Tech Note 1022

Configuring the MBTCP DAServer to Receive Unsolicited Messages

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Introduction

Unsolicited messaging provides the capability for a PLC to inform the DAServer of critical events immediately, without having to wait for the DAServer to poll for the data. DASMBTCP provides the ability to receive unsolicited messages from a PLC. In order to support unsolicited messages from the PLC, the MBTCP DAServer listens on ethernet port 502. The unsolicited messaging feature is available only to controllers that are directly connected to the TCPIP Port. Controllers under the Modbus Bridge object hierarchy cannot use this feature.

This *Tech Note* provides a sample configuration that will demonstrate unsolicited messaging using a Quantum PLC. In this example, the IP Address of the PLC is 10.2.82.112 and the IP address of the computer running DASMBTCP is 10.2.82.139

Note: This *Tech Note* assumes basic knowledge of DASMBTCP and Modicon PLC programming.

Application Versions

- MBTCP DAServer 3.0 SP1

Configuring the PLC MSTR instruction

In order for the PLC to send an unsolicited message, a MSTR Write instruction must be programmed. The MSTR Write instruction sends data from the PLC to a specified device on the network (DASMBTCP). In this example, the MSTR instruction is programmed to send data from 50 registers to DASMBTCP.

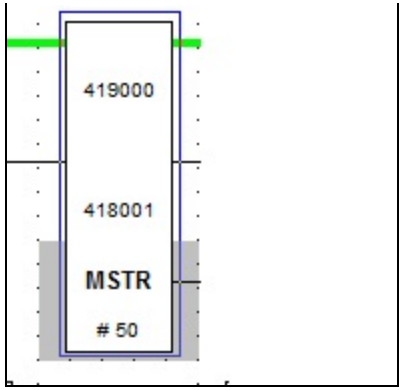

FIGURE 1: MSTR WRITE

- The top node (419000) in the above instruction is the starting address of the Control Block. The Control Block can be configured by going to the DX Zoom screen in the PLC programming software.
- The middle node (418001) is the starting register that holds the source of the data to be sent (Data Area).
- The bottom node (#50) is the length of the data area.
- The top input is used to enable the MSTR operation
- The middle input is used to terminate the MSTR operation
- The top output is on while the instruction is active
- The middle output is on if the instruction is terminated
- The bottom output is on if the operation is successful

