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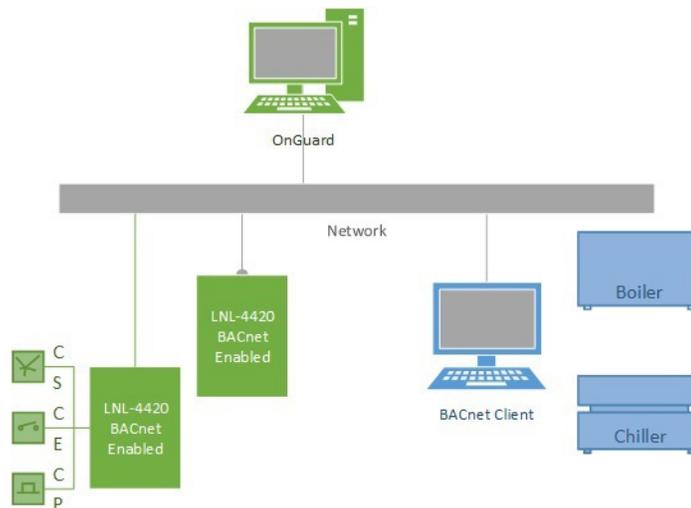www.lenel.com

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.

Figure 1. BACnet server in 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**.

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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**.

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.
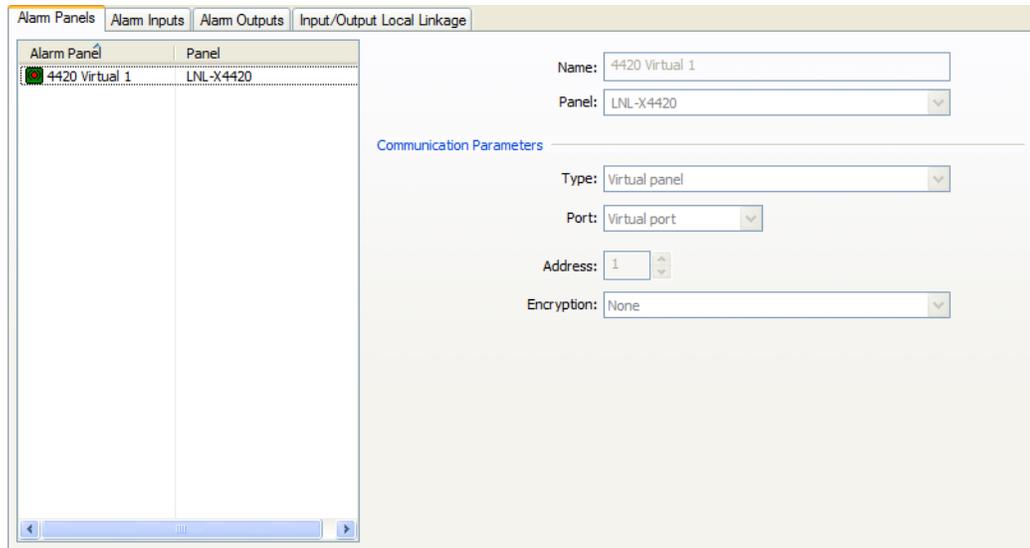
Figure 3. Enable TLS Data Security

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**.

