

RACO AlarmAgent.info®

Owner's Manual

Revision 1.1b



Revision History

Rev #	Description	Author/Editor	Date
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1.1	Added Troubleshooting section; links to FAQs for Excel demo, OPC Client. Renamed non-OPC to Direct Connect. Other minor edits	Davey Hudson	6/24/2015
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CONTENTS

1	INTRODUCTION	3
A	PURPOSE	4
B	OVERVIEW	4
C	REQUIREMENTS	4
D	REFERENCE LINKS FOR PRODUCTS AND OPC	5
2	ALARMAGENT.INFO SYSTEM OVERVIEW	6
A	WHAT IS THE ALARMAGENT.INFO OPC SYSTEM?	6
B	WHAT IS INCLUDED WITH ALARMAGENT.INFO?	6
C	WHAT IS THE ALARMAGENT.INFO DEMO VERSION?	7
D	SYSTEM DESCRIPTION.....	7
E	DIRECT CONNECT APPLICATIONS	9
3	INSTALLATION AND SETUP	10
A	SYSTEM REQUIREMENTS	10
B	DOWNLOADING THE ALARMAGENT.INFO SOFTWARE	11
C	INSTALLING THE ALARMAGENT.INFO SOFTWARE.....	12
D	ALARMAGENT.INFO USER (ENTERING THE OPC SERVER LOGIN)	16
E	SWITCHING THE ACCOUNT FROM DEMO TO YOUR ORGANIZATION ACCOUNT.....	17
4	CONFIGURING YOUR OPC CLIENT (FACTORYTALK VIEW STUDIO)	18
A	ADDING THE OPC SERVER TO A FACTORYTALK PROJECT	19
B	ADDING A GRAPHIC OBJECT WITH AN OPC TAG TO A DISPLAY	21
5	USING THE DIRECT CONNECT APPLICATIONS	28
A	ALARMAGENT.INFO DASHBOARD.....	28
B	ALARMAGENT.INFO EXCEL (OPTIONAL)	32
6	TROUBLESHOOTING	38
A	FIREWALLS.....	38
B	TESTING FOR A BLOCKED PORT 58724 WITH TELNET	38
C	CONFIGURING WINDOWS FIREWALL (WINDOWS XP)	40
D	CONFIGURING WINDOWS FIREWALL (WINDOWS 7).....	41
E	TESTING THE OPC SERVER USING THE OPC FOUNDATION'S SAMPLE CLIENT	44
7	CONCLUSION	46

1 INTRODUCTION

This document gives an introduction and brief overview of the AlarmAgent.info[®] OPC System. It describes the features of the system and how it works. It briefly describes how to install and use the demo and how to perform an installation and basic setup.

A Purpose

This document is to provide customers with basic information in the AlarmAgent.info OPC System and an overview of the setup and operation of the demo.

B Overview

AlarmAgent.info[®] (AAI) is a system that allows you to access your AlarmAgent.com WRTU data via the OPC protocol. This allows you to access that data from your SCADA or other OPC compliant systems.

AAI requires that the customer account be configured by **RACO**. The customer must install and configure the AAI software on their local computer. This software installs an OPC server on that computer. It is the customer's responsibility to configure their SCADA system to access the OPC server.

C Requirements

Description	Name / Type	Version
PC with Pentium [®] II, 256 MB RAM and 100 MB HDD. Windows XP or later, Windows .NET Framework 3.5 or later	Refer to Section X.X.X for more specific requirements and recommendations.	NA
Active AlarmAgent.com [®] Service Agreement and online WRTUs	NA	NA
Active AlarmAgent.info [®] Service Agreement for the AlarmAgent.com WRTUs to be accessed by the OPC server	NA	NA

D Reference Links for Products and OPC

For further information about the AlarmAgent.info[®], please consult the **RACO** website at www.AlarmAgent.info

For more information about OPC, please consult the OPC Foundation website at opcfoundation.org

2 ALARMAGENT.INFO SYSTEM OVERVIEW

This section provides a general overview of the system. Refer to the system diagram at the end of this section.

A What is the AlarmAgent.info OPC system?

AlarmAgent.info (AAI) is a system that allows you to access your AlarmAgent.com WRTU (Wireless Remote Telemetry Unit) data via the OPC (Open Platform Communications) protocol. This allows you to monitor and display data on your SCADA systems, HMIs, and other OPC compliant devices.

OPC is an industry standard protocol that is designed to allow automation and SCADA system devices from various manufacturers to connect and share data. OPC will allow any device to share data with any other OPC device regardless of the brand or model. While any OPC compliant device like PLCs, HMIs, and other computer applications can connect to the AlarmAgent.info system, for simplicity here we will refer to them all as SCADA.

OPC was developed by an industry task force to allow data sharing between process control devices of different manufactures. Its standards are managed by the OPC Foundation.

The AAI system acts as a go-between to connect your SCADA system and the AlarmAgent.com system. Your SCADA system can be configured to display your AlarmAgent.com WRTU data in any format and at any location inside that system.

B What is included with AlarmAgent.info?

The core of AAI is the RACO OPC Server that is installed on your local computer during the AlarmAgent.info installation. Once it is installed, it runs in the background and requires no user intervention. It connects to the remote RACO AAI Server and then makes that information available locally to any OPC clients.

There are also two Direct Connect applications that are installed with AlarmAgent.info. These are standalone applications that connect directly to the RACO AAI Server without using OPC or a SCADA system.

AlarmAgent.info Dashboard provides you with an overview of your system without having to log into the AlarmAgent.com website. Dashboard reads the AlarmAgent.com WRTU data directly from the AlarmAgent.info server and displays the data in a chart format.

AlarmAgent.info Excel acts as a tag browser that can display the tag data available on the AlarmAgent.info server. It can convert the addressing and tag information into a formula format that's compatible with Excel. The text string can be copied and pasted into an Excel spreadsheet. Excel will dynamically display the value of the selected tag in the cell. This allows you to create a simple custom display on any PC without using OPC or SCADA

C What is the AlarmAgent.info Demo Version?

The AAI demo version allows you to test drive the actual software that is used in the AAI system. The only difference between the demo system and the licensed version is the login information that you enter into the system. The login provided with the demo system will only let you connect to the **RACO** demo and test AlarmAgent.com WRTUs. The system is read-only so there are no concerns about adversely affecting the **RACO** WRTUs or any other data.

When you purchase the licensed AlarmAgent.info version, you may easily reconfigure the AlarmAgent.info demo version without reinstalling it. This is covered in more detail in the section "Switching the Account from Demo to your Organization Account" at the end of this procedure.

D System Description

The AAI system is composed of software running on the **RACO** AlarmAgent.com server that provides a secure data connection to the **RACO** applications that are installed on your local computer.

Refer to Figure 1 OPC Server Network Diagram.

The AlarmAgent.com WRTUs periodically upload their status on the **RACO** AlarmAgent.com server over the Internet via a cellular connection. The **RACO** server stores this information in a database for future retrieval. The AAI server can access this data and make it available via a proprietary, secure data connection via the Internet.

When the SCADA system requests data from the OPC Server, the OPC Server requests the data via a secure, encrypted TCP connection to AlarmAgent.info server. The data travels the same as other internet traffic: from the computer, to the Local Network > Corporate Router/ Firewall > Internet.

Note: The data travels on port 58724 so that port must be open on the both the local computer's firewall and on your corporate firewall.

When the AlarmAgent.info server receives the request for data, it sends a query to the database and then receives the response. It sends the response backwards along the same path: the Internet > Corporate Router/ Firewall > Local Network > Computer > and finally to the OPC Server. The OPC Server receives the data, decrypts it, converts it to the correct OPC Protocol, and then sends the data to the SCADA device that requested it.

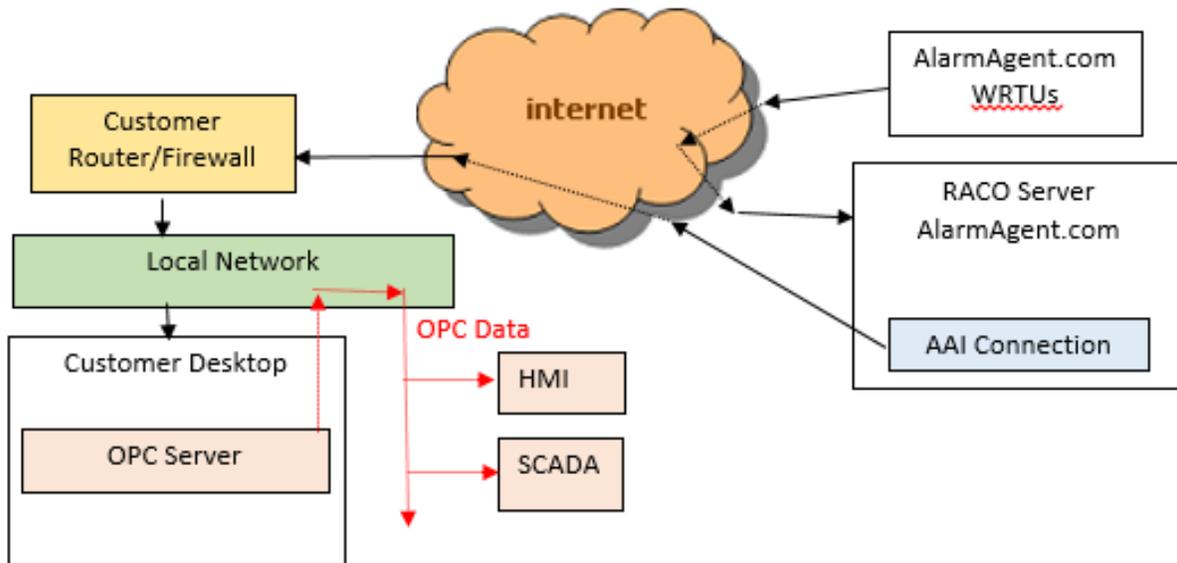


Figure 1 OPC Server Network Diagram

E Direct Connect Applications

The Direct Connect applications (AAI Dashboard and AAI Excel) connect similarly to the OPC Server. The applications request data directly from the **RACO AlarmAgent.info** server via the same path and protocol as the OPC Server. The requested data is returned over the same path back to the application that requested it. The data is then formatted and displayed on the Dashboard screen or in the Excel spreadsheet.

Refer to Figure 2 Network Diagram with Direct Connect Applications.

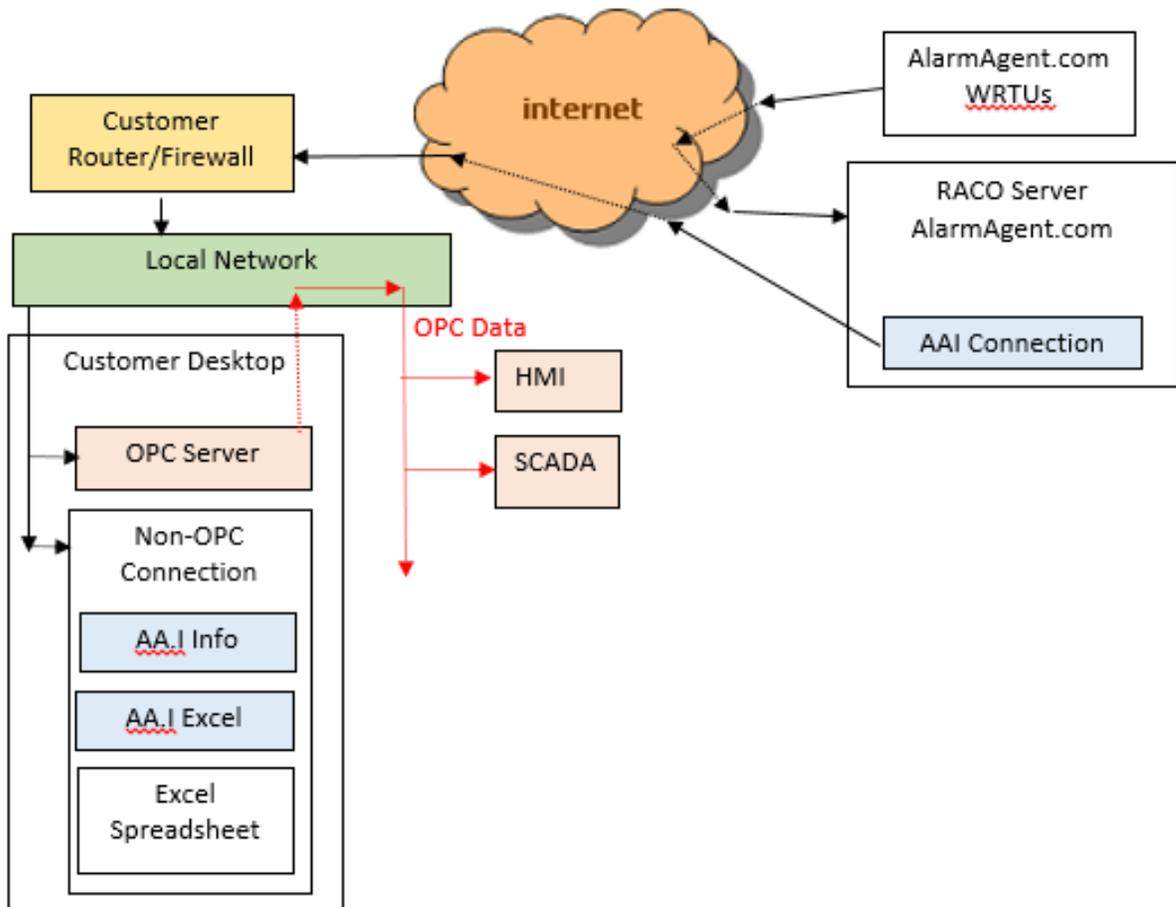


Figure 2 Network Diagram with Direct Connect Applications

3 INSTALLATION AND SETUP

This section covers the steps to get AlarmAgent.info installed and setup on your computer.

