

Import alarms from ABB800xA to Nimbus

Nimbus use OPC AE (Alarms and Events) to subscribe for alarm events from 800xA.

The Nimbus Alarm Server itself has no build-in feature for OPC AE but there is an external application, *NimOPC* (Nimbus OPC AE link), which is downloadable from www.automatisera.nu.

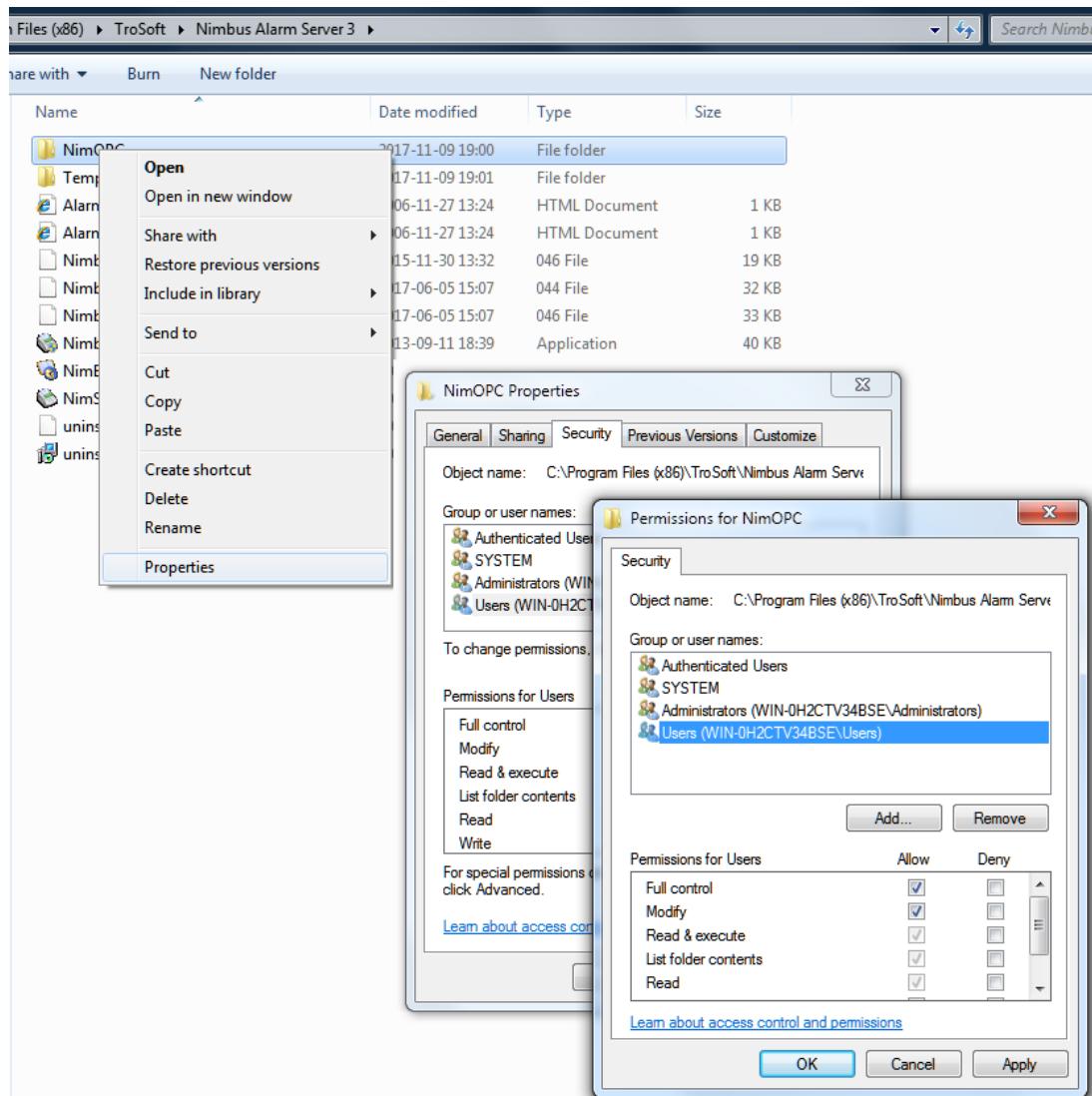
Install and configure NimOPC

Create a new folder, *NimOPC*, where Nimbus Alarm Server were installed – usually
C:\Program Files (x86)\TroSoft\Nimbus Alarm Server 3

Open the downloaded *NimOPC_2.0.0.xx.zip* file and copy the files to the newly created *NimOPC* folder.

