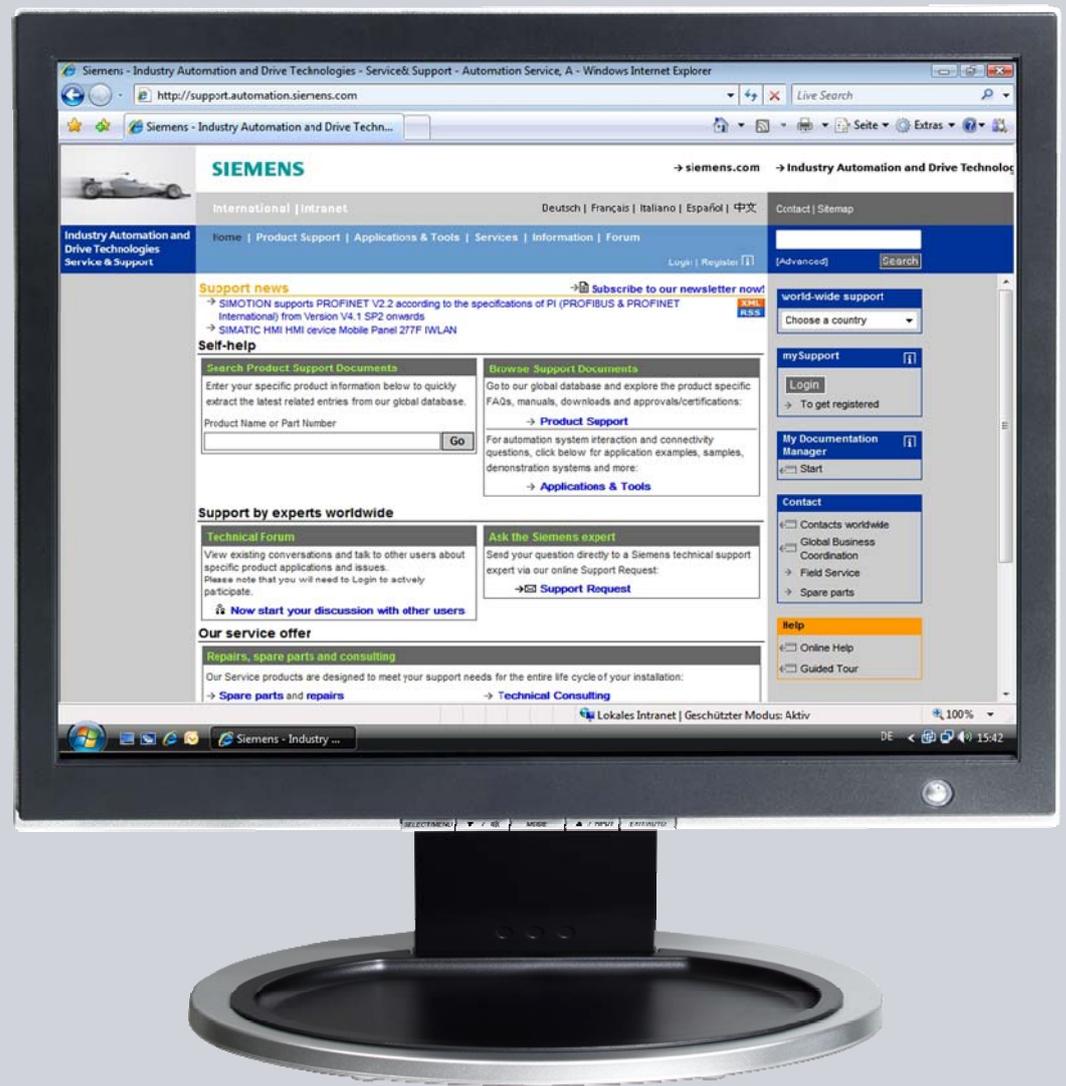


SIMATIC NET SNMP OPC Server and WinCC

Simple Network Management Protocol

FAQ • August 2010



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Question

How do you configure the SIMATIC NET OPC server in order to access devices in the network using SNMP and how do you incorporate the SNMP OPC items in WinCC?

Answer

The instructions and notes listed in this document provide a detailed answer to this question.