Most customers will install the demo version initially so that will be covered in this procedure. The software and the installation procedure are the same for the licensed version.

When you purchase the AlarmAgent.info licensed version, you will be provided a unique login that provides access to your WRTUs. The WRTUs that have AAI subscriptions must also have their configuration updated by **RACO** before they can be accessed.

A System requirements

AlarmAgent.info's minimum requirements are a single Pentium II with 256 Megs of RAM and 100 Megabyte hard disk. This would be limited to a system that had 10,000 tags or less on the service, trending 1,000 tags, and logging 10,000 tags at a 1 second frequency. The number of clients would be limited to 10 clients for this minimum hardware configuration.

RACO recommends the following requirements based on you specific system:

32 Bit and 64 Bit Operating Systems

AlarmAgent.info will run on 32 bit operating systems up to 100,000 tags. For best performance choose a 64 bit operating system.

AlarmAgent.info will take advantage of 64 bit operating systems to use up to 1 terabyte of memory. For any system that has more than 100,000 Tags a 64 bit operating system is required.

Number of Processors

AlarmAgent.info will take advantage of multiple processors and will evenly distribute processing of the service functions across all processors that are available.

- It is recommended to allocate 2 processors for every 100,000 tags running in the service.
- Allocate 1 additional processer for each set of 25,000 tags to be logged at a 1 second frequency.

- Allocate 1 additional processor for every 50,000 tags to be trended at a 1 second rate for 1 hour of time frame.
- Allocate an additional processor for each 25 clients or more connected to the service.

RAM

- Allocate 4 Gigs of RAM for every 100,000 tags running in the service.
- Allocate 4 Gigs of RAM for each set of 25,000 tags to be logged at a 1 second frequency.
- Allocate 4 Gigs of RAM for every 50,000 tags to be trended at a 1 second rate for 1 hour of time frame.
- Allocate 4 Gigs of RAM for each 25 Smart Clients connected to the service.

B Downloading the AlarmAgent.info software

The software may be downloaded from the AlarmAgent.info website (www.alarmagent.info)

1. Enter www.alarmagent.info in your browser. When the AlarmAgent.info home page opens, fill in the form with your organization's info. Click the button:

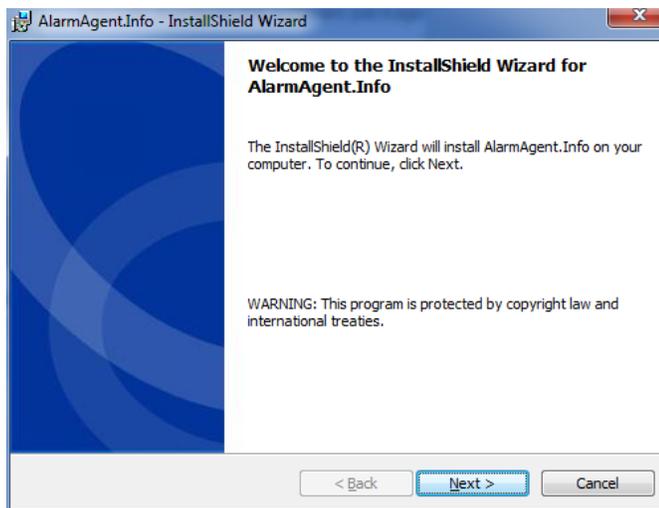
Let me see it in action!

2. Review the information on the download screen. Chose the **64-Bit** or **32-Bit** option depending on your Windows version. If your browser prompts you to **Run** or **Save** the file, choose the **Save** option. Your browser will download the installer (**AlarmAgentInfo_R1_x32.exe** or **AlarmAgentInfo_R1_x64.exe**) to the browser's download folder. The exact process and location will vary depending on your browser and settings.
3. Your browser or anti-virus might flag the file as dangerous, but that's only because it's not in its list of frequently downloaded files. Choose the browser option to keep or restore the file.

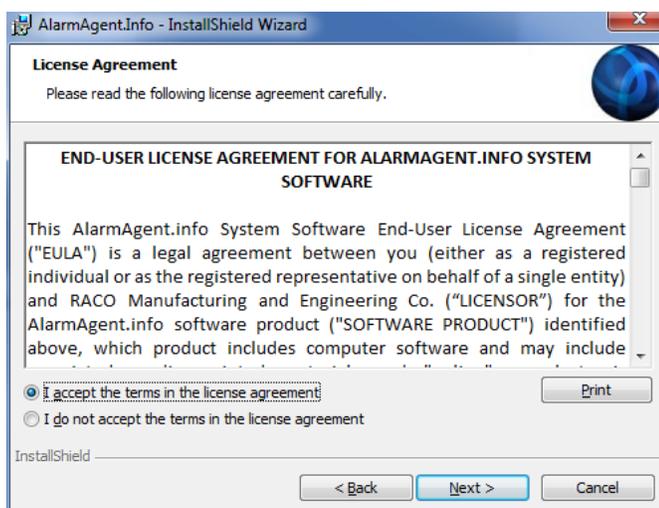
C Installing the AlarmAgent.info software

This section covers the process for installing and configuring the AAI software.

1. Browse to the download folder where the setup file was saved
2. Double-click on either the **AlarmAgentInfo_R1_x32.exe** or **AlarmAgentInfo_R1_x64.exe** file depending on the version of Windows that's installed on the computer.
3. Click **Yes** at the **User Account Control** warning screen. Click **Next** at the **Welcome** screen.



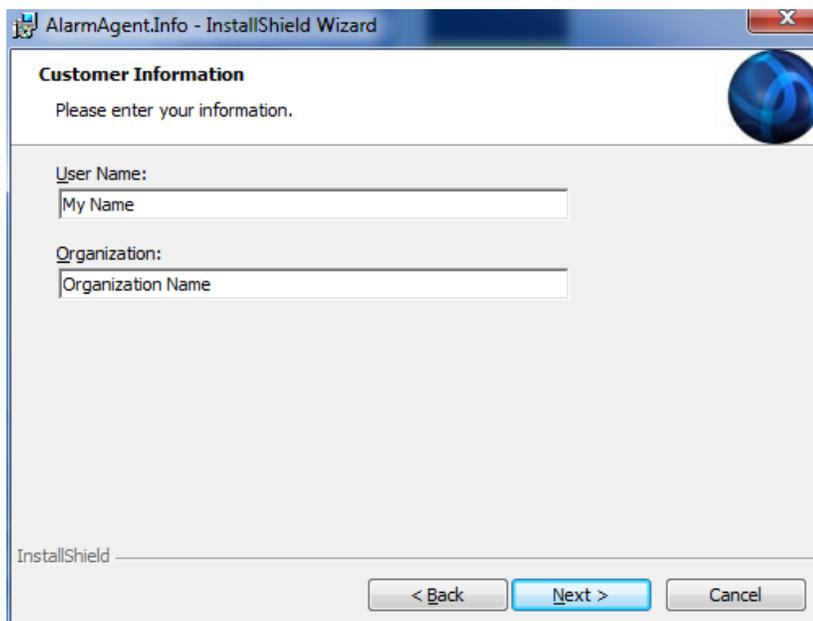
4. Review the license agreement and then choose "I accept..." and then click **Next**.



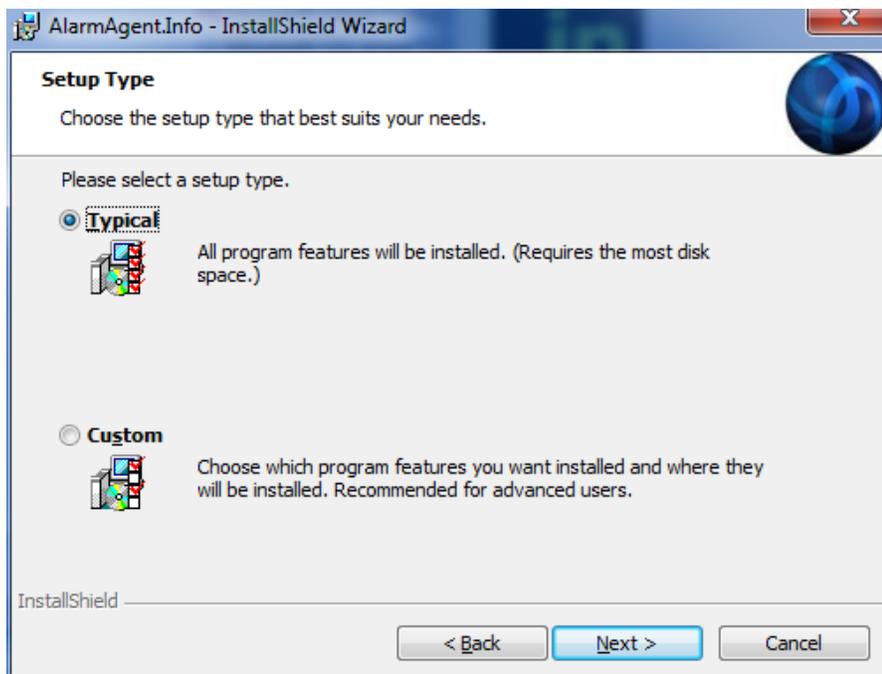
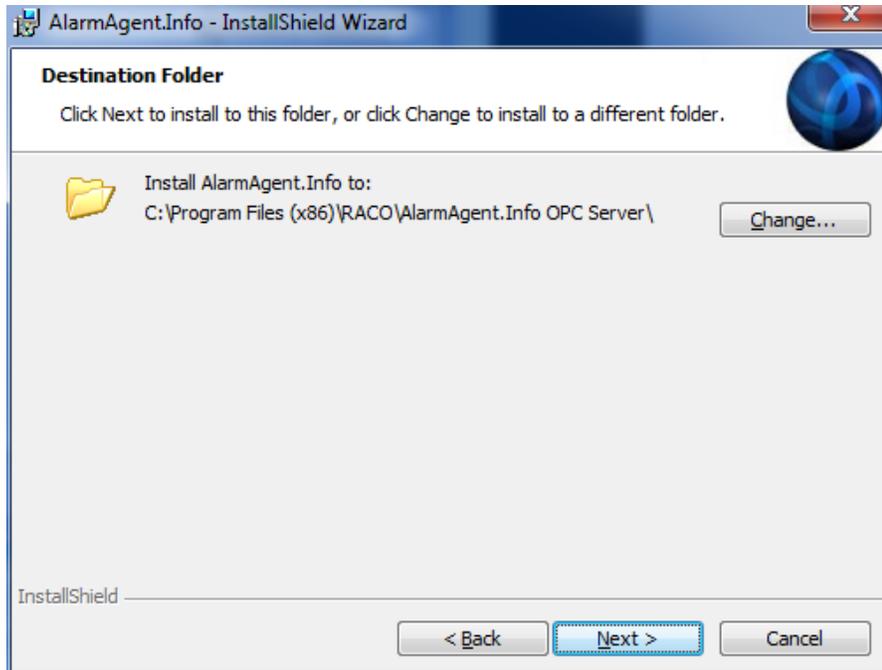
5. At the next window, review the Readme information and then click **Next**.



6. At the **Customer Information** screen, enter your **User Name** and **Organization**. This is a personal name and your organization's name of your choosing, NOT your username and password for accessing the system. You can enter any name of your choice. Click **Next** to proceed.

