Tech Note 946
Working with New DASGESRTP V2.0 Features to Resolve Communication Problems

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Introduction

This *Tech Note* will help you to get your communication working again with the older versions of 9030 and 9070 PLCs under the newer MS OS, and how to advise the Symbolic Item Names in RX3i and RX7i PLC families.

- **Supporting Older PLC Families with DASGESRTP V2.0 Running Under Windows 7 and Windows 2008**

- **Advising the Symbolic Name in RX3i and RX7i PLC Families**

Application Versions

- DASGESRTP V2.0

Supporting Older PLC Families with DASGESRTP V2.0 Running Under Windows 7 and Windows 2008

DASGESRTP V2.0 now includes support for Windows 7 and Windows 2008 operating systems in both 32-bit and 64-bit releases.

If you are using Wonderware DASGESRTP server to access data from the GE legacy PLC 9030s and 9070s, and have upgraded to Windows 7 or Windows 2008 and later, you might have trouble getting data updates from the PLCs.

Issue and Solution with Older Legacy 9030 and 9070 PLCs

In many scenarios, old GE Fanuc 9030 and/or 9070 PLCs are used in plants and production operations. While the PLCs are still handling the control nicely, the HMI, Interface to the PLC, and operating systems often require upgrades to keep up with the newer and faster network environment. In these cases, after you upgrade your operating system, the client application no longer receives data updates from the DASGESRTP from the same PLCs.
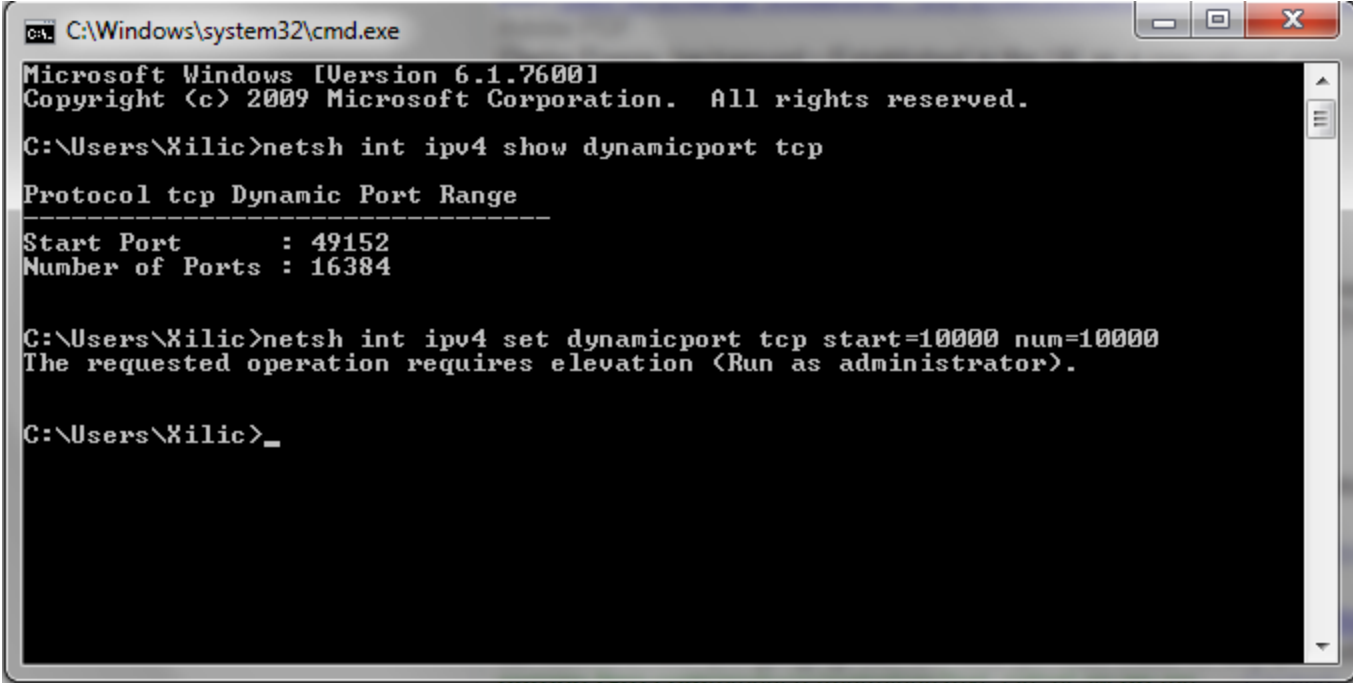
Wonderware Technical Support has found an issue with upgrading the Operating System. The issue is that the range of dynamic ports (sometimes referred to as **Wildcard Port Assignment**) is different in Microsoft Windows 7 or Windows 2008 Operating Systems . The dynamic port range for these operating systems now starts at **49152** and ends at **65535**. Analysis shows that the GE CMM protocols running older firmware do not support this range of ports.

