How to Configure \textit{uaGate MB} for Connecting Modbus PLCs via OPC UA
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**Introductory Remark**

The IP addresses used in this configuration manual are shown for demonstration purposes. It is possible to use specific IP addresses of your installation instead.

**Configuration Environment Preparation**

**Windows PC**
- Set IP address to **192.168.1.251** (or use your specific IP address instead)
- Open applications
  - Internet browser
  - *OPC UA Demo Client*
  - *Modbus Slave* (Modbus Simulator)
  - *Wireshark* Ethernet packet analyzer (optional)

*uaGate MB*
- Set IP address of *IT* port to **DHCP**
- Set IP address of *MACHINE* port to **192.168.1.111** (or use your specific IP address instead)

**uaGate MB Configuration Steps**

1. **Open *uaGate MB* Configuration**
   - Connect Windows PC to *MACHINE* port of *uaGate MB*
   - In Internet browser:
     - Enter IP address of *MACHINE* port

**NOTE:**
See *uaGate MB* Quick Start Guide for additional help
2. **Determine OPC UA Server Endpoint URI**
   - Navigate to *IT Settings/OPC UA Server* page
   - Determine *Endpoint URI*

3. **Enter IP Address of MACHINE Port**
   - Navigate to *Machine Settings/Machine Network* page
   - Enter IP address of MACHINE port in *IPv4 Address* field
4. Add Modbus TCP Connection

- Navigate to *Machine Settings/PLC Connection* page

![Configuration Settings](image)

- Enter IP address of *Modbus Slave* in *IPv4 Address* field

**NOTES:**
- Default settings are used within this configuration manual
- Required information is shown by *Modbus Slave*
- IP address of *Modbus Slave* is IP address of *Windows PC*
5. **Check Network Settings**

- Check all network settings of PC for correct addresses

![Network Connection Details]

- Check network settings of *Modbus Slave* for correct IP address

![Modbus Slave Network Settings]
6. Define and Export Modbus Symbols

- Enter Modbus symbols in *Modbus Slave*

- Export Modbus symbols in text file for later import in *uaGate MB*

**NOTE:**
It is also possible to create the symbol file manually:
Create new text file and define symbols using format “<Item Name>=<Modbus Register>”
See *uaGate MB* online help for full syntax information

7. Import Modbus Symbols into *uaGate MB*

- Navigate to *Machine Settings*/*Modbus Connection*/*Symbol View* page
- Import Modbus symbols as exported in *Modbus Slave* or defined manually (see section 6, Define and Export Modbus Symbols) into *uaGate MB*
- Navigate to *Machine Settings*/*Symbol View* page for verifying the correct symbol import
8. **Set-up OPC UA Demo Client**

- Start **OPC UA Demo Client**
- Add new session
- Enter OPC UA Endpoint URI (see section 2, **Determine OPC UA Server Endpoint URI**)

- Press **Validate Connection** button
- Press **OK** button
• Navigate to **OPC UA Endpoint/Objects/Mobus Connection**
• Double-click on OPC UA item for subscribing
9. **Verify OPC UA Connection**

- Enter values of some OPC UA items using **OPC UA Demo Client**
- Check update of Modbus register value using **Modbus Slave** or **Wireshark**

![Image of Modbus and Wireshark usage]