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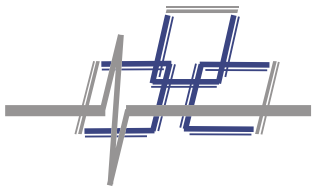
Fiber SenSys

Fiber SenSys OnGuard Integrator

How to set up OnGuard to integrate with the Fiber SenSys Fiber Defender® Alarm Processing Units

Application Note



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Introduction

This application note provides an overview on how to add support for Fiber SenSys Inc. (FSI) Alarm Processing Units (APU) in the OnGuard software. The Fiber SenSys OnGuard Integrator is responsible for communicating with Fiber SenSys APUs and forwarding alarms and other messages to OnGuard using the DataConduIT interface.

This document will describe how to set up DataConduIT devices for each FSI APU. It will explain the events sent to OnGuard using the DataConduIT application integration service. It will also explain how to add and remove additional APUs to OnGuard.

This document was written based on OnGuard versions 7.1 - 7.3 and Fiber SenSys OnGuard Integrator version 2.4.0.

NOTE: This is a basic guide. Your specific configuration and steps may differ from what is shown. For more information about OnGuard, refer to the OnGuard *DataConduIT User Guide* and the *System Administration User Guide*. For more information about setting up Fiber SenSys APUs, refer to your APU's documentation or to the *APU Networking Application Note* (AN-SM-009).

NOTE: As this guide was written with OnGuard versions 7.1 - 7.3 in mind, be aware there may be some differences in terminology from other versions. For example, Logical Sources were previously called DataConduIT Source Downstream Devices or DataConduIT Sources.

NOTE: The Fiber SenSys OnGuard Integrator has certain limitations. See Appendix D for details.

Before You Get Started

Alarm Processing Unit Configuration

This guide assumes that the Fiber SenSys APUs to integrate are powered on and connected to a TCP/IP network. The APUs do not have to be attached to the fiber optic sensing cables; however, it will not be possible to properly test for intrusions or sensing cable fault reporting until the APUs are attached to sensing cables.

For an APU to work with the integration software, some of the APU's network parameters must be set to certain values: the auto-start must be off and the local port must be 10001. These are the default settings for new APUs. Refer to AN-SM-009, the *APU Networking Application Note* for instructions on how to change these settings if necessary.

Be sure to note each APU's IP address. The Fiber SenSys Integration software connects to the APUs using IP address.

NOTE: Each APU must have a unique name. An APU's default name is based on the serial number of the APU and is therefore unique. To adjust the APU name — or the name of a zone — please refer to the APU documentation for instructions. To adjust the name that Fiber SenSys OnGuard Integrator reports fo the APU or zone, see Appendix D.

OnGuard Security Management System Configuration

The OnGuard server software must be installed and running on a Windows computer (server or PC). The OnGuard client software must also be installed and running on a Windows computer. See the OnGuard *System Adminstration User Guide* for more information about properly setting up your OnGuard system.

The Fiber SenSys OnGuard Integrator integrates with OnGuard via the DataConduIT interface. As such, no add-on is needed. However, a *DataConduIT* license is required (Lenel part number SWG-1140). Contact Lenel to obtain this license.

The **LS Communication Server**, **LS DataConduIT Service**, and **LS Linkage Server** Windows services need to be running on the OnGuard server for any messages to be sent to OnGuard. Confirm this through the *OnGuard Services* tab of the OnGuard *System Management Console* software and start the services if required.

Single sign-on must be enabled for the Windows account used by the integration software to connect to OnGuard. OnGuard Single Sign-On is configured using Microsoft Active Directory and linked to a domain user. Refer to the OnGuard documentation for additional information.

NOTE: After making changes to the Fiber SenSys OnGuard Integrator, or to the settings in the OnGuard System Administration application, the Alarm Monitoring application may need to be restarted.

For the DataConduIT interface to display messages, at least one Panel of any kind has to be set up in OnGuard. It doesn't have to actually be connected to anything. For example, if the only use of a particular OnGuard setup is to monitor Fiber SenSys APUs, a

generic intrusion panel could be set up with default values. This wouldn't actually talk to anything, but this would allow messages to be displayed in the OnGuard “Alarm Monitoring” software.

Installing the *Fiber SenSys OnGuard Integrator* software

Before installing the *Fiber SenSys OnGuard Integrator* software, determine whether you will install it on the same computer as the OnGuard server or on a different computer.

When installed on a different computer, that computer must be joined to the same domain as the computer running the OnGuard server. Other issues relating to remote configuration will be described later in this document.

Install the *Fiber SenSys OnGuard Integrator* software using the provided installer executable. If you do not already have the installer executable, you can download it from the Fiber SenSys website.

NOTE: The Fiber SenSys OnGuard Integrator must be running at all times for alarms to be reported to OnGuard. This is why the installer's default setting is to install the application to be run on computer startup. Do not switch off this setting unless you are sure that you do not want the service running continuously.

Adding APUs to Fiber SenSys OnGuard Integrator

The Fiber SenSys OnGuard Integrator is responsible for communicating with APUs and forwarding alarms and other messages to OnGuard. The Fiber SenSys OnGuard Integrator needs to be configured to communicate with the APUs.

Open the Fiber SenSys OnGuard Integrator. It can be opened by clicking its icon in the notification area or the start menu.

Figure 1. The Fiber SenSys OnGuard Integrator icon.

Click **Add** to add a new APU to the Fiber SenSys OnGuard Integrator.

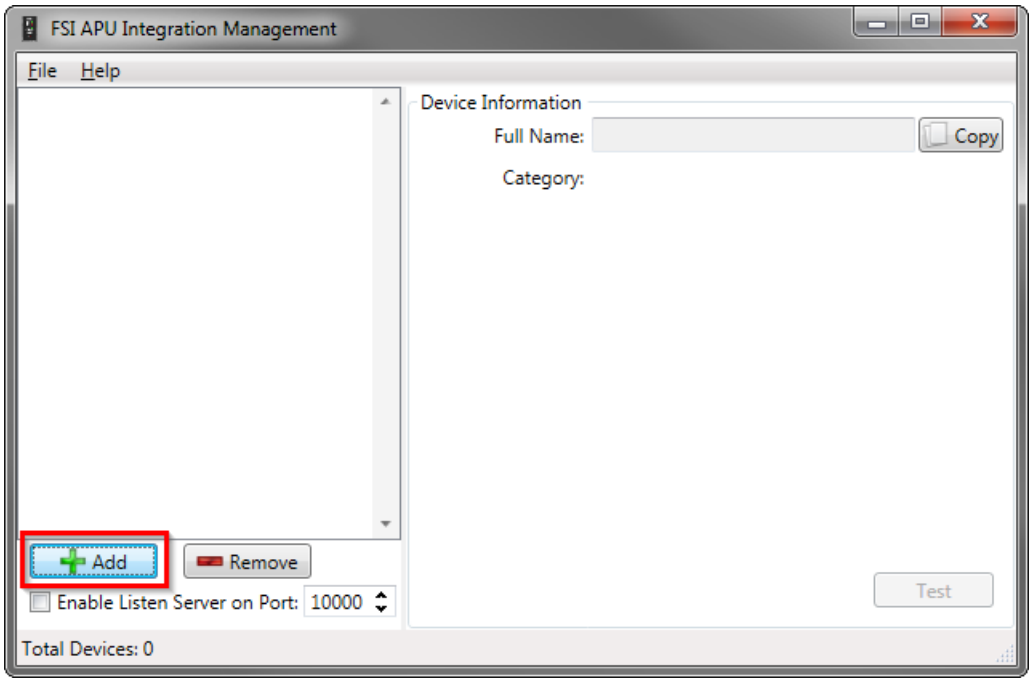


Figure 2. Click Add to add a new device to the Fiber SenSys OnGuard Integrator.

In **Add Device** type the APU's IP address the **Host** box then click **Add**.

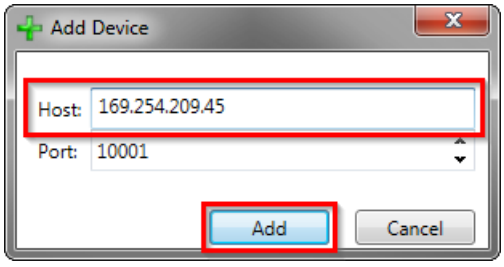


Figure 3. Add Device window.

The Fiber SenSys OnGuard Integrator shows the connection state of the APU. There are three possible states:

Disconnected
: There is not a network connection to the APU. Check that the APU is powered, is connected to the network, and the IP address entered into the Fiber SenSys OnGuard Integrator is incorrect. The Fiber SenSys OnGuard Integrator may show a message providing more details about the connection problem.

Waiting for Handshake
: The Fiber SenSys OnGuard Integrator has established a TCP/IP connection to the APU and is waiting for the APU to report its device name and other information. The handshake process may take up to two minutes to complete. Alarms will not be reported while waiting for the handshake to complete.

Connected

The APU is communicating with the Fiber SenSys OnGuard Integrator. Alarms and other events will be forwarded to OnGuard.

The following images show the handshake and connected states.