Set the folder access rights on the new *NimOPC* folder for group *Users* to *Full control*, by right clicking the *NimOPC* folder -> *Properties* -> *Security* -> *Edit*.

Select *Users* group and check *Full control*. Click *Ok* twice.



Folder access rights needs to be changed, or it will be difficult to edit *NimOPC.ini*

Open the *NimOPC.ini* file. Uncomment the *ProgId=ABB.OPCEventServer* row. Save *NimOPC.ini*.

Start *800xA* if it not running. Start *NimOPC.exe* as *Administrator*. If it does not connect to the *800xA* AE server, try to run it using an account with proper rights (access might need to be setup in *800xA*).

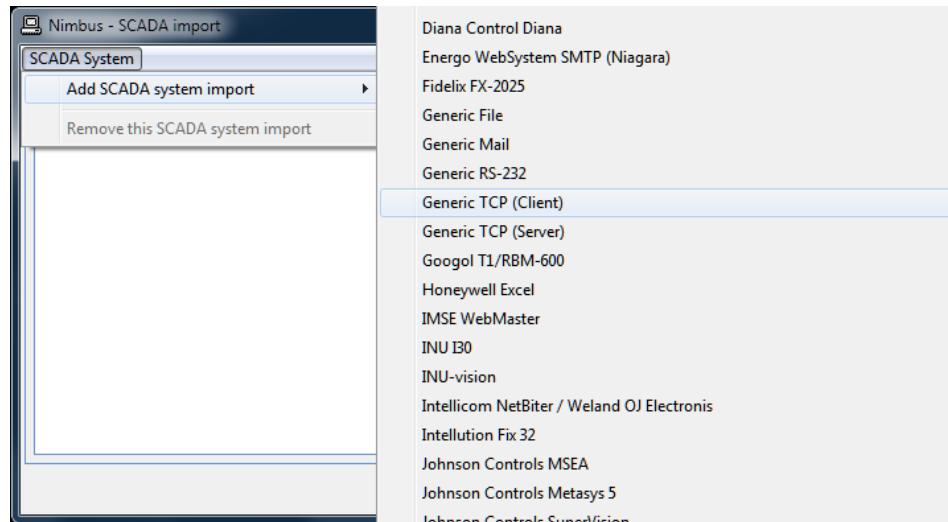
If you get a question about exposing ports to the network, select desired networks and *Ok*. *NimOPC* exposes a TCP socket port where *Nimbus* will connect (usually port 14000).

Source	Time	Sever...	NewState	Condition	Subcondition	Event...	Message	ChangeM...	EventType	To Nimbus	[t0] Tag	[t1] Al
+26562=573FC001	2022-12-19 15:...	100	0x0001	0256210209	+26562=573FC001	1	Fli;zkt: Avslagen si;zke...	0x0001	0x0004	Inactive	+26562=573FC001	
+2646a=573SA002	2022-12-19 15:...	100	0x0001	0246310230	+2646a=573SA002	1	Spj;zill: Li;zge Hand i;z...	0x0001	0x0004	Inactive	+2646a=573SA002	
+2646a=573SA001	2022-12-19 15:...	100	0x0001	0246310230	+2646a=573SA001	1	Spj;zill: Li;zge Hand i;z...	0x0001	0x0004	Inactive	+2646a=573SA001	
+2646a=573AK001	2022-12-19 15:...	100	0x0001	0246310228	+2646a=573AK001	1	Fli;zkt: Li;zge Hand i;zv...	0x0001	0x0004	Inactive	+2646a=573AK001	
+26562=573FC001	2022-12-19 15:...	100	0x0003	0256210209	+26562=573FC001	1	Fli;zkt: Avslagen si;zke...	0x0003	0x0004	Active	+26562=573FC001	
+2646a=573SA002	2022-12-19 15:...	100	0x0003	0246310230	+2646a=573SA002	1	Spj;zill: Li;zge Hand i;z...	0x0003	0x0004	Active	+2646a=573SA002	
+2646a=573SA001	2022-12-19 15:...	100	0x0003	0246310230	+2646a=573SA001	1	Spj;zill: Li;zge Hand i;z...	0x0003	0x0004	Active	+2646a=573SA001	
+2646a=573AK001	2022-12-19 15:...	100	0x0003	0246310228	+2646a=573AK001	1	Fli;zkt: Li;zge Hand i;zv...	0x0003	0x0004	Active	+2646a=573AK001	
Nimbus Alarm Server	2022-12-19 14:...	--		Connected								

