

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 "ADdd Data Collector" when done.

Manually Add Data Collector	Add Connection	Add Instrument	Remove All Refresh Displ Instruments View Log	lay g
Select Data C	ollector(s)	r Address	Node Name	# of Dev
₩s://127.0	0.1:8181		Node 1	0
	Marually Add Data Collector Select Data C Add wvs://127.0.	Manualiy Add Add Data Collector Connection Select Data Collector(s) Add Data Collector ws://127.00.118181 ₽	Manually Add Add Add Add Add Add Information Add Information Informatio Information Information Information Information Inform	Manually Add Add Add Remove All Referent Dapp Obset Collector Connection Instrument Referent Dapp Select Data Collectors(s) Instrument Node Name Add Data Collector Address Node Name wss//127.00.118181 Node 1

NOTE: Will work unless the port is blocked.

Configuration Tool

Connect

Devices

Auto Detect Data Collectors	Manually Add Data Collector	Add Connection	Add Instrument	Remove Al Instrument	C I Refresh D s View
		🐻 Data C	ollector Setup		×
		IP Addr	ress:	127 0 0	0 1
		Port:	٤	3181	
		L	d >	Cancel]

Figure 1.2





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.

Configuration Tool	Connection Setup X
Connect Devices Auto Detect Manually Add Add Data Collectors Data Collector Connection Image: Connection Rename Node Image: Connection Add Connection Image: Connection Remove Data Collector	Connection Type: ModbusSerialAscii ModbusSerialRTU ModbusTcp DconSerialAscii DconTcp WebSocket
Figure 1.4A	Figure 1.4B
	Connection Type: WebSocket ~ Ip Address: 10 10 3 50
ψ 🔌 🔱 🕻 🕴 Σ	Add Cancel

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.

🔞 Configuration Tool	Node 1	🚯 Instrument Setup	×
Connect Devices	Socket Connection: 10.10.5.30.816	Device Sample Settings Slave Address: Location Number: Instrument Type: Portable Mode:	Advanced
Node 1		ОК	Cancel
Figure 1.6A	Figu	ure 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 ¹, 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).



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.

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Database - # ×	List & 🖸 -Config & X												
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C ~Lighthouse C ~Sensors Data	Product Firmware Flow Rate	('HideReadings Set Icon:	Unknown	Hid+Readings Set Icon:	Unknown	HideReadings Set Icon:	Unknown	r HideReadings Set Icon:	Unknown	C'Hide Readings Set Icon:	Unknown	Filde Readings Set Icon:	Unknown
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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



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

Figure 2.6



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.

General	Connection	Advance			 _
Locatio	n Number 0	ß			
			Enter Location		×
			Enter Location Enter a Value:	0	×

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

General Conne	ection Advance												
ApexZ3 04		ApexZ3 04 CH	ł	ApexZ3 04 CH		ApexZ3 04 CH	I	ApexZ3 04 CI	н	ApexZ3 04 C	4	ApexZ3 04 CH	l.
Data Collector	Data Collector	1		2		3		4		5		6	
Model	ApexZ3	dia.	Aprenzi SM CH 1	da.	Apen/2104 CH Z	da.	Apres 23 04 013	dis.	Apend3 IN CH 4	die.	Apres 23 94 CH 3	da.	Apends b4 CH 8
Serial	1705141008		0 pm		ο pm·		U prit-		U pvrt-		0 pm		υριπ
Product	APC	0 p/ft ³		0 p/ft ^a		0 p/ft ^a		0 p/ft ^s		0 p/ft ^s		0 p/ft ^a	
Firmware	2.02.004	T'Hide Readings		Hide Readings		Hide Readings		Hide Readings		Hide Readings		Hide Readings	
Flow Rate	28.316 LPM	Set Icon:	Particle	Set Icon:	Particle	Set Icon:	Particle	Set Icon:	Particle	Set Icon:	Particle	Set Icon:	Particle
Cal Due Date	12/20/2019	Ciller Tunei	Destate	Filler Tune:	Dedista	Ciltor Tupo:	Destists	Filler Tune:	Destists	Filter Tupe:	Destinia	Filler Tune:	0.0
Sample Time	60	Filler type.	Falucie	Filler Type.	ratucie	Filler Type.	Falucie	Filler Type.	Failucie	Filter Type.	Fatucle	Filler Type.	Other
Filter Type:	Particle												
Set Icon:	Circle	Channel Type	Particle	Channel Type	Particle	Channel Type	Particle	Channel Type	Particle	Channel Type	Particle	Channel Type	Particle
Hide Reading		Channel Numb	m 1	Channel Numbe	r 2	Channel Numbe	er 3	Channel Numb	er 4	Channel Numb	er 5	Channel Numbe	r 6
1 Inde Roading		Full Scale	14000000	Full Scale	14000000	Full Scale	14000000	Full Scale	14000000	Full Scale	14000000	Full Scale	14000000
A	ApexZ3 04	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
		Low Warning	-1	Low Warning	-1	Low Warning	-1	Low Warning	-1	Low Warning	-1	Low Warning	-1
0	p/ft ^a	Low Alarm	-1	Low Alarm	-1	Low Alarm	-1	Low Alarm	-1	Low Alarm	-1	Low Alarm	-1
0	p/π ² U p/π ²	Zero Scale	-1	Zero Scale	-1	Zero Scale	-1	Zero Scale	-1	Zero Scale	-1	Zero Scale	-1
0	p/π,	Units	p/ft³	Units	p/ft³	Units	p/ft³	Units	p/ft ³	Units	p/ft³	Units	p/ft³
		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.







3.2 In the eft-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.









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.

Administer User Accounts
Manage Portable Files
Change format of Email and SMS messages Change who Email and SMS Notifications are sent to
Edit Map
Fdit Grid
Map Links
Configure Status Points
Change Daily Backup Settings
Change Daily Report Schedule
Area Status Summary
Status Browser
Configuration Browser
Customization Browser





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.



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.

🖌 🗐 Node 1		🚯 Instrument Setup	>
A 🔔 Socket Conn	ection: 10.10.3.50:8181	Device Sample Settings Advanced	
ApexZ3	(Addr: 1, Loc: 4)	Slave Address: 1	~
	Start Instrument	Location Number: 4	~
	Stop Buffer Download	Instrument Type: Generic	4
	Start Cache Downlaod	Portable Mode:	~
	🚰 Update Instrument		
	Update Lovations		
	Display Records		
	X Delete Instrument	RK Cancel	





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).

Identification	Location	User Methods	Alarm	Redirection	LWS Instrument	Connection
C	onnection	Type Data Col	lector	~		
L	ocation Nu	mber 🚺			0	



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.

ns	Identification Location User Meth	oods Alarm Redirection LWS Instrument Co	nnection	
onfiguration			The court	
in Facility	In Service			
Status	Data Collector	Data.Communications.LWS Channels.Node 001	<u>Go To</u>	
~Area	Model Name	ApexZ3		
~Configuration		1705141000		
~lcons	Senal Number	1705141008		
Data	Product Name	APC		
🔯 ~Configuration	Firmware Version	2.02.004		
ApexZ3 04	Row Bate	28 316 LPM		
No. IