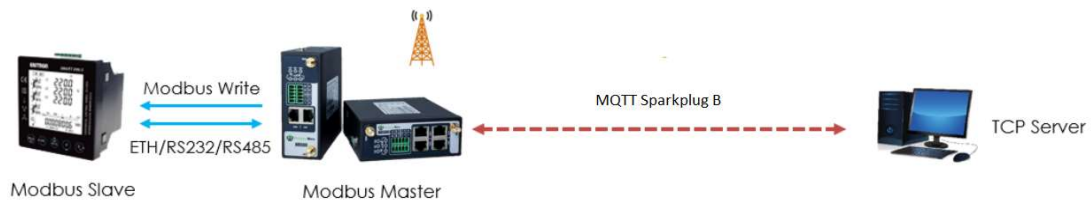


Oppsett av MQTT Sparkplug B i NavigateWorx NR500 router

Det er ofte et ønske å kunne overføre data via en protokoll som krever svært liten båndbredde. Spesielt nå overføringen foregår via et trådløst samband som 4G.

NavigateWorx NR500 har innebygd Modbus Gateway, og kan overføre dataene videre via MQTT Sparkplug B.



Oppsettet krever at to s.k. apper installeres i NR500:

- Modbus Master
- Modbus Sparkplug B

Appene kan lastes ned fra vår hjemmeside www.autic.no

Modbus Master

Det første vi må gjøre er å konfigurere Modbus Master innstillingene. NR500 støtter Modbus både via seriell RS232/RS485 og via TCP

The screenshot shows the 'Modbus Master' configuration page in the NavigateWorx web interface. The page has a dark blue header with the 'NavigateWorx' logo and a 'Login: admin' status. Below the header are 'Reboot' and 'Logout' buttons. The main content area is titled 'Modbus Master' and contains a 'Connection List' table. The table has columns for Index, Enable, Description, Scan Rate, Reconnect Interval, Connection Type, Baud Rate, Parity, Server Address, and Server Port. There is one entry in the table with Index 1, Enable true, Description IPM, Scan Rate 1000, Reconnect Interval 60, Connection Type RS485, Baud Rate 9600, Parity None, Server Address 192.168.0.203, and Server Port 502. At the bottom of the page are 'Save' and 'Apply' buttons. The footer contains the copyright notice: 'Copyright © 2018 Guangzhou Navigateworx Technologies Co., Ltd. All rights reserved.'

Index	Enable	Description	Scan Rate	Reconnect Interval	Connection Type	Baud Rate	Parity	Server Address	Server Port
1	true	IPM	1000	60	RS485	9600	None	192.168.0.203	502

Grunninnstillingene er enkle, enten man velger seriell kommunikasjon eller TCP:

Connection Settings	
Index	1
Enable	<input checked="" type="checkbox"/>
Description	IPM
Scan Rate	1000 ?
Response Timeout	1000 ?
Delay Between Polls	0 ?
Connection Type	RS485
Enable Show Status	<input checked="" type="checkbox"/>
Enable Verbose Log	<input type="checkbox"/>

Serial Settings	
Baud Rate	9600
Parity	None
Data Bits	8
Stop Bits	1

Channel List	
--------------	--

Connection Settings	
Index	1
Enable	<input checked="" type="checkbox"/>
Description	IPM
Scan Rate	1000 ?
Reconnect Interval	60 ?
Response Timeout	1000 ?
Delay Between Polls	0 ?
Connection Type	TCP
Enable Show Status	<input checked="" type="checkbox"/>
Enable Verbose Log	<input type="checkbox"/>

TCP Settings	
Server Address	192.168.0.203
Server Port	502
Connection Timeout	10 ?

Channel List	
--------------	--

Etter at grunninnstillingene er foretatt, må man definere hvilke Modbus registre man ønsker å lese og skrive til. Dette settes opp under Modbus Poll og Modbus Write. I eksempelet nedenfor leser vi 6 Holding-registre, med start på adresse 2.

Index	1
Enable	<input checked="" type="checkbox"/>
Description	IPM
Slave ID	1
Function Code	03-Holding-Register
Register Address	2
Data type	Uint16
Multiple Register	<input checked="" type="checkbox"/>
Quantity	6
Data Endian	AB
Keep Decimal Places	6
Exponent	<input type="checkbox"/>

Modbus Sparkplug

Det neste vi må gjøre er å konfigurere Modbus Sparkplug (MQTT Sparkplug B):

NavigateWorx

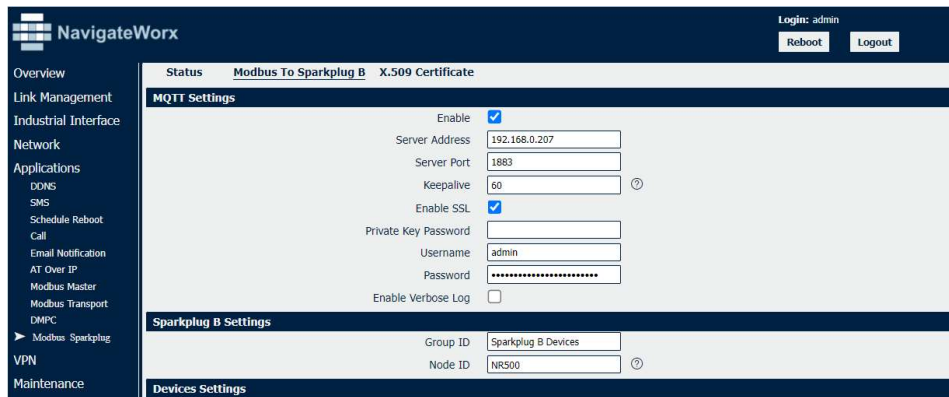
Overview
Link Management
Industrial Interface
Network
Applications
DDNS
SMS
Schedule Reboot
Call
Email Notification
AT Over IP
Modbus Master
Modbus Transport
DMPC
▶ Modbus Sparkplug

Status **Modbus To Sparkplug B** **X.509 Certificate**

Modbus To Sparkplug B Status

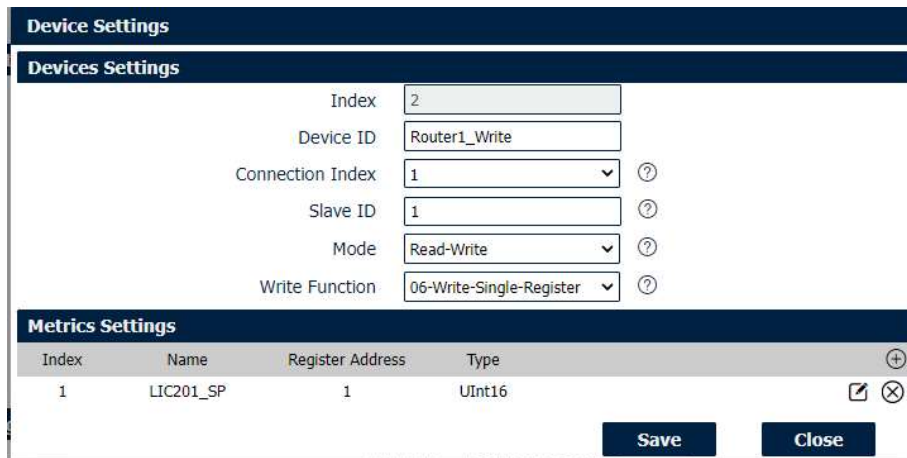
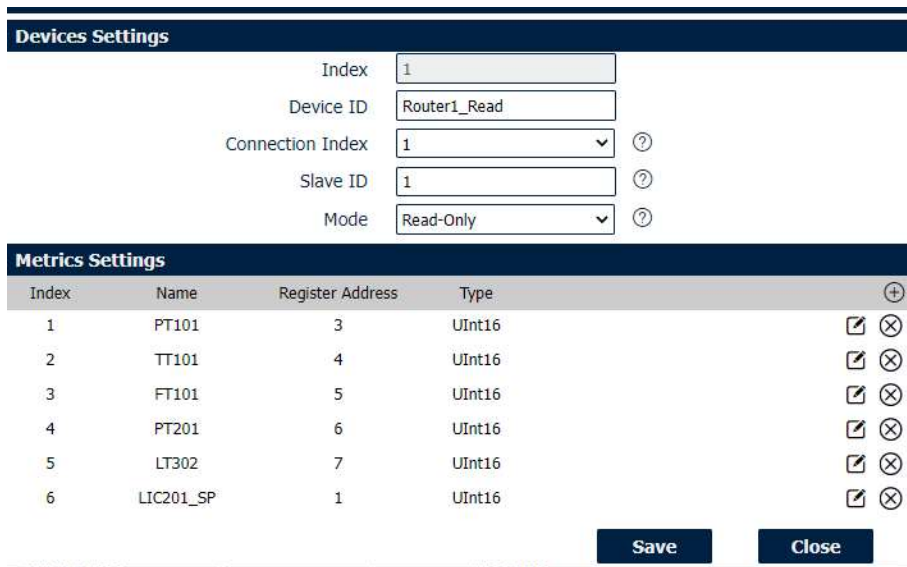
Modbus Connection Status	Connected
MQTT Connection Status	Connected

I eksempelet benytter vi ikke sertifikater. Vi setter opp adressen og porten til Serveren (MQTT Brokern) og legger inn bruker og passord, hvis det kreves. I eksempelet kobler vi oss opp mot en Ignition server med MQTT Distributor modulen (MQTT broker) installert.



