

## INTEGRATING AN APEXZ INTO LMS PHARMA 8

This Whitepaper is intended to assist users that are looking to integrate their ApexZ unit into LMS Pharma’s facility control/monitoring system. This document covers the following topics:

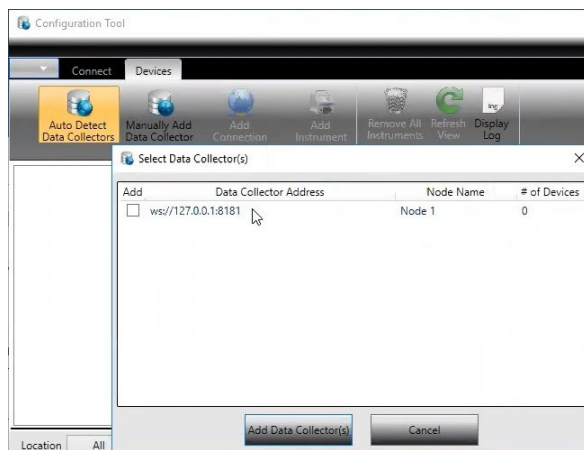
1. Establishing a connection to the ApexZ unit via the Configuration Tool
2. Establishing a connected unit into LMS Pharma’s Database Tree
3. Adding a connected unit to the Map and Grid tabs within LMS Pharma
4. Running a connected ApexZ in Portable Mode
5. Performing a data buffer download from the connected unit.

It is required that the ApexZ unit be connected to the same network as the computer running LMS Pharma.

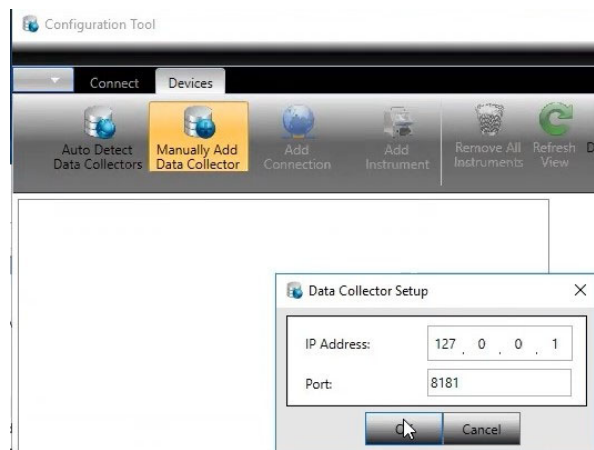
### 1 Connecting ApexZ Unit to Configuration Tool

- 1.1 Open the Configuration Tool, which connects to the Data Collector Service (allows connection to most LWS instruments).
- 1.2 On the Devices tab, click Auto-Detect (will detect any LWS instruments connected to network and On). A connection will pop up based on available devices, with IP Address (127.0.0.(new unused address)), TCP socket used, and Node. See Figure 1.2. Click on “Add Data Collector” when done.

**NOTE:** Will work unless the port is blocked.



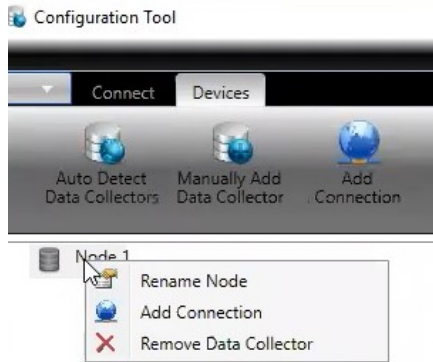
**Figure 1.2**



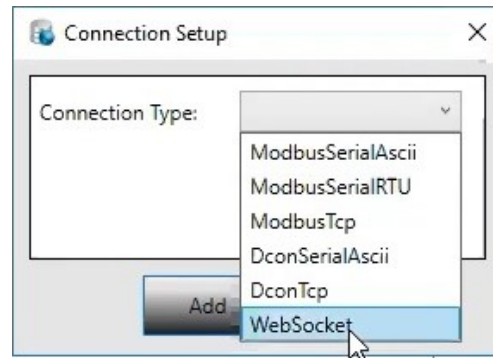
**Figure 1.3**

1.3 To MANUALLY add a connection, click the “Manually Add Data Collector” button as seen in Figure 1.3. Input IP address (127.0.0.(unused address)) and Port used. Click on “OK” when done.