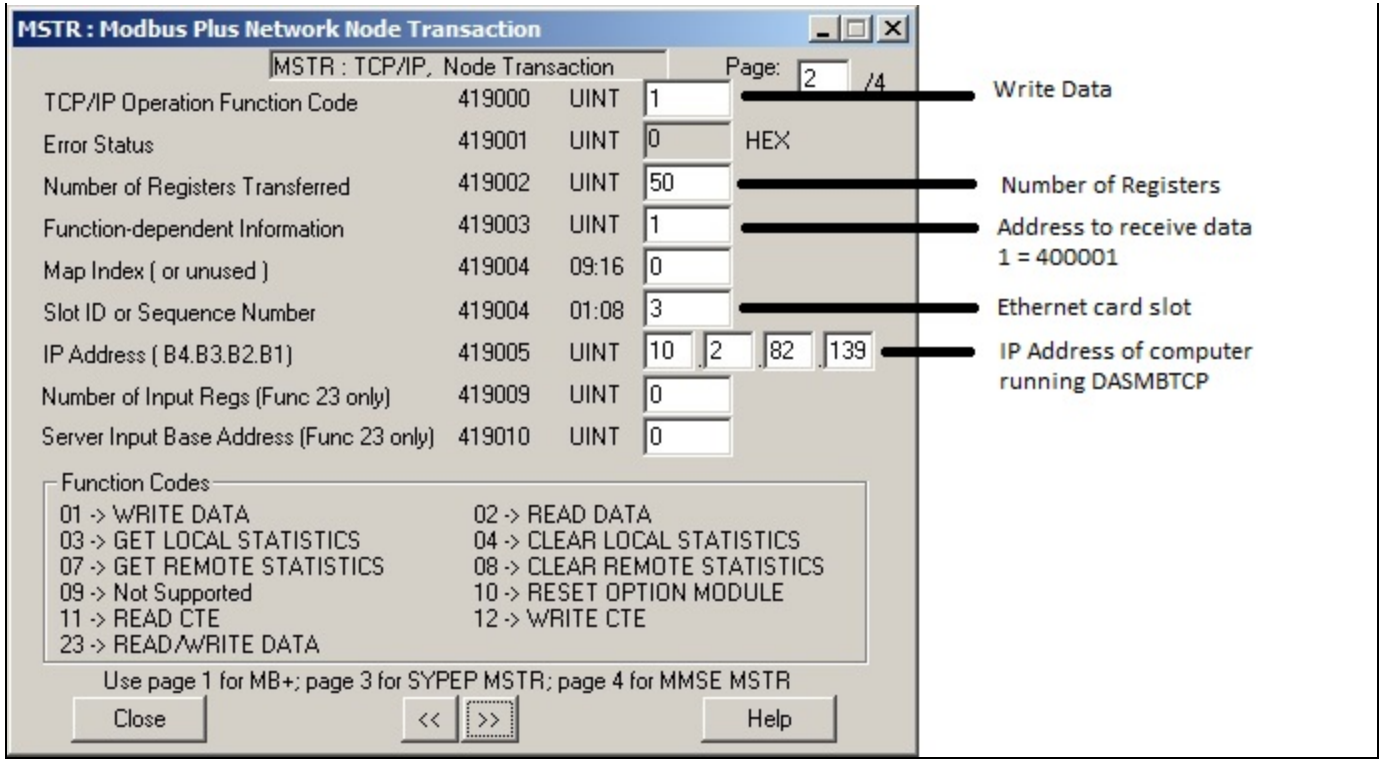

FIGURE 2: CONFIGURING THE CONTROL BLOCK USING DX ZOOM

In this example, the MSTR instruction is configured to write data from 50 consecutive registers starting at 418001 in the PLC to 50 consecutive registers starting at 400001 in the DAServer running on IP address 10.2.82.139

- The **TCP/IP Operation Function Code** is set to 1 (Write Data)
- The **Number of Registers Transfered** is set to 50
- The **Function dependent Information** contains the starting holding register in DASMBTCP that will receive the data. 1 = 400001
- The **Slot ID or Sequence Number** is set to 3. This is the slot in the PLC chassis where the ethernet card resides
- The **IP Address** is the IP address of the computer running DASMBTCP

Configuring the MBTCP DAServer to Accept Unsolicited Messages

Configuring DASMBTCP is to accept unsolicited data consists of creating a PLC object, a device group with an update rate of 0 and selecting **Support Unsolicited Messages** for that device group.