I oppsettet definerer vi Group ID og Node ID ihht. Sparkplug standarden.

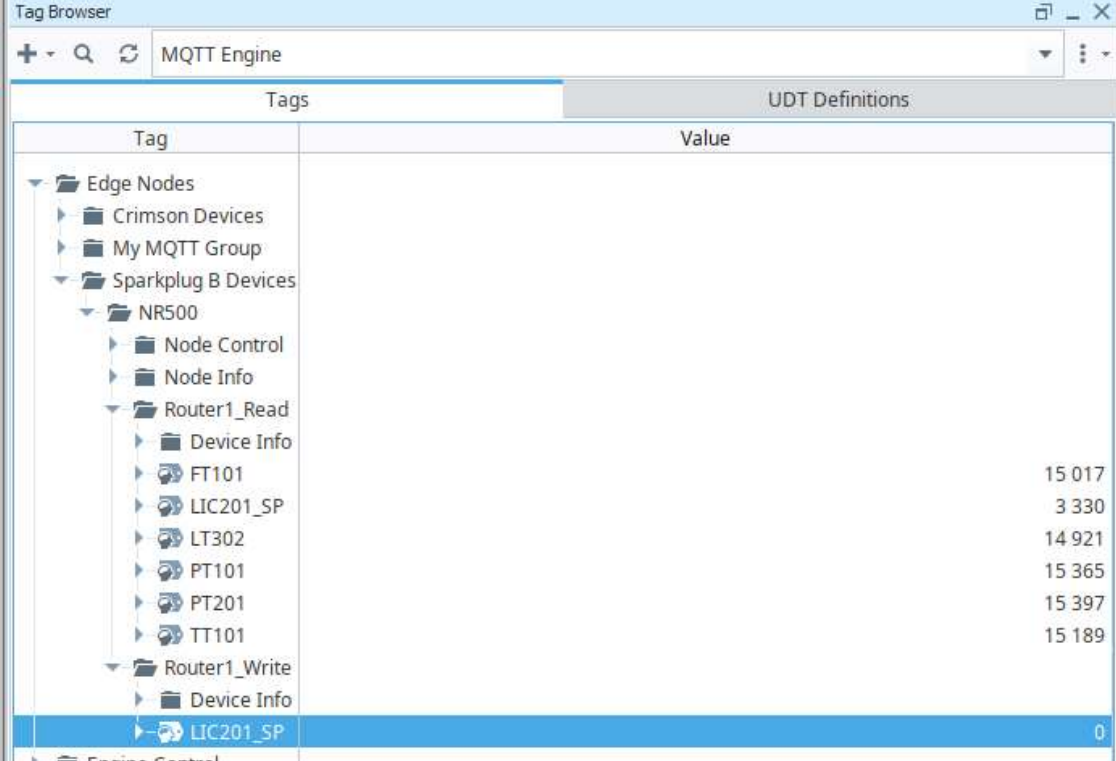
Det eneste som gjenstår er å definere hvilke Modbus registre vi vil overføre via MQTT. Det gjøre vi under Devices Settings. Vi har valgt å sende (Read-Only) 6 registre og motta 1 (Read-Write).



Ignition

Oppsettet i NR500 er klart og routeren begynner å overføre data. I Ignition kreves det ikke noe oppsett, bortsett fra oppsettet av MQTT modulene i Gatewayen.

Signalene fra NR500 kommer automatisk inn.



The screenshot shows the Ignition Tag Browser interface. The 'MQTT Engine' tab is active, and the 'Tags' view is selected. The tree structure on the left shows the hierarchy: Edge Nodes > Sparkplug B Devices > NR500 > Router1_Read > LIC201_SP. The main table displays the following data:

Tag	Value
Edge Nodes	
Crimson Devices	
My MQTT Group	
Sparkplug B Devices	
NR500	
Node Control	
Node Info	
Router1_Read	
Device Info	
FT101	15 017
LIC201_SP	3 330
LT302	14 921
PT101	15 365
PT201	15 397
TT101	15 189
Router1_Write	
Device Info	
LIC201_SP	0