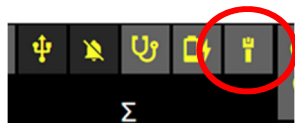
1.4 On the Devices tab, a new Node will show. Right click on this new node and select “Add Connection” (see Figure 1.4A). In the dropdown for Connection Type, select Web Socket. Click on Add, will create a Socket Connection on screen.



**Figure 1.4A**



**Figure 1.4B**



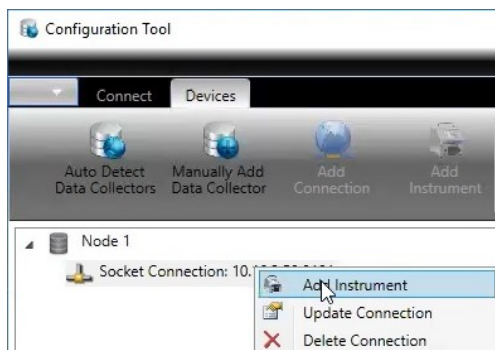
**Figure 1.5A**



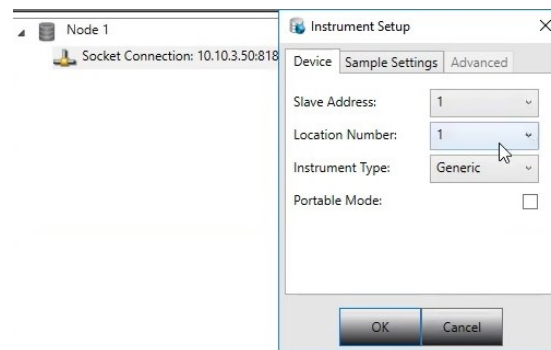
**Figure 1.5B**

1.5 Collect the IP Address from the ApexZ unit by clicking on the Network Connections icon on the units Main Screen (Figure 1.5A). Input that IP address into the “Ip Address” box in the Connection Setup window, select an available Port, and click “Add”. This will create a Socket Connection under the Node in the Configuration Tool.

1.6 Right click on Socket Connection, click “Add Instrument”. In the Instrument Setup box, leave Slave Address and Instrument Type alone. Select Location the ApexZ unit will use, and click OK.



**Figure 1.6A**



**Figure 1.6B**

1.7 On the Devices screen, the Apex unit will show up. It will have a Stop sign on the unit image; the physical unit will have gone into Remote mode and all sampling will be stopped.

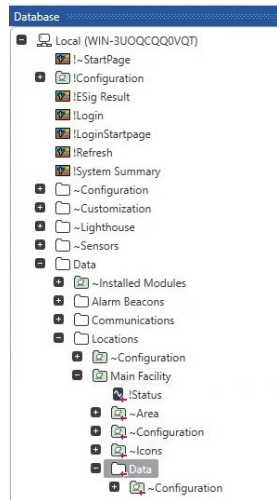
1.8 To add additional units, repeat steps 1.2/1.3 through 1.6. A new Socket Connection will be made, and the new unit will show under it.

## 2 Establishing Connected ApexZ Unit into LMS Pharma Database Tree

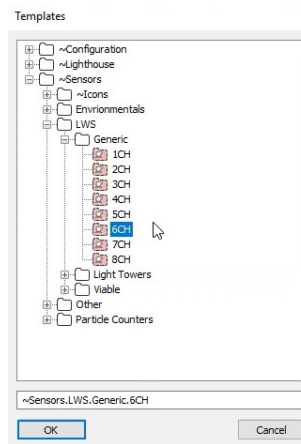


2.1 Open ViewX, the configuration tool for LMS Pharma. Click the Log On button, then use appropriate credentials to log on to the ViewX terminal.