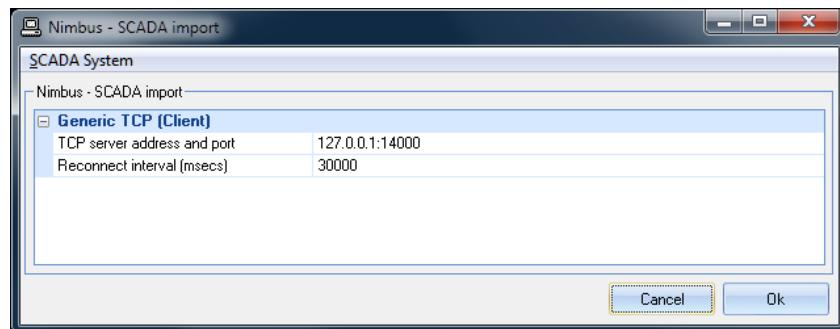
The title bar show some info and the text *ABB.OPCEventServer*.

Some events will hopefully appear in the list when they occur. *NimOPC* will automatically subscribe to all events.

Configure Nimbus to connect to NimOPC



In *Nimbus Explorer* select *Setup* -> *SCADA import setup*. Select *SCADA System* -> *Add SCADA system import* ->*Generic TCP (Client)*



Nimbus has default values as above.

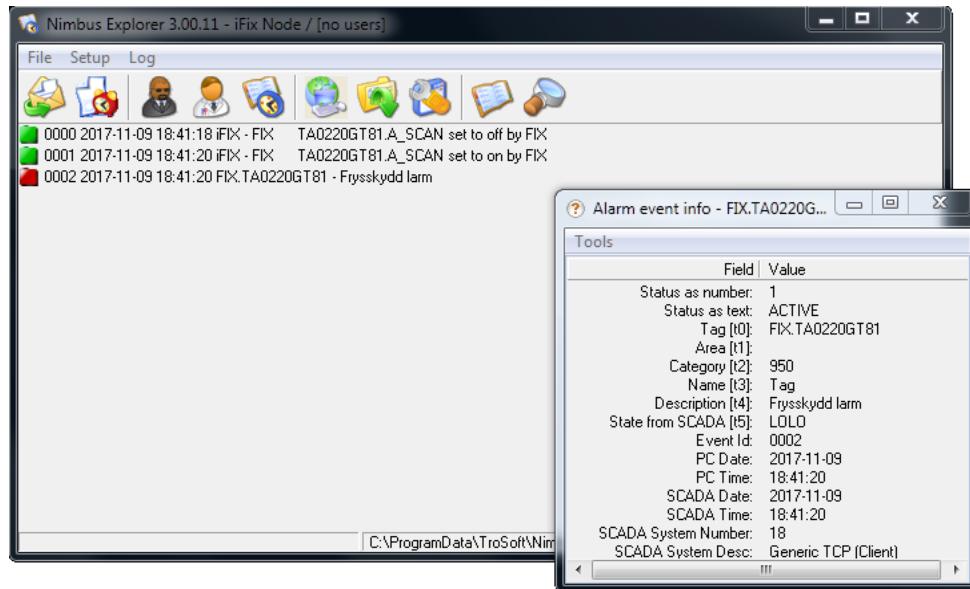
Nimbus Alarm Server may aswell be installed in some other server than the *NimOPC / ABB800xA* node. If that is the case the above IP should be changed and necessary firewalls be configured accordingly.

Port number should correspond to the port number set in *NimOPC.ini*. The default value is 14000.

Start the *Nimbus Server* either using *Service Control Manager* if it is installed as service or using the *File* menu.

Nimbus should now connect to the *NimOPC* application, this will be indicated in the *NimOPC list view*.

Try some test alarms and ensure they appear in Nimbus Explorer.



In the above example some events have been sent from *NimOPC* to the *Nimbus Alarm Server*.

Double click the alarm event to open the *Alarm Event Info* form.

Configure the NimOPC application to run as service

To install *NimOPC* as service start *NimOPC* using the command line switch */i* from an elevated command prompt, ex:

NimOPC.exe /i

Uninstall from services using the */u* command line switch (stop the application first)

The first time *NimOPC* needs to be started manually using the *Service Control Manager (SCM)*.

Usually *NimOPC* should be run using the same service account as 800xA. The default user is *Local System Account*.

Also select *Startup type: Automatic (Delayed start)* to ensure 800xA has started properly before *NimOPC* starts.