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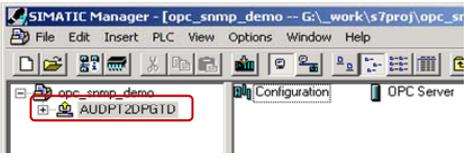
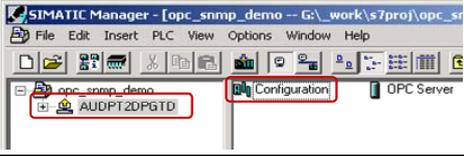
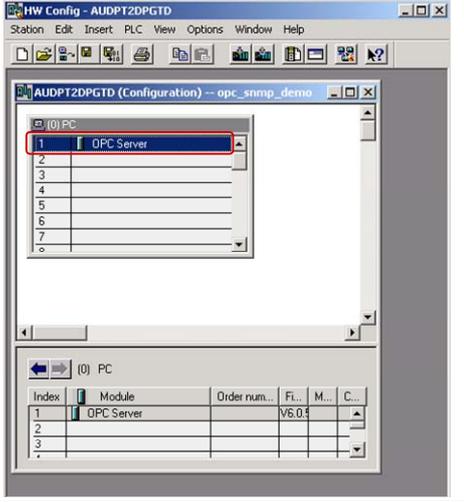
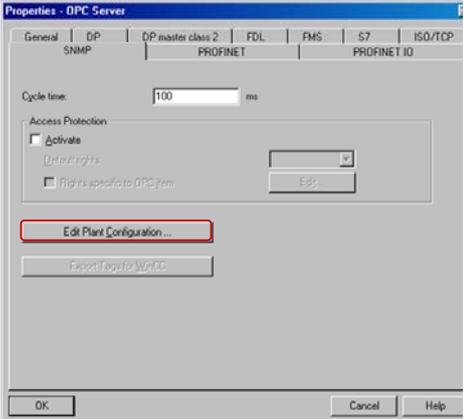
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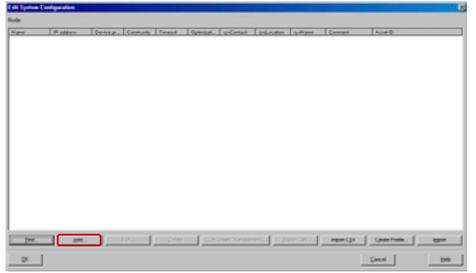
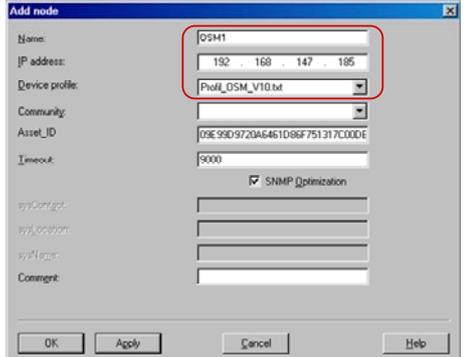
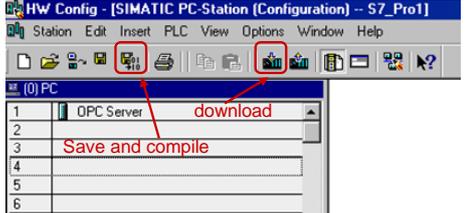
1 Configure the SNMP OPC Server

1.1 Configuring the PC Station with STEP 7 or NCM PC

Please follow the instructions below for configuring the PC station with STEP 7 or NCM PC.

Table 1-1

Action	Remark
<p>In the SIMATIC Manager, insert a SIMATIC PC station via the menu Insert → Station.</p>	
<p>In the SIMATIC Manager, you mark the SIMATIC PC station and double-click on "Configuration" in order to open the Hardware Configuration of the SIMATIC PC station.</p>	
<p>In the hardware catalog, select the OPC server under SIMATIC PC Station → User Application → OPC Server and drag-and-drop the server to any slot in the rack.</p> <p>In this example, the OPC server is inserted in slot 1 in the rack.</p> <p>Double-click on the OPC server to open the Properties dialog.</p>	
<p>In the Properties dialog of the OPC server you switch to the "SNMP" tab.</p> <p>Click on the "Edit Plant Configuration..." button. The "Edit Plant Configuration" dialog opens.</p>	

Action	Remark
<p>In the "Edit Plant Configuration" dialog you click on the "Add" button. The "Add node" dialog opens.</p>	
<p>In the "Add node" dialog you enter the name and IP address of the device which the OPC server is to access. Select the appropriate profile for the device. Then click on the "Apply" button to apply the settings made.</p>	
<p>The device profile can be created new from an MIB file or changed as required.</p>	<p>The MIB file is obtainable from the manufacturer of the SNMP-compatible network components.</p>
<p>Save and compile the hardware configuration. Then load the configuration into the PC station.</p>	