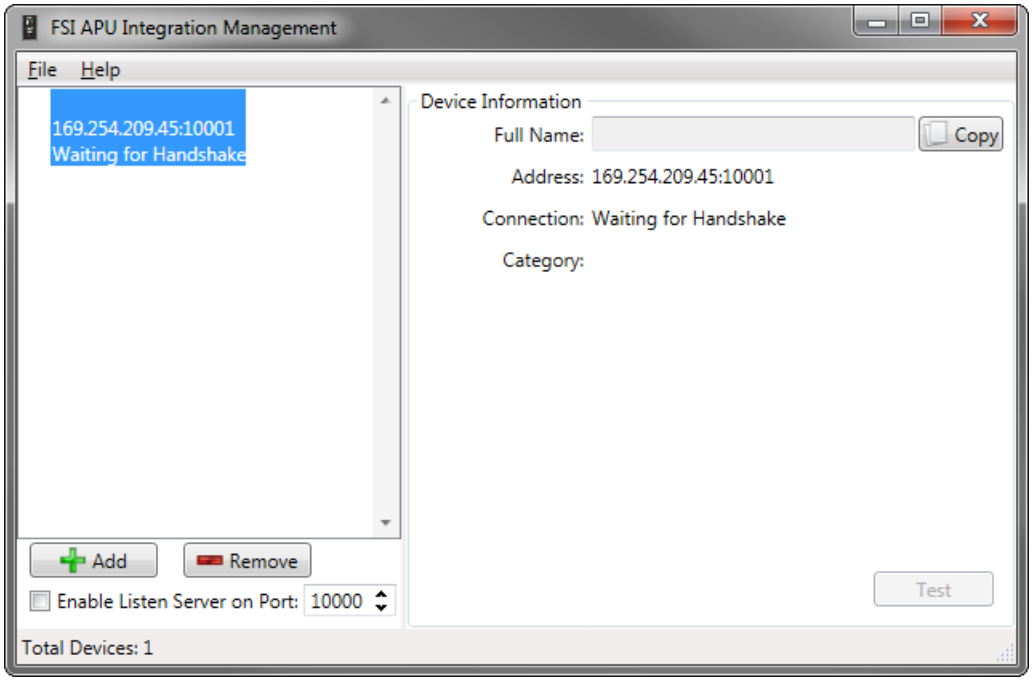


Figure 4. Waiting for the handshake to complete.

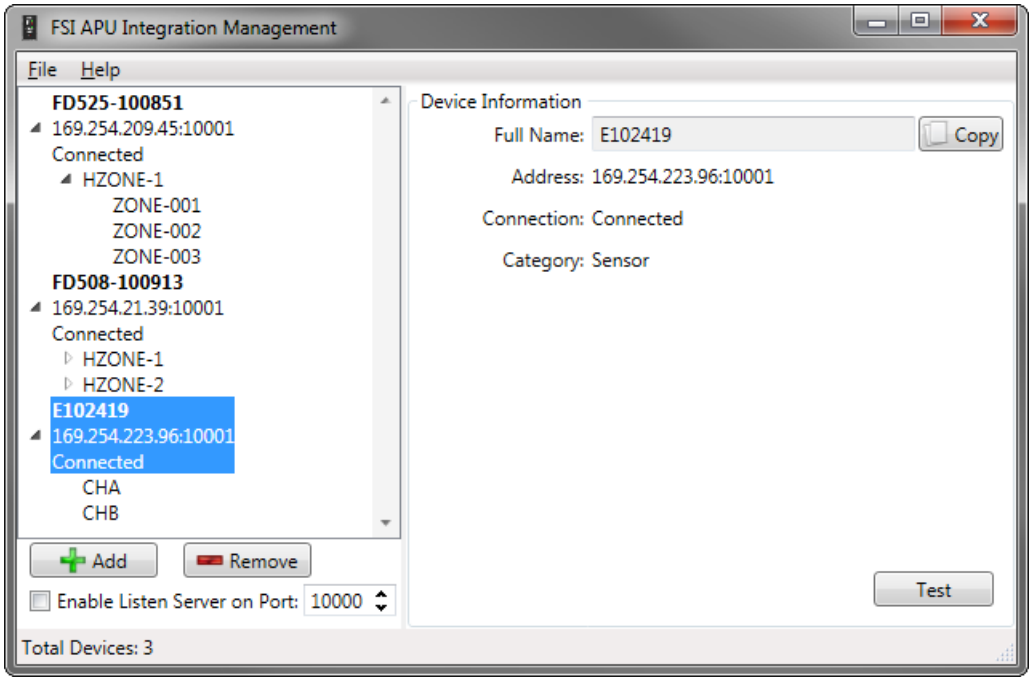


Figure 5. The APUs are connected to the Fiber SenSys OnGuard Integrator. Note the zones underneath the APUs in the tree view.

Verify that each APU is connected to the Fiber SenSys OnGuard Integrator before proceeding to the next step.

Connecting to DataConduIT server

By default, the Fiber SenSys OnGuard Integrator is configured to communicate with a DataConduIT service that is running locally. However, it is possible to to connect to a remote DataConduIT service. This is useful when you want to install the Fiber SenSys OnGuard Integrator on a different computer than the DataConduIT service.

On the **File** menu, click **Configuration** to modify the remote DataConduIT service options.

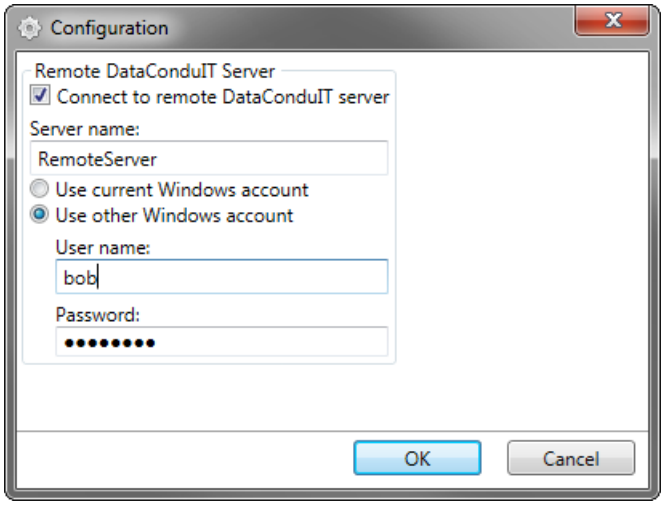


Figure 6. DataConduIT server configuration.

To connect to a remote DataConduIT server select the **Connect to remote DataConduIT server** check box and enter the name or IP address of the remote DataConduIT server.

Choose the user account to use when connecting to the remote DataConduIT server. Select **Use current Windows account** to use the Windows account of the user currently logged into the computer running the Fiber SenSys OnGuard Integrator. Or select **Use other Windows account** to specify a specific Windows user name and password to use when connecting to the server.

NOTE: Windows must be configured to allow remote DataConduIT server access. See Appendix A for details.

Setting up FSI APUs as Logical devices

This section will explain how to set up the Logical Devices required for the Fiber SenSys OnGuard Integrator to work with OnGuard. This step requires the name of each APU and zone that is displayed in the **Name** box in the Fiber SenSys OnGuard Integrator. For more information see the OnGuard *System Administration User Guide Chapter 61: Logical Sources Folder*

NOTE: It is possible to change the name that Fiber SenSys OnGuard Integrator reports to OnGuard. See Appendix C for details.

Each APU will be configured as a Logical Device. Each zone will be configured as a Logical Sub-Device.

Start the OnGuard “System Administration” application.

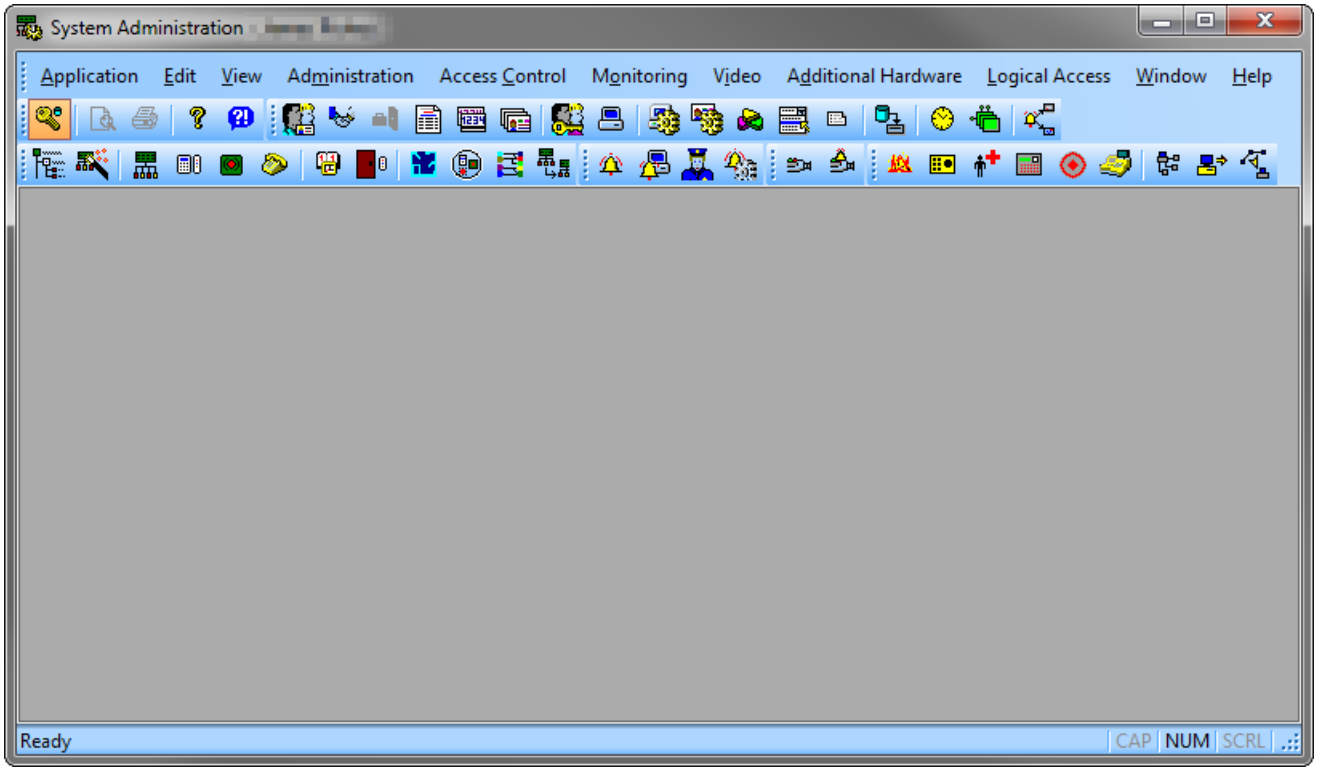


Figure 7. The OnGuard System Administration application is used to associate Logical Devices with Fiber SenSys APUs.

