# 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

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

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*.

Name		Date modified	Туре	Size			
\rm Nim 🖓		2917-11-09 19:00	File folder				
퉬 Tem	Open	17-11-09 19:01	File folder				
🧉 Alarn	Open in new window	06-11-27 13:24	HTML Document	1 KB			
🥖 Alarn	Share with	06-11-27 13:24	HTML Document	1 KB			
🗋 Nimt	Restore previous versions	15-11-30 13:32	046 File	19 KB			
🗋 Nimt	Include in library	17-06-05 15:07	044 File	32 KB			
Nimt	Send to	17-06-05 15:07	046 File Application	33 KB 40 KB			
S NimE	Cut			1010	52		
🗞 Nims	Сору	L NimOPC P	roperties				
unins	Paste	General Sha	aring Security Previou	s Versions Custon	nize		
🔂 unins	Create shortcut	Object name	: C:\Program Files (x8)	5)\TroSoft\Nimbus	Alarm Serve		
	Delete	Group or un					~
	Rename	Authen	ticated User	sions for NimOP	C		^
	Properties	& SYSTE	M Security	]			
	Topenes	Adminis & Adminis	strators (WIN	C) P		N.N	
		🔏 Users (	WIN-0H2C1 Object	name: C:\Progra	m Files (x86) \ 170 Sof	t (Nimbus Alarm Serv	/e
		To change p	Group Group	or user names:			_
			88 AL	thenticated Users			
		Permissions	for Users	/STEM		inistate)	
		Full contro	al 👔	sers (WIN-0H2CTV)	H2CTV34B3EV4011 34BSE\Users)	inistrators)	
		Modify					
		Read & ex	(ecute				
		Bead	contents		Add	Remove	٦
		Write					
		For special p	ermissions (	ions for Users	Allo	w Deny	-
		click Advance	ced. Full of	control			
		Leam about	access cor	ty d 8 oversite			
			List f	older contents			
			Read	3	4		
			Leam a	bout access contro	l and permissions		
					OK Can	cel Apply	_
							_

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).

ABBServer_AE_Emulator - Connected (server is running and we are subscribing) - NimOPC											- 0	×
<u>F</u> ile <u>H</u> elp												
Source	Time	Sever	NewState	Condition	Subcondition	Event	Message	ChangeM	EventType	To Nimbus	[t0] Tag	[t1] A
+26562=573FC001	2022-12-19 15:	100	0x0001	0256210209	+26562=573FC001	1	Flī¿¤kt: Avslagen sī¿¤ker	0x0001	0x0004	Inactive	+26562=573FC001	
+2646a=573SA002	2022-12-19 15:	100	0x0001	0246310230	+2646a=573SA002	1	Spjīz¤ll: Līz¤ge Hand īz¶	0x0001	0x0004	Inactive	+2646a=573SA002	
+2646a=573SA001	2022-12-19 15:	100	0x0001	0246310230	+2646a=573SA001	1	Spjīz¤ll: Līz¤ge Hand īzī	0x0001	0x0004	Inactive	+2646a=573SA001	
+2646a=573AK001	2022-12-19 15:	100	0x0001	0246310228	+2646a=573AK001	1	Flīį¤kt: Līį¤ge Hand īį līv	0x0001	0x0004	Inactive	+2646a=573AK001	
+26562=573FC001	2022-12-19 15:	100	0x0003	0256210209	+26562=573FC001	1	Flī¿¤kt: Avslagen sī¿¤ker	0x0003	0x0004	Active	+26562=573FC001	
+2646a=573SA002	2022-12-19 15:	100	0x0003	0246310230	+2646a=573SA002	1	Spjï/¤ll: Lï/¤ge Hand ï/¶	0x0003	0x0004	Active	+2646a=573SA002	
+2646a=573SA001	2022-12-19 15:	100	0x0003	0246310230	+2646a=573SA001	1	Spjï/¤ll: Lï/¤ge Hand ï/¶	0x0003	0x0004	Active	+2646a=573SA001	
+2646a=573AK001	2022-12-19 15:	100	0x0003	0246310228	+2646a=573AK001	1	Flī; ¤kt: Lī; ¤ge Hand ï; līv	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**

Rimbus - SCADA import	Diana Control Diana
SCADA System	Energo WebSystem SMTP (Niagara)
Add SCADA system import	Fidelix FX-2025
Remove this SCADA system import	Generic File
Remove this SCADA system import	Generic Mail
	Generic RS-232
	Generic TCP (Client)
	Generic TCP (Server)
	Googol T1/RBM-600
	Honeywell Excel
	IMSE WebMaster
	INU I30
	INU-vision
	Intellicom NetBiter / Weland OJ Electronis
	Intellution Fix 32
	Johnson Controls MSEA
	Johnson Controls Metasys 5
	Johnson Controls SuperVision

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

	Nimbus - SCADA import		
SC	ADA System		
ΓN	imbus - SCADA import		
E	Generic TCP (Client)		
	TCP server address and port	127.0.0.1:14000	
	Reconnect interval (msecs)	30000	
			Cancel Ok

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.