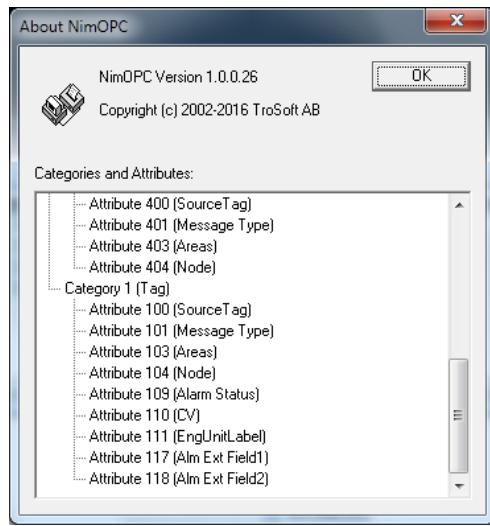
Warning! When starting *NimOPC* as service (or restarting it) ensure that you do not have any running *NimOPC* application instance. The first started *NimOPC* - whether it is a service or application does not matter - will use the TCP and will prevent any following *NimOPC* from using that port.

Configure NimOPC for more info

Attributes

The 800xA OPC AE server is able to provide some more information about each alarm event. This is in the OPC world known as *Attributes*.

Show the *NimOPC* form, select *Help -> About NimOPC*



Here you can see what numbers the attributes have.

Open the *NimOPC.ini* file.

```
NimOPC.INI - Notepad
File Edit Format View Help
[Nimbus]

; Formatting for the string(s) sent to Nimbus (these formatings are also readable in the
; listview columns t0..t5)

[Source]           - OPC AE Source
[Severity]         - Severity 0..999
[ConditionName]   - OPC AE Condition
[Message]          - OPC AE Message
[SubconditionName] - OPC AE Subcondition
[EventCategory]    - OPC AE Event Category
[2.5]              - OPC AE Category 2, Attribute 5

Fields may be concatenated, ex
t4=[Message] [1.5][2.5][3.5]
t1=EventCategory: [eventCategory] Attribute: [1.1][2.2]

is valid. If ex category 2, attribute 5 does not exist for a certain event, it will simply not be ap
Categories and Attributes is broswed by the About dialog box in NimOPC.

Any text may be entered, ex
t0=Alarm from Node 21: [source]

It is also possible to have different formats depending of alarm event type, ex one format
when the alarm goes active and another format when it goes back to normal. Use parameter suffix, ex:
t3=[ConditionName]
t3_Active=[ConditionName] [2.6]

Suffixes may be _InActive _Active and _Acked (ex t3_InActive, t3_Active, t3_Acked)

t0=[Source]
t1=
t2=[Severity]
t3=[ConditionName]
t4=[Message]
t5=[SubconditionName]

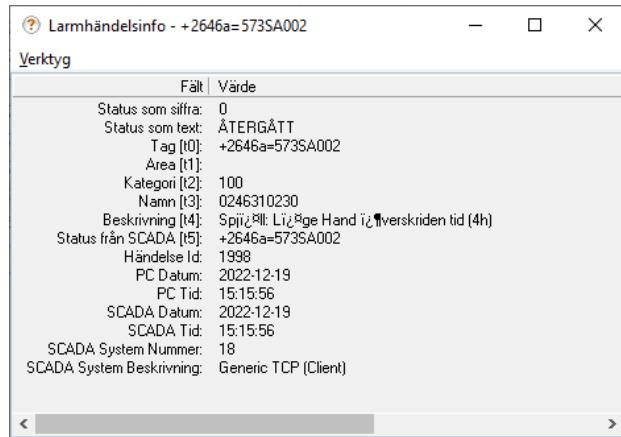
t1=[1.103]
; ConditionName
; t3_InActive=[ConditionName] [2.5]
; t3_Active=[ConditionName] [2.6]
; t3_Acked=[ConditionName] [2.7]

; Severity (range(s) if you like) to ignore (will not be sent to Nimbus)
IgnoreSeverity=1-100,110-125,201,208
;

; ChangeMask(s) to ignore (will not be sent to Nimbus)
bit masks for m_ChangeMask
OPC_CHANGE_ACTIVE_STATE 0x0001
OPC_CHANGE_ACK_STATE    0x0002
```

Select the field(s) where to put the new attributes. In the example above we just use the *1.103 Areas* attribute and put into the *T1*-field.

Save *NimOPC.ini*. Restart *NimOPC*.