Open the **Additional Hardware** menu and select **Logical Sources...**

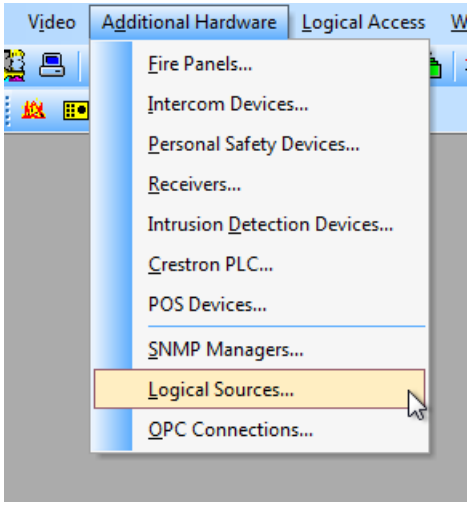
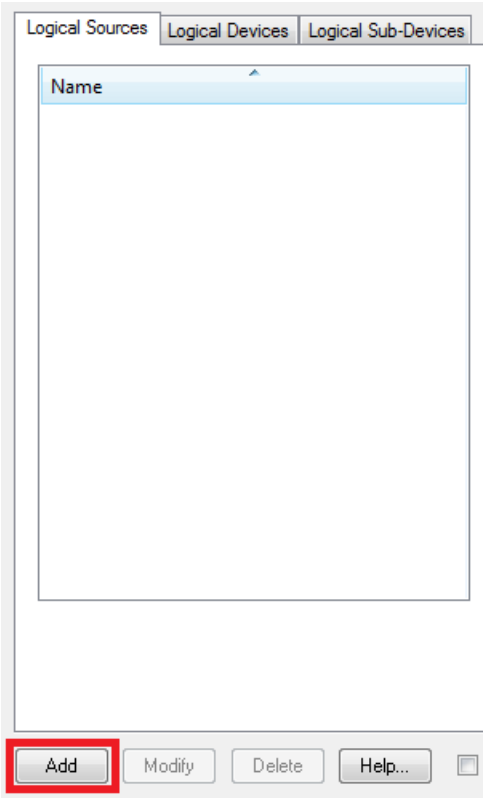


Figure 8. The Logical Sources dialog window is selected from the OnGuard System Administration Additional Hardware menu.

Under the **Logical Sources** tab, click **Add**.



Enter `FiberSenSys` in the **Name** box and click **OK**

NOTE: Make sure this is entered exactly as `FiberSenSys`. All text entered into OnGuard is case-sensitive. There cannot be any spaces.

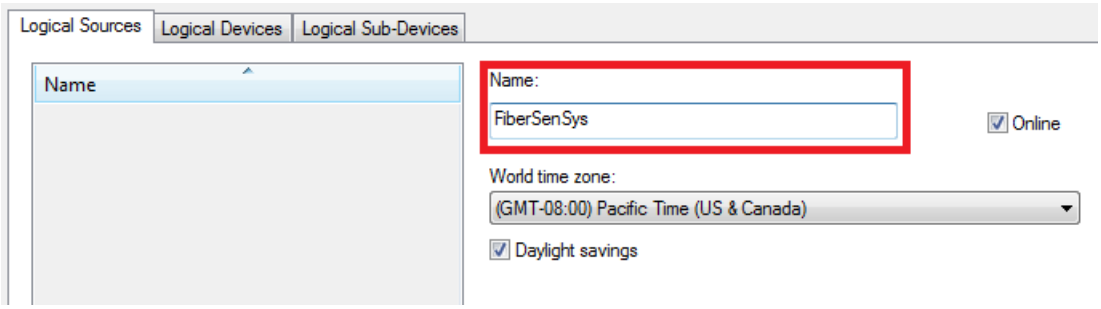


Figure 9. Adding a *FiberSenSys* logical source.

A **Monitor Zone Assignments** dialog window will appear. Select the appropriate OnGuard monitor zone(s) for your integration. This is usually the **Default Zone**.

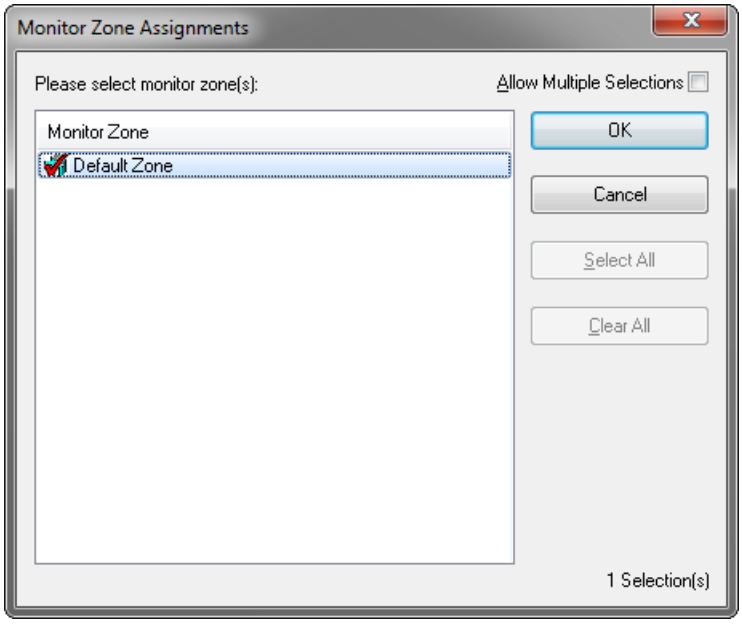


Figure 10. Select a monitor zone for the logical source.

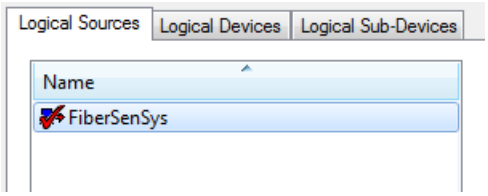


Figure 11. A properly added FiberSenSys logical source.

Adding each Fiber SenSys APU as a Logical Device

Go to the **Logical Devices** tab and click **Add** to add an APU as a device.

Enter the APU name in the **Name** box. This name needs to match exactly the text displayed in the Fiber SenSys OnGuard Integrator **Name** box. Click **Copy** in the Fiber SenSys OnGuard Integrator to copy the name to the clipboard. (Or select the name and type **Ctrl+C**.)

NOTE: It is possible to change the name that Fiber SenSys OnGuard Integrator reports to OnGuard. See Appendix C for details.

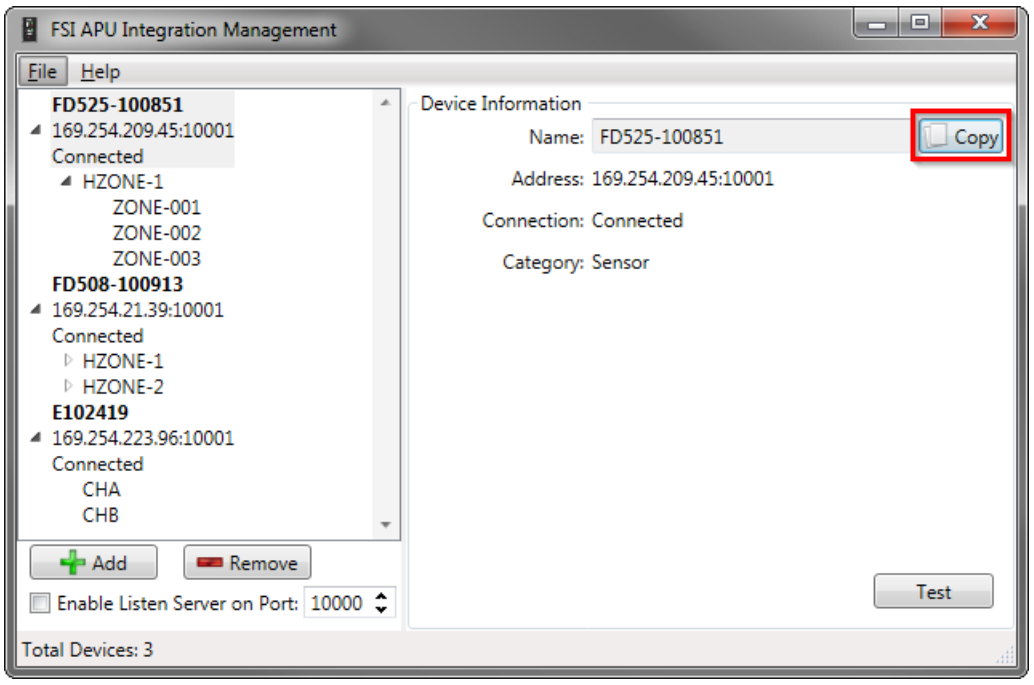


Figure 12. The device name displayed in the Fiber SenSys OnGuard Integrator.

