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BACnet Setup in OnGuard

Overview

This document describes how to configure an LNL-4420 access controller to function as a BACnet server in an OnGuard system.



Requirements

- With OnGuard 7.3 or later: An LNL-4420 enabled as a BACnet server
- With OnGuard 7.5 or later: An LNL-X4420 enabled as a BACnet server
- Firmware 1.256 or later

LNL-4420 BACnet Capabilities

Supports 63 points exposed to BACnet:

- Physical inputs Aux Reader inputs and downstream inputs of the alarm panels
- Virtual outputs Configurable state registers (BACnet Control Points) that can be set by OnGuard or the external BACnet clients

Configure BACnet in OnGuard

Configure a BACnet Server

From System Administration, complete the following steps:

1. From the *Access Control* menu, select *Access Panels*, and then LNL-4420.

- 2. On the Options sub-tab:
 - a. Select the **Enable BACnet server** check box.
 - b. Enter the **BACnet server port**.
 - c. Enter the **BACnet device instance**.

Figure 2. Enable LNL-4420 as a BACnet server

Name:	
LNL-X4420	✓ Online
Location Primary Connection Secondary O	Connection Options Diagnostics Notes Encryption
Ports:	Device count
(2) 2-Wire Ports	Reader modules: Alarm panels:
Feature capacity level:	32 32
3 (Normal) 🗸	One emistic deter
Memory:	Not enforced
16 MB	Not enforced
PIN tree:	Store activation date:
None	Not enforced
None	Timed anti-passback
OSDP biometrics:	Store area anti-passback location
None 🗸	Precision access (reader inclusion)
Auxiliary module type:	Elevator support
None	First card unlock
Control down	HandKey biometrics
Cardnoiders:	Bioscrypt biometrics
500	Special area rules
Assets:	Double card unlock/toggle
0	ILS encryption
F 1 50000	✓ Enable BACnet server
Event capacity: 50000	BAChet server port:
	4/808
	BACnet device instance:
	1

The LNL-4420 must be TLS-enabled.

From System Administration, complete the following steps:

- 1. On the LNL-4420 Location sub-tab, click [Configuration Web Page].
- 2. On the Host Communication page, select "TLS if Available" from the **Data Security** drop-down.

Figure 3. Enable TLS Data Security

lenet	LNL-4420 Intelligent Dual Reader Controller								
Home		Host Communication							
Network	Communication			1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 -					
Host Comm	Addresse	0 -		Use IPv6 Only					
Device Info	Address.			1010 1998 1999 1993 1993 1993 1993 1993 1993					
Users									
Auto-Save	Primary Host Port								
Restore/Default	Connection Type:	IP Server	•	Data Security:	TLS if Available 🔻				
Apply Settings									
Load Certificate	Port Number:		3001						
Log Out	i ortridiliber:		5001						
Diagnostic			Allow All		 Authorized IP Address Required 				
	Authorized IP Address	-							
	🔲 Enable Peer Certifica	ate							

Configure the Virtual BACnet Panels

From System Administration, complete the following steps:

- 1. From the *Access Control* menu, select *Alarm Panels*.
- 2. On the Alarm Panels tab:

- a. Select "Virtual panel" as the **Type**.
- b. Select "Virtual port" as the **Port**.
- c. Select from 0-3 as the **Address**.

Figure	4.	Add	BACnet	virtual	panel
I IGUI C		muu	Difficie	vii cuui	punci

Alarm Panels Alarm Inputs Alarm Output	ts Input/Output Local Linka	age		
Alarm Panél Panel		Name:	4420 Virtual 1	
		Panel:	LNL-X4420	~
	Communicat	tion Parameters		
		Type:	Virtual panel	*
		Port:	Virtual port 🗸	
		Address:	1 *	
		Encryption:	None	~

Configure the Virtual BACnet Points

Virtual BACnet points are configured in System Administration. (From the *Access Control* menu, select *Alarm Panels*, and then the Alarm Output sub-tab.)

The status of BACnet virtual points can be changed from OnGuard or the external BACnet clients. The alarms for these are logged in Alarm Monitoring regardless of which system changes the point status. Virtual outputs can be thought of as Control Points (memory registers or set/reset flip-flops). Their state can be set using any OnGuard function that can set as an output state, that can then be monitored, all without using an actual physical I/O point. This includes Local I/O, Global I/O, Maps Icons, Action Groups, etc.

Figure 5. Add BACnet virtual points (alarm outputs)

Alarm Panels Alarm Inputs	Alarm Outputs	Input/Output Loca	al Linkage	
Alarm Output	Alarm Panel	Panel	Name: Wirtual Alam Point #1	
🞸 Virtual Alarm Point #1	4420 Virtual 1	LNL-X4420		
🙏 Virtual Alarm Point #2	4420 Virtual 1	LNL-X4420		
🙏 Virtual Alarm Point #3	4420 Virtual 1	LNL-X4420	Duration: 0	
			Always Activate Output	
			BACnet 🚽	
			Activate Output During Timezone:	

Expose the Physical Alarm Inputs to BACnet

Alarm panel inputs (configured as points) can be exposed to external BACnet clients. The status of these points can only be monitored by BACnet.

Configure the alarm inputs in System Administration. From the *Access Control* menu, select *Alarm Panels*, and then the Alarm Inputs sub-tab.

Note: The alarm panel must be connected to an LNL-4420 or LNL-X4420 with BACnet enabled. For more information please refer to Configure a BACnet Server on page 1. Figure 6. Configure alarm panel input as BACnet point

Alarm Panels Alarm Inputs Alarm	Outputs Input/Output Loca	al Linkage
Alarm Panel	Panel	Name:
🜠 LNL-1100	LNL-X4420	Alarm Panel: LNL-1100
		Input Number: 1 😴 🛛 🖓 BACnet
		Supervision: Not Supervised, Normally Open
		Debounce: Default
		Hold Time: 0
		Scheduling
		Log Events:
		Never Mask Always Mask
		Mask:
		Exit/Entry Delay
		Non - Latch Entry
		Entry Delay: 0
		Exit Delay: 0
I]

Expose Reader Interface Auxiliary Inputs to BACnet

Reader interface or on-board reader auxiliary inputs (configured as points) can be exposed to BACnet. The status of these points can only be monitored by BACnet.

Configure the auxiliary inputs in System Administration. From the *Access Control* menu, select *Readers and Doors*, and then the Aux Inputs sub-tab.

Note: The BACnet server option must be enabled on the LNL-4420 or LNL-X4420 to expose the on-board reader auxiliary inputs or reader interface module auxiliary inputs connected to the access panel. For more information please refer to Configure a BACnet Server on page 1.

	Figure 7.	Configure re	ader aux ir	put as BAC	net p	oint		
GLNL-4420 Reader 2 IBPW6K1R2 Reader 1 IBPW6K1R2 Reader 2 IBPW6K1R2 Reader 2 IBPRE 2 IBPRE 2 IBPRE 1	LNL-4420 PW6K PW6K ACUXL ACUXL	Onboard LNL-1320 LNL-1320 RRE RRE	Reader (Dual Interface) (Dual Interface)	Wiegand / Prox Wiegand / Prox Wiegand / Prox Wiegand / Prox Wiegand / Prox	Onb Port 3 Port 3 Port 2 Port 2	0 0 2 1		1 0 1 0 0
General Grouping Settings Contr Input 1 Input 1 Name: Ext / Entry Delay	ols Aux Inputs Aux Outputs Mask Input 1 D	s Anti-Passback Cou uring Timezone:	mmand Programmin Never Mask I Always Mask Checkpoint	ng Notes nput 1 Input 1	Hok 0	d Time:		
Non - Latch Entry	0		Supervision: Not Supervised.	Normally Open	▼ Deb	ounce: fault	•	
Input 2 Name: Exit / Entry Delay	Mask Input 2 I	xit Delay:	Never Mask I Always Mask Checkpoint Supervision:	nput 2 Input 2	Hok 0 Deb	BACnet	F	
Non - Latch Entry	0		Not Supervised,	Normally Open	- De	fault	-	

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View Virtual Points in a BACnet Explorer





Database names in OnGuard carry into BACnet

OnGuard BACnet Use Examples

- Use OnGuard inputs and status to affect the building automation system.
 - Adjust temperature when employees enter or exit.
 - Turn off air conditioning if a door is propped open.
- Use the building automation system inputs and status to affect the OnGuard system.
 - Change access rights if unsafe conditions are detected (coolant leak, flooding).
 - Allocate available space to optimize HVAC operating costs.
- Report the status of building automation points in OnGuard Alarm Monitoring and Maps.
 - Guards can react to HVAC equipment failures after hours, allowing repair time before the next shift.
- Report status of OnGuard points to the building automation system.

- Understand utilization patterns and employee behavior, and their affect on building systems.