🔞 Nimbus Explorer 3.00.11 - iFix Node / [no users]	
File Setup Log	
🍣 🕼 😰 🔊 🚷 🚷 🚳 🖗	
0000 2017-11-09 18:41:18 iFIX - FIX TA0220GT81.A_SCAN set to off by FIX	
0001 2017-11-09 18:41:20 FIX + FIX TA0220GT81.A_SCAN set to on by FIX =	
	🕐 Alarm event info - FIX.TA0220G 🗖 🔲 🌋
	Tools
	Field Value
	Status as number: 1
	Status as text: ACTIVE
	Area [1]:
	Category [t2]: 950
	Name [t3]: Tag
	Description [t4]: Frysskydd Iarm
	EventId: 0002
	PC Date: 2017-11-09
	PC Time: 18:41:20
	SCADA Date: 2017-11-09
	SUADA Lime: 18:41:20
C:\ProgramData\TroSoft\Nim	SCADA System Number: 18 SCADA System Desc: Generic TCP (Client)

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).

Ususally *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 - wheter 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.



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.

? Larmhändelsinfo - +264	_	×	
<u>V</u> erktyg			
Fält	Värde		
Status som siffra: Status som text: Tag (0): Area [1]: Namn [3]: Beskrivning [44]: Status från SCADA [45]: Händelse Id: PC Datum: PC Tid: SCADA Tid: SCADA Tid: SCADA Tid: SCADA System Nummer: SCADA System Beskrivning:	0 ÅTERGÅTT +2646a=573SA002 100 0246310230 Spii∠¤i: Lit∠¤ge Hand ĭ∠¶verskriden +2646a=573SA002 1998 2022-12-19 15:15:56 2022-12-19 15:15:56 18 Generic TCP (Client)	tid (4h)	
<			>

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

### **Category / Severity**

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

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

NimOPC.INI - Notepad	
<u>File Edit Format View H</u> elp	
; OPC_CHANGE_SEVERITY 0x0010 ; OPC_CHANGE_SUBCONDITION 0x0020 ; OPC_CHANGE_MESSAGE 0x0040 ; OPC_CHANGE_ATTRIBUTE 0x0080 ; IgnoreChangeMask=0x0008,0x0020,0x0040 ;	^
[SeverityTranslation]	
; OPC AE severity may be translated to anything else, ex A, B etc	
850=A 500=B 250-350=C 100-200=D-larm	
950=A-larm 900=A-larm 850=B-larm 500=B-larm 150=B_larm	
80=A-larm 40=C-larm	E
<	►

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.

Proficy.OPCIFDKA	E.1 - NimOPC		10											
Ele Help														
Source	Time	Sever	NewState	Condi	Subco	Message	ChangeM	EventType	To Nimbus	[t0] Tag	[t1] Area	[t2] Category	[t3] Name	[14] Descr 🔺
FDX.TA0220GT81	20:31:05.790	950	0x0003	Tag	LOLO	Frysskydd larm	0x0041	0x0004	Active	FIX.TA0220GT81	0,4 (A, F, L, N, Nimbus)	A-larm	Tag	Frysskydd Iarm
IFIX	20:31:05.704	150	0x0003			[FIX ] Process databas	0x0008	0x0002	Active	iFDC		B-larm		FIX Process .
iFIX	20:31:05.704	150	0x0003			[FIX ] TA0220GT81 wa	0x0008	0x0002	Active	iFDC		B-larm		FIX TA0220
FIX.TA0220GT81	20:30:46.938	950	0x0003	Tag	LOLO	Frysskydd larm	0x0008	0x0004	Active	FIX.TA0220GT81		A-larm	Tag	Frysskydd Iarm
IFIX	20:30:31.831	150	0x0337			[FIX ] TA0220GT81.A	0x0460	0x0002	Active	IFIX		B-larm		FIX TA0220
IFIX	20:30:20.438	150	0x0337			[FIX ] TA0220GT81.A	0x0660	0x0002	Active	iFIX		B-larm		FIX TA0220
FDX.TA0220GT81	20:23:31.690	950	0x0003	Tag	LOLO	Frysskydd Iarm	0x0041	0x0004	Active	FIX.TA0220GT81	0.4 (A. F. L. N. Nimbus)	950	Tag	Frvsskvdd larm *
														<ul> <li>1.3</li> </ul>

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).

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