Recommendations

- You can update the firmware for the PLCs by contacting GE for update version firmware.

- You can also assign a new dynamic port range in your Windows Operating System.

To change the dynamic port range in Windows OS

Note: Make sure you have **Administrator** privileges before you make the following changes. Otherwise you will see a message showing that you are not able to make the changes.

FIGURE 1: MESSAGE REQUESTING PROPER PRIVILEGE

1. Open a Command prompt.

2. Type **netsh int ipv4 show dynamicport tcp** and press **Enter**.

   You should see the currently-configured port range. Write or copy this information for future reference.
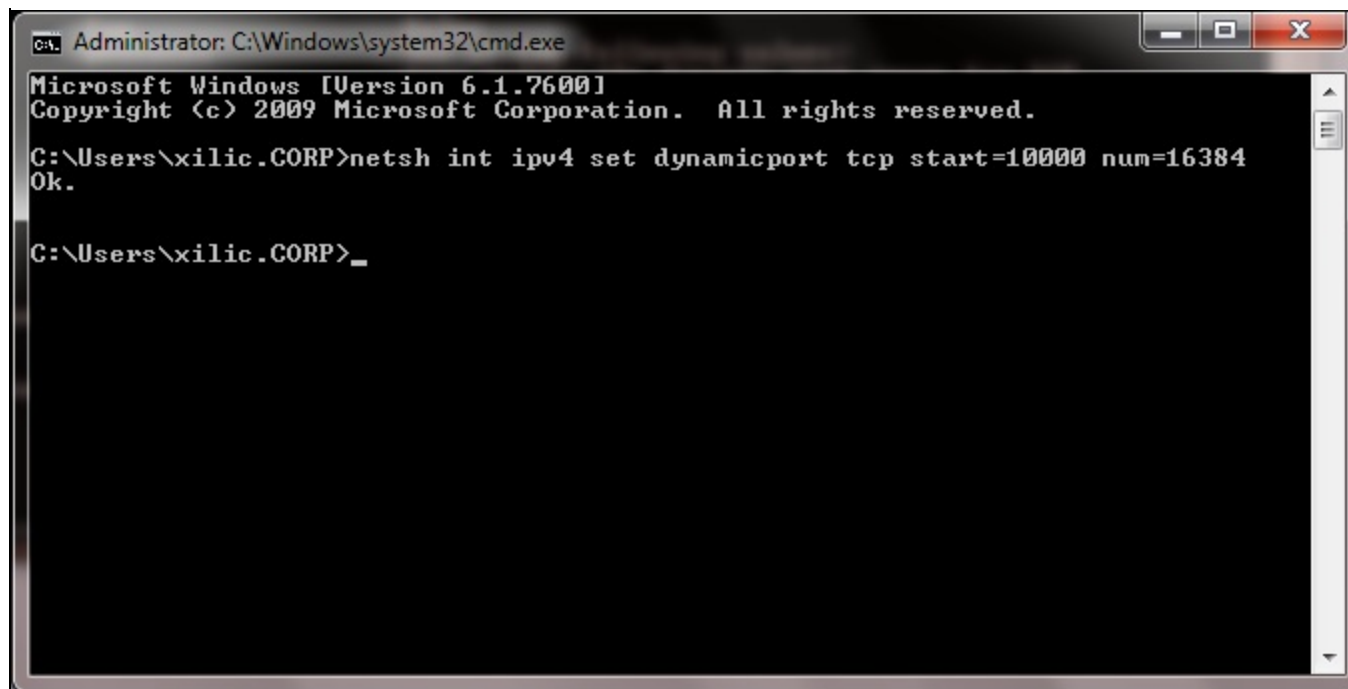
FIGURE 2: DYNAMIC PORT RANGE

