RUT240 MQTT (legacy WebUI)

The information in this page is updated in accordance with firmware version **RUT2XX_R_00.01.14.7**.

***Note**: this user manual page is for RUT240's old WebUI style available in earlier FW versions. **Click here** for information based on the latest FW version.*

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Summary

MQTT (MQ Telemetry Transport or Message Queue Telemetry Transport) is an ISO standard (ISO/IEC PRF 20922) publish-subscribe-based "lightweight" messaging protocol for use on top of the TCP/IP protocol. It is designed to send short messages from one client (**publisher**) to another (**subscriber**) through **brokers**, which are responsible for message delivery to the end point.

RUT2XX routers support this functionality via an open source Mosquitto broker. The messages are sent this way: a client (**subscriber**) subscribes to a topic(s); a publisher posts a message to that specific topic(s). The **broker** then checks who is subscribed to that particular topic(s) and transmits data from the publisher to the subscriber.

The following chapter is a summary of the MQTT function in RUT2XX routers. For in-depth MQTT configuration examples, refer to this page: **Monitoring via MQTT**.

MQTT Broker

The **Broker** will “listen” for connections on the specified Local port. In order to accept connections from WAN, you also need to check Enable Remote Access.

Field name	Value	Description
Enable	yes | no; default: **no**	Toggles MQTT Broker ON or OFF.

Local Port	integer [0..65535]; default: **1883**	Specifies the local port that the MQTT broker will listen to.
Enable Remote Access	yes | no; default: **no**	If enabled, MQTT Broker will be reachable by remote user (from WAN).

Security

The MQTT **Security** tab is used to establish MQTT connection security via TLS/SSL.

Field name	Value	Description
Use TLS/SSL	yes | no; default: **no**	Toggles the use of TLS/SSL certificates ON or OFF.
CA File	.ca file; default: **none**	**Certificate authority** is an entity that issues digital certificates. A digital certificate certifies the ownership of a public key by the named subject of the certificate.
CERT File	.crt file; default: **none**	Certificate file is a type of digital certificate that is used by client systems to make authenticated requests to a remote server. Client certificates play a key role in many mutual authentication designs, providing strong assurances of a requester's identity.
Key File	.key file; default: **none**	Private key for client to establish connection.
TLS version	tlsv1.1 | tlsv1.2 | Support all; default: **Support all**	Authenticates a client to a server and establishes precisely who they are.

Bridge

The MQTT Broker also supports a functionality called **Bridge**. An MQTT Bridge is used for the communication between two MQTT Brokers. The window of Bridge parameters is presented below. Some of these are mandatory as they are needed to create a connection: Connection Name, Remote Address and Remote Port. For more information on **MQTT Bridge** parameters you can read the official mosquitto.conf manual page.

Field name	Value	Description
Use TLS/SSL	yes | no; default: **no**	Toggles MQTT Bridge ON or OFF.
Connection Name	string; default: **none**	Name of the Bridge connection. Although this is used for easier management purposes, this field is mandatory.
Remote Address	ip; default: **none**	Remote Broker’s address.
Remote Port	integer [0..65535]; default: **1883**	Specifies which port the remote broker uses to listen for connections.

Use Remote TLS/SSL	yes | no; default: **no**	Enables the use of TSL/SSL certificates of the remote broker. If this is checked, you will be prompted to upload TLS/SSL certificates. More information can be found in the Security section of this chapter.
Use Remote Bridge Login	yes | no; default: **no**	Enables the use of Remote login data. If this is checked, you will be prompted to enter a remote client ID, username and password.
Topic	string; default: **none**	Specifies the names of the Topics that your Broker will subscribe to.
Try Private	yes | no; default: **no**	Check if the remote Broker is another instance of a daemon.
Clean Session	yes | no; default: **no**	Check to discard session state after connecting or disconnecting.

Topics

The **Topic** section is used to add and configure topics for MQTT communication.

Field	Value	Description
Topic	string; default: **none**	The name of this topic.
Direction	OUT | IN | BOTH; default: **OUT**	Specifies the direction in which messages for this topic can be shared in.
QoS level	integer; default: **0**	The publish/subscribe QoS level for this topic..
Delete	- (interactive button)	Deletes the topic next to it.

Miscellaneous

The last section of MQTT Broker parameters is called **Miscellaneous**. It contains parameters that are related to neither Security nor Bridge.

field name	value	description
ACL File	.ACL file; default: **none**	The contents of this file are used to control client access to topics of the broker.
Password File	password file; default: **none**	The Password file stores user names and corresponding passwords, used for authentication. The file can be produced by mosquitto_passwd on the ssh command line, see https://mosquitto.org/man/mosquitto_passwd-1.html
Persistence	yes | no; default: **no**	If enabled, connection, subscription and message data will be written to the disk. Otherwise, the data is stored in the router's memory only.
Allow Anonymous	yes | no; default: **yes**	If enabled, the Broker allows anonymous access.

MQTT Publisher

An **MQTT Publisher** is a client that sends messages to the Broker, who then forwards these messages to the Subscriber.

field name	value	description
Enable	yes | no; default: **no**	Toggles the MQTT Publisher ON or OFF.
Hostname	host | ip; default: **none**	Broker’s IP address or hostname.
Port	integer [0..65535]; default: **1883**	Specifies the port used for connecting to the Broker.
Username	string; default: **none**	User name used for authentication when connecting to the Broker.
Password	string; default: **none**	Password used for authentication when connecting to the Broker.
TLS	yes | no; default: **no**	Toggles the TLS authentication between ON or OFF.
Allow insecure connection	yes | no; default: **no**	If enabled, router will be allowed to not verify server's authenticity.
CA file	.ca file; default: **none**	**Certificate authority** is an entity that issues digital certificates. A digital certificate certifies the ownership of a public key by the named subject of the certificate.
Certificate file	.crt file; default: **none**	Certificate file is a type of digital certificate that is used by client systems to make authenticated requests to a remote server. Client certificates play a key role in many mutual authentication designs, providing strong assurances of a requester's identity.
Key file	.key file; default: **none**	Private key for client to establish connection.