## **Configuring a Bindable BACnet Server**

The BB2-3020 or BB2-7020 BACnet to LonWorks gateways are normally used to put BACnet devices on a LonWorks network. As such, the configuration tool and auto-build features are geared toward creating a BACnet client that will poll one or more BACnet devices and present the data to the LonWorks network, or receive data from the LonWorks network to be written to the BACnet devices.

A less common but feasible scenario is one in which the gateway will be bound into a managed network using LonMaker or equivalent, but the device on the BACnet side is a BACnet front end system that acts as the client. In a sense, we now want the gateway to be a server (or slave) on both sides, and in this case, the direction of the Network Variables needs to get reversed from the default directions that would apply when the gateway is the client.

The following process needs to be followed to configure the gateway to behave this way.

Start by telling the configuration tool that the gateway is going to act as a BACnet server.

s I	
9	Connected: 🔀 Sync: 🔀
onnect   Obj Import   Obj List   NV Import	NV List   Master List   View Data   BACnet Port   LonWorks
Device Model BB2-3020 -	I am creating/updating a new node.
COM port COM1 V	I am updating a node already commissioned.
Connect	Configure gateway as BACnet client.
	Configure gateway as BACnet server
	17 Soundare gateway as bricine server.
	Send
1	
	*
	-
. P	

You must start with the network variables in this type of configuration. Go to the NV List page, and add whatever variables you will be binding. You can also import an XIF file if applicable via the NV import page.

In the following example, we start by creating a few variables. For this part of the process, simply click the Append NV button a few times. You will configure the details shortly.

Conr	nect	Obj Import	Obj List	NV Import NV List	Mas	er Li <mark>st  </mark> View Data   B/	Connected: 🔀 Sync: 🔀
No	action			Ex	ecute		
	nsert N	IV Ap	pend NV	Add Field De	elete		
T	Dir	FB #	Loc	SNVT Type		SNVT Category	NV Name
•	NVO	1222	312	SNVT_count		1882 C	New_NV_1
•	NVO	1111	352	SNVT_count		252	New_NV_2
•	NVO	12227	322	SNVT_count		552	New_NV_3
	NVO		322	SNVT_count		322	New_NV_4
	NVO			SNV1_count			New_NV_5

Quite likely some or all of the NVs will not be going in the direction you desire. If that is the case, double click on the NV to open the NV editor and change the direction. In our example case, we want to monitor NVs as BACnet Analog Inputs. To bind NVs in a direction that allows data to flow TO the gateway, the NVs must be NVI (Network Variable Input).

Name	New_NV_1	
SNVT Type	SNVT_count (8)	Method Standard SNVT/User NV
Direction	NVI I NVO	Formula 🔤
Min SndT	0 00:00:00 Max SndT 0 00:00:00	[S] PID [0] 00:00:00:00:00:00:00:00
NV Category	NVT_CAT_UNSIGNED_LONG	NV Size 2
Scale A	T Scale B 0	Scale C
Byte Offset	0 Bit Offset	Is Lock 🗖 Yes

We have now changed the direction of our NVs to be all NVI.

No	action					
lr	nsert N	V Appe	and NV	Add Field Delete		- ND/ NL
1	Dir	FB#	LOC	SNVT Type	SINV I Category	NV Name
	NIVI		5.0	SNVI_count		New_NV_1
	NIVI	100	352	SNVT_count	310	New NV 2
	NVI	12227	312	SNVT_count	552	New NV 4
• 1	NVI		552	SNVT_count	862	New_NV_5

You are also most likely going to want some SNVT types other than just SNVT\_count. To do this, double click on the NV and select a different type from the list.

Name	New_NV_3		
SNVT Type	SNVT_count (8)	•	Method Standard SNVT/User NV
Direction	SNVT_state_64 (165) SNVT_str_ascii (36)	*	Formula
Min SndT	SNVT_str_int (37) SNVT_switch (95) SNVT_telecom (38)		[S] PID [0] 00:00:00:00:00:00:00:00
NV Category	SNVT_temp (39) SNVT_temp_diff_p (147) SNVT_temp_f (63)		NV Size 2
Scale A	SNVT temp_p (105) SNVT temp_ror (131)		Scale C 0
Byte Offset	SNVT_temp_setpt (106) SNVT_therm_mode (119) SNVT_time_f (64)		Is Lock 🏳 Yes
FB (OLA)#	0 Object # AI 0		

You can change the SNVT type and NV direction at the same time. You may also change the NV name in the NV Editor at the same time, or come back and do that later. But do not do anything else at this point - do not set anything other than 0 for FB # or Object #. That comes in the next step.