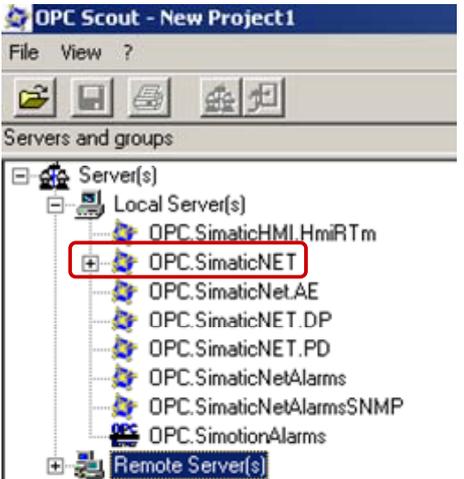
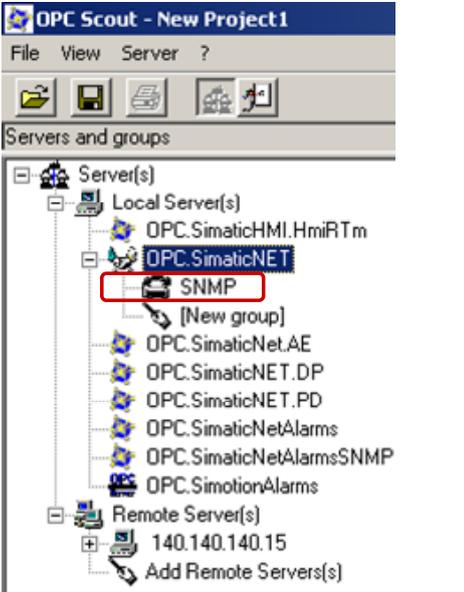
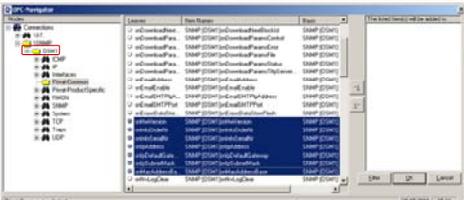
1.2 Checking the configuration with the OPC Scout

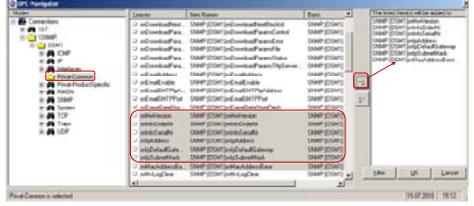
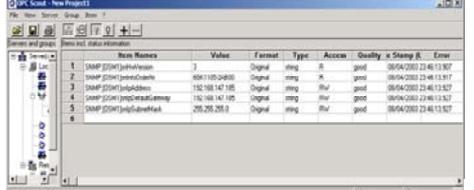
The OPC Scout is an OPC client. It is included in the SIMATIC NET PC software delivery package.

Proceed as follows to check the configuration with the OPC Scout.

1 Configure the SNMP OPC Server

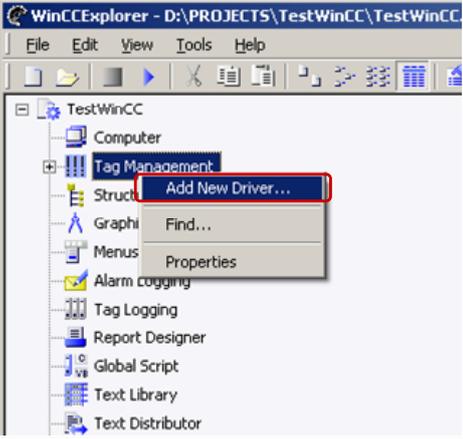
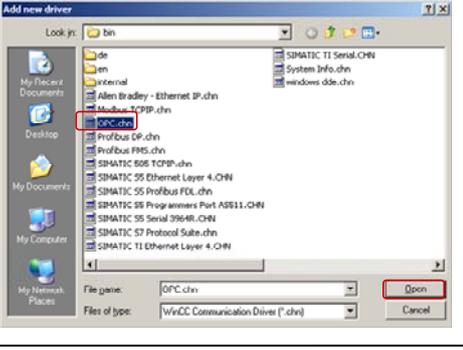
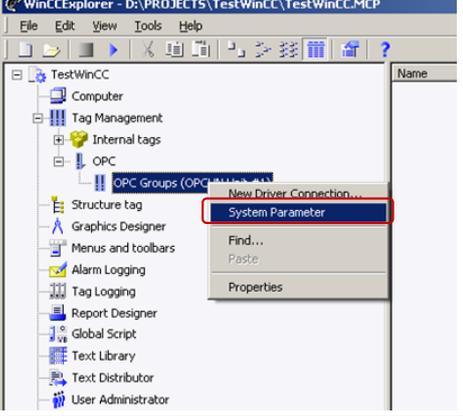
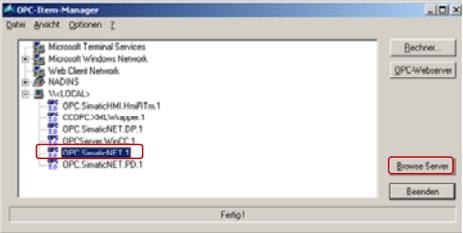
Table 1-2