In OnGuard **System Administration** enter the name. To paste from the clipboard, right click on the **Name** box and click **Paste**. (You could also click in the box and type **Ctrl+V**).

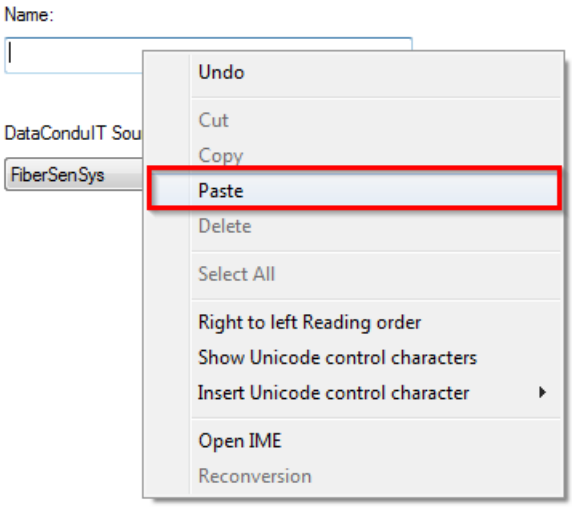


Figure 13. Click Paste in the Name box context menu to paste the APU name from the clipboard.

Select the `FiberSenSys` entry from the **Logical Source** dropdown list.

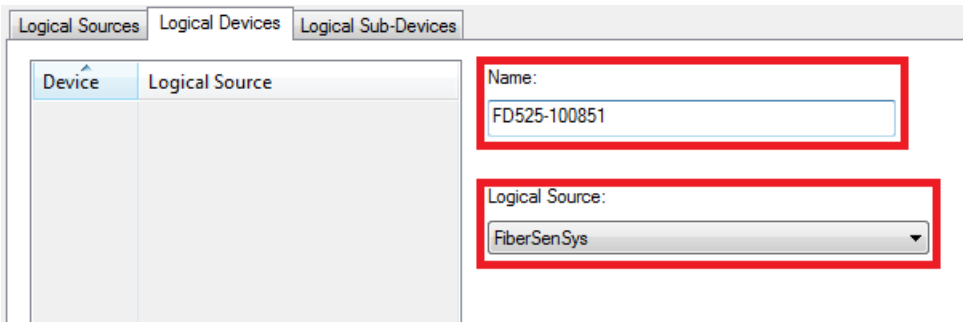


Figure 14. Example device name entered into the Logical Devices tab.

Press **OK** to add the APU as a logical device.

Repeat the logical device adding process for each APU listed in the Fiber SenSys OnGuard Integrator.

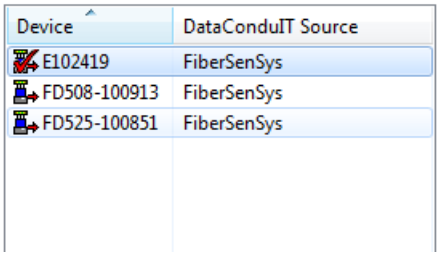


Figure 15. Device list showing all APUs that have been added.

Adding each Fiber SenSys APU zone as a Logical Sub-Device

After all the APUs are added, click on the **Logical Sub-Devices** tab and press **Add**.

Enter the zone name in the **Name** box. As with adding APUs, the name must match the exact name from Fiber SenSys OnGuard Integrator.

Select the name of the APU associated APU name from the **Logical Source** dropdown list.

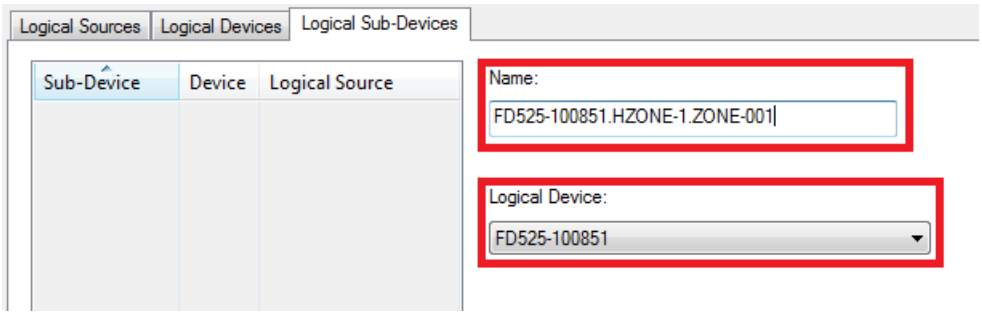


Figure 16. Example zone name entered into the Logical Sub-Devices tab.

Repeat the logical device adding process for each zone listed in the Fiber SenSys OnGuard Integrator.

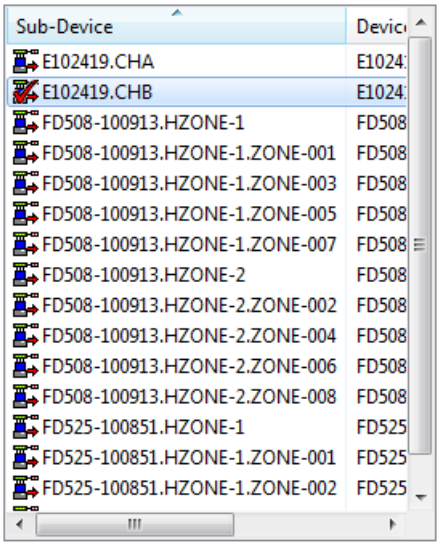


Figure 17. Logical Sub-Device list showing all zones that have been added.

NOTE: The hyperzone sub-devices do not report events, so you can save time setting up the system by not adding hyperzones. Hyperzones only appear under 500 series devices and appear in the device tree in the form *HZONE-###*. The individual zones underneath the hyperzone must still be added.

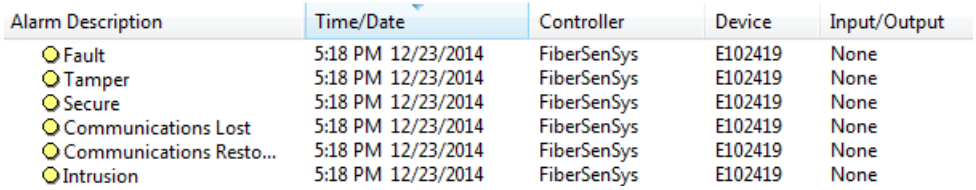
DataConduIT events

The Fiber SenSys OnGuard Integrator forwards alarms and other events to OnGuard using “Generic Events”. The following table describes the common types of events that are sent to OnGuard.

Event Text	Description
`Secure`	The APU reported that the specified zone or channel is ready to detect alarms. When reported for the APU itself, this indicates that the APU is able to report alarms and is not in the `Tamper` state.
`Intrusion`	The APU reported that an alarm condition has occurred on the specified zone or channel. Multiple intrusions may be reported in a group.
`Fault`	APU reported loss or significant degradation of returning optical power specified zone or channel. This condition exists until `Secure` is reported for that zone or channel.
`Tamper`	The APU reported a tamper condition. This condition exists until `Secure` is reported on the APU itself.
`Communications Lost`	The Fiber SenSys OnGuard Integrator has lost communication with the APU. The APU will not report alarms or other events until communications is restored.
`Communications Restored`	The Fiber SenSys OnGuard Integrator has successfully connected to the APU. The Fiber SenSys OnGuard Integrator will forward alarms and other events to OnGuard.

Table 1. Description of events reported to OnGuard.

When an event is sent to OnGuard it appears in the Alarm Monitoring application. The event text, the APU name, and the zone / channel name are displayed. The OnGuard *System Administration User Guide Chapter 45: Alarm Configuration Folder* describes how to customize the alarm processing if desired.



Alarm Description	Time/Date	Controller	Device	Input/Output
Fault	5:18 PM 12/23/2014	FiberSenSys	E102419	None
Tamper	5:18 PM 12/23/2014	FiberSenSys	E102419	None
Secure	5:18 PM 12/23/2014	FiberSenSys	E102419	None
Communications Lost	5:18 PM 12/23/2014	FiberSenSys	E102419	None
Communications Resto...	5:18 PM 12/23/2014	FiberSenSys	E102419	None
Intrusion	5:18 PM 12/23/2014	FiberSenSys	E102419	None

Figure 18. Example alarms in the Alarm Monitoring application

NOTE: Acknowledging an event in the Alarm Monitoring application clears the event from the display, however, the event may still be ongoing. **This is important for the user operating the Alarm Monitoring application to understand**.

Testing the integration

This section describes how to test the integration between the Fiber SenSys OnGuard Integrator and OnGuard. Each APU and zone is individually tested.

In the Fiber SenSys OnGuard Integrator select the APU or zone to be tested, then click the **Test** button.

