

How to add FactoryTalk import to Nimbus Alarm Server

Nimbus Alarm Server will use a separate application (service) to access alarms from FactoryTalk.

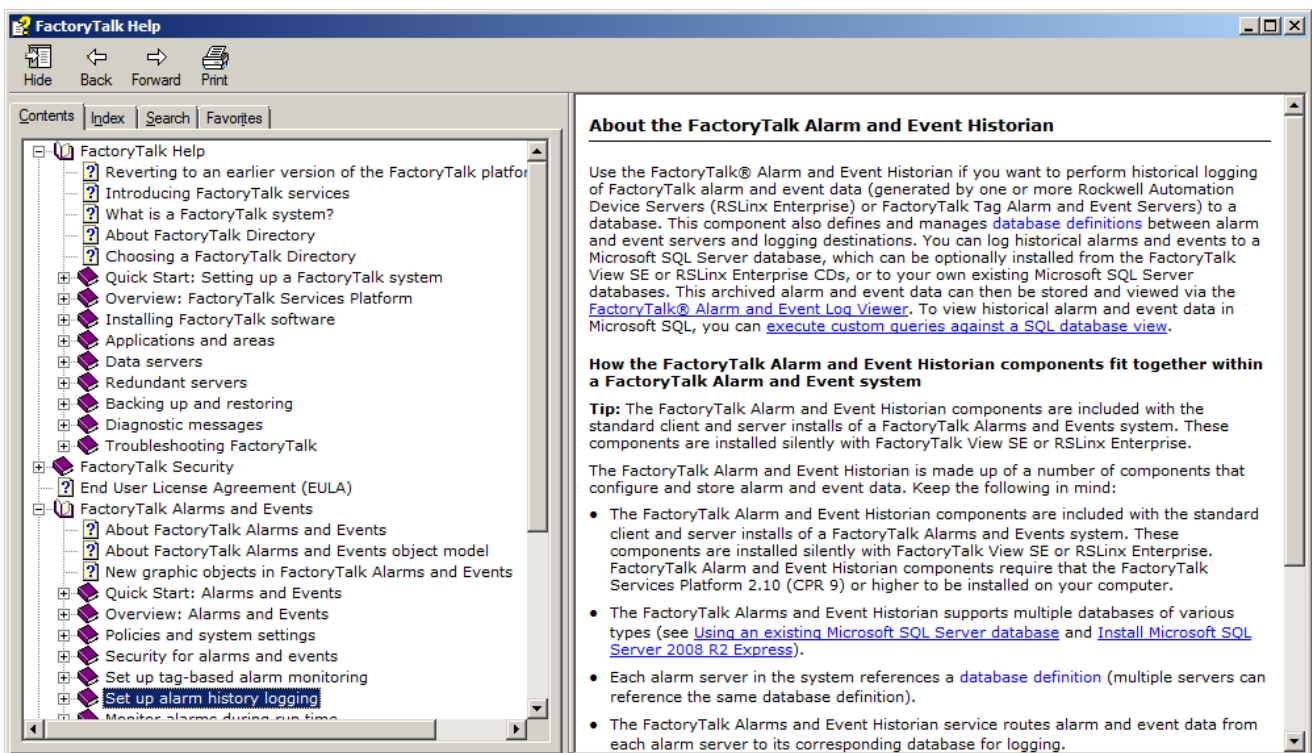
The application is named *FactoryTalk2Nimbus*. It will cyclically scan the *FactoryTalk SQL Alarm History* database. If the application finds any new alarms it will pass it on to *Nimbus Alarm Server*.

Since it is SQL and (depending of SQL setup) remote accessible, the application may be located either in the FactoryTalk server or in the Nimbus server, or even in some other server. Mostly all three softwares are located in the same machine.

FactoryTalk2Nimbus passes alarms to *Nimbus Alarm Server* either by placing the alarms directly in the Nimbus internal alarm queue or using TCP. The first method is the default method and requires that *FactoryTalk2Nimbus* is installed in the same server as *Nimbus Alarm Server*.