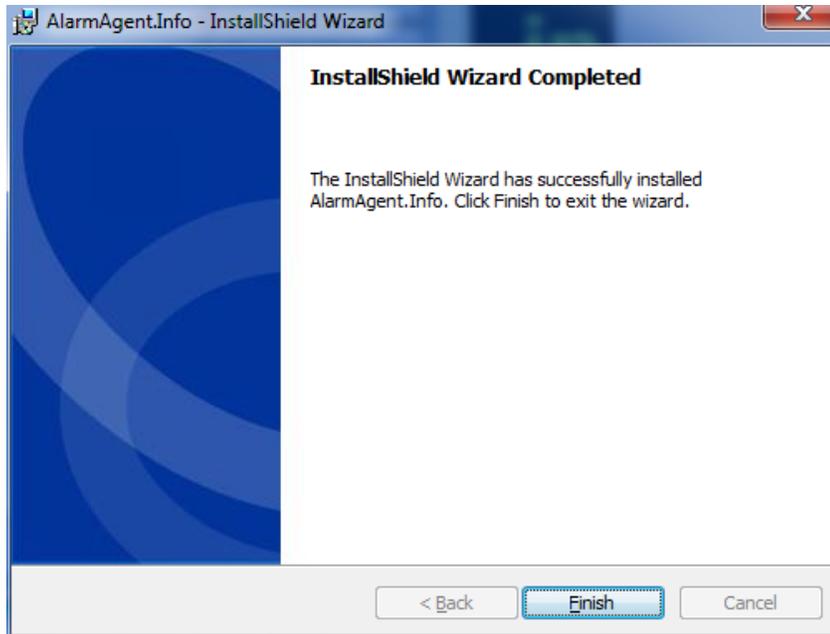


- At the next two screens, chose **Next** to accept the default installation folder and then **Next** to accept the default setup type.



8. The installer will install the required software on your computer. During the setup process, the installer will automatically run the AlarmAgent.info User utility. This will display a dialog box requesting your User name and Password. This is covered in the next section [AlarmAgent.info User \(Entering the OPC Server login\)](#).

Click **Finish** to complete the software installation then continue the procedure in the next section [AlarmAgent.info User \(Entering the OPC Server login\)](#).



D AlarmAgent.info User (Entering the OPC Server login)

This utility is used to store the AlarmAgent.info account User name and Password that the OPC Server uses to log onto the remote **RACO** Alarmagent.info server. This allows the OPC Server to retrieve the WRTU data via the encrypted secure data protocol. It is not the password that OPC clients use to access the OPC server.

For the demo version enter this login. If you've been supplied a specific login for your organization's account, enter that instead. Click **Next**.

User name: **3**

Password: **6616585**



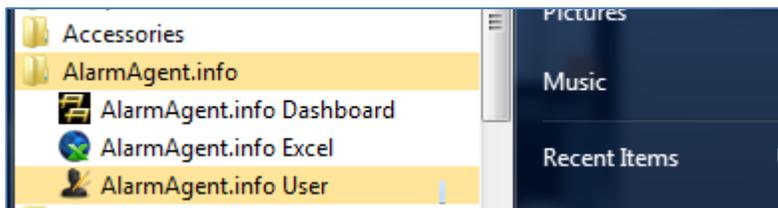
This completes the installation of the AlarmAgent.Info software and the configuration of the local OPC Server. You may now configure your OPC client SCADA system to access this server.

E Switching the Account from Demo to your Organization Account

When you purchase the AlarmAgent.info service, **RACO** will provide you with a unique login that you can use to access your organization's specific data. Please keep this in a secure place. Your data cannot be accessed without this login information.

The OPC Server must be configured to use this new login via the AlarmAgent.info User utility.

1. To run the utility, **click Start Menu > AlarmAgent.info > AlarmAgent.info User.**



2. The AlarmAgent.info User window will appear. Enter your provided **User name** and **Password**, then Click **OK**. The window will close.



3. Restart your computer to ensure that the OPC Server reads the new configuration. Once your computer is restarted, the OPC Server will be able to retrieve data from your account when requested by your OPC client.

Note: The data travels on port 58724 so that port must be open on the both the local computer's firewall and on the customer's corporate firewall. Refer to the Troubleshooting section for details on firewall configuration and testing.

4 CONFIGURING YOUR OPC CLIENT (FACTORYTALK VIEW STUDIO)

The exact connection process depends on the type of OPC client that you use to connect to the RACO AlarmAgent.info OPC Server. Covering every possible situation is beyond the scope of this document. The basic steps for all clients will be similar:

1. Add the OPC Server configuration to the SCADA project
2. Add a text or graphical display control to receive and display the OPC data item from the AlarmAgent.com WRTU.
3. Browse the OPC Server and locate the desired OPC data item (tag)
4. Include the tag in the display control.

This is an example of how to use FactoryTalk View to display data items from the OPC Server using the FactoryTalk View Studio application. In this example, we'll add a string display object that will display the AlarmAgent.com WRTU name as well as an alarm indicator. The process will be similar for displaying other data from the WRTU and for other controls.

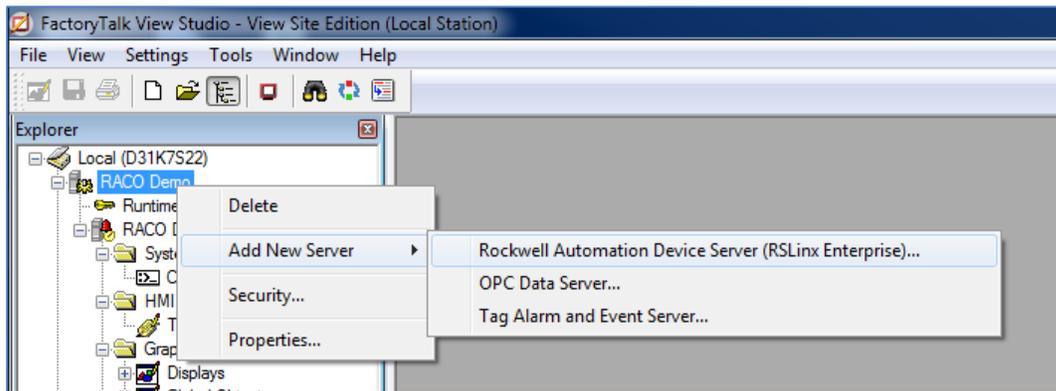
This also serves as a general guide to setting up a typical SCADA/HMI graphical display as most programs work in a similar fashion. Refer to your program's documentation for the specific process.

This process is for people that are familiar with using the FactoryTalk View Studio program. A detailed tutorial is beyond the scope of this document. It is based on the FactoryTalk View Studio User's Guide. Refer to your specific user's guide if you are using a different application. The process is described in greater detail in this document, which is located at the link below http://literature.rockwellautomation.com/idc/groups/literature/documents/um/viewse-um006_en-e.pdf

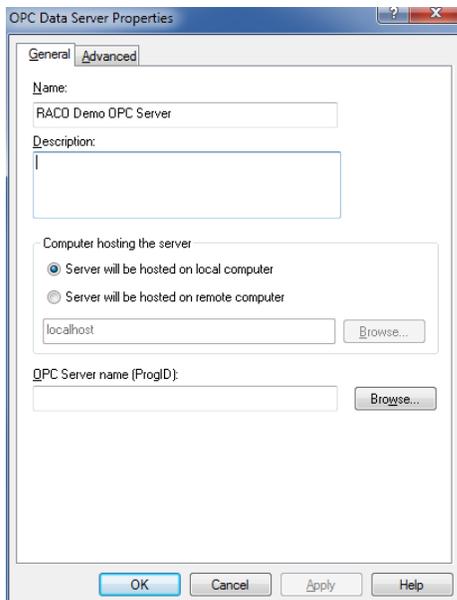
A Adding the OPC Server to a *FactoryTalk* Project

Refer to FactoryTalk View Studio User's Guide, Chapter 9 "Setting up communications", section "Adding OPC data servers to an application"

1. Open your existing FactoryTalk project or create a new one.
2. In FactoryTalk View Studio's **Explorer** window, **right-click** the application root or an area name, Select **Add New Server > OPC Data Server**.

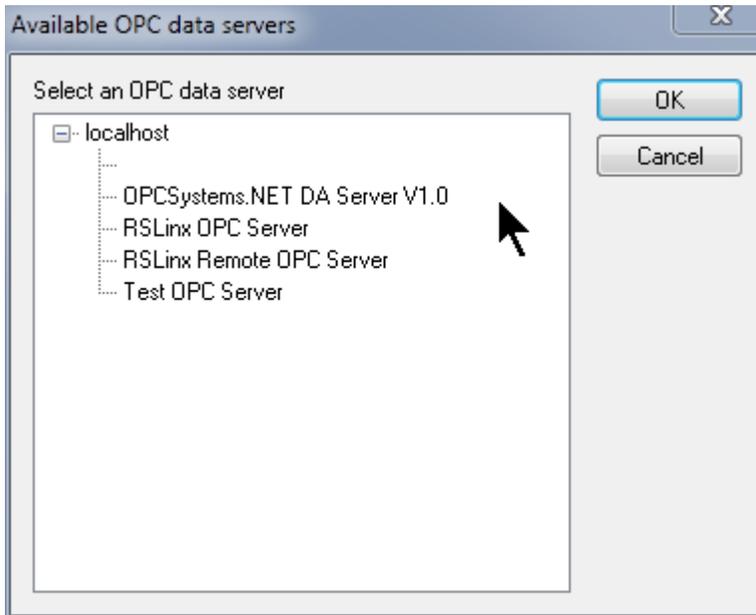


3. In the **OPC Data Server Properties** dialog box, select the options and provide information in each tab. These settings are for a SCADA that's running on the same computer as the OPC server. If they are on different computers, then you will have to change these to match your network configuration.



4. Click **Browse**, then choose the **OPCSystems.NET** Server, then click OK

Note: The actual server name is “**OPCSystems.NET**”. FactoryTalk appends the other information onto the name for its own use. If your application requires a server name, use **OPCSystems.NET**

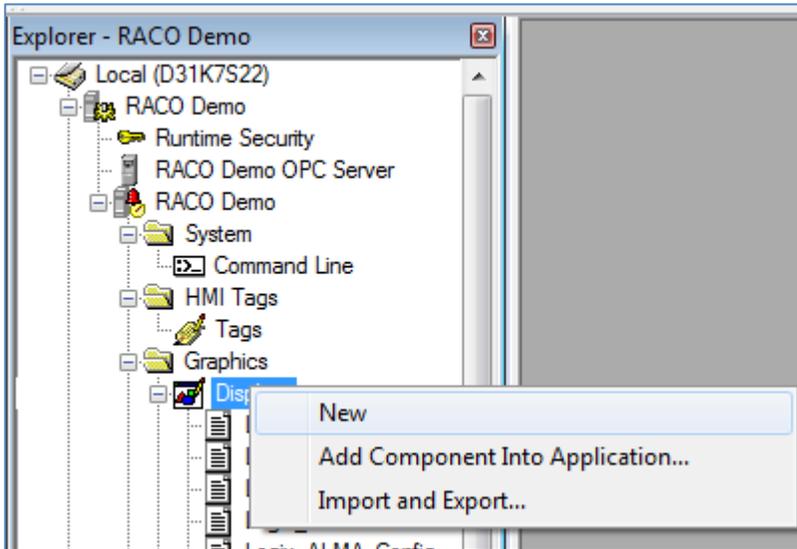


5. After you select the desired data item, click **OK** to close the **Available OPC data servers** properties window.

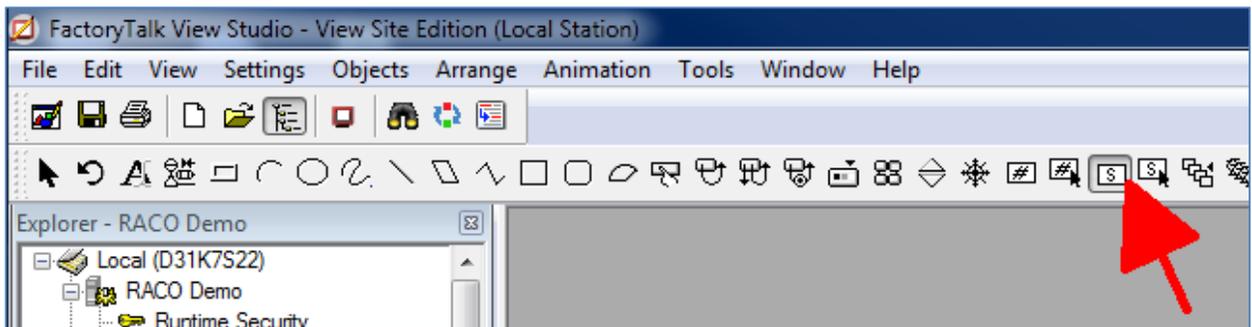
B Adding a Graphic Object with an OPC Tag to a Display