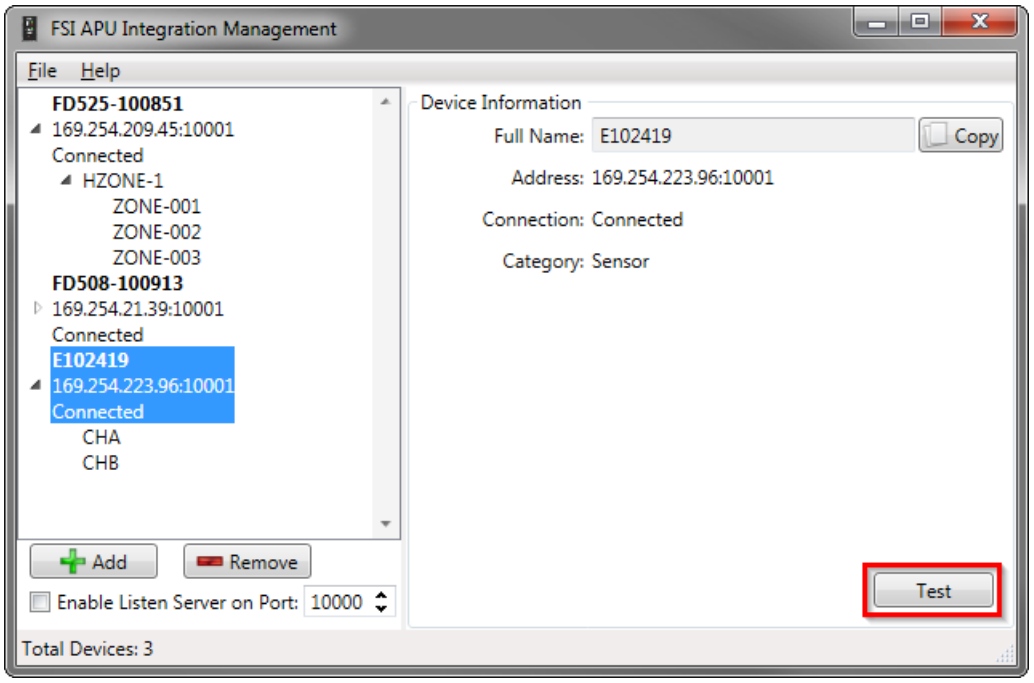


Figure 19. Fiber SenSys OnGuard Integrator Test button.

Alarms should appear in the “Alarm Monitoring” application.

For APUs, the `Secure`, `Tamper`, `Communications Lost`, and `Communications Restored` test events will be sent.

For zones, the `Secure`, `Fault`, and `Intrusion` test events will be sent.

Alarm Description	Time/Date	Controller	Device	Input/Output
Fault	5:18 PM 12/23/2014	FiberSenSys	E102419	None
Tamper	5:18 PM 12/23/2014	FiberSenSys	E102419	None
Secure	5:18 PM 12/23/2014	FiberSenSys	E102419	None
Communications Lost	5:18 PM 12/23/2014	FiberSenSys	E102419	None
Communications Resto...	5:18 PM 12/23/2014	FiberSenSys	E102419	None
Intrusion	5:18 PM 12/23/2014	FiberSenSys	E102419	None

Figure 20. Test alarms in the Alarm Monitoring application.

Troubleshooting

If the Fiber SenSys OnGuard Integrator detects a problem while reporting alarms to OnGuard a message will be shown.

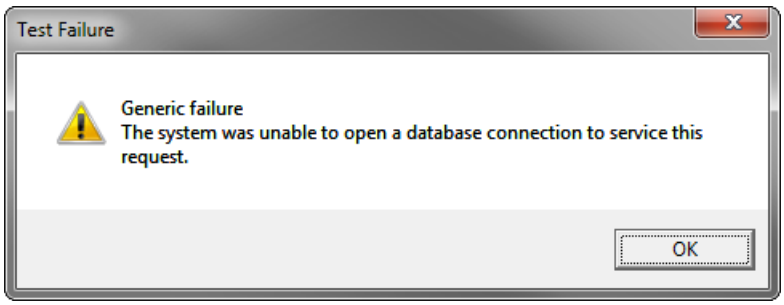


Figure 21. Example of a test failure message.

NOTE:
OnGuard does not report some failures to the Fiber SenSys OnGuard Integrator, and in those cases **no failure message will appear**, but no alarms will appear in the Alarm Monitoring application. This can be the result of the alarm definitions being incorrectly configured, or the Windows services not running. In that case try the following:

- Verify the test alarms appear as expected in the Alarm Monitoring application.
- Verify the configuration from the Alarm Processing Unit Configuration section.
- Verify the services listed in OnGuard Security Management System Configuration are running.

The table below describes some common test failure messages and possible causes.

Test Failure Message	Possible Cause
Cannot connect to OnGuard	The WMI connection to OnGuard could not be created. This means that the server name, the user name, or the password is correct. You should check each of these values.
Invalid Parameter	There is not a matching Logical device or sub-device configured in System Administration for the item being tested. Verify the device as been added in the OnGuard System Administration **Logical Sources** tab and the name matches *exactly*.
The system was unable to open a database connection to service this request.	The LS Communications Server is not started or OnGuard could not access the SQL database.
The RPC server is unavailable.	The Fiber SenSys OnGuard Integrator is unable to communicate with the remote DataConduIT server.
Access is denied.	The user does not have permission to access the remote DataConduIT server. Check the WMI permissions and verify UAC is disabled.

Table 2. Possible causes for various test failure messages.

Removing APUs

This section explains how to completely remove the configuration for an APU.

Remove from OnGuard

Load up System Administration

Open the **Additional Hardware** menu and click **Logical Sources...**

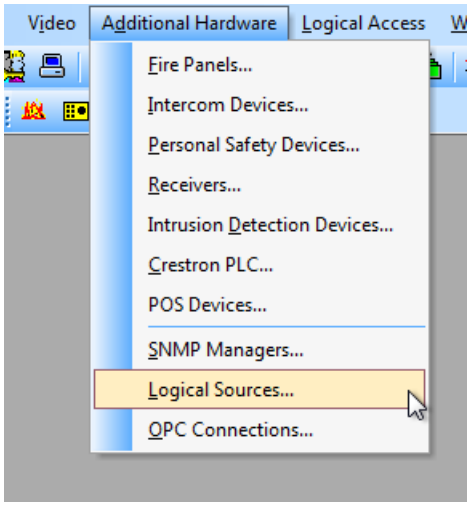


Figure 22. The Logical Sources dialog window is selected from the OnGuard System Administration Additional Hardware menu.

Click on the **Logical Devices** tab

Select the logical device that represents the APU to be removed and click **Delete**.

Figure 23. Delete Logical device button.

Click **OK**.

A message should pop up asking if you are sure you want to delete the device. Click **OK**.

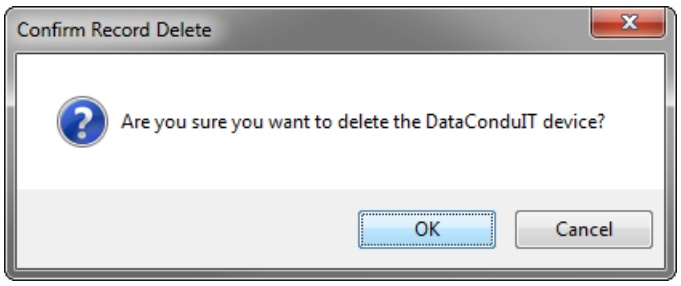


Figure 24. Confirm Record Delete message.

Remove from Fiber SenSys OnGuard Integrator

Open the Fiber SenSys OnGuard Integrator

Select the APU to remove

Click **Remove**.

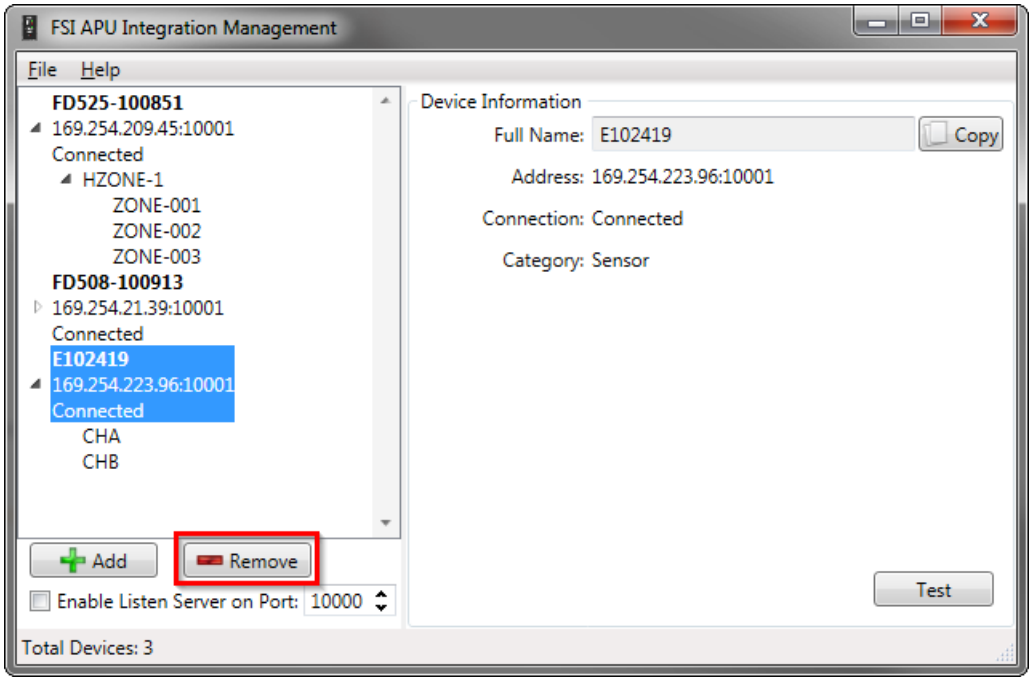


Figure 25. Click Remove to remove the selected device from the Fiber SenSys OnGuard Integrator.

Appendix A: Remote DataConduIT Server Configuration

The Fiber SenSys OnGuard Integrator communicates with DataConduIT using Microsoft Windows Management Instrumentation (WMI). The OnGuard DataConduIT server must be configured to allow remote WMI connections.

Windows Firewall

The Windows Firewall on the DataConduIT server must be configured to allow incoming WMI connections. Open Windows Firewall with Advanced Security and create a new inbound rule.

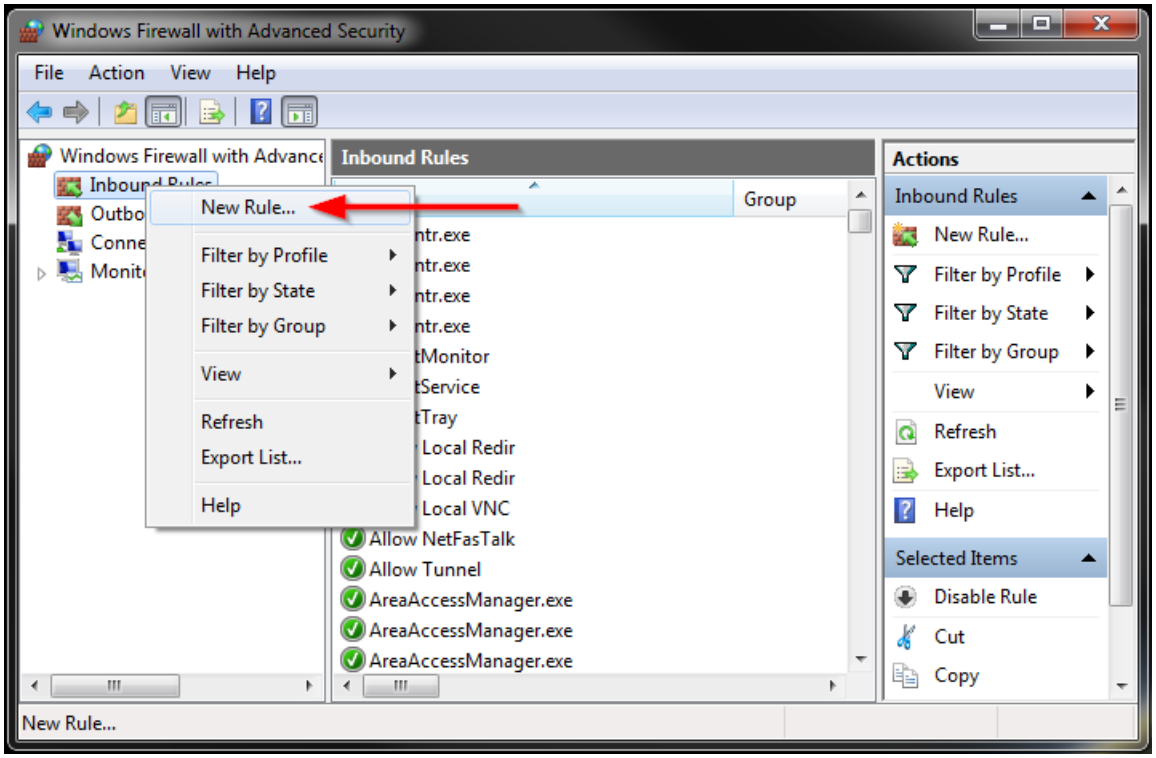


Figure 26. Windows Firewall new rule menu.

In the **New Inbound Rule Wizard** click **Predefined** then click **Microsoft Windows Management Instrumentation (WMI)**.

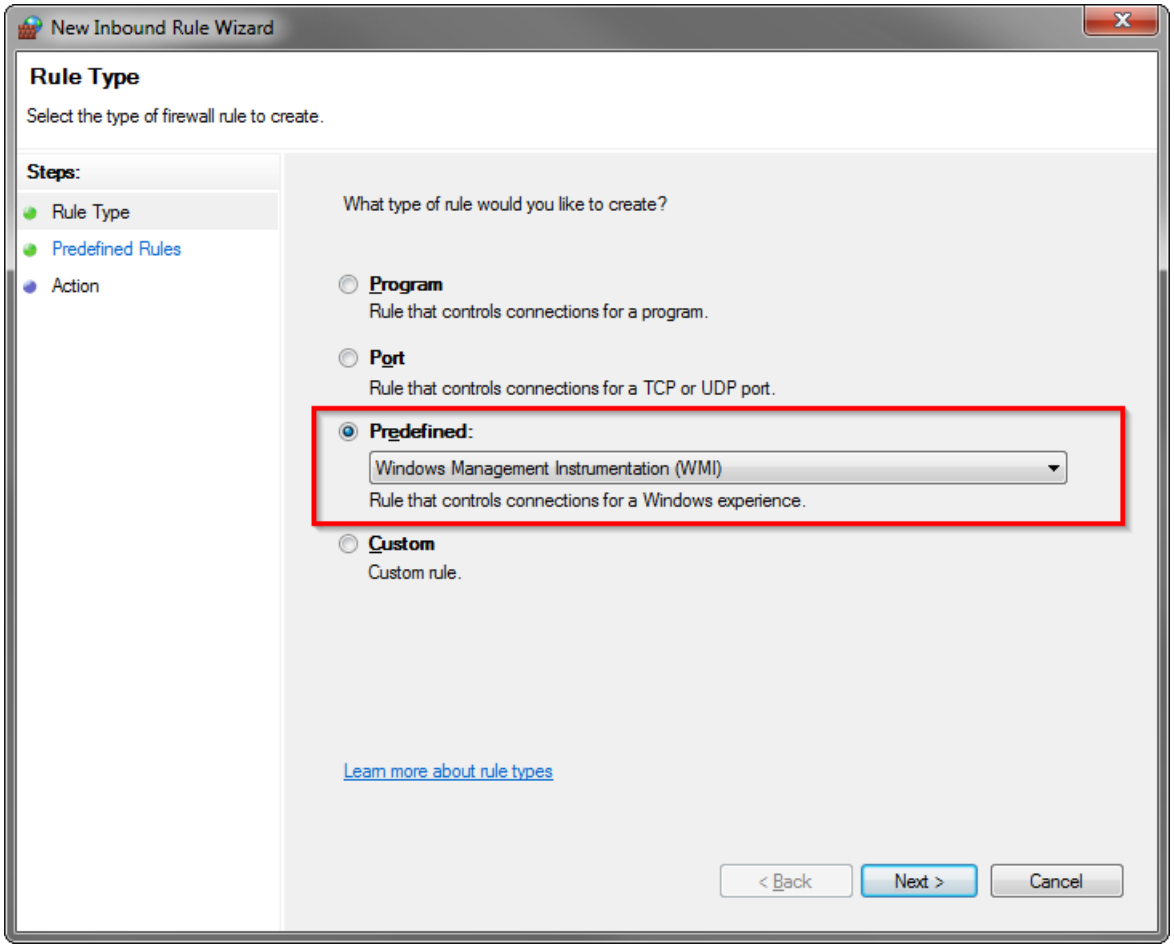


Figure 27. Select the Predefined Microsoft Windows Management Instrumentation (WMI) rule.

Select all of the available **Microsoft Windows Management Instrumentation** check boxes.

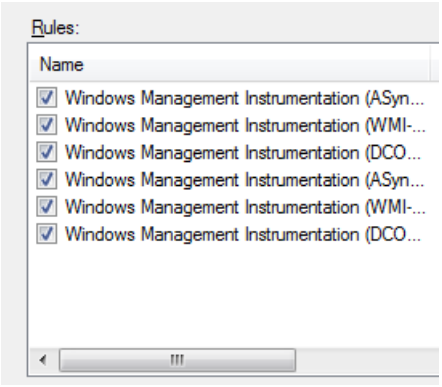


Figure 28. Select all the available WMI rules.

Click the **Allow the Connection** option, and then click **Finish**.