Setup FactoryTalk to store alarms in the historical database

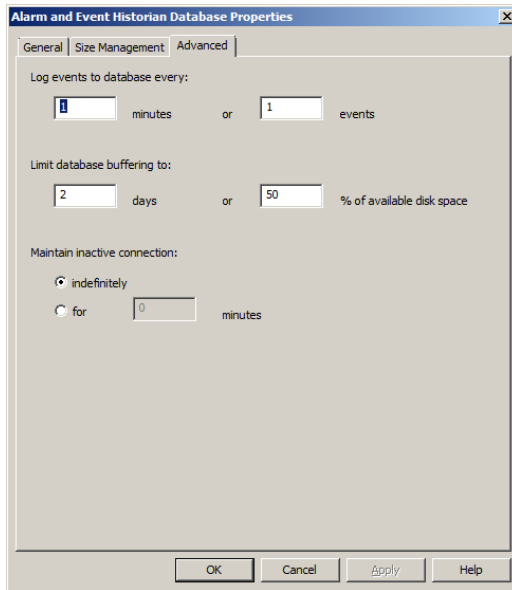
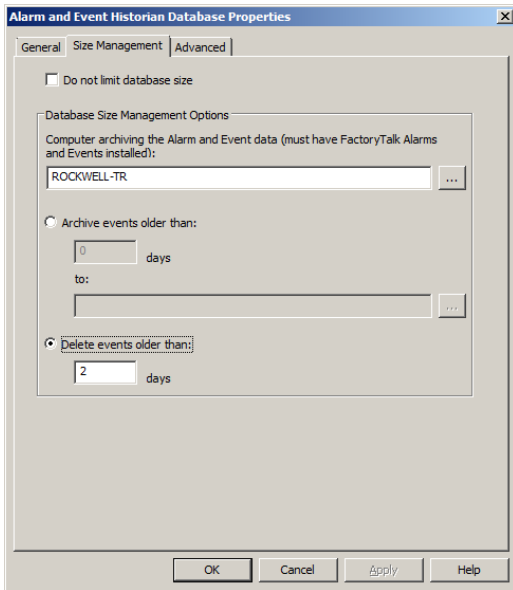
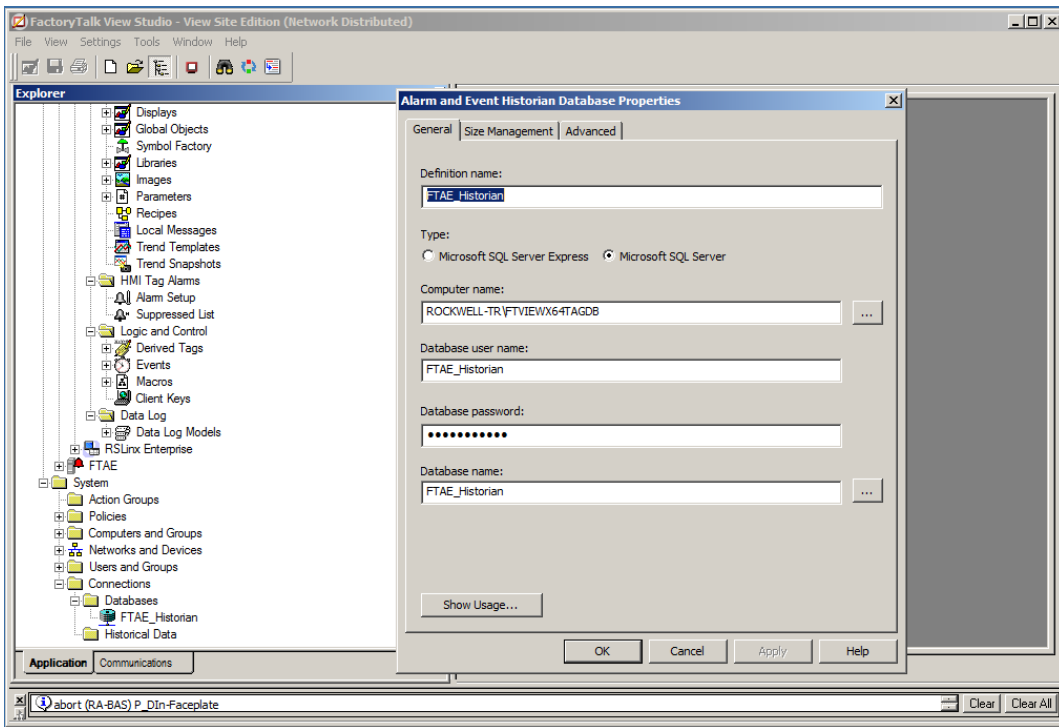
See the *FactoryTalk Administration Console Help (Contents)*, where you will find how to setup SQL storage of alarms in section *FactoryTalk Help -> FactoryTalk Alarms and Events -> Set up alarm history logging*.