Refer to FactoryTalk View Site Edition User's Guide, Chapter 10: "Working with tags"

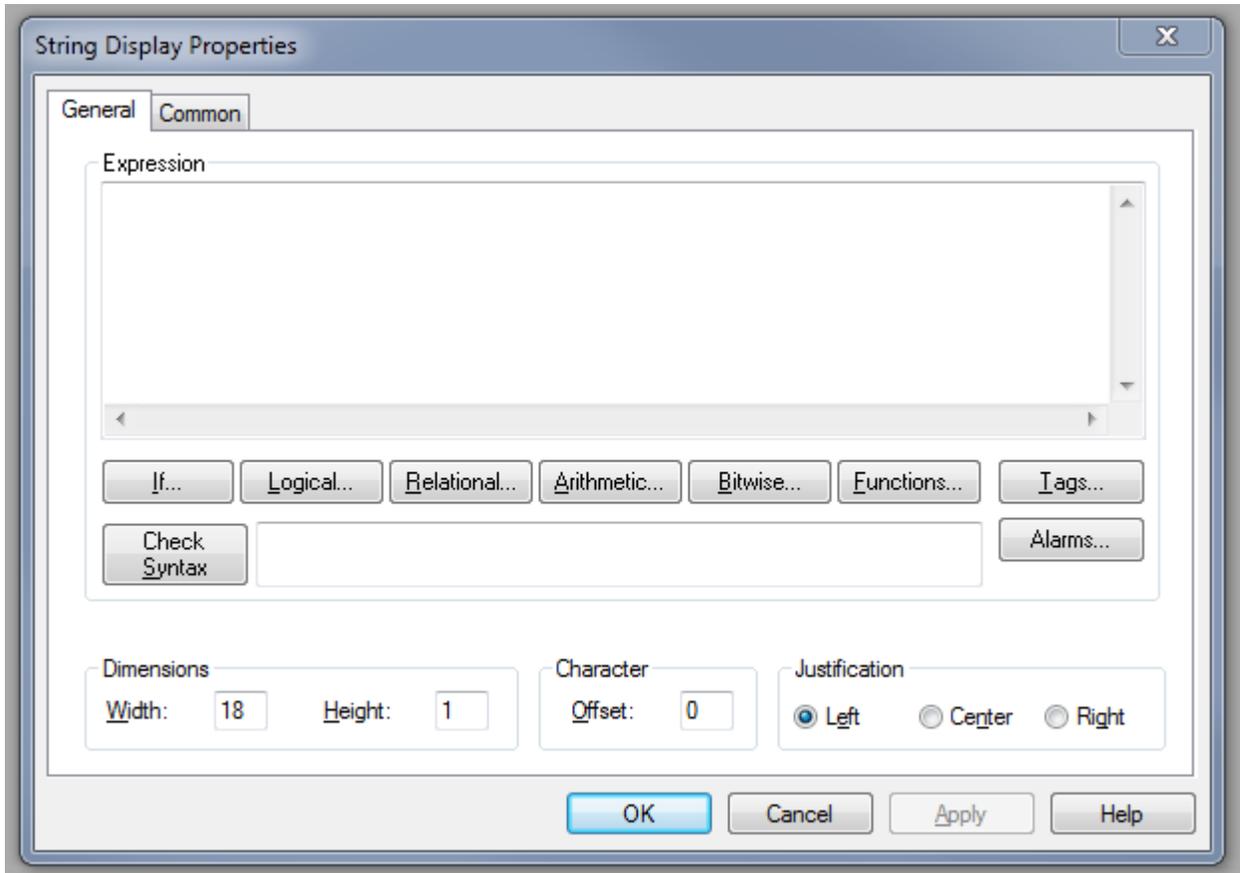
1. Open your FactoryTalk project. Open the graphic display that you wish to add the AAI WRTU data to (go to **Application Explorer > (YourApplication) > Graphics > Displays > YourDisplay**). To create a new display, go to **Application Explorer > (YourApplication) > Graphics > Displays**, right click **Displays** and chose **New**.



2. Select the **String Display Object**  tool from the **Graphics Toolbar**. Click and drag on the location where you wish to display the WRTU's name and draw a rubber band box the desired size.

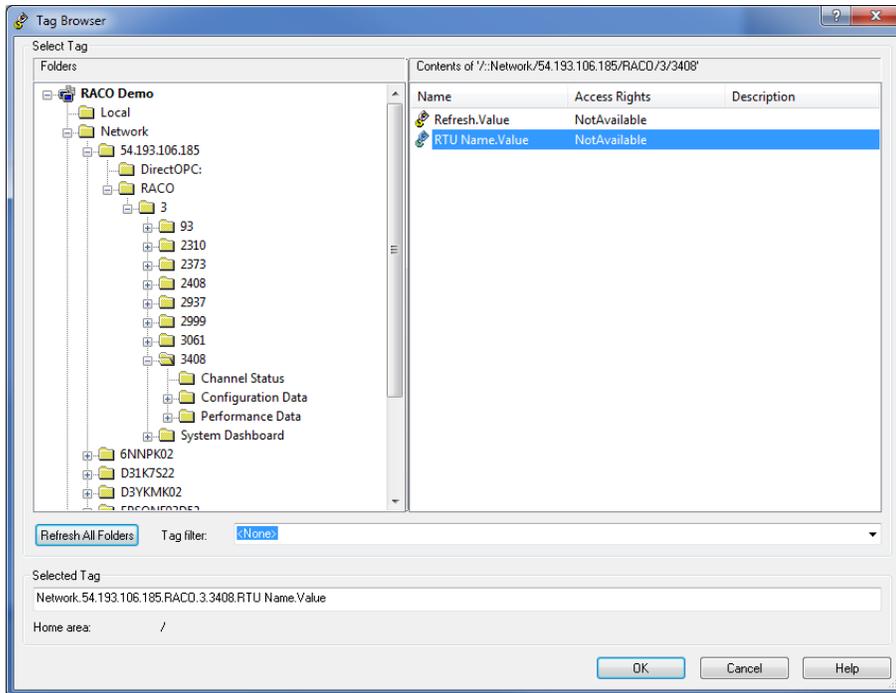


3. When you release the mouse button, the **String Display Properties** dialog box will automatically appear. Click the **Tags** button.



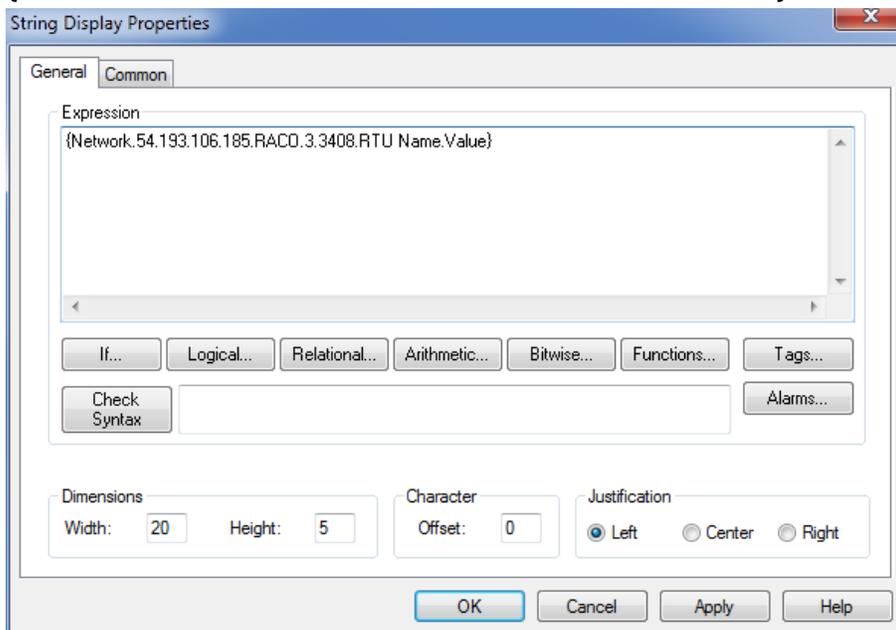
4. In the **Tag Browser**, expand the folders until you get to the tag that you wish to display. Chose the **Network** option, not the **Local** option, as this refers to the source of the data (the remote **RACO AlarmAgent.info** server) and not the OPC server location. If a folder appears empty, **right-click** the folder and chose **Refresh Folder**.
5. To show the properties or current value of a tag (OPC data item), in **the Tag Browser**, **right-click** the tag, and then click **Properties**. The **Tag Properties** dialog box shows information about the tag.

6. Click **OK** once you've located and selected the correct data tag.



7. The **Tag Browser** fills in the **Expression** for the selected data tag:

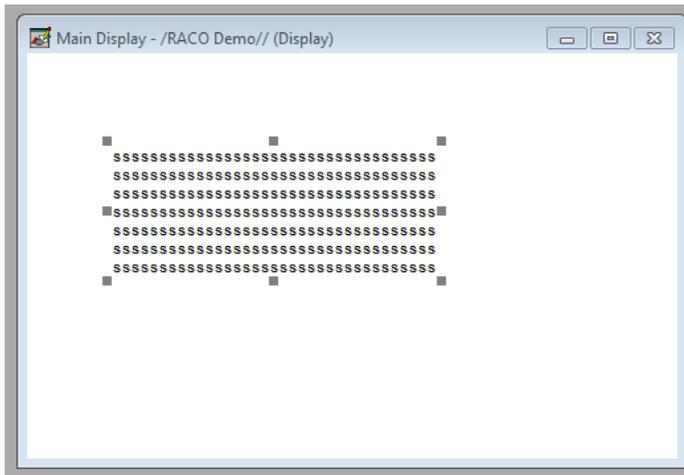
{Network.54.193.106.185.RACO.3.3408.RTU Name.Value}



8. You can adjust other text parameters to suit your layout.

While it is usually not necessary to do so, you can edit the tag manually. This can be helpful when adding numerous tags that are similar and where you would only need to change a WRTU number or channel number. Refer to the Formula Description at the end of this section.

9. Click **OK** to close the **String Display Properties** window. The **Display** screen will show the standard representation for a String Display object.

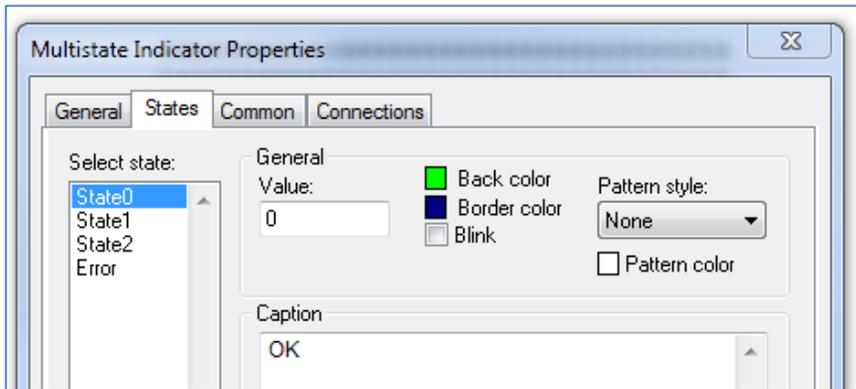


10. We can also use string annotations. Create another String Display Object and enter this expression:

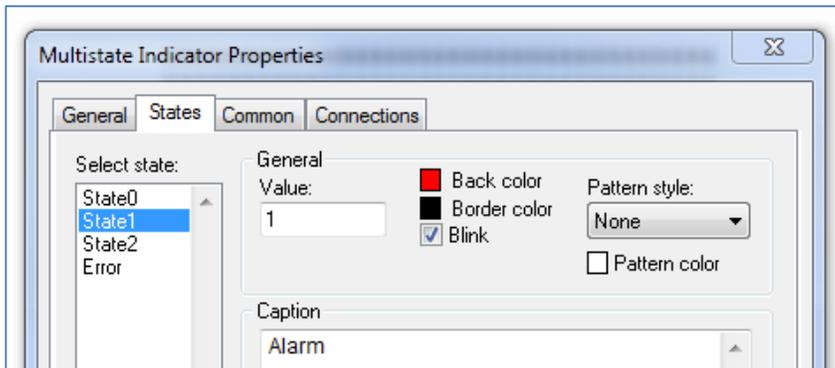
"Channel 4 Status: " + {Network.54.193.106.185.RACO.3.3408.Channel Status.Channel 4 AlarmState.Value}

11. Let's also add a multistate indicator as the expressions for that are trickier. It uses integer types but many of the data item tags from the WRTU are strings.