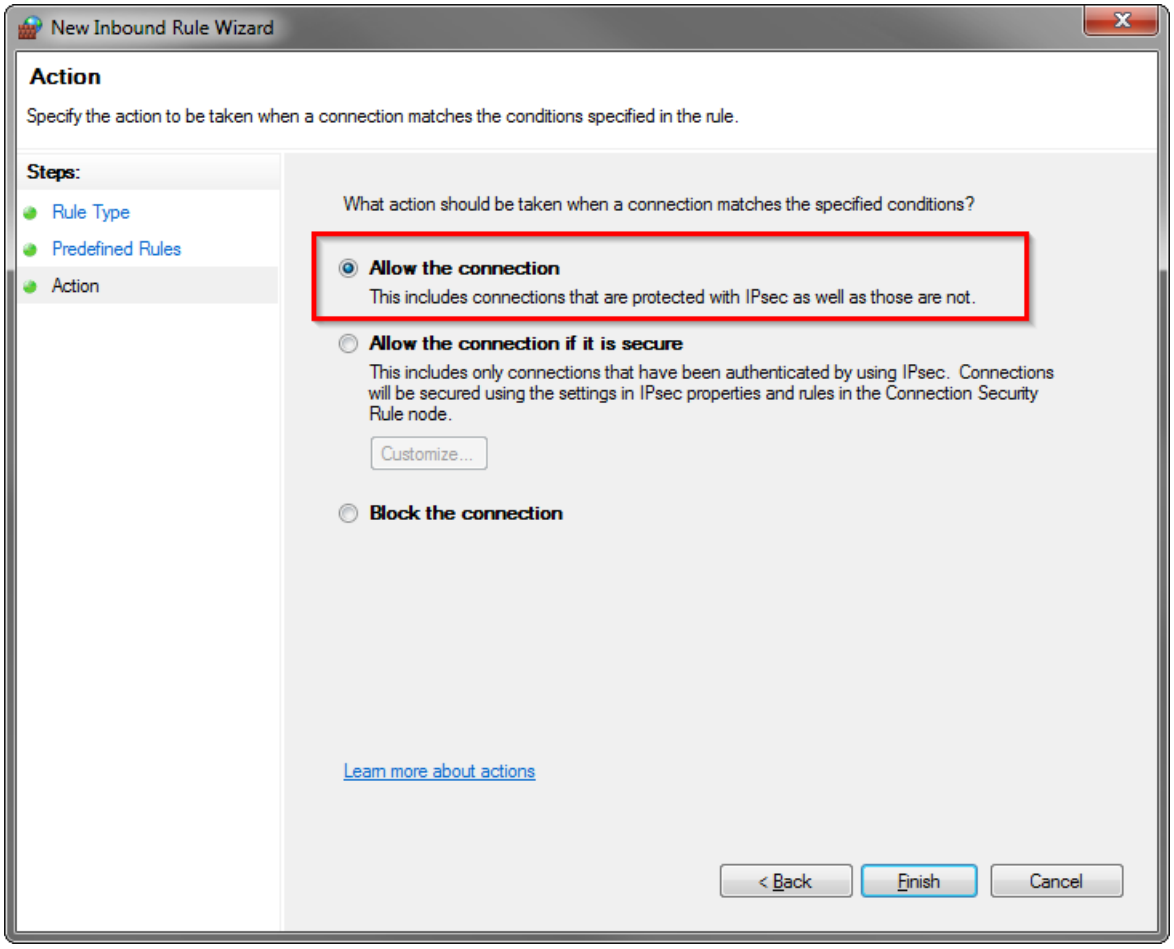


Figure 29. Allow incoming Microsoft Windows Management Instrumentation connections.

User Account Control (UAC)

Windows User Account Control (UAC) must be disabled on the remote OnGuard DataConduIT server so the Fiber SenSys OnGuard Integrator can send DataConduIT events remotely to OnGuard .

Open the User Account Control Settings by searching for “UAC” in the control panel. To turn UAC off move the slider to the **Never notify** position, and then click **OK**. You will need to restart your computer for UAC to be turned off.

WMI User Permissions

The account used to connect remotely to the DataConduIT server needs to have remote WMI permissions on the DataConduIT server. Open the Windows **Computer Management** application. Open the **WMI Control** properties in the **Services and Applications** tree.

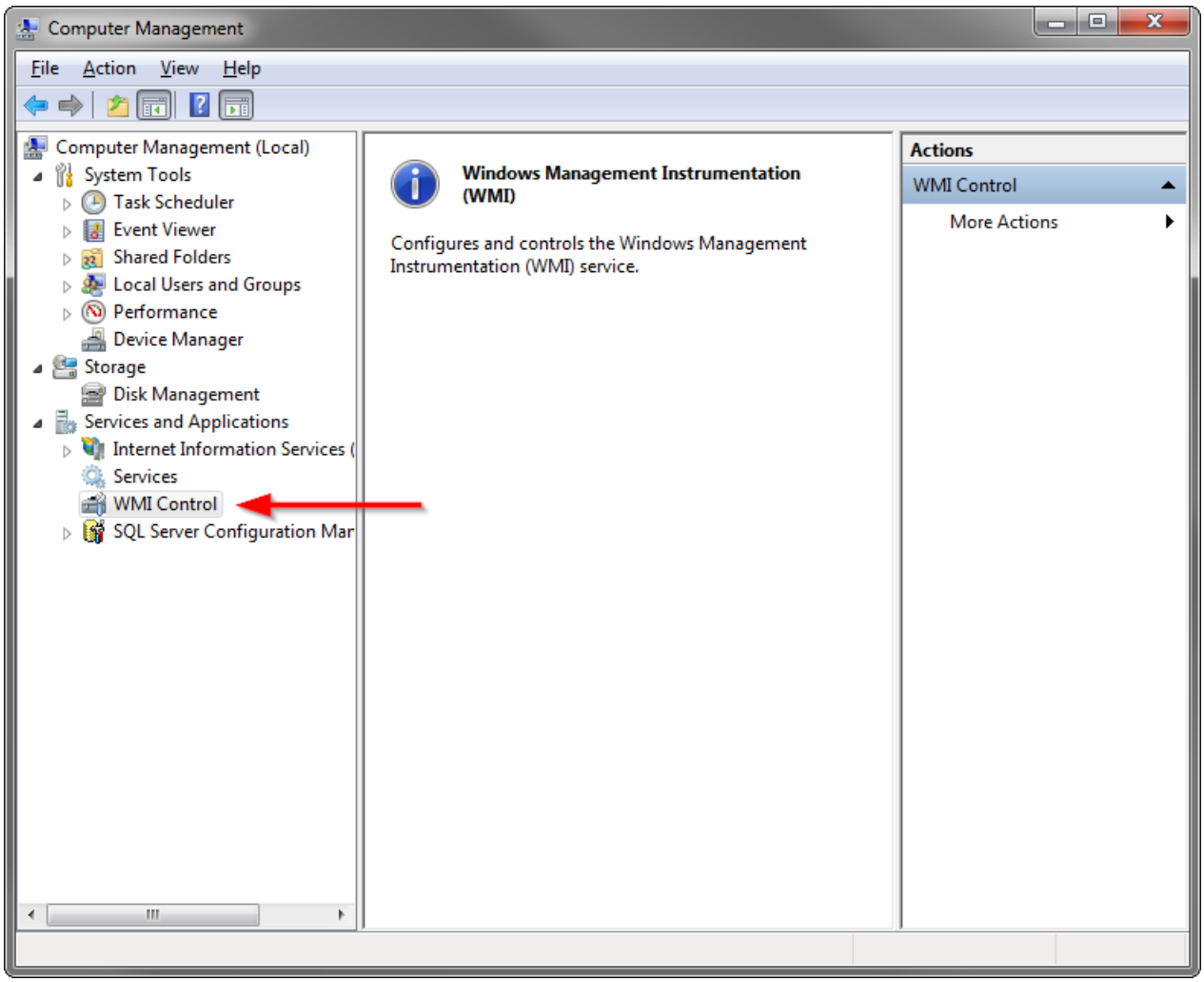


Figure 30. WMI Control properties located in the Computer Management application.

In the **Security** tab, click on **OnGuard** then click **Security**.

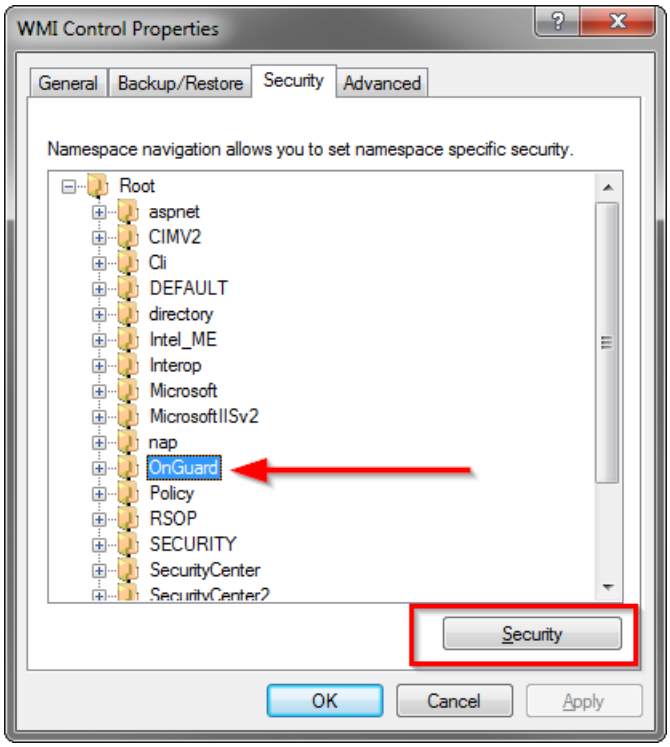


Figure 31. Listing of all WMI Controls.

Select the account used to connect remotely to the DataConduIT server and verify the account has the **Remote Enable** permission.

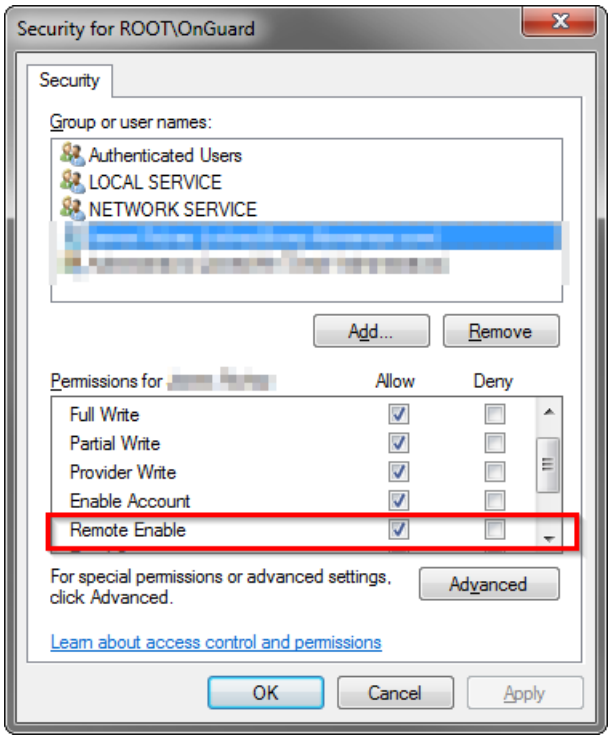


Figure 32. OnGuard WMI security properties. Check Allow Remote Enable to allow remote access.

Appendix B: Using the Listen Server

The Fiber SenSys OnGuard Integrator can be configured to accept incoming connections initiated from APUs.

To enable the listen server first enter the port to listen on in the **Port** box. The default port is 10000. Next select **Enable Listen Server**. The port cannot be changed while the server is running.