When setting up the SQL connection you could use the name and password of your choice for the database, you must however later on edit the *FactoryTalk2Nimbus.ini* configuration file to reflect these settings.

If you wish to place *FactoryTalk2Nimbus* on another server you will have to ensure firewall and TCP settings in *SQL Server Configuration Manager* enables remote access to the SQL Server. You further on has to ensure the login method (which should be reflected in the connection string in *FactoryTalk2Nimbus.ini*) allows remote access from the server where *FactoryTalk2Nimbus* resides.

Here is an example of the SQL connection setup in FactoryTalk



FactoryTalk2Nimbus will never delete any rows from the SQL database since it is also used for presenting alarm history in the *FactoryTalk View Client*. You could set the deletion period as you like.

Ensure you select event log flush time to 1 minute and granularity to 1 event as above right to ensure Nimbus Alarm Server will detect new alarms as fast as possible.

Now the FactoryTalk setup is finished. Let's continue with the Nimbus applications.

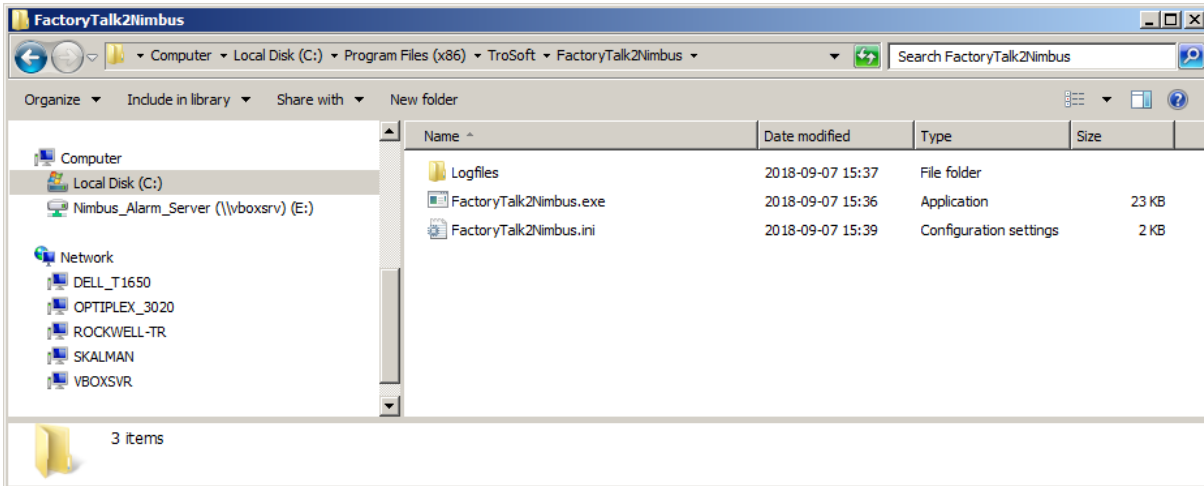
Install FactoryTalk2Nimbus

First of all install *Nimbus Alarm Server* on the server where it should reside before installing/configuring *FactoryTalk2Nimbus*.