12. Create a new multistate indicator and configure State0 to show a normal condition.



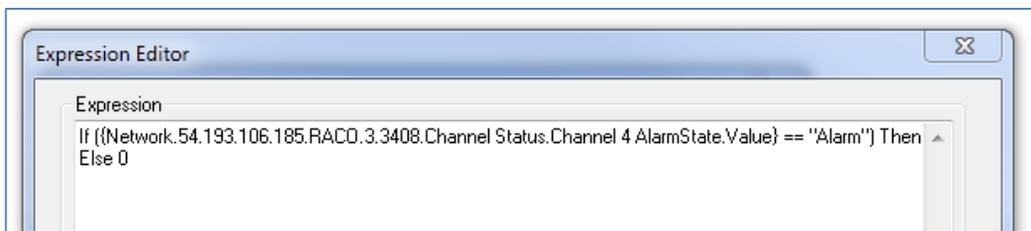
13. Configure State1 to show an alarm condition.



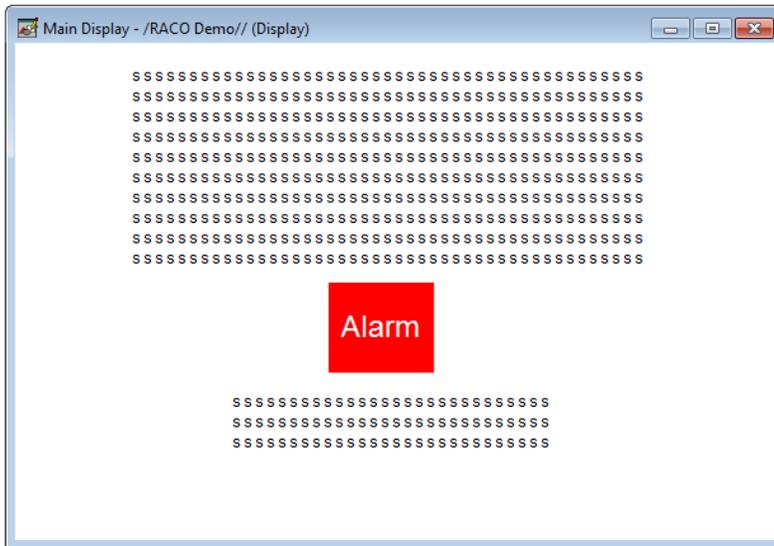
14. Add the tag {Network.54.193.106.185.RACO.3.3408.Channel Status.Channel 4 AlarmState.Value}

15. In the Expression textbox, enter the test below. Part of the text does not show in the graphic as the window is too small.

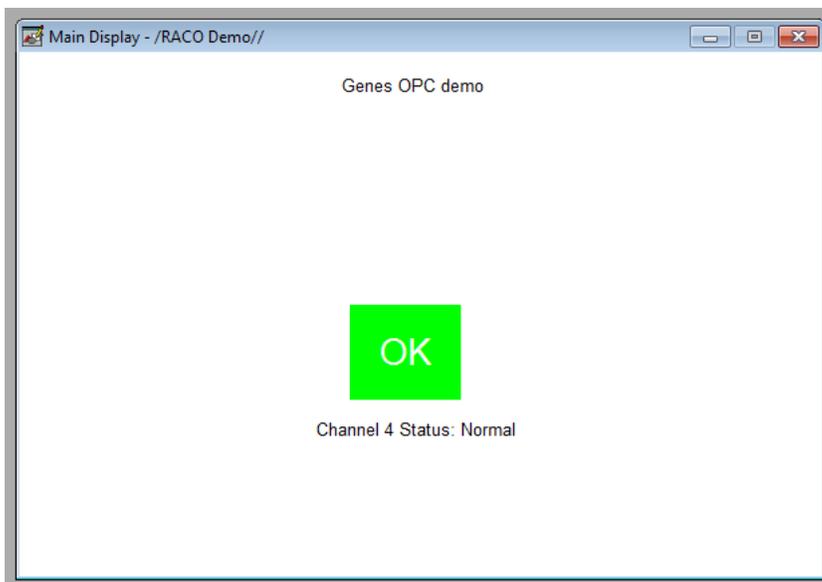
```
If ({Network.54.193.106.185.RACO.3.3408.Channel Status.Channel 4 AlarmState.Value}
== "Alarm") Then 1
Else 0
```



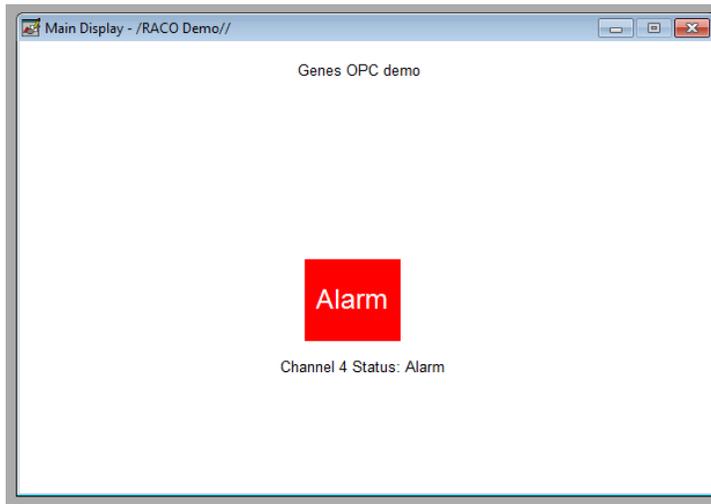
16. Your display should resemble this example, but sizes and locations aren't important.



17. Save the project and then launch the SE client. The display should resemble this:



18. If you trip the alarm, the display will indicate an alarm condition:



19. The process is similar for adding other items or display objects.

Formula Description

{**Network.54.193.106.185.RACO.3.3408.RTU Name.Value**}

Network.54.193.106.185.RACO is the node on the OPC Server which will always be the same.

{**Network.54.193.106.185.RACO.3.3408.RTU Name.Value**}

3 is your Account ID number.

{**Network.54.193.106.185.RACO.3.3408.RTU Name.Value**}

3408 is the AlarmAgent.com WRTU number.

{**Network.54.193.106.185.RACO.3.3408.RTU Name.Value**}

RTU Name is the name of the tag.

{**Network.54.193.106.185.RACO.3.3408.RTU Name.Value**}

Value is the property of the tag that will be returned. It's almost always 'value' but in some cases it might be another property like a timestamp

5 USING THE DIRECT CONNECT APPLICATIONS

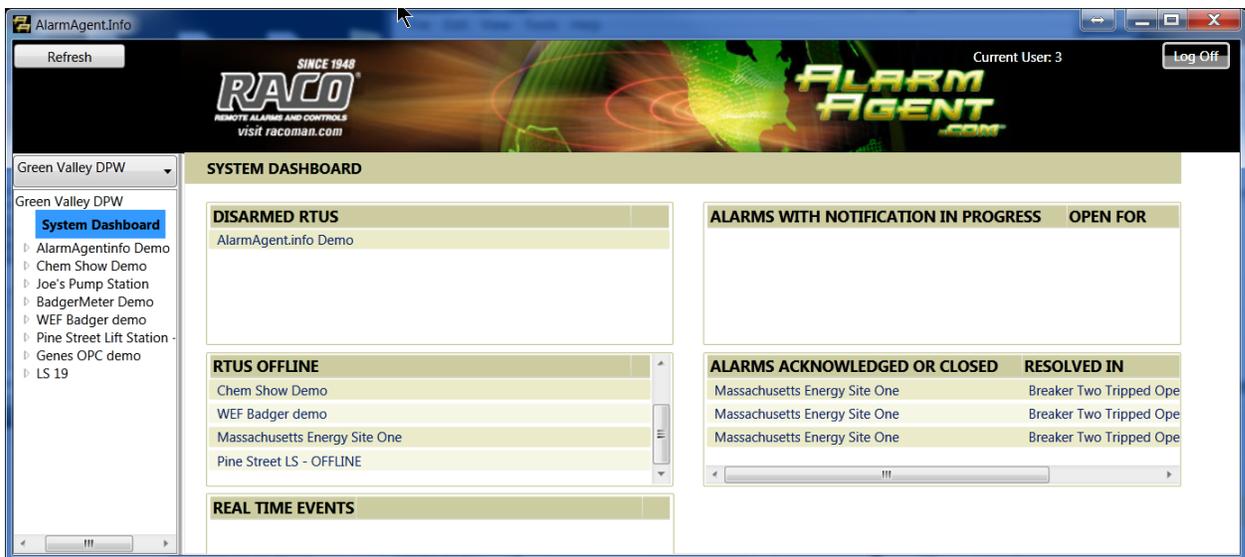
In addition to the OPC Server, the demo includes two additional applications that can be used to access your AlarmAgent.com WRTU data. They directly connect to the remote **RACO** AlarmAgent.info server using a secure data connection. These applications do not connect via OPC or the OPC server.

A AlarmAgent.info Dashboard

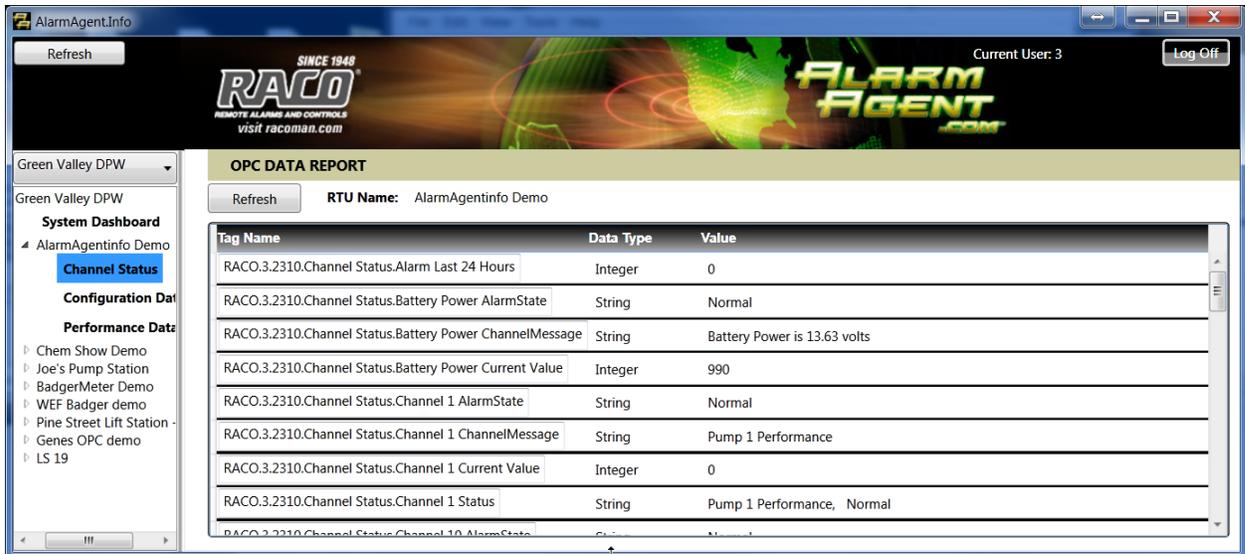
This AlarmAgent.info Dashboard application allows a customer to read live data from their AlarmAgent.info server and display it on their computer monitor in a chart format. This gives a quick overview of your WRTU data without having to log into AlarmAgent.com or having a SCADA system. The data displayed and layout is hard-coded and cannot be modified by the user.

Dashboard offers both an overview of the entire system and a detailed view of each site's WRTU.

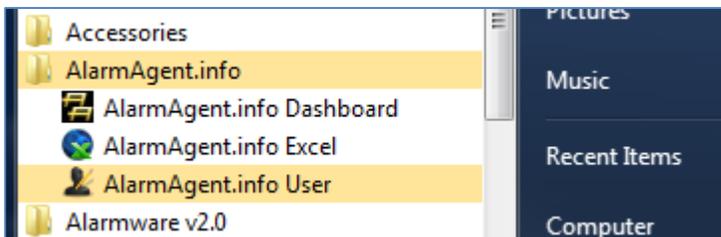
The **System Dashboard** provides information on which WRTUs are in an abnormal condition- those that are offline, disarmed, or that have alarms.



The WRTU Dashboard view gives specific information about the status, performance data, and configuration of the WRTU.