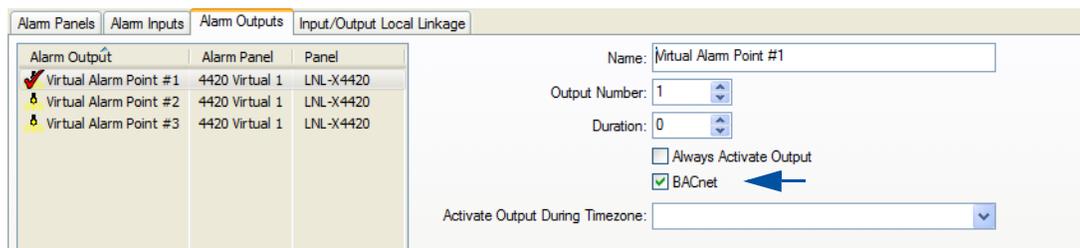**Figure 4. Add BACnet virtual panel**

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)**

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
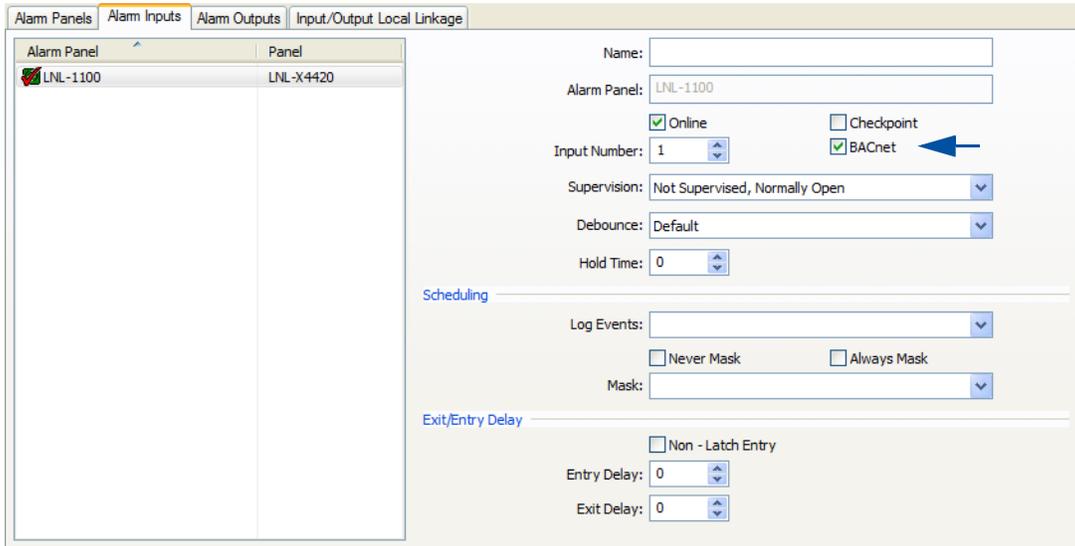

Expose Reader Interface Auxiliary Inputs to BACnet

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 reader aux input as BACnet point
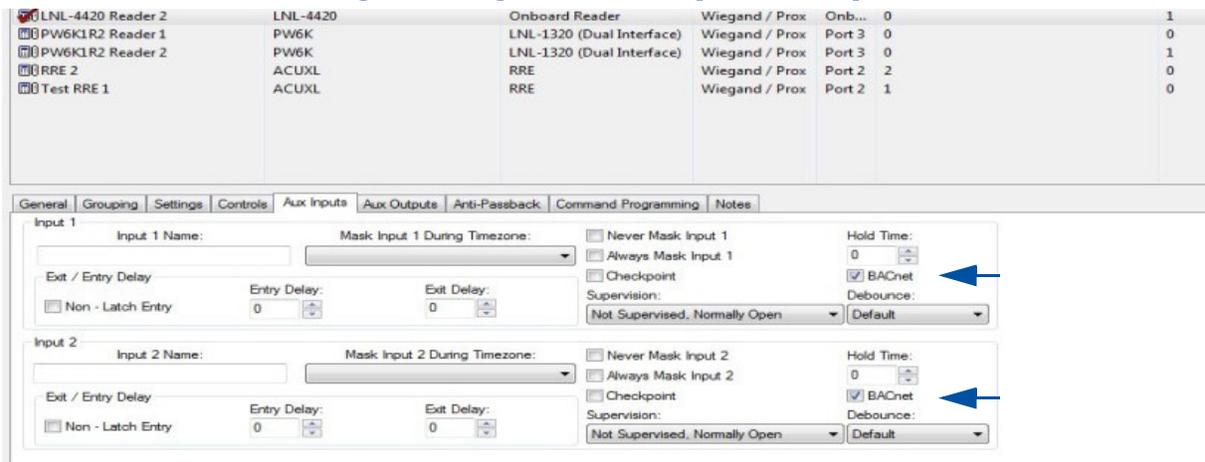
View Virtual Points in a BACnet Explorer

Figure 8. A look at virtual points using a BACnet explorer

- Point Status is displayed as 0/1
- Point Status can be modified by BACnet clients

Database names in OnGuard carry into BACnet

Figure 9. A look at physical points using a BACnet explorer

Point Status is displayed as 0/1

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.

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