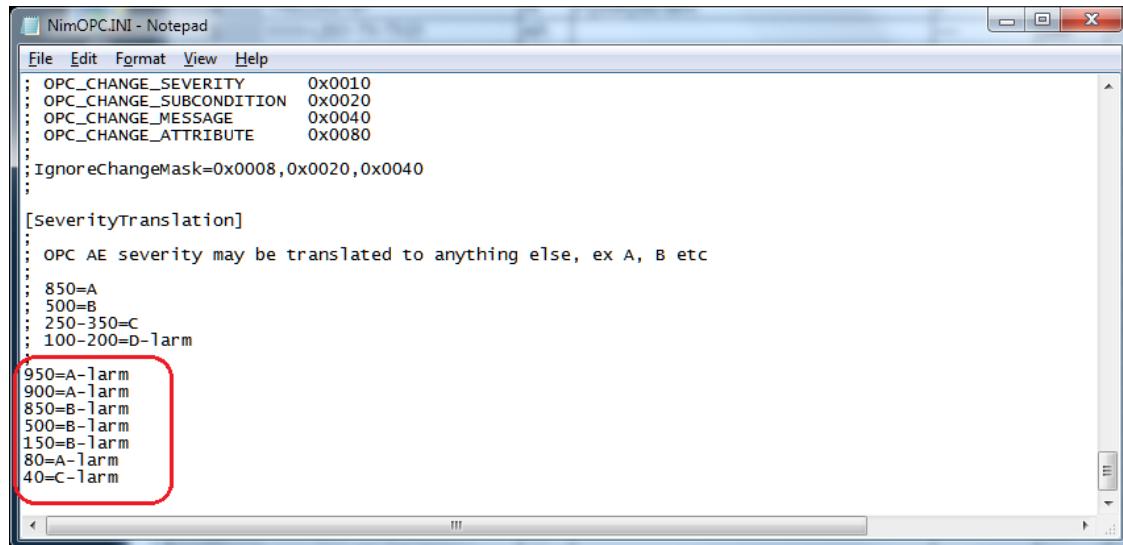


This is how it looks in Nimbus (the sample is from an simulator unfortunately presenting ÅÄÖääö wrong).

Category / Severity

Category may also differ from plant to plant and customer needs.

The severity may be translated by *NimOPC* to something more

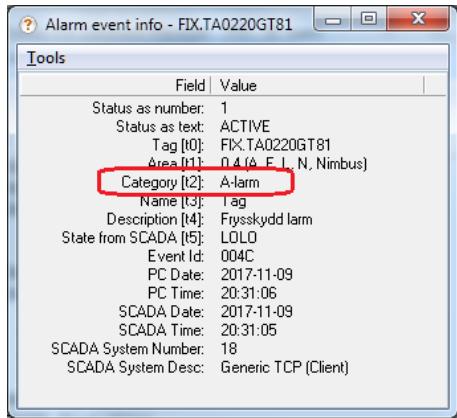


Enter the Severity number and what it should be translated to in the *[SeverityTranslation]* section.

Save *NimOPC.ini*. These changes take effect immediately, no programs need to be restarted.

Source	Time	Sever...	NewState	Cond...	Subco...	Message	ChangeM...	EventTyp...	To Nimbus	[t0] Tag	[t1] Area	[t2] Category	[t3] Name	[t4] Descr	
FDX.TA0220GT81	20-31-05.790	950	0x0003	Tag	LOLO	Fryskylld larm	0x0004	Active	FDX.TA0220GT81	0.4 (A, F, L, N, Nimbus)	A-larm	Tag	Fryskylld larm		
FDX	20-31-05.790	150	0x0003			FDX	0x0002	Active	FDX		B-larm	FDX	FDX	FDX	
FDX	20-31-05.704	150	0x0003			FDX	0x0008	Active	FDX		B-larm	FDX	TA0220...		
FDX.TA0220GT81	20-30-16.038	950	0x0003	Tag	LOLO	Fryskylld larm	0x0008	0x0004	Active	FDX.TA0220GT81	A-larm	Tag	Fryskylld larm		
FDX	20-30-18.331	150	0x0337			FDX	0x0060	0x0002	Active	FDX	B-larm	FDX	TA0220...		
FDX	20-30-20.438	150	0x0337			FDX	0x0160	0x0002	Active	FDX	B-larm	FDX	TA0220...		
FDX.TA0220GT81	20-23-31.690	950	0x0003	Tag	LOLO	Fryskylld larm	0x0011	0x0004	Active	FDX.TA0220GT81	0.4 (A, F, L, N, Nimbus)	950	Tag	Fryskylld larm	

Here, the previous severity number 950 is now translated to the text *A-larm* before it is sent to *Nimbus*.



This is how it looks in Nimbus. The text may be used as filter in the *Alarm Route Profiles* just as any other field.

Other settings and filters

There are some other settings in *NimOPC.ini* that change the behaviour and look. Ex to filter out unwanted events (operator messages).

Unfortunately there are no specific documentation for *NimOPC*, however the INI-file is pretty well commented.