3. Type **netsh int ipv4 set dynamicport tcp start=10000 num=16384** and press **Enter**.

This command sets 16384 dynamic ports starting at port number **10000**. This will provide the same number of dynamic ports (as the original OS setting) with a lower starting port address of **10000** (Figure 2 below).
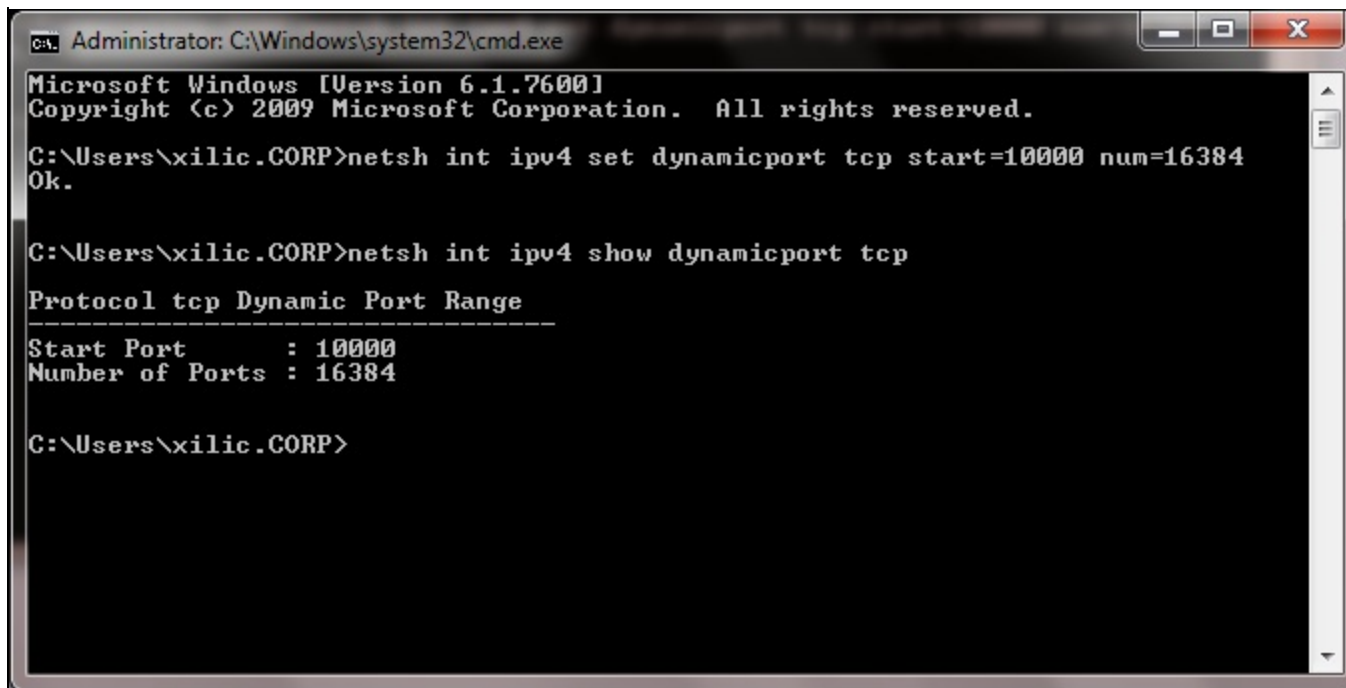
FIGURE 3: SET THE PORT RANGE STARTING AT 10000

4. Restart the computer.

5. After the computer restarts open the Command window and type **netsh int ipv4 show dynamicport tcp** to verify the new port range (Figure 3 below).