2.2 Expand the Local location under Database on the left side of the screen by pressing the + button next to it. Similarly expand Data under that, then Locations. Choose a location for the instrument (Main Facility used in examples) and expand that level. Right click on Data within that level and select Create Instance from the menu to open the Templates window (Figure 2.2B).



**Figure 2.2A**



**Figure 2.2B**

2.3 In the Templates window as shown in Figure 2.2B, click on Sensors, then LWS, then Generic, and make a selection based on the number of channels you want displayed from the connected instrument. Give the connection a name in the last box. Click OK.

2.4 Expand the new unit and select the Config item. This will show the Config screen as seen in Figure 2.4. Ensure that the first dropdown has “Data Collector” listed.

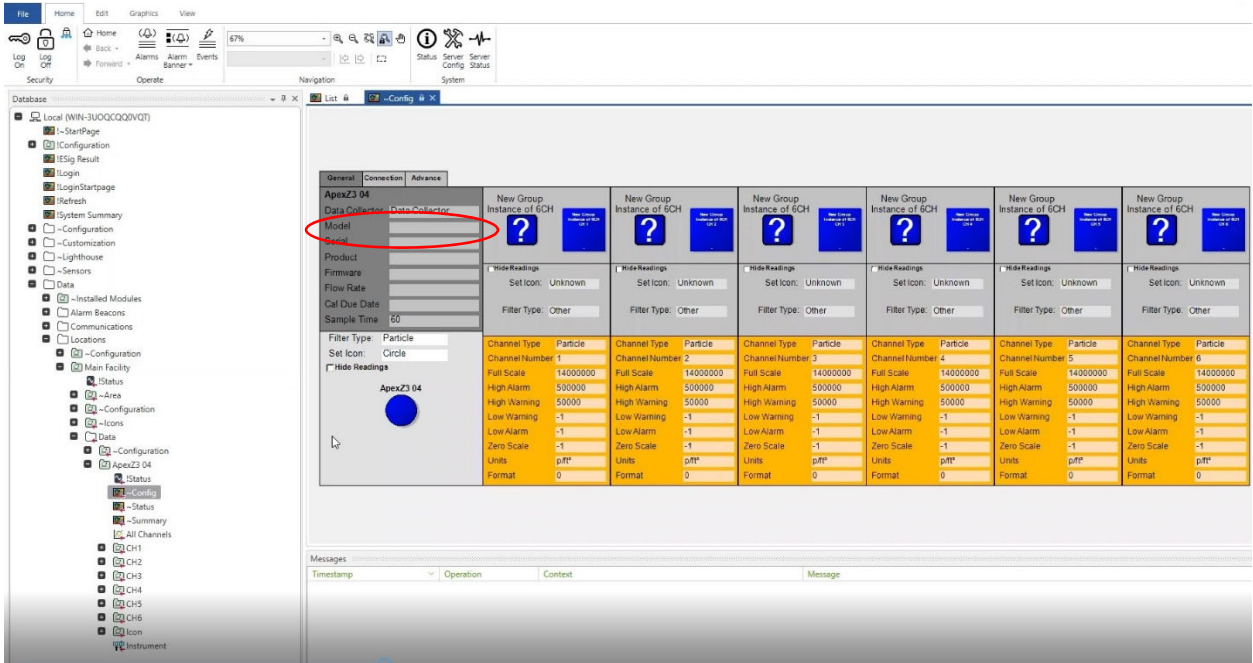


Figure 2.4

2.5 If desired, the icons on this screen can be changed. Update the channel icon by clicking in the “Set Icon” window for each channel and selecting a different symbol from the list, as shown in Figure 2.5.