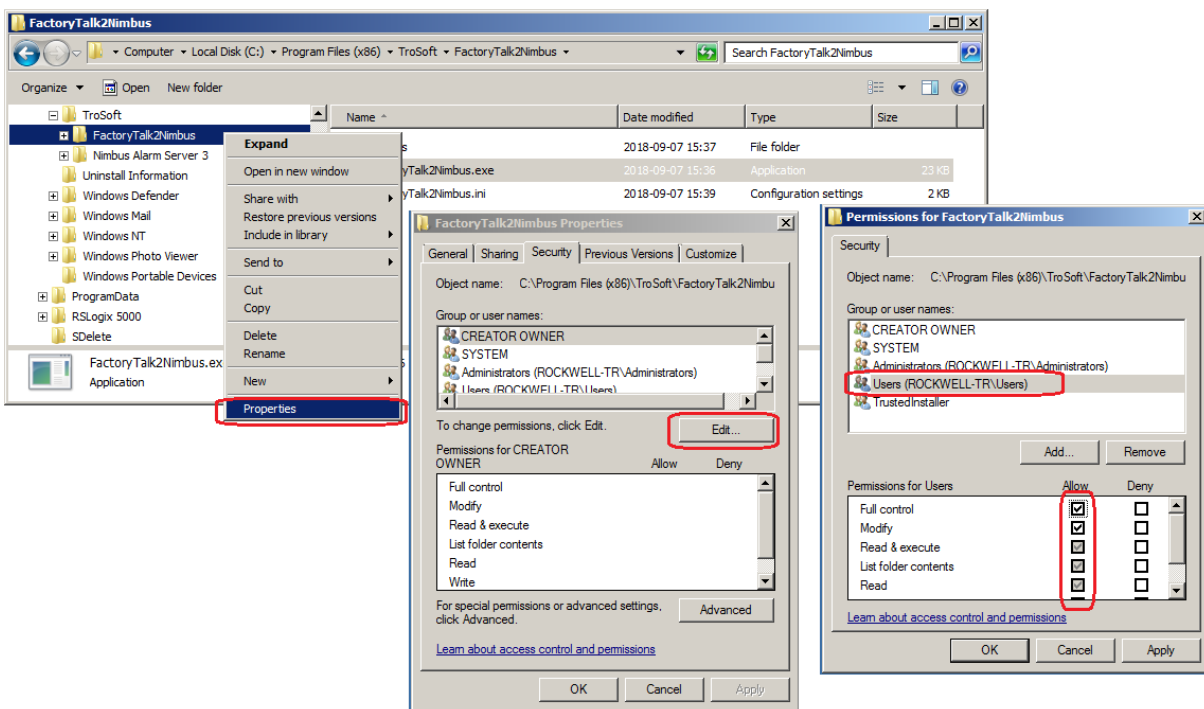
As the *FactoryTalk2Nimbus* application consists of only two files there is no installation program for it.

Create a new folder on the server where *FactoryTalk2Nimbus* should reside:

C:\Program Files (x86)\TroSoft\FactoryTalk2Nimbus

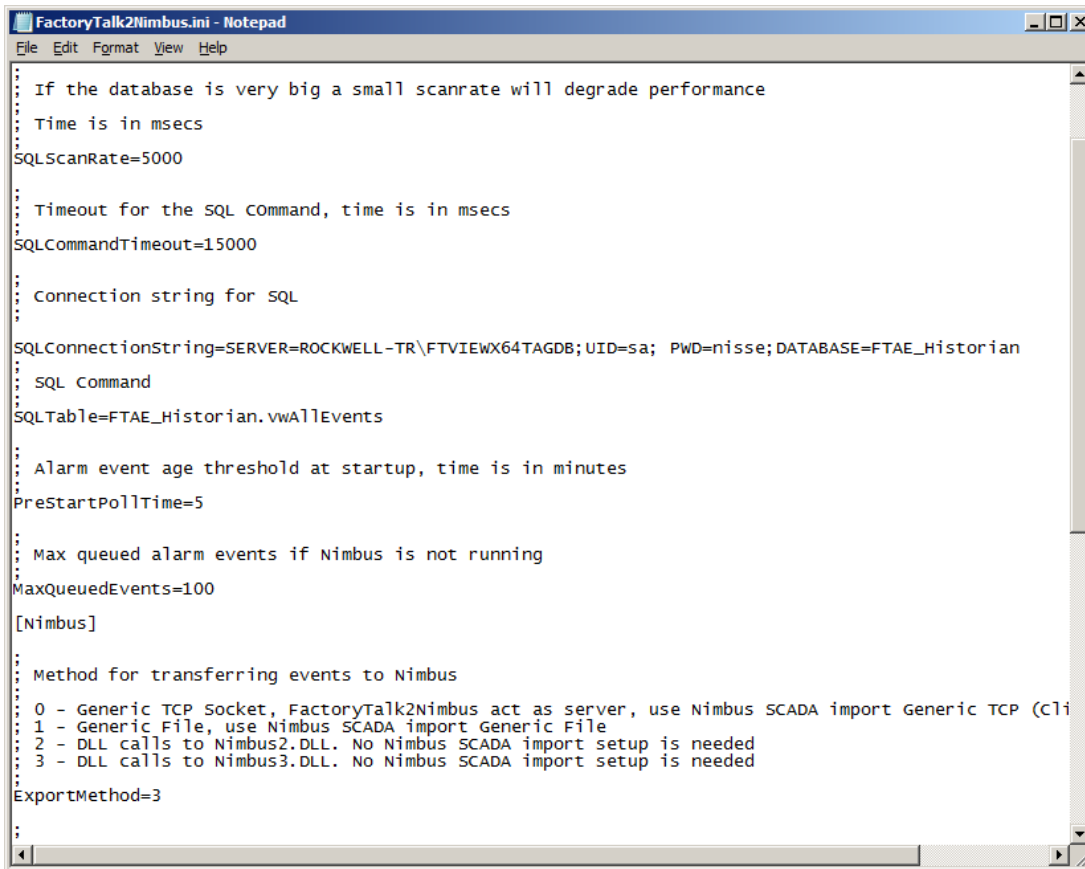


Copy the files *FactoryTalk2Nimbus.exe* and *FactoryTalk2Nimbus.ini* to the newly created folder



Set the *Folder Access Rights* as above (*Users -> Full control*).

You will now be able to edit the configuration file without the need to store it somewhere else or run *Notepad* as administrator. Now edit the configuration file using *Notepad*.



```
FactoryTalk2Nimbus.ini - Notepad
File Edit Format View Help
:
: If the database is very big a small scanrate will degrade performance
:
: Time is in msec
SQLScanRate=5000
:
: Timeout for the SQL Command, time is in msec
SQLCommandTimeout=15000
:
: Connection string for SQL
SQLConnectionString=SERVER=ROCKWELL-TR\FTVIEWX64TAGDB;UID=sa; PWD=nisse;DATABASE=FTAE_Historian
:
: SQL Command
SQLTable=FTAE_Historian.vwAllEvents
:
: Alarm event age threshold at startup, time is in minutes
PreStartPollTime=5
:
: Max queued alarm events if Nimbus is not running
MaxQueuedEvents=100
[Nimbus]
:
: Method for transferring events to Nimbus
:
: 0 - Generic TCP Socket, FactoryTalk2Nimbus act as server, use Nimbus SCADA import Generic TCP (Cl
: 1 - Generic File, use Nimbus SCADA import Generic File
: 2 - DLL calls to Nimbus2.DLL. No Nimbus SCADA import setup is needed
: 3 - DLL calls to Nimbus3.DLL. No Nimbus SCADA import setup is needed
ExportMethod=3
:
```

Edit the *SQLConnectionString* paramter as appropriate. If database name etc is the same as in the example you will only need to change the UID and PWD properties.

The default database scan rate is 5 seconds (5000 msec).

When *FactoryTalk2Nimbus* is started, its first SQL select command will use the current time subtracted by the number of minutes in the *PreStartPollTime* parameter. The default setting is *PreStartPollTime=5*. This will cause *FactoryTalk2Nimbus* to retrieve all alarms in the SQL database that is no more than 5 minutes old. The next alarm poll will use the most recent found alarm timestamp to find newly occurred alarms and so on.

This ensures no alarms are lost during server startup.

However if *FactoryTalk* inserts a lot of new alarm events into the SQL database during server startup this time need to be adjusted. It is also possible to enter a negative number, ex -2 will cause *FactoryTalk2Nimbus* to retrieve alarms occurring 2 minutes or later from when it was started.

Install FactoryTalk2Nimbus and Nimbus Server at different servers

The default Nimbus export method (transferring alarm events to Nimbus) is *ExportMethod=3*. This means the *FactoryTalk2Nimbus* will place the new alarms directly into the Nimbus 3 server alarm queue using a DLL. This makes the Nimbus setup very easy, since no *SCADA Import* setup is needed.

If Nimbus server and *FactoryTalk2Nimbus* is installed on different servers, *ExportMethod=0* should be used. The *SCADA Import Generic TCP (client)* need to be added and configured in *Nimbus Explorer*.

If *ExportMethod=0* then *FactoryTalk2Nimbus* will act as a TCP socket server on port 14000 and *Nimbus Alarm Server* will connect as client to this port.