In our example, our NV set now looks like this:

Coni No	nect	Obj Import	Obj List	NV Import	NV List   Mas Execute	ster List   View Data   B	ACnet Port   LonWorks
	Insert I		pend NV	Add Field	Delete	<u> </u>	
T	Dir	FB #	Loc	SNVT Type		SNVT Category	NV Name
	NVI	1222	212	SNVT_count		11 <u>2122</u>	New_NV_1
•	NVI	1111	5.2	SNVT_count		332	New_NV_2
•	NVI		332	SNVT_temp_	р	512	New_NV_3
•	NVI		352	SNVT_temp_	р	552	New_NV_4
	NVI			SNVT_count			New_NV_5

Now you can proceed with some assignments. From the action list, select "Auto-assign new NV function blocks" and click Execute.

Connect	Obj Impo	rt   Obj Lie	st   NV Import	NV List   Ma	ster List   View Data   B	ACnet Port   LonWorks		
No action				Execute			1	
No action	AUX	Providence States	NAME AND DESCRIPTION OF	Delete				
Auto-assi	an new BA	Cnet object	ts	1 200000		1	_	
Remove	BACnet ob	ject assignr	ments		SNVT Category	NV Name		
Remove	NV functio	n block ass	ignments <sub>t</sub>		322	New_NV_1		
Get NV d	efinitions fr	to device	t		556	New_NV_2		
INVI Delig INVI	uen nuons	to device	SINV I_temp_	р	552	New_NV_3		
NVI		325	SNVT_temp_	р	352	New_NV_4		
NVI		322	SNVT_count		022	New_NV_5		

Next, select "Auto-assign new BACnet objects" and click Execute. A dialog will ask about converting SNVT\_switch. If any of your NVs are SNVT\_switch, answer accordingly, or just click OK.

Connect	Obj Import	Obj Lis	st NV Import	NV List   Mas	ster List   View Data   B	ACnet Port   LonWorks	
Auto-assi	gn new NV1	function b	locks 💌	Execute	_   _		
No action Auto-assi	n n new NV f	function b	locks	Delete			-
Auto-assi	an new BAC	net objec	ts		SNIVT Category	NV Name	
Remove	BACnet obje	ct assignr	nents igoments		1 SINVI Categoly	New NV 1	
Get NV d	efinitions from	m device	igninenta		1997	New NV 2	
Send NV	definitions to	o device	SINUT LEMI	f n	510	New NV 3	
NVI	OLA 4	322	SNVT temp	р рр	322	New NV 4	
NVI 🔍	OLA 5	322	SNVT_cour	-i nt	310	New_NV_5	

The NV list will now appear as follows:

onnect Auto-as	Obj Import	Obj List	NV Import N	V List   Mai	ster List   View Data   B	ACnet Port   LonWorks
		pend NV	Add Field	Delete		
Dir	FB #	Loc	SNVT Type		SNVT Category	NV Name
NVI	OLA 1	AI1	SNVT_count		1996	New_NV_1
NVI	OLA 2	AI 2	SNVT_count SNVT_temp_p		352	New_NV_2
NVI	OLA 3	AI 3			322	New_NV_3
NVI	OLA 4	AI 4	SNVT_temp_p		397	New_NV_4
NVI	OLA 5	AI 5	SNVT_count		000	New_NV_5

The Master List will appear as illustrated below. The blanked out columns would only be populated if the gateway was acting as a Client, but we have configured a Server, so these columns are unused.

No	action	Obj Impo	rt   Obj L	ist   N\	/ Import	NV List	VV List Master List   View Data   BACnet Port   LonWorks  Execute			
Т	Local	R/W	Device	Type	Inst	Prop	Dir	FB #	SNVT Type	Object Name
j,	AI1	-	2	-	2	P20	NVI	OLA1	SNVT count	New NV 1
I	AI 2	23	2	12	8 <u>4</u>	821	NVI	OLA 2	SNVT_count	New NV 2
	AI 3	-23	2	12 m	14	94 <u>6</u> 1	NVI	OLA 3	SNVT_temp_p	New_NV_3
	AI 4	-23	2	14	12	R <u>a</u> l	NVI	OLA 4	SNVT_temp_p	New_NV_4
	AI 5	-	2	-	-	932) 	NVI	OLA 5	SNVT_count	New_NV_5

You are now ready to send this configuration to the gateway. Go back to the Connect page and get connected, and then follow the same "send" sequence as you would for a gateway that was acting as the client.

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