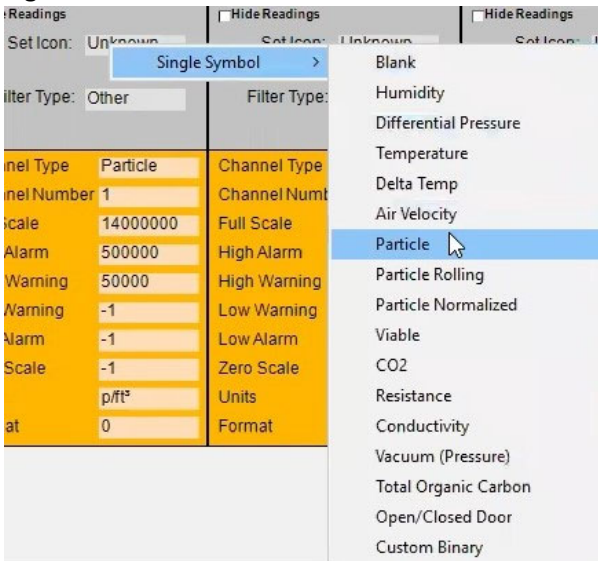


Figure 2.5

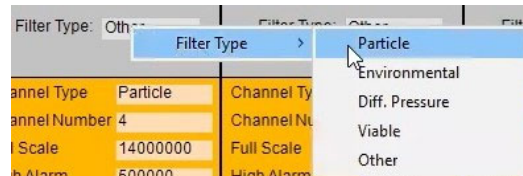
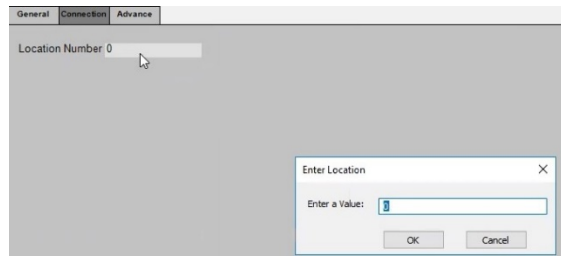


Figure 2.6

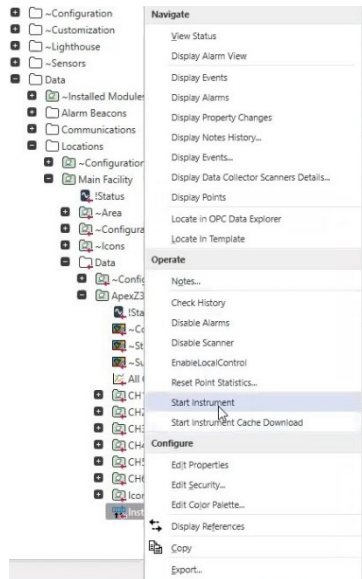
2.6 Set the Filter Type to Particle (Figure 2.6) to help drive Reports and Lists properly.

2.7 Go to the Connection tab. Select the window listing the Location Number and input the value put in at Step 1.6. Select OK.



**Figure 2.7**

2.8 Right click on the Instrument item in the left-side menu and click on Start Instrument (Figure 2.8A). The General tab will update with the connected units information, as seen in Figure 2.8B.