NOTE: Make sure the listen server port number is not in use by any other application.

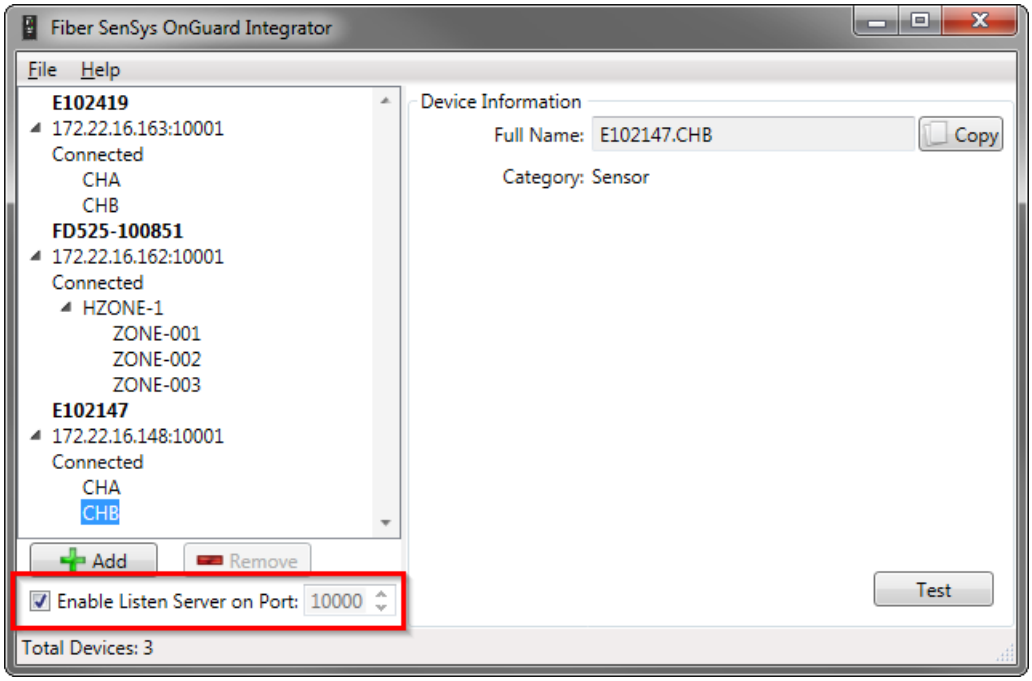


Figure 33. The listen server allows APUs to actively connect to the Fiber SenSys OnGuard Integrator.

Each APU must be configured to connect to the PC running the Fiber SenSys OnGuard Integrator. Refer to AN-SM-009, the *APU Networking Application Note*, on how to configure the APU's **Active Connect** options.

When an APU connects the APU will automatically be added to the device list.

Appendix C: Changing the reported names of APUs and zones

The names reported by Fiber SenSys OnGuard Integrator for an APU or zone can be configured. This allows the names reported in OnGuard to be the appropriate names for your site.

Begin by using the Fiber SenSys OnGuard Integrator software. Select the APU or zone whose name you want to change and press the **Edit** button.

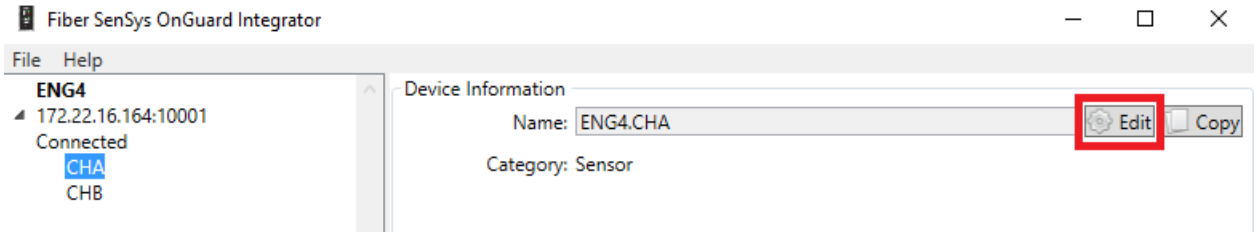


Figure 34. The edit button can be used to change the name reported to OnGuard.

This will pop up a dialog window. Edit the name to the value of your choice and press **OK**. If you decide that you do not want to change the name, press **Cancel**.

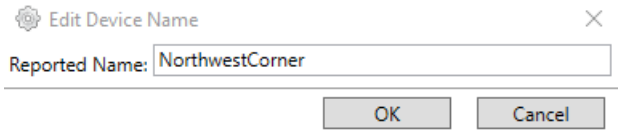


Figure 35. The dialog window for editing a reported name.

Verify that the name has been modified.

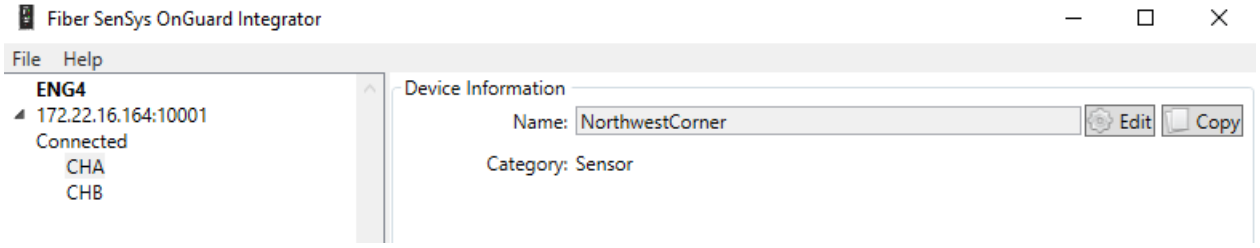


Figure 36. This zone's reporting name has been changed.

If the APU or zone has already been added to OnGuard, you will need to edit the name in OnGuard to match. This process is similar to the process for adding APUs and zones in that you will need to access the **Logical Devices...** section of the "System Administration" application. Use the **Modify** button to edit the logical device (for an APU) or logical sub-device (for a zone).

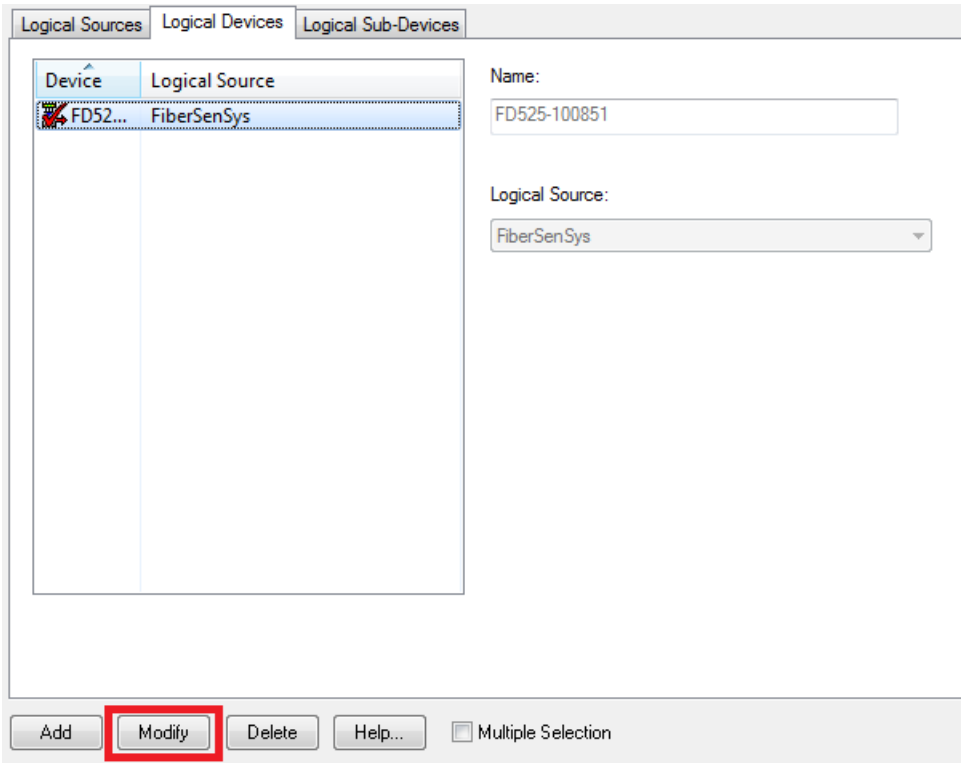


Figure 37. Modifying a device to change its name.

Appendix D: Limitations

There are some limitations with the integration that users should be aware of.

1. The Fiber Defender alarms sent to OnGuard Alarm Monitoring will display the time of the OnGuard system.
2. When the OnGuard Communication Server or DataCondulT service is down, any alarms triggered from Fiber Defender during this time will not be sent to OnGuard once OnGuard Communication Server or DataCondulT service is up again.
3. There will be no additional text displayed with the Fiber Defender alarms that are sent to OnGuard Alarm Monitoring.

About Fiber SenSys

Fiber SenSys is the market leading manufacturer of fiber-optic intrusion detection solutions for government and military installations, airports, oil refineries, electrical substations, nuclear power plants, water purification and storage, corporate headquarters, and manufacturing facilities. As the only fiber optic solution that is PL-1 Nuclear Certified, Fiber SenSys products offer superior operations in the harshest environments. Simple installation with hand tools and designed for a 20 year lifespan, Fiber SenSys offers the lowest Total Cost of Ownership in the industry. In addition to keeping intruders out, Fiber SenSys intrusion detection systems can be used to protect the most important resources. Please visit the company's website where additional software and product information can be found: www.fibersensys.com.

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