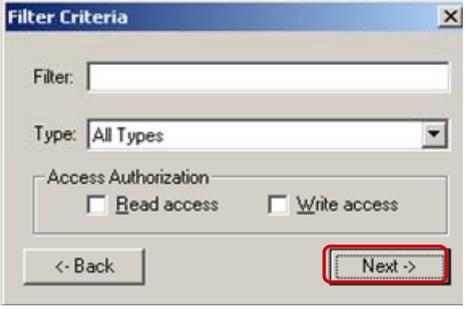
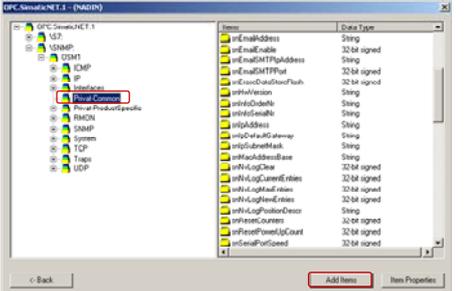
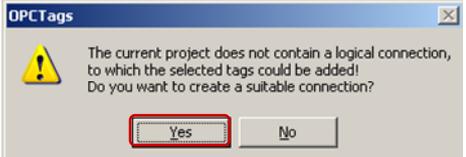
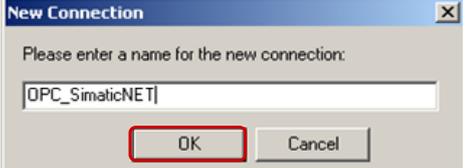
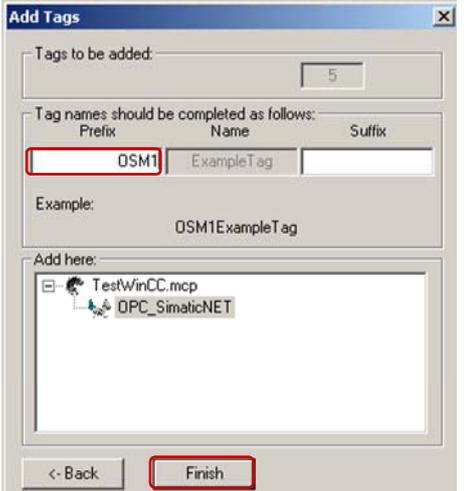
Action	Remark
<p>In the OPC Scout double-click on the "OPC.SimaticNET" entry under "Local Server(s)" to connect to the SIMATIC NET OPC server.</p>	
<p>In the "Add Group" dialog you enter a name for the group, SNMP, for example. Close the dialog with "OK".</p>	
<p>Under "OPC.SimaticNET" you double-click on the newly added group "SNMP". The OPC Navigator opens.</p>	
<p>In the OPC Navigator under "SNMP" is the SNMP-compatible device "OSM1" configured in the hardware configuration.</p>	