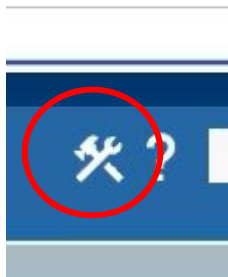
**Figure 2.8A**

ApexZ3 04		ApexZ3 04 CH 1		ApexZ3 04 CH 2		ApexZ3 04 CH 3		ApexZ3 04 CH 4		ApexZ3 04 CH 5		ApexZ3 04 CH 6	
Data Collector	Data Collector	ApexZ3 04 CH 1	ApexZ3 04 CH 1	ApexZ3 04 CH 2	ApexZ3 04 CH 2	ApexZ3 04 CH 3	ApexZ3 04 CH 3	ApexZ3 04 CH 4	ApexZ3 04 CH 4	ApexZ3 04 CH 5	ApexZ3 04 CH 5	ApexZ3 04 CH 6	ApexZ3 04 CH 6
Model	ApexZ3	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>
Serial	1705141008	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>
Product	APC	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>
Firmware	2.02.004	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>
Flow Rate	28.316 LPM	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>
Cal Due Date	12/20/2019	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>
Sample Time	60	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>	0 p/ft <sup>3</sup>
Filter Type:	Particle	Channel Type	Particle	Channel Type	Particle	Channel Type	Particle	Channel Type	Particle	Channel Type	Particle	Channel Type	Particle
Set Icon:	Circle	Channel Number	1	Channel Number	2	Channel Number	3	Channel Number	4	Channel Number	5	Channel Number	6
Full Scale	14000000	Full Scale	14000000	Full Scale	14000000	Full Scale	14000000	Full Scale	14000000	Full Scale	14000000	Full Scale	14000000
High Alarm	500000	High Alarm	500000	High Alarm	500000	High Alarm	500000	High Alarm	500000	High Alarm	500000	High Alarm	500000
High Warning	50000	High Warning	50000	High Warning	50000	High Warning	50000	High Warning	50000	High Warning	50000	High Warning	50000
Low Warning	-1	Low Warning	-1	Low Warning	-1	Low Warning	-1	Low Warning	-1	Low Warning	-1	Low Warning	-1
Low Alarm	-1	Low Alarm	-1	Low Alarm	-1	Low Alarm	-1	Low Alarm	-1	Low Alarm	-1	Low Alarm	-1
Zero Scale	-1	Zero Scale	-1	Zero Scale	-1	Zero Scale	-1	Zero Scale	-1	Zero Scale	-1	Zero Scale	-1
Units	p/ft <sup>3</sup>	Units	p/ft <sup>3</sup>	Units	p/ft <sup>3</sup>	Units	p/ft <sup>3</sup>	Units	p/ft <sup>3</sup>	Units	p/ft <sup>3</sup>	Units	p/ft <sup>3</sup>
Format	0	Format	0	Format	0	Format	0	Format	0	Format	0	Format	0

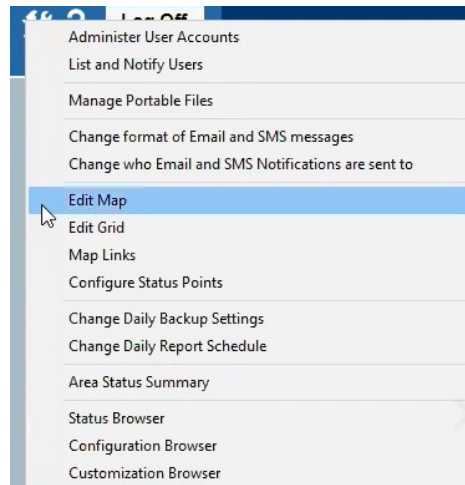
**Figure 2.8B**

### 3 Adding Connected Unit to LMS Pharma Main Facility Map and Grid Tabs

3.1 Once added to the Database Tree as in Section 2, the unit channels will be shown in the List tab on the Main Facility screen, but not on the Map or Grid tabs. Select the Map tab in the Main Facility screen. Click on the Config icon in the upper right corner (Figure 3.1A) and select “Edit Map” from the list (Figure 3.1B). This will bring up the Map editor screen.

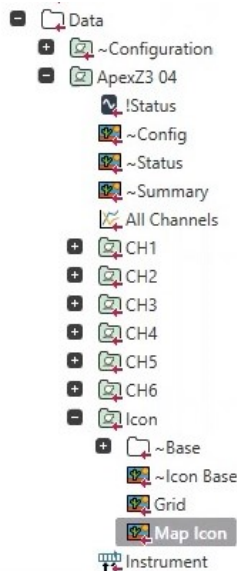


**Figure 3.1A**



**Figure 3.1B**

3.2 In the left-side menu, select the Icon item under the connected unit. Click and drag the Map Icon item onto the Map editor space, then select “Embedded Mimic” from the list that pops up. Resize the image at will, close the Map Editor, and the embedded mimic will show on the Map tab.

