Quality Plan Comments' section with the text '6.75" x 6.75" FLATBREAD 3.3 oz' and 'ALLERGEN: MILK'. A yellow notification bar with a warning icon contains the text 'Automatic data retrieval failed for one or more tests' and a 'Retry' button. Below the notification is the 'All Tests' section, which shows '5' tests, 'Incomplete' (3), and 'All Data Types'. The test location is set to 'All'. The test package is 'SAA\_Line\_3\_Pkg'. Under the 'Chemical' section, there are two test items: 'VS SAA-2101-Moisture-Sample-Weight' and 'α# SAA-2102-Moisture-Dried-Sample-Time'. The first item has a value of 2.975 M and a target of 3.000. The second item is marked as 'Delayed'. A yellow notification bar with a warning icon and the text 'Automatic data retrieval failed' is positioned above the first test item.

30. To try again to retrieve failed values from the MQTT broker, click the 'Retry' button.

This screenshot is identical to the previous one, but the 'Retry' button in the yellow notification bar is circled in red. Additionally, the 'Automatic data retrieval failed' notification in the test results section is also circled in red.

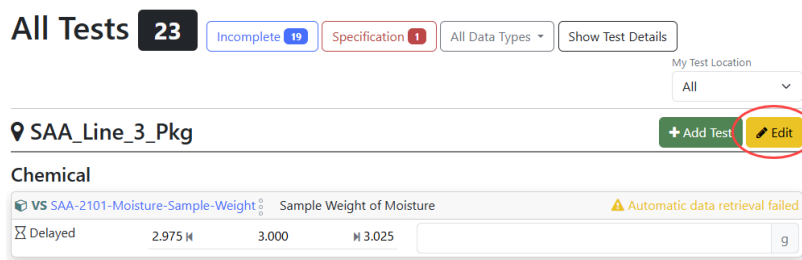
**Note:** A retry will not affect values that were previously successfully obtained.

**Note:** A retry will obtain values from the date/time of the sample, not the date/time of the retry.

**Note:** As explained in the previous chapter, MQTT values are stored in memory for a maximum of 24 hours. Thereafter, the 'Retry' button will disappear and a message will indicate that the time period for automatic data retrieval has expired.

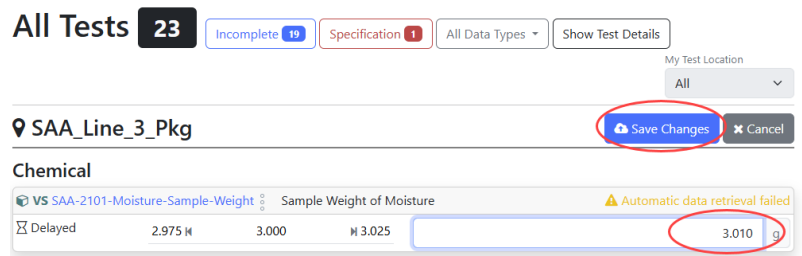
The screenshot shows the EdgePatrol interface after the 24-hour period has expired. The 'Test Results' tab now shows 23 tests, with 19 incomplete and 1 failed. The 'Quality Plan Comments' section remains the same. The yellow notification bar now contains the text 'The time period for automatic data retrieval has expired.' and the 'Retry' button is no longer present. The test results section is also visible, showing the same test items as before.

31. To manually enter failed auto-collection values, click the 'Edit' button.



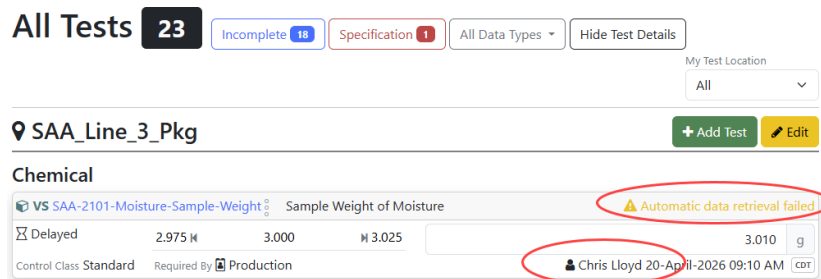
The screenshot shows the 'All Tests' summary with 23 tests, 19 incomplete, and 1 specification. Below, the 'SAA\_Line\_3\_Pkg' test is selected. The 'Chemical' section shows a table for 'VS SAA-2101-Moisture-Sample-Weight' with a 'Sample Weight of Moisture' column. The value '3.010' is entered in the input field, and the 'Automatic data retrieval failed' message is present. The 'Edit' button is circled in red.

a. Enter the value and click the 'Save Changes' button.



The screenshot shows the same interface as above, but the 'Save Changes' button is circled in red. The value '3.010' is still entered in the input field.

**Note:** In cases where a failed auto-collection value was manually entered, the “Automatic data retrieval failed” message will remain, but the user who entered the value will be identified.



The screenshot shows the 'All Tests' summary with 23 tests, 18 incomplete, and 1 specification. Below, the 'SAA\_Line\_3\_Pkg' test is selected. The 'Chemical' section shows the same table as above, but the 'Automatic data retrieval failed' message is now accompanied by the user name 'Chris Lloyd' and the timestamp '20-Apr-2026 09:10 AM'. These are circled in red.

**Note:** If an auto-collected value failed and was subsequently manually entered, clicking the 'Retry' button will not overwrite the manually entered value.

# Chapter 8: DashPatrol

## Alarming & SPC

Values obtained from the MQTT broker will be displayed in DashPatrol if the corresponding Test Property, Test Method, or Quality Plan indicates that monitoring is required. No additional configuration is needed.

**Note:** The alarms page organizes the test methods by Product Characteristics and Process Parameters.