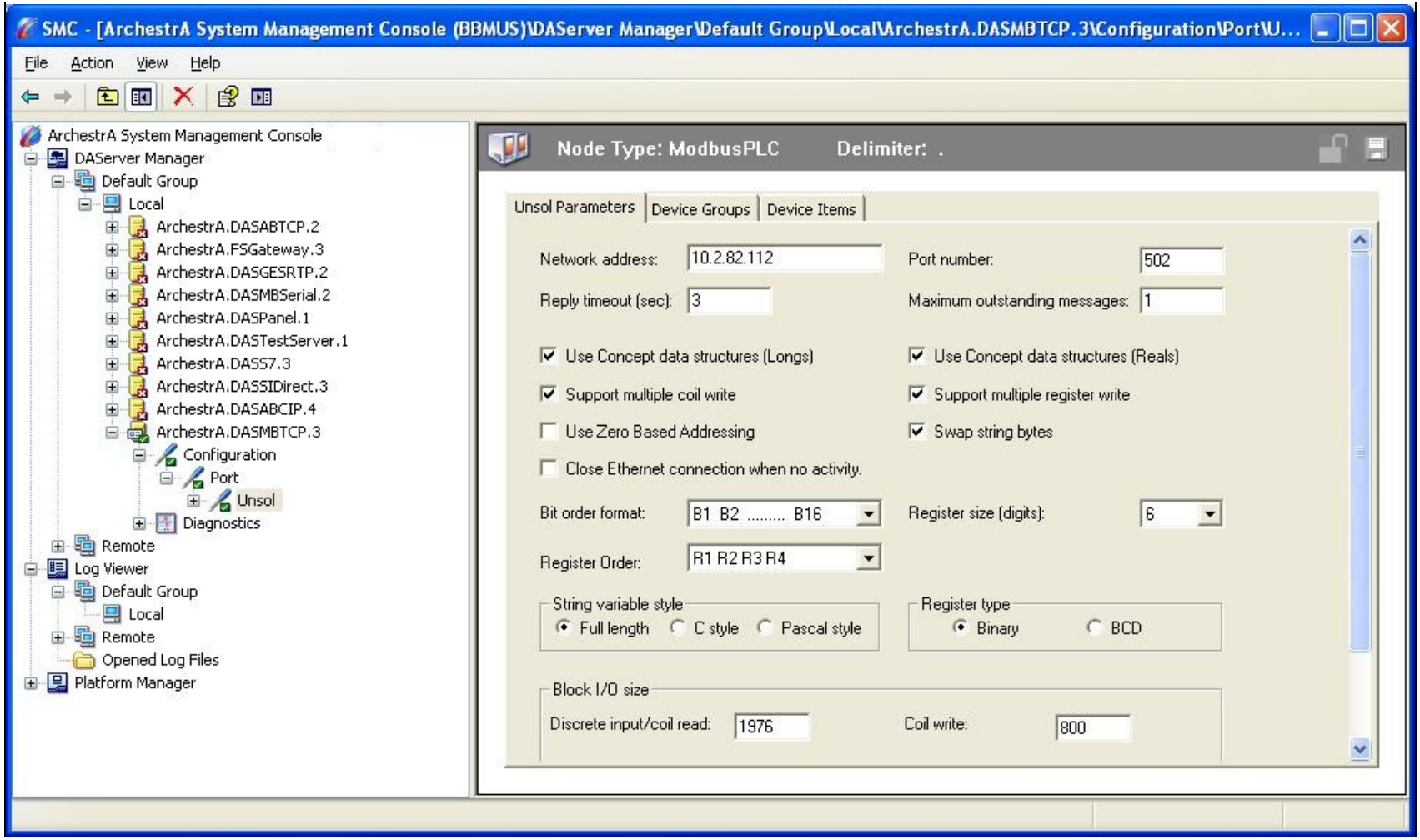

FIGURE 3: DASMBTCP CONFIGURATION

This example uses a ModbusPLC object. The **Network address** is set to the PLC's IP Address (10.2.82.112). All other parameters are using default values.

1. Create a device group named **unsol**. Since we don't need to poll this group, an **Update Interval** of 0 is used.
2. Since this device group is being used to accept unsolicited messages, right-click on the device group name and click **Edit**.
3. Place a check mark next to **Support Unsolicited Messages** then select **OK** then save.