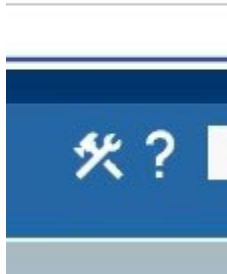


**Figure 3.2A**

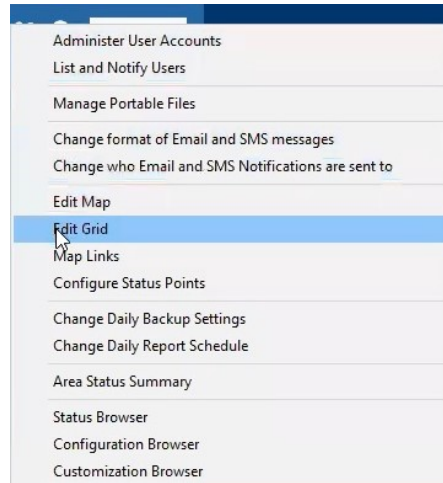


**Figure 3.2B**

3.3 To add the unit to the Grid tab, click on the Config icon in the upper right corner and select “Edit Grid” from the list. This will bring up the Grid Editor screen.

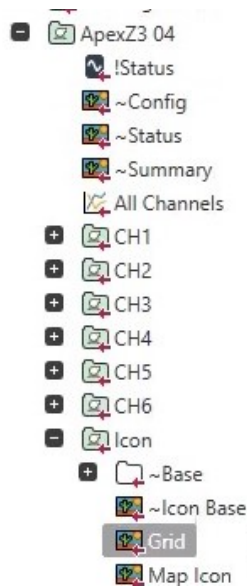


**Figure 3.3A**

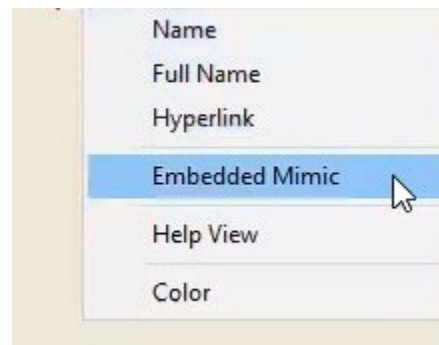


**Figure 3.3B**

3.4 In the left-side menu, select the Grid icon under the connected unit. Click and drag the item onto the Grid editor space, then select “Embedded Mimic” from the list that pops up. Resize the image that appears at will. Close the Grid Editor to return to the Main Facility screen, and the embedded mimic will be shown on the Grid tab.



**Figure 3.4A**



**Figure 3.4B**

The instrument can now be controlled and viewed on the indicated tabs.

## 4 Running Connected Unit in Portable Mode

4.1 In the Configuration Tool, right click on the instrument, select Update Instrument, and enable Portable Mode in the Instrument Setup window. Click OK. The ApexZ unit will go out of Remote Mode and be controllable from the instrument screen.