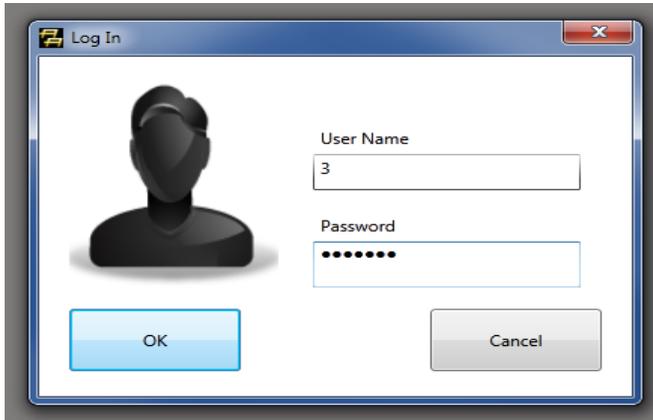
To use *Dashboard*, click **Start Menu > AlarmAgent.info > AlarmAgent.info Dashboard.**



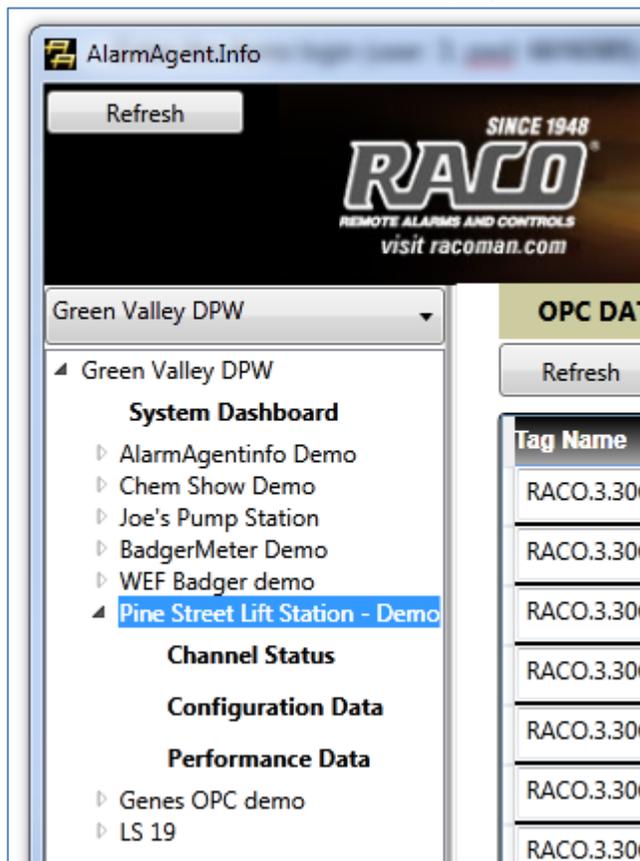
1. Click the **Login** button in the top, right corner of the screen.



- Enter the demo login (user: **3**, pwd: **6616585**) or your provided organization login and click OK



- The AlarmAgent.info Dashboard will open. Using the **Site Explorer** in the left side panel, expand the categories by clicking on the triangle next to its name. Open the categories until the desired data items are displayed.



- Dashboard will retrieve the selected data directly from the **RACO AlarmAgent.info** server. It displays the tag name, data type, and the current value. The data will update if it changes on the server. **Click Refresh** to force a complete download of all the data.

The screenshot shows the AlarmAgent.info web application interface. The main content area displays an 'OPC DATA REPORT' for the 'Pine Street Lift Station - Demo' RTU. The report includes a table with columns for Tag Name, Data Type, and Value. The table lists various configuration data points for channels 1, 10, 2, and 3, including their real-time modes and channel types.

Tag Name	Data Type	Value
RACO.3.3061.Configuration Data.Battery Power ChannelTypeEnum	String	Battery
RACO.3.3061.Configuration Data.Changes Pending Real Time	Integer	0
RACO.3.3061.Configuration Data.Channel 1 ChannelTypeEnum	String	Pump Combo
RACO.3.3061.Configuration Data.Channel 1 RealtimeMode	Integer	1
RACO.3.3061.Configuration Data.Channel 10 ChannelTypeEnum	String	Analog
RACO.3.3061.Configuration Data.Channel 10 RealtimeMode	Integer	0
RACO.3.3061.Configuration Data.Channel 2 ChannelTypeEnum	String	Pump Combo
RACO.3.3061.Configuration Data.Channel 2 RealtimeMode	Integer	1
RACO.3.3061.Configuration Data.Channel 3 ChannelTypeEnum	String	Pump Combo

B AlarmAgent.info Excel (OPTIONAL)

What is AlarmAgent.info Excel?

AlarmAgent.info Excel allows you to display live data from their AlarmAgent.info WRTUs on your PC with a formatted Excel spreadsheet. Like Dashboard, AlarmAgent.info Excel reads data directly from the **RACO** AlarmAgent.info server, not from the local OPC server.

You can use the powerful formatting capabilities of Excel to create a custom visual display with many SCADA-like features such as bar graphs and indicators. By using conditional formatting, you can easily create attention-getting displays of alarms and critical conditions.

We've created a sample Excel spreadsheet to demonstrate some of these possibilities. You can use this as a starting point to create your own display customized for your application.

RACO AlarmAgent.info Excel Demo			
Station Status: AlarmAgentinfo Demo			
Select AlarmAgent RTU	2310	24 Hr Station Flow (KGAL)	?
RTU Name	AlarmAgentinfo Demo	Pump 1 Flow rate (GPM)	?
RTU Firmware	v5.2	Pump 2 Flow rate (GPM)	?
RTU Template	2	Pump 3 Flow rate (GPM)	?
Alarms last 24 Hrs	0	Signal Strength	50%
RTU Armed State	FALSE	External Power	12.25
Last contact with RTU	6/25/2015 6:05:47 PM	Battery Power	12.25
Channel	Channel Type	Current State	Channels current message
1	Pump Combo	Normal	Pump 2 Performance
2	Pump Combo	Normal	Pump 2 Performance
3	Totalizer	Normal	172578 KGal
4	Normally Closed	Normal	Loss of Power for Controls
5	Normally Open	Normal	Bypass Pump off
6	Normally Open	Alarm	Pump Number Two Overload is
7	Normally Open	Normal	Spare Channel 7
8	Normally Open	Normal	Spare Channel 8
9	Analog	Normal	Wet Well Level is 0 Feet
10	Status Only	Alarm	Spare Channel 10
Login Info		Color Code Legend	
Username	3	Blue = Data that is being read from WRTU	
Password	6616585	Green = Excel Text	
Login EQ.	1	Red = Enter Data Here	
		? In cell = No data received	

You can this sample it from the RACO Support FAQ "Where can I find a free sample AlarmAgent.info Excel spreadsheet?"

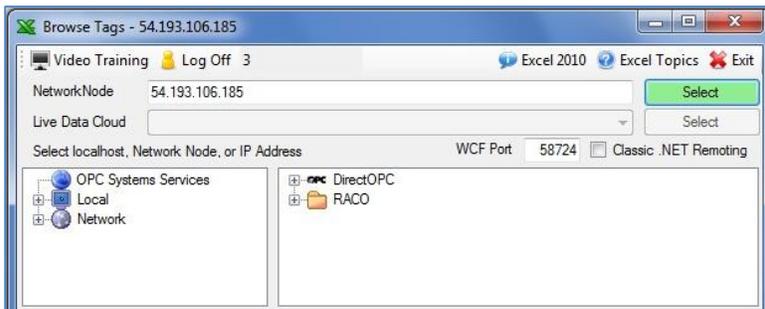
http://racoman.custhelp.com/app/answers/detail/a_id/892/kw/892

When you open the spreadsheet on a PC with AlarmAgent.info installed, it will automatically connect and download data from RACO and display it on your PC. You may modify this spreadsheet to suit your specific needs.

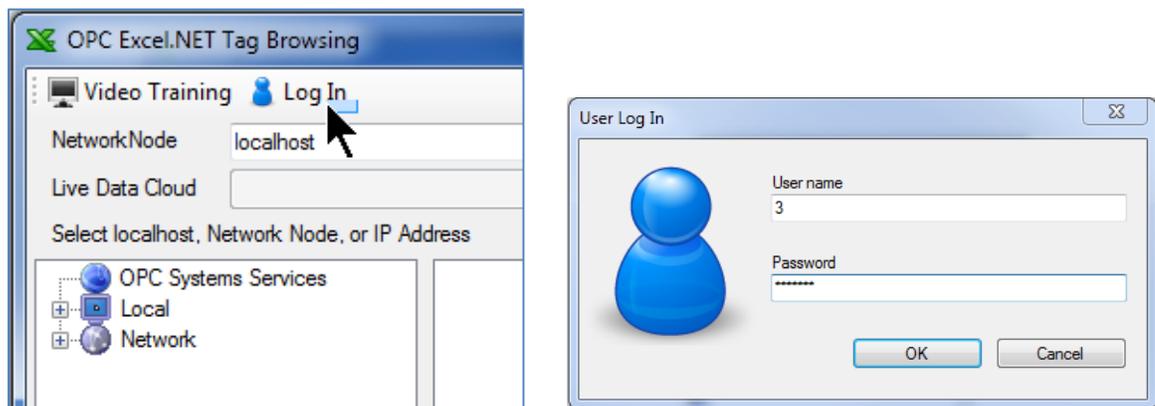
Using AlarmAgent.info Excel to create a formula

To use the AlarmAgent.info Excel feature, you must determine the correct formula (function call) to enter into your spreadsheet. This is aided by using the AlarmAgent.info Excel application. Once the formula is determined, it can be pasted into the Excel Spreadsheet.

AlarmAgent.info Excel does not have to be running for the spreadsheet to receive data, but the AlarmAgent.info software must be installed on the same computer that has the Excel spreadsheet.

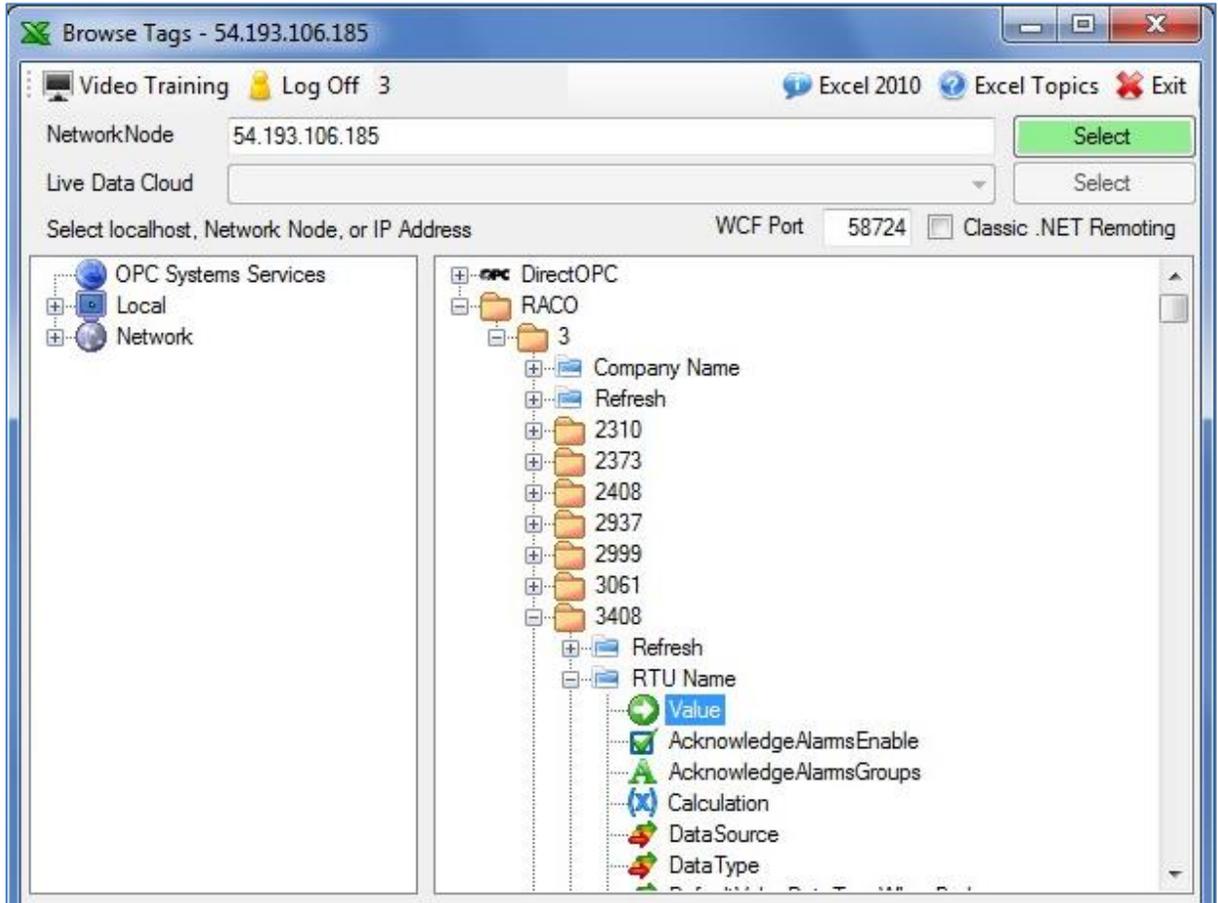


1. Click the **Log In** button and enter either the demo login or your provided login. Click **OK**.



2. AlarmAgent.info Excel will temporarily store this login for use during this session. It does not attempt to log in now so if the login is incorrect there will not be an error generated.