FIGURE 4: CONFIRM THE PORT RANGE

6. Now test with your IT application or wwclient. You should be able to get data from the PLCs.

Important: If you have other applications in the same node and they do not work correctly after changing the dynamic port range, you may have to set the port range back to the default. For this purpose, Wonderware recommend to run the dedicated DAServer node without other applications.

Advising the Symbolic Name in RX3i and RX7i PLC Families

The DASGESRTP V2.0 supports PLC Symbolic Variables.

What is a Symbolic Variable?

Symbolic variables are the item names for the PLC internal memory registers, which may or may not associate to a PLC IO register. To create or define a symbolic variable you do not have to assign a physical address of specific memory register. You can also use them to access pre-defined tags in the PLC.

For instance, if you know there is a tank pressure sensor connected to a PLC, you can access the data from its tag as **#TankPressure** rather than having to know the exact memory register address for that data.

Use the following syntax to address Symbolic variables:

#<var_name> <ItemSuffix> (where "#" and <ItemSuffix> are optional)

Syntax	Description
Prefix '#'	This identifies the item as a symbolic variable. If the PLC has a symbolic item with the same name as a register (such as R3000) then the '#' is required.
	If '#' is not provided, then the GESRTP DAServer will first try to resolve the item as an IO or memory register. If it is not a valid syntax for an IO or memory register, then the DAServer will create the Symbolic Item.
<Item Suffix>	This identifies the data type, when the item is created in the DAServer. Combination of suffixes is not supported.
	If the suffix is not supplied, the DA Server will create the item with delayed item validation. The data type at the time of item creation will be VT_EMPTY and the actual PLC data type will be determined later. For more information on data types and suffixes, see **Suffixes to Explicitly Control I/O Variables and Data Types for Registers** in the online help file.

Examples

- **#TankLevel ARRAY(S)**: Creates a symbolic variable item named **TankLevel**, with the canonical data type of **VT_I4** (4-byte integer).

- **#R3000 W**: Creates a symbolic variable named **R3000**, with the canonical data type of **VT_UI2** (2-byte unsigned integer).

- **TankLevel**: Creates a symbolic variable item named **TankLevel**. The data type will be determined when the DA Server attempts to access the item on the PLC.

The following screenshots show the Symbolic Variables in the PLC database.

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- RX3IP.SecDisOut
- RX3IP.SecHBCmd
- RX3IP.SecHLSSts
- RX3IP.SecNewXchng
- RX3IP.Seek_Seq
- ⊞ RX3IP.sr_fltmsg
- RX3IP.sr_temp
- RX3IP.SRTonSec
- RX3IP.Start_ENIU
- RX3IP.SW_CMR
- RX3IP.Sw_HO
- RX3IP.swtch_ovr
- RX3IP.T00165
- RX3IP.T00166
- RX3IP.T00167
- RX3IP.T00168
- RX3IP.T00169
- RX3IP.T00170
- RX3IP.temp_cr1
- RX3IP.temp_cr2
- RX3IP.Temp_HLS
- RX3IP.ts_A_ltch
- RX3IP.ts_A_os
- RX3IP.ts_AtoB
- RX3IP.ts_B_ltch
- RX3IP.ts_B_os
- RX3IP.ts_BtoA

Tabs: InfoViewer | CH_INT [RX3I] | SYM [RX3I] | _MAIN [RX3I] | Wmemory [NEWRX3I]

Ladder logic:
```
                    1
6000 —IN    Q— DWORDV...
#ALW_OFF   MOVE
11  —| |—  DWORD
                    1
7000 —IN    Q— DWORDV...
```

Symbolic Item

PLC IO Register Reference

Inspector

Variable [RX3I]	
Name	#ALW_OFF
Description	Always OFF
Publish	False
Data Source	GE IP Controller
Ref Address	%S00008
Data Type	BOOL
Current Value	Off
Default Display Format	On / Off
Retentive	True

General

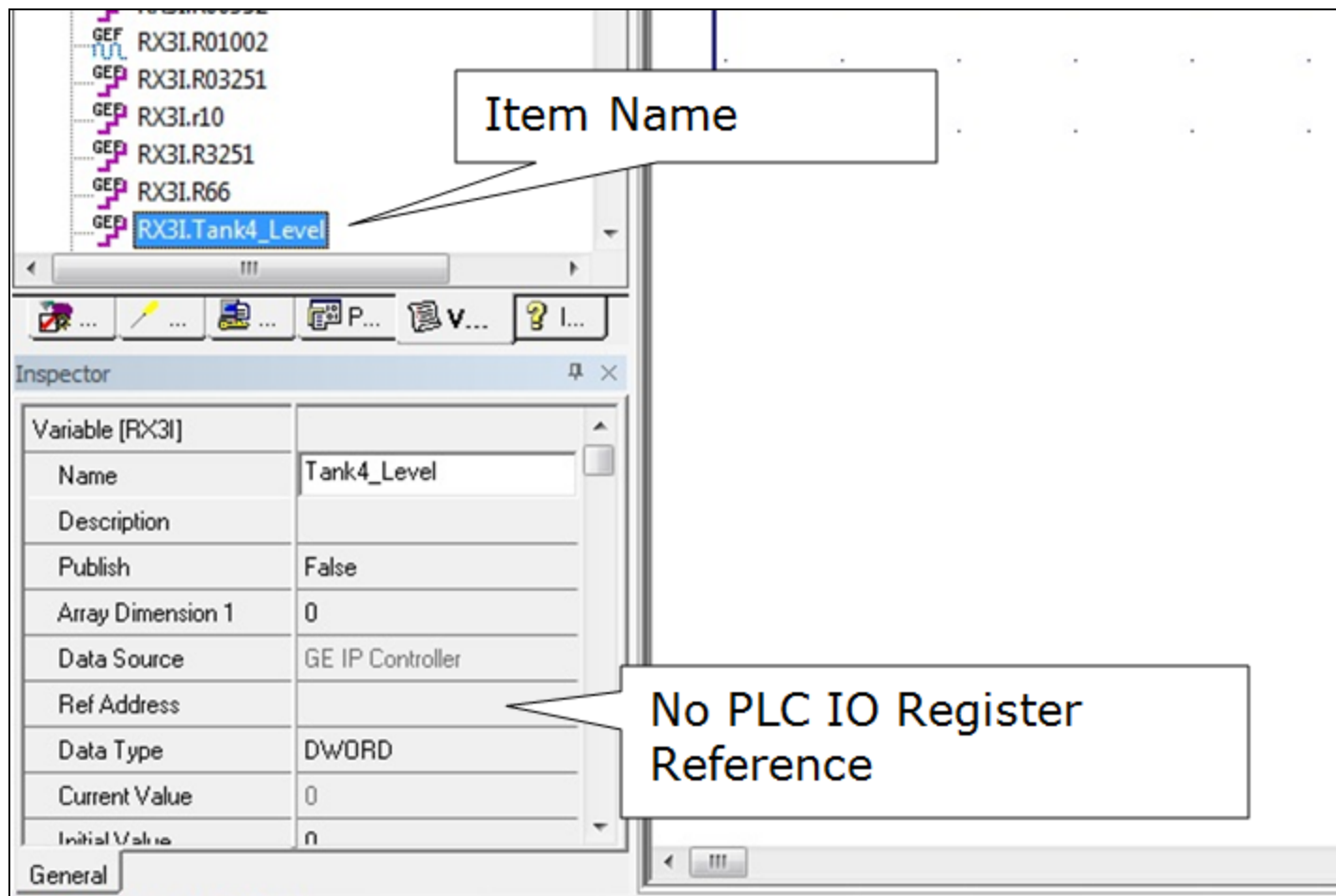**FIGURE 5: THE SYMBOLIC VARIABLE WITH THE PLC IO REGISTER**

FIGURE 6: THE SYMBOLIC VARIABLE WITHOUT THE PLC IO REGISTER

To Access the Symbolic Variables Via DASGESRTP

In the PLC for all the Symbolic Variables, there is a parameter called **Publish**. Publish includes 3 options - **False**, **Internal**, or **External Read/Write**.

To use the Symbolic Naming in DASGESRTP, the **Publish** parameter must be set to **External Read\Write** (Figure 7 below).
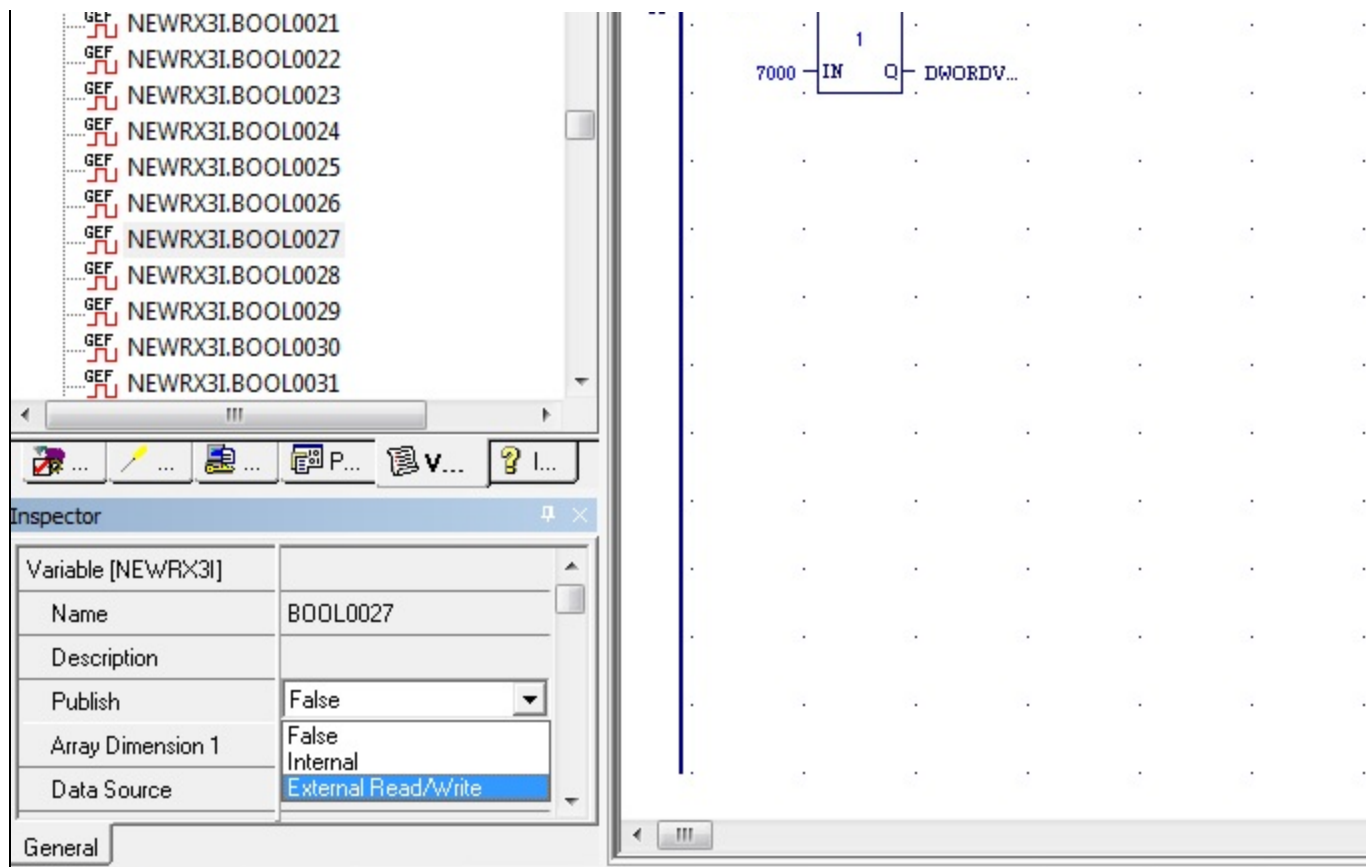
FIGURE 7: USE PUBLISH TO ACCESS SYMBOLIC VALUES VIA DASGESRTP

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For technical support questions, send an e-mail to **wwsupport@invensys.com**.

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