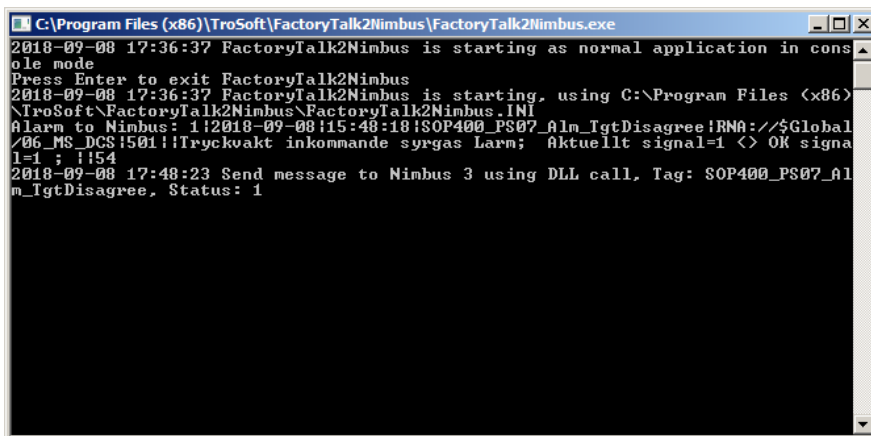
The port number may be changed in the configuration file and in *Nimbus Explorer SCADA Import* setup.

You will need to setup firewall rules as appropriate.

Starting FactoryTalk2Nimbus

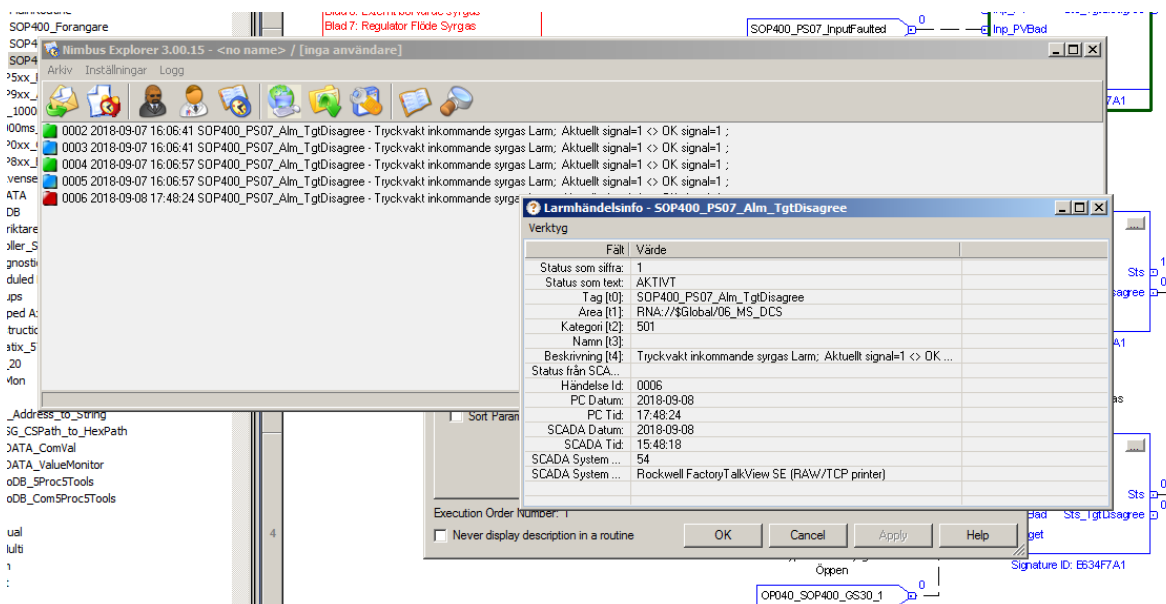
First of all start *Nimbus Alarm Server*

Start *FactoryTalk2Nimbus* as *Administrator*. It should generally be run as a service, but before configuring it as a service we recommend you test it as it will provide some information in the *FactoryTalk2Nimbus* window. This information is also stored in the text based logfiles created in the *LogFiles* subfolder. The subfolder will be created automatically.



```
C:\Program Files (x86)\TroSoft\FactoryTalk2Nimbus\FactoryTalk2Nimbus.exe
2018-09-08 17:36:37 FactoryTalk2Nimbus is starting as normal application in console mode
Press Enter to exit FactoryTalk2Nimbus
2018-09-08 17:36:37 FactoryTalk2Nimbus is starting, using C:\Program Files (x86)\TroSoft\FactoryTalk2Nimbus\FactoryTalk2Nimbus.INI
Alarm to Nimbus: 1:2018-09-08!15:48:18!SOP400_PS07_Alm_TgtDisagree!RNA://$Global/06_MS_DCS!501!!Tryckvakt inkommande syrgas Larm; Aktuell signal=1 <> OK signal=1 ; !154
2018-09-08 17:48:23 Send message to Nimbus 3 using DLL call, Tag: SOP400_PS07_Alm_TgtDisagree, Status: 1
```

Change some alarm in *FactoryTalk*. It should appear just as the *SOP400_PS07_Alm_TgtDisagree* alarm above.