3. The **NetworkNode** must be entered since it connects to the **RACO** remote server directly. Enter the IP **54.193.106.185** then click the **Select** button. AlarmAgent.info Excel will attempt to connect to the **RACO** AlarmAgent.info server and login. If an incorrect login was entered in Step 3, AlarmAgent.info Excel error will generate an error now when it attempts to connect.



4. If the connection is established, AlarmAgent.info Excel will display the nodes that are running on the remote **RACO** server in the right side box. The **DirectOPC** and **RACO** branches should appear there. **DirectOPC** is not used so it will be empty.
5. Expand the **RACO** tree until you get to the **Value** tag (OPC data item) or other item that you want to display in Excel. In this case, the WRTU 3408 RTU Name item **Value** property tag is selected.

6. Do not change the **Tag** or **Read / Write** sections. The text that must be entered into the Excel cell is displayed in the textbox at the bottom of the screen. It will resemble this:

=RTD("OPCExcel", "\\54.193.106.185\RACO.3.3408.Performance Data.Pump 2 GPM.Value", "Read", "?")

The screenshot shows a configuration window with two main sections: **Tag** and **Read / Write**. In the **Tag** section, there is a checkbox for **Direct OPC** and a text input field containing the tag name: `\\54.193.106.185\RACO.3.3408.Performance Data.Pump 2 GPM.Value`. In the **Read / Write** section, there are radio buttons for **Read** (selected), **Write**, **Security**, and **Networking**. There is also a checkbox for **Read Timestamp** and a text input field for **Value when data quality is bad:** containing a question mark. At the bottom of the window, there are two buttons: **Copy text below and paste into Excel spreadsheet cell.** and **Copy to Clipboard**. Below these buttons is a text box containing the RTD formula: `=RTD("OPCExcel", "\\54.193.106.185\RACO.3.3408.Performance Data.Pump 2 GPM.Value", "Read", "?")`.

7. Click the **Copy to Clipboard** button and then paste it into an Excel cell
8. The following information is not needed unless you desire to manually edit the formula. If you just want to display the data value in the cell, proceed to Step 10

Formula Description

=RTD(...) calls the Excel function 'Real Time Data'.

OPCExcel is the name of the COM server that provides the data from the AlarmAgent.info Excel program.

\\54.193.106.185 is the IP of the server computer that is running the WCF server.

RACO is the node on server that is running on the computer.

3 is the customer's account number (username).

3408 is the WRTU number.

'**Performance Data.Pump 2 GPM.Value**' is the actual data field (tag) that is to be read.

Read determines if the value is to be read or written (not supported at this time)

"?" tells Excel to display a '?' in the cell if there is no data. You can change that to something more descriptive, like "No Data" if you prefer.

9. In order for the Excel spreadsheet to log into the remote **RACO** server, we must also store the login information in the spreadsheet by entering this formula into any cell in the spreadsheet:

=RTD("opcExcel",,"Security","Log In","3","6616585",1)

Where “**3**” is the customer’s Account Number (username) , and ” **6616585**” is their password. Use your organization’s login if you have been provided one.

10. If AlarmAgent.info is not installed on the same computer, the spreadsheet cell will give a formula error and display #N/A in all the cells with formulas.

6 TROUBLESHOOTING

This section describes some common troubleshooting steps. Please contact RACO Technical Support if you have any questions or need assistance with troubleshooting.

A Firewalls

The most common cause for lack of connection is a firewall that blocks the port that AlarmAgent.info uses to send and receive data. There are generally two firewalls that can block the data.

1. A typical company will have a physical firewall located between the internet (their ISP) and the company's internal local network. Often this is part of the router or gateway. Sometimes it is managed by the ISP.

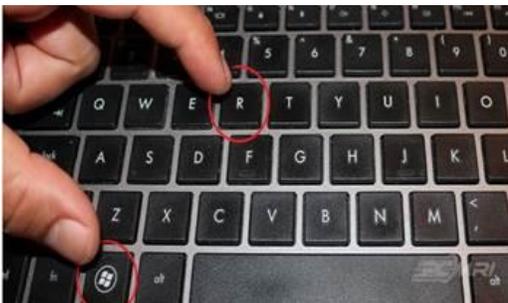
If a problem is suspected with this firewall, please contact your ISP or person responsible for the firewall's configuration and/or the ISP.

2. Each computer will have a software firewall that's installed with Windows. Some companies may also install other software such as anti-virus and internet security programs that can block the AlarmAgent.info data. Your IT department should be able to provide information on these. For troubleshooting, you may find it easier to disable these temporarily to see if that resolves the lack of connectivity. If disabling the firewall restores connectivity, then add a rule to the firewall(s) to allow AlarmAgent.info TCP traffic on port 58724.

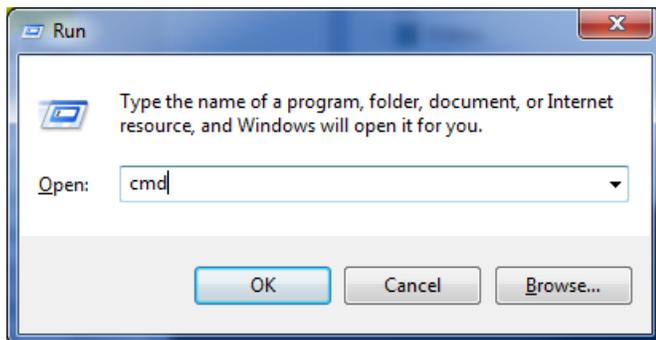
B Testing for a blocked port 58724 with telnet

If you are not getting data to the OPC Server, the first step in troubleshooting is to verify that there's not anything blocking TCP port 58724. This can be done using the Windows Telnet command line utility.

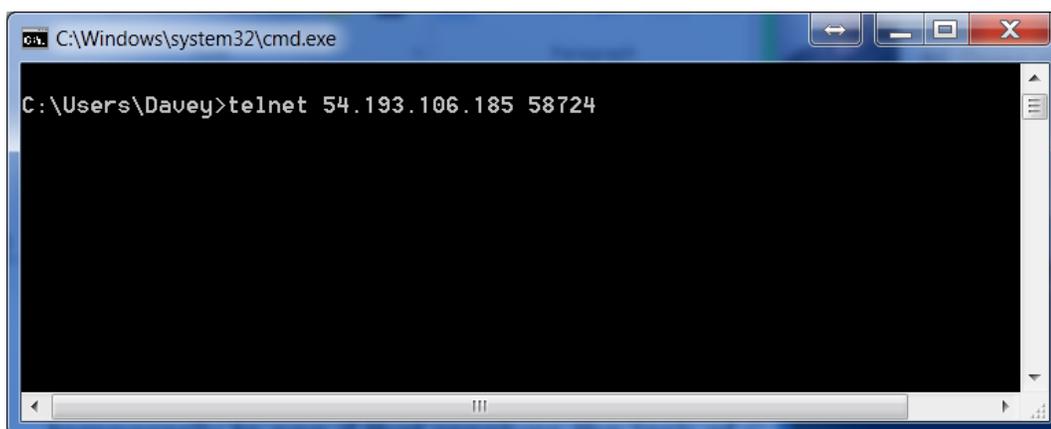
1. Press the **Windows flag** key  (next to the Alt Key) and the **R** key at the same time. This will bring up a Run window.



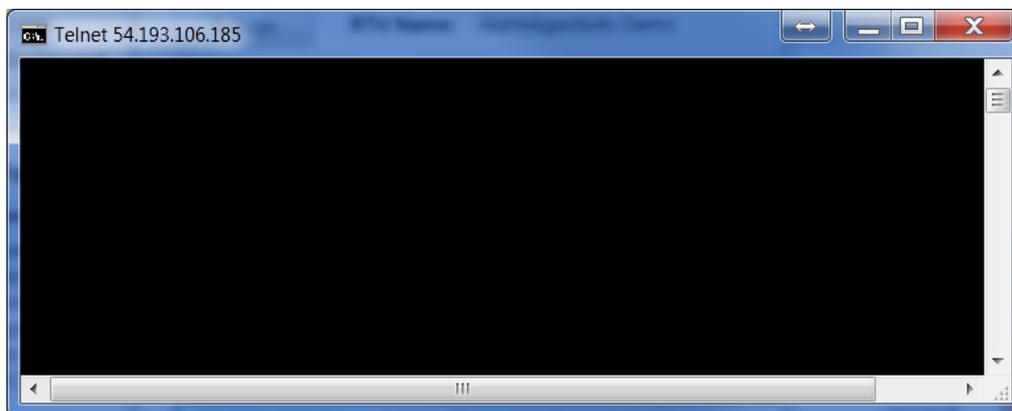
2. Type **cmd** and click **OK**



3. This will bring up the command console. Type **telnet 54.193.106.185 58724** and then **<Enter>**. There's a space between **185** and **58724** but none elsewhere.

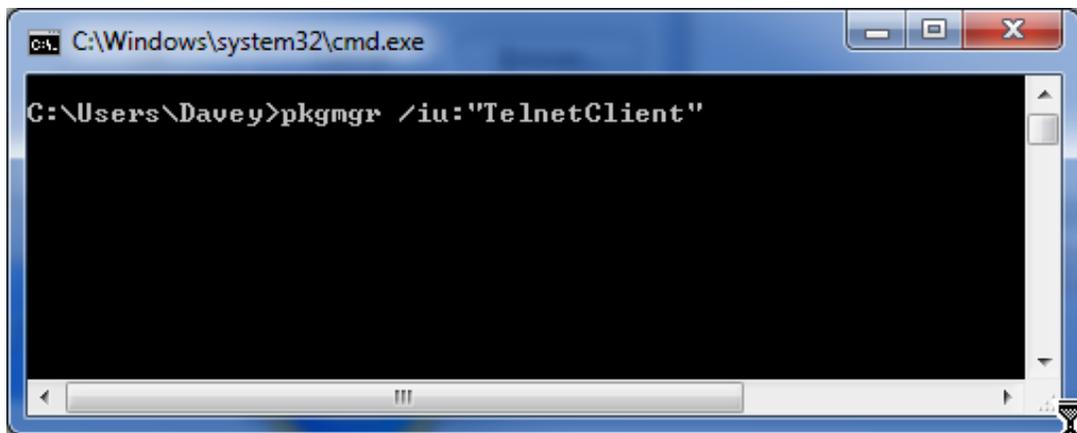


4. If the connection is successful the command screen will go blank. This means that port 58724 is open and that the connection path between the local OPC Server and the remote RACO AlarmAgent.info server is good. The connection issue is not a blocked port or bad connection and must lie elsewhere. Press **Enter** to end the telnet session.



5. If there is an error "**Connecting To 54.193.106.185...Could not open connection to the host, on port 58725: Connect failed**" then there is something blocking the port or connection. Check the firewalls and other devices that can block the connection.
6. If there is an error "**'telnet' is not recognized as an internal or external command, operable program or batch file.**" then telnet is not enabled in Windows.

To enable telnet, type **pkgmgr /iu:"TelnetClient"** in the command window and then **<Enter>**. There's a space between **pkgmgr** and **/iu:"TelnetClient"** but not elsewhere. You must type the quotes as shown, with no space after the colon. It can also be enabled via **Control Panel > Programs and Features > Turn Windows features on and off** and checking the **[X] Telnet Client** box.



7. This will install Telnet from the windows installer. When it finishes installing and returns to the command prompt, return to Step 3 and re-try the telnet command
8. Click the **[X]** to close the window.