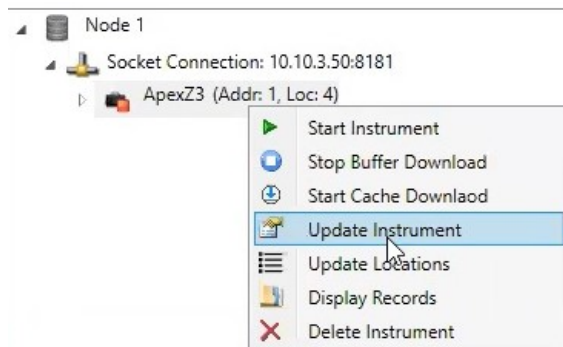


Figure 4.1A

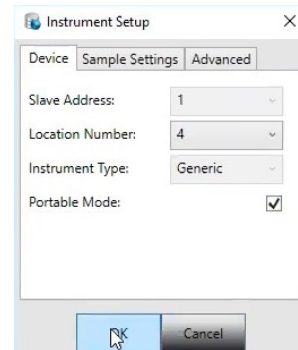


Figure 4.1B

4.2 To display records from separate locations, create a new object in the left-side menu. In the Location desired for the instrument, right click on the Data object and select Create Instance (Figure 4.2). In the Templates window that pops up, select Sensors, then LWS, then Generic, and select the number of channels desired to be displayed. Name the New Connection and click OK.

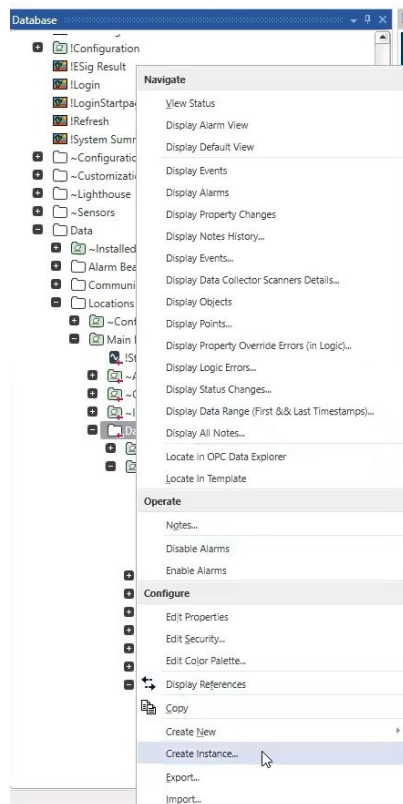


Figure 4.2A

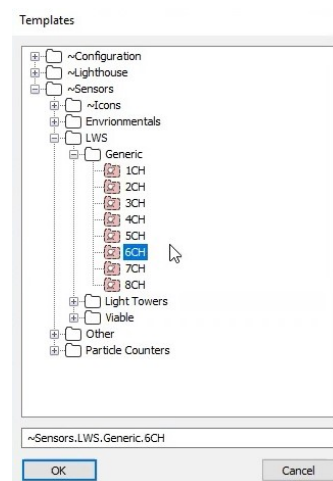
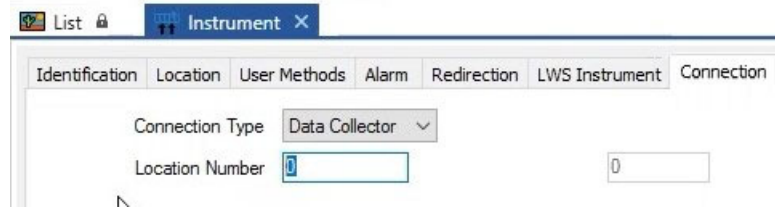