The screenshot shows the Nimbus Explorer interface with a list of alarms. A dialog box titled "Larmhändelseinfo - SOP400_PS07_Alm_TgtDisagree" is open, displaying the following details:

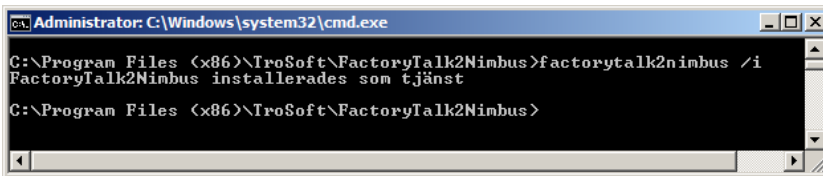
Verktyg	Fält	Värde
Status som siffra:		1
Status som text:		AKTIVT
Tag [0]:		SOP400_PS07_Alm_TgtDisagree
Area [1]:		RNA://\$Global/06_MS_DCS
Kategori [2]:		501
Namn [3]:		
Beskrivning [4]:		Tryckvakt inkommande syrgas Larm; Aktuell signal=1 <> OK ...
Status från SCA...		
Händelse Id:		0006
PC Datum:		2018-09-08 17:48:24
SCADA Datum:		2018-09-08 15:48:18
SCADA Tid:		15:48:18
SCADA System ...:		54
SCADA System ...:		Rockwell FactoryTalkView SE (RAW/TCP printer)

The alarm should also appear in *Nimbus Explorer* as above. Double click the alarm in *Nimbus Explorer* to view all properties.

Configuring FactoryTalk2Nimbus to run as a Service

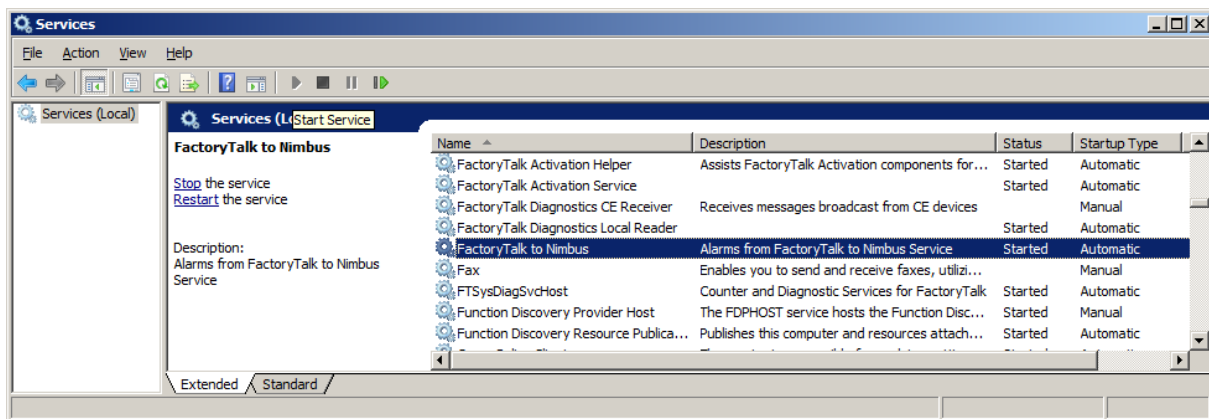
Stop the application by pressing *Enter* in the *FactoryTalk2Nimbus* window.

Open a *CMD*-window as *Administrator* and step down to the *FactoryTalk2Nimbus* folder.



```
Administrator: C:\Windows\system32\cmd.exe
C:\Program Files (x86)\TroSoft\FactoryTalk2Nimbus>factorytalk2nimbus /i
FactoryTalk2Nimbus installerades som tjänst
C:\Program Files (x86)\TroSoft\FactoryTalk2Nimbus>
```

Use the */i* switch to add *FactoryTalk2Nimbus* to the *Service Control Manager*



Open *Service Control Manager* and start the *FactoryTalk2Nimbus* service.

It will automatically start when the server is restarted but needs to be started manually the first time.

To remove it from services, use the switch */u*

If you configured SQL to use only *Windows Authentication* instead of *UID / PWD* you might need to change user in the *Logon As* tab in the services' properties. The service will by default run as *Local System Account*.