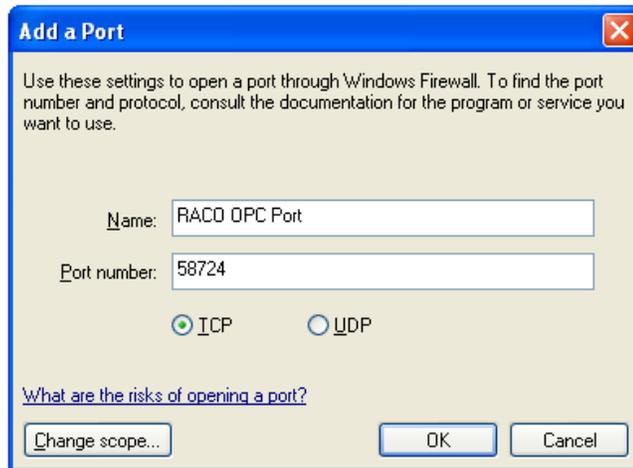
C Configuring Windows Firewall (Windows XP)

If you suspect that Windows Firewall is blocking the port, you can try turning the firewall off completely and then repeating the **Testing for a blocked port 58724 with telnet** the section. For assistance in configuring the Windows Firewall, please refer to the Microsoft website pertaining to the version of Windows that is installed

<https://technet.microsoft.com/en-us/library/bb877979.aspx>
<https://support.microsoft.com/en-us/kb/875356>

1. Start Window Firewall (**Control Panel > Windows Firewall**).

2. To turn the firewall off completely, click (*) **Off (not recommended)**
3. To add a rule to unblock port 58724, uncheck [] **Don't Allow Exceptions**
4. Click the **Exceptions** tab, then click **Add a Port**. Enter a **Name** and **Port number**. You may use the **Change scope...** button to limit the IP range to the systems that will be communicating together.



5. Click **OK** to save the changes.
6. Retest the connection using the procedure **Testing for a blocked port 58724 with telnet**

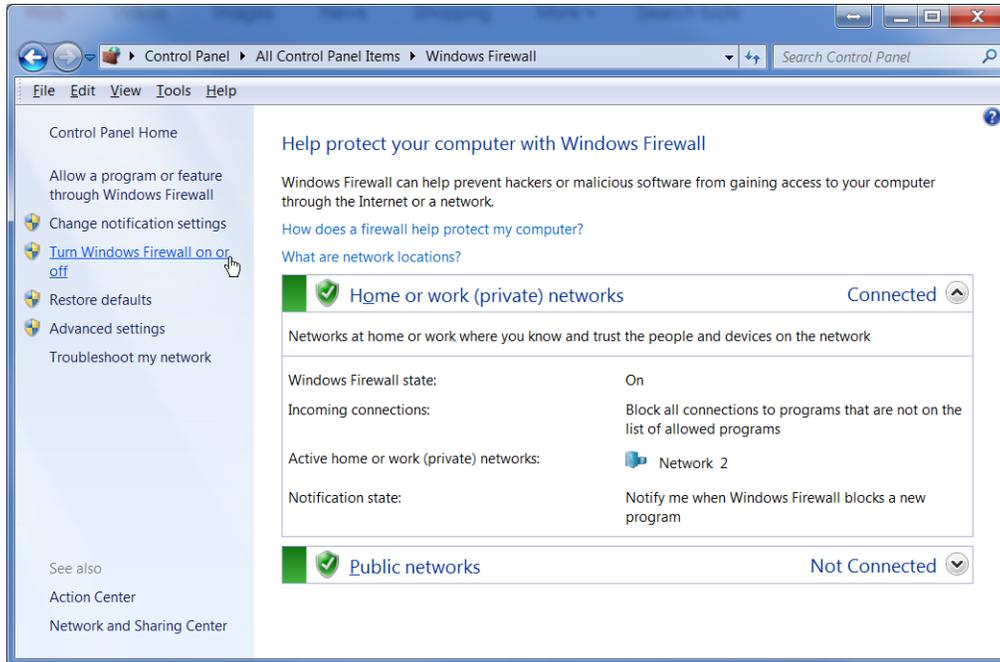
D Configuring Windows Firewall (Windows 7)

If you suspect that Windows Firewall is blocking the port, you can try turning the firewall off completely and then repeating the **Testing for a blocked port 58724 with telnet** the section. For assistance in configuring the Windows Firewall, please refer to the Microsoft website pertaining to the version of Windows that is installed.

<http://windows.microsoft.com/en-us/windows/understanding-firewall-settings#1TC=windows-7>

<http://windows.microsoft.com/en-us/windows/communicate-through-windows-firewall#1TC=windows-7>

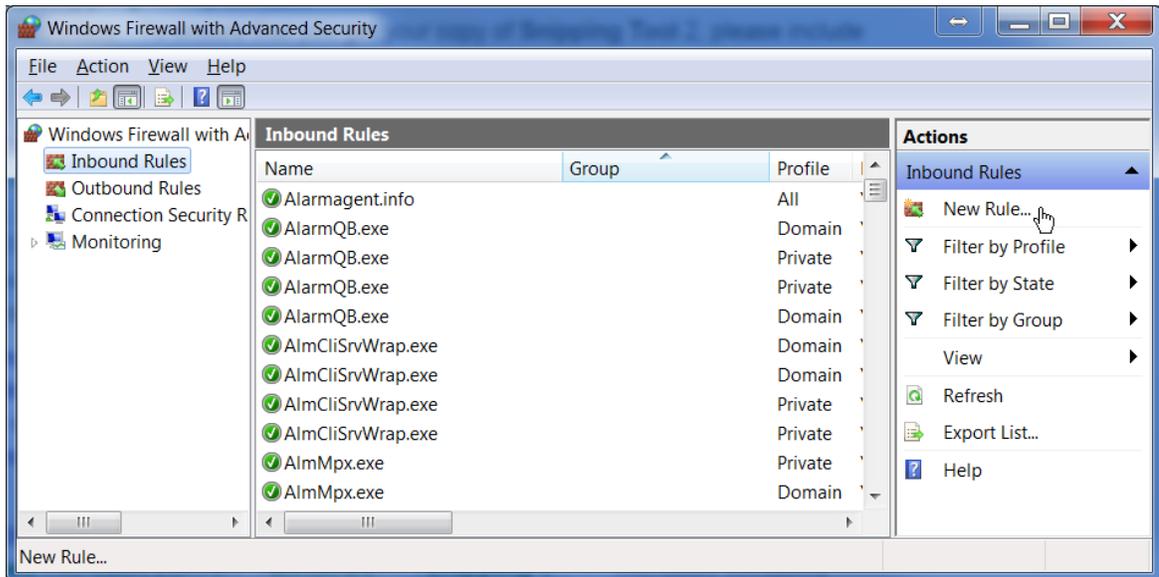
1. Start Window Firewall (**Control Panel > Windows Firewall**)
2. Select **Allow a program or feature through Windows Firewall**



3. The Advanced Security page will appear. Select **"Inbound Rules"**.



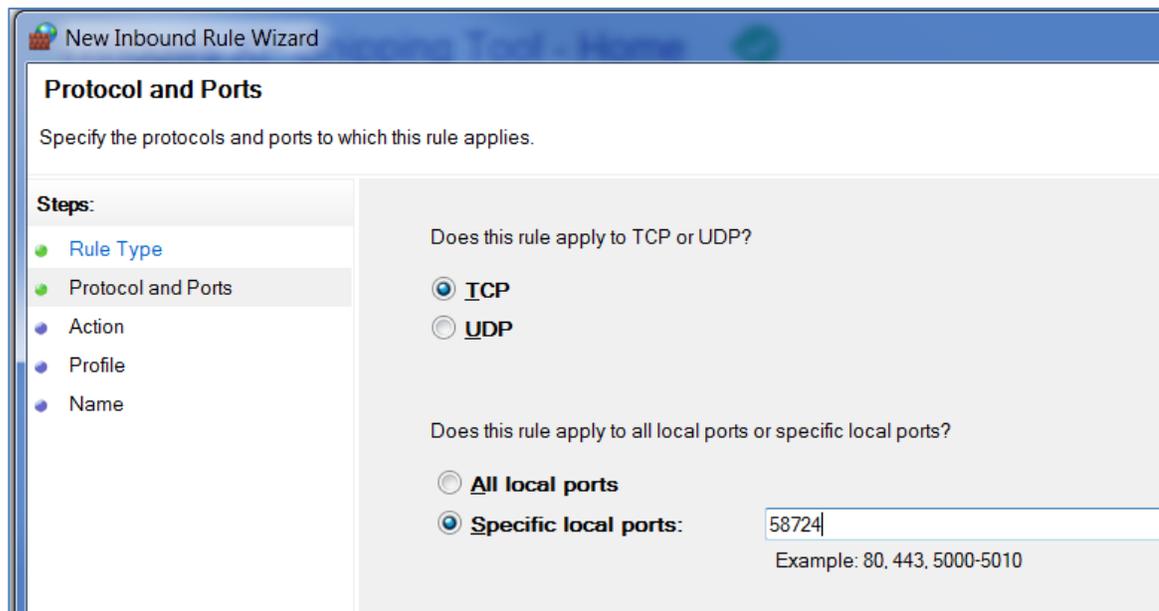
4. Select **New Rule**.



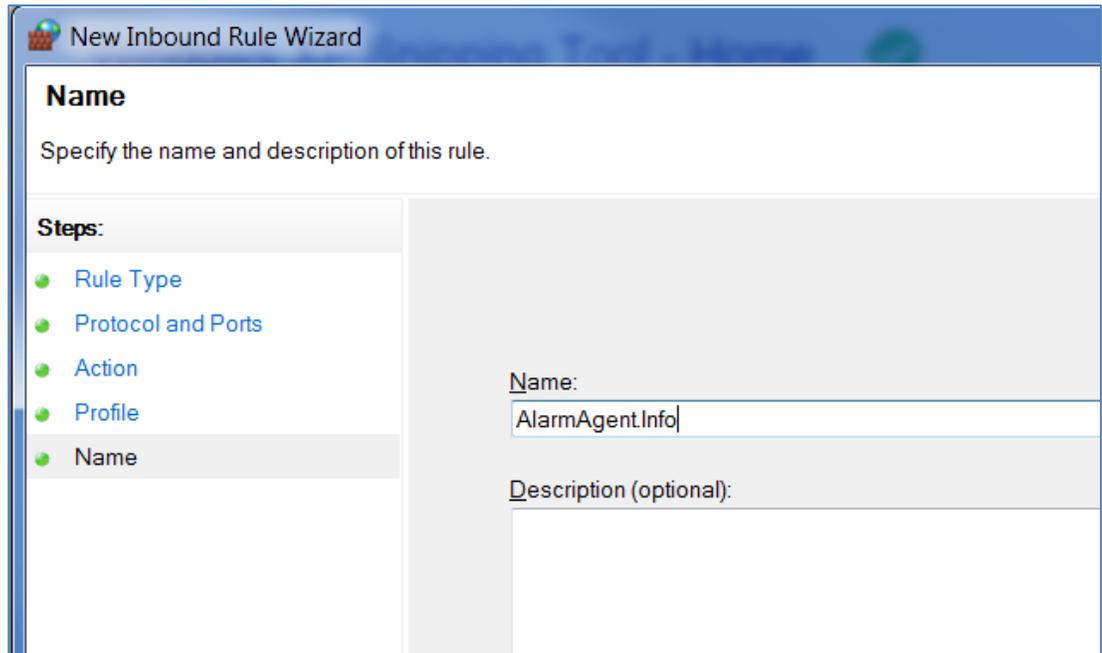
5. The **New Inbound Rule Wizard** will launch.

6. Click on the **Port** radio button; then **Next**.

7. Select **TCP**, **Specific local ports**, and enter **58724**; Click **Next**.



8. Select **Allow the connection** then click **Next**.
9. At the next window, check **Domain**, **Private**, and **Public** options. Click **Next**.
10. Give the rule a name, "**AlarmAgent.Info**" for example. Click **Finish**.



11. Close the Windows Firewall control panel.
12. Retest the connection using the procedure **Testing for a blocked port 58724 with telnet**

E Testing the OPC Server using the OPC Foundation's Sample Client

Once you have verified that the port is open and that you can establish a telnet connection to the remote RACO AlarmAgent.info server, the next step is to check that the OPC Server is working. We suggest that you test the connection with the standard OPC Foundation's Sample Client as it complies with the OPC specifications. It has been tested with the RACO OPC Server and the configuration is known and verified.

If the OPC Foundation's Sample Client cannot connect, then contact RACO Technical support for further assistance.

If the OPC Foundation's Sample Client can connect but your SCADA system cannot, then the problem lies outside of the RACO system. Please consult with your IT department and your SCADA developers for assistance. RACO Technical support can work with them to try to resolve the issue.

For complete instructions on installing and using the OPC Foundation's Sample Client refer to the RACO FAQ "**How can I test the RACO OPC Server using the OPC Foundation's Sample Client ?**" at

http://racoman.custhelp.com/app/answers/detail/a_id/891/kw/891

7 CONCLUSION

This concludes this procedure. If you have any questions about setting up AlarmAgent.info please contact **RACO** support.

----- End -----