Action	Remark																																																
<p>Mark the "Private Common" entry and add the following OPC items to the OPC item list:</p> <ul style="list-style-type: none"> • SNMP:[OSM1]snHWVersion • SNMP:[OSM1]snInfoOrderNr • SNMP:[OSM1]snIpAddress • SNMP:[OSM1]snIpDefaultGateway • SNMP:[OSM1]snIpSubnetMask <p>Click on "OK" to close the dialog.</p>																																																	
<p>The OPC items added to the OPC item list are displayed with status information in the OPC Scout.</p>	 <table border="1" data-bbox="890 611 1364 801"> <thead> <tr> <th>Item Names</th> <th>Value</th> <th>Format</th> <th>Type</th> <th>Access</th> <th>Quality</th> <th>Stamp</th> <th>Err</th> </tr> </thead> <tbody> <tr> <td>SNMP[OSM1]snHWVersion</td> <td>3</td> <td>Original</td> <td>msg</td> <td>R</td> <td>good</td> <td>06/04/2012 22:46:13.917</td> <td></td> </tr> <tr> <td>SNMP[OSM1]snInfoOrderNr</td> <td>63811326260</td> <td>Original</td> <td>msg</td> <td>R</td> <td>good</td> <td>06/04/2012 22:46:13.917</td> <td></td> </tr> <tr> <td>SNMP[OSM1]snIpAddress</td> <td>192.168.147.195</td> <td>Original</td> <td>msg</td> <td>R/W</td> <td>good</td> <td>06/04/2012 22:46:13.917</td> <td></td> </tr> <tr> <td>SNMP[OSM1]snIpDefaultGateway</td> <td>192.168.147.195</td> <td>Original</td> <td>msg</td> <td>R/W</td> <td>good</td> <td>06/04/2012 22:46:13.917</td> <td></td> </tr> <tr> <td>SNMP[OSM1]snIpSubnetMask</td> <td>255.255.255.0</td> <td>Original</td> <td>msg</td> <td>R/W</td> <td>good</td> <td>06/04/2012 22:46:13.917</td> <td></td> </tr> </tbody> </table>	Item Names	Value	Format	Type	Access	Quality	Stamp	Err	SNMP[OSM1]snHWVersion	3	Original	msg	R	good	06/04/2012 22:46:13.917		SNMP[OSM1]snInfoOrderNr	63811326260	Original	msg	R	good	06/04/2012 22:46:13.917		SNMP[OSM1]snIpAddress	192.168.147.195	Original	msg	R/W	good	06/04/2012 22:46:13.917		SNMP[OSM1]snIpDefaultGateway	192.168.147.195	Original	msg	R/W	good	06/04/2012 22:46:13.917		SNMP[OSM1]snIpSubnetMask	255.255.255.0	Original	msg	R/W	good	06/04/2012 22:46:13.917	
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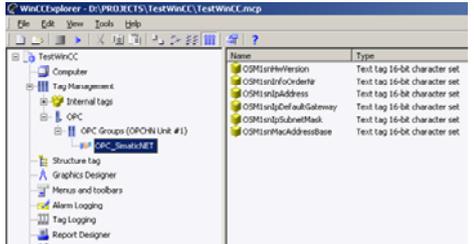
2 Incorporate the SNMP OPC Items in WinCC

Table 2-1

Action	Remark
<p>In the WinCC Explorer you right-click on the Tag Management item and select the Add New Driver... menu. The "Add new driver" dialog opens.</p>	 <p>The screenshot shows the WinCC Explorer interface with the 'Tag Management' folder selected in the tree view. A right-click context menu is open, and the 'Add New Driver...' option is highlighted with a red box.</p>
<p>In the "Add new driver" dialog you select the WinCC communications driver "OPC.chn". Click on the "Open" button to open the WinCC communications driver "OPC.chn".</p>	 <p>The screenshot shows the 'Add new driver' dialog box. The 'Look in' field is set to 'bin'. In the file list, 'OPC.chn' is selected and highlighted with a red box. The 'Open' button at the bottom right is also highlighted with a red box.</p>
<p>In the WinCC Explorer you go to Tag Management → OPC and right-click on the item OPC Groups and then select the menu System Parameters. The "OPC Item Manager" dialog opens.</p>	 <p>The screenshot shows the WinCC Explorer interface with the 'OPC Groups' folder selected in the tree view. A right-click context menu is open, and the 'System Parameter' option is highlighted with a red box.</p>
<p>In the "OPC Item Manager" dialog, under \\<LOCAL> you select the item OPC.SimaticNET. Then click on the "Browse Server" button. The "Filter Criteria" dialog opens.</p>	 <p>The screenshot shows the 'OPC Item Manager' dialog box. Under the 'Local' section, 'OPC.SimaticNET' is selected and highlighted with a red box. The 'Browse Server' button at the bottom right is also highlighted with a red box.</p>

Action	Remark
<p>In the "Filter Criteria" dialog you click on the "Next ->" button to add the OPC items.</p>	
<p>Under OSM1 → Private Common you select the following OPC items:</p> <ul style="list-style-type: none"> • SNMP:[OSM1]snHWVersion • SNMP:[OSM1]snInfoOrderNr • SNMP:[OSM1]snIpAddress • SNMP:[OSM1]snIpDefaultGateway • SNMP:[OSM1]snIpSubnetMask <p>Click on the "Add Items" button.</p>	
<p>Acknowledge the message that appears with "Yes" and create a new connection.</p>	
<p>In the "New Connection" dialog you enter a name for the new connection. Click on "OK" to close the dialog.</p>	
<p>In the "Add Tags" dialog you enter the prefix for the tag name. In this way you can better distinguish between the tags of the different devices. Click on the "Finish" button to close the dialog.</p>	

2 Incorporate the SNMP OPC Items in WinCC

Action	Remark
<p>The SNMP tags have now been created and can be used.</p>	
<p>The SNMP tags can only be displayed and used in WinCC pictures.</p>	