Figure 4.2B



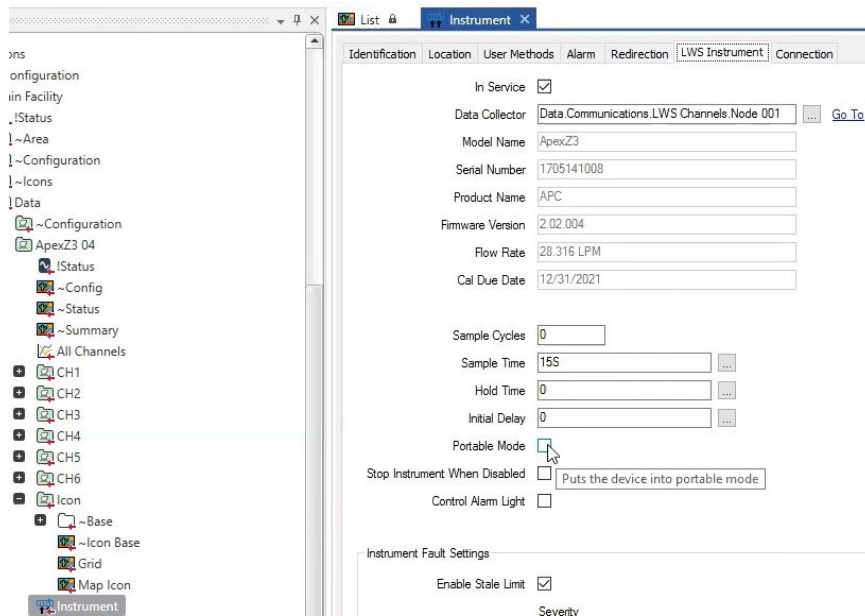
4.3 Click on the Instrument object listed under the new item created in the left-side menu. On the Connection tab, change the Location Number to the Location that will be used on the Instrument. (I.E. if Pharma is set to Location Number 5, it will only update with data when the unit is set to Location 5).



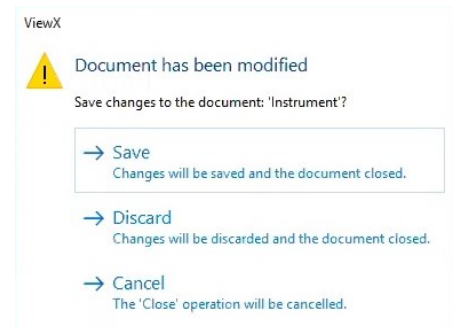
**Figure 4.3**

4.4 Repeat steps 4.2 and 4.3 for each Location that the ApexZ will be used to sample at. When the unit is run at different Locations, the data will now update to the appropriate object in Pharma that is set for that Location.

4.5 To restrict Alarming to unit only (will not show in Pharma system): Select Instrument from the left side menu for the object desired. In the Instrument screen shown, check “Portable Mode” and close the Instrument window. Click Save to confirm on the popup window. This will change the icons in Pharma to an Orange color indicating the set state.



**Figure 4.5A**



**Figure 4.5B**

4.6 The icons in Pharma will change to an Orange color to indicate the new set state. Particle data will continue to be collected and displayed in this state, but Alarms active on the connected unit will not be indicated in the Pharma windows. This process needs to be completed on each Location object for the connected unit in order to set the Alarm state.

## 5 Downloading Data from Connected ApexZ Unit Instrument Buffer

5.1 Prior to performing a buffer download, ensure that an instrument object has been created for the connected unit for each Location that data is desired for. Imported data for Locations not set up will not be displayed, and will have to be re-downloaded once a proper object has been created.

5.2 Right click on Map object, select All channels (or individual channel, if desired), then select “Start Instrument Cache Download”. Fill in the popup window that displays, and click OK. LMS Pharma will display a notification window that the download has been started successfully. Data will be filtered by Location into each object already in existence in Pharma.

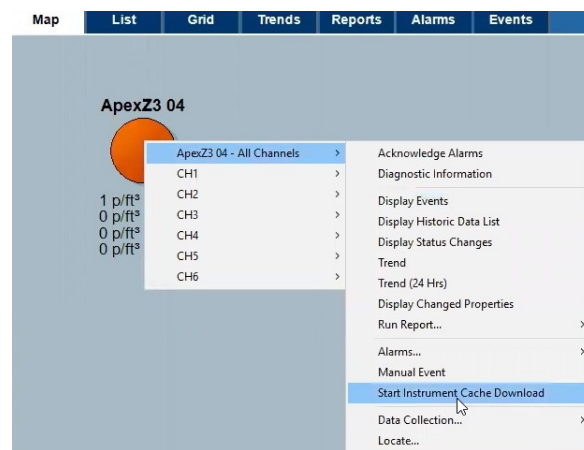


Figure 5.2