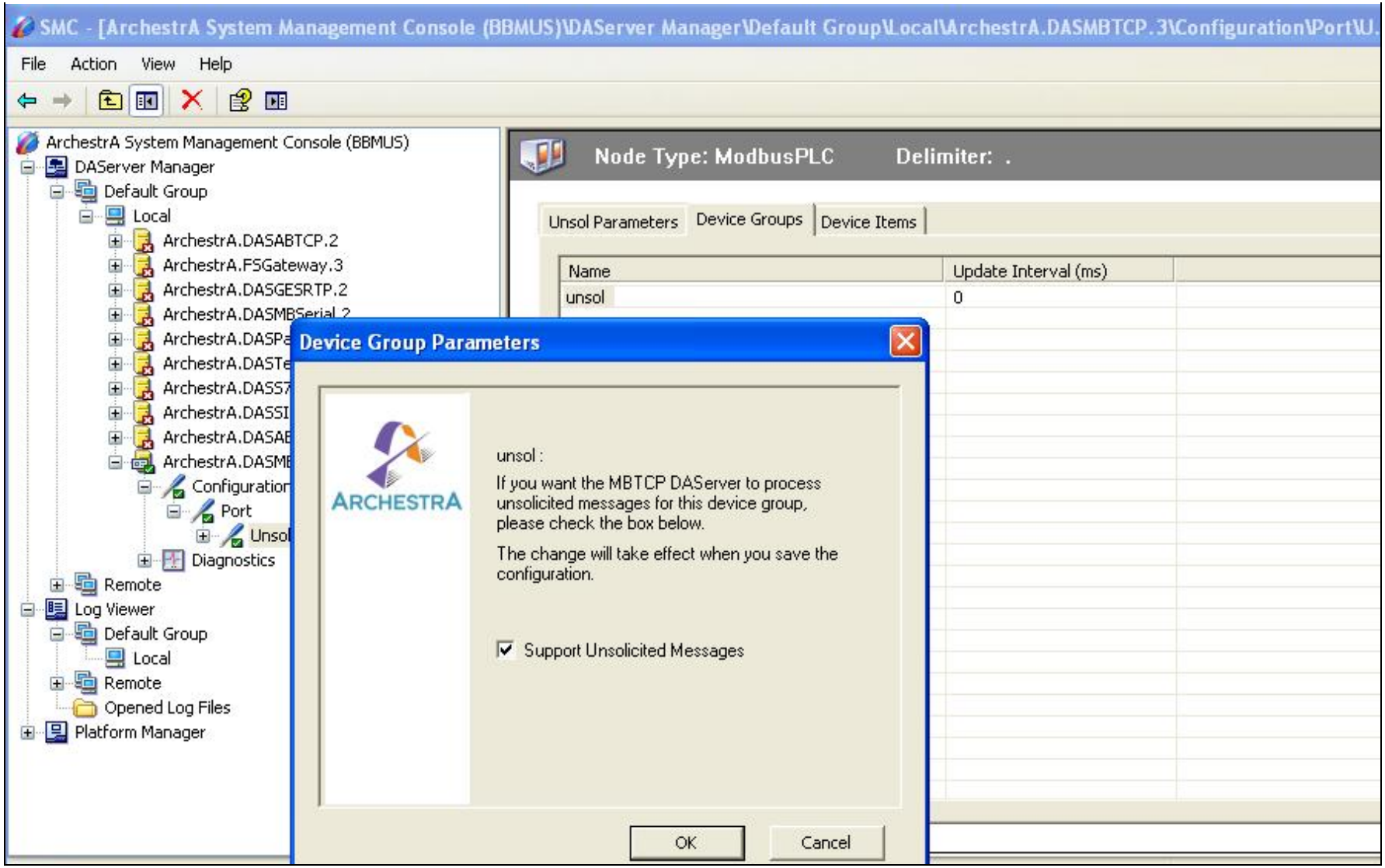

FIGURE 4: SUPPORT UNSOLICITED MESSAGES

After activating DASMBTCP use a client to advise registers 400001 thru 400050. The client application in this example is **WWClient**.

1. Open **WWClient**
2. Select **Connections -> Create**.
3. Type **DASMBTCP** as the Application, type **unsol** as the Topic and click **IOT** as the Connection Type.
4. Click **Create**.
5. Click **Item** then type **400001..400050** in the Item field.

6. Click **AdviseEx**.

   You see the following window:

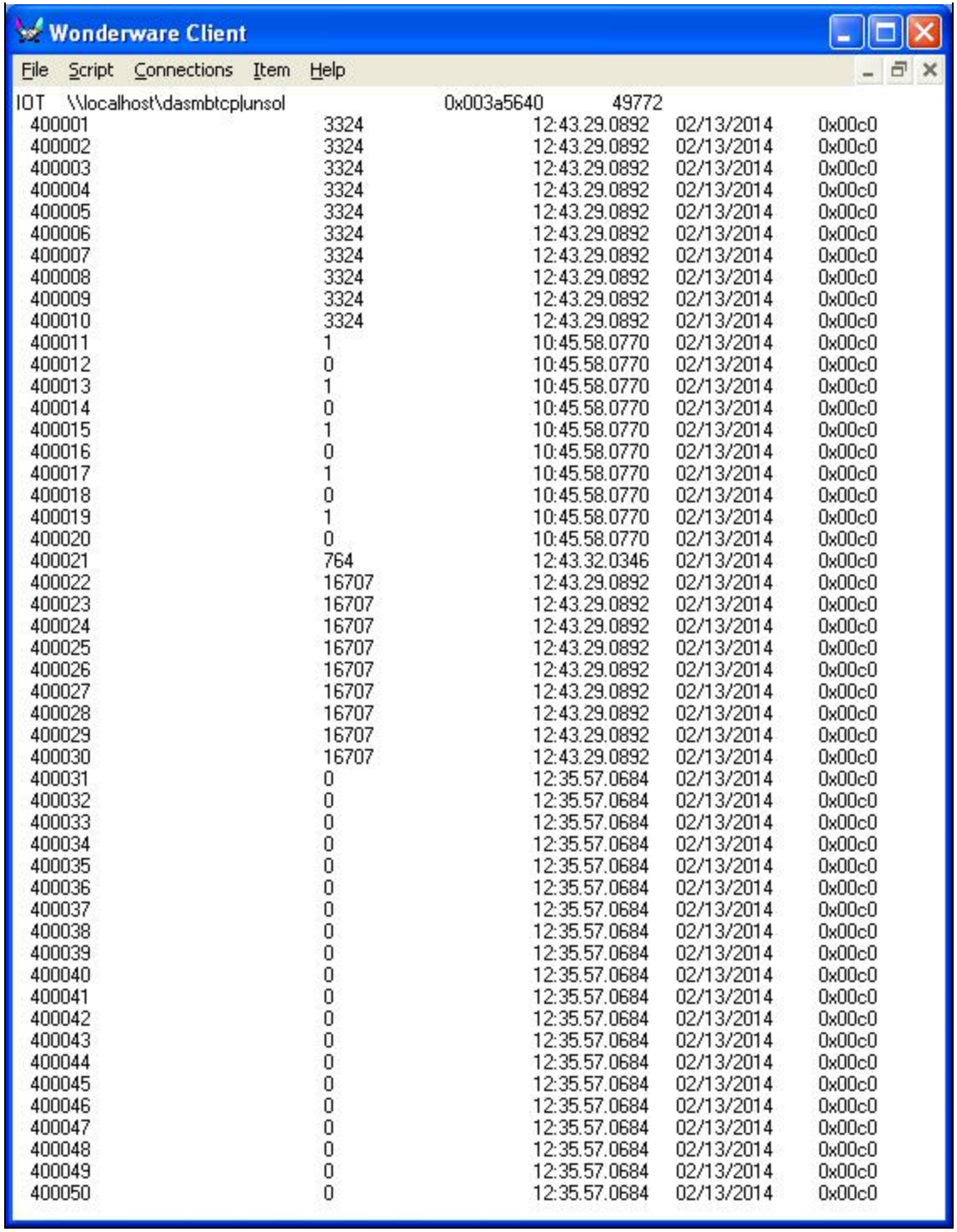

Figure 5: WW Client

Activating the MSTR instruction in the PLC will now send the data in PLC registers 418001 thru 418050 to DASMBTCP advised registers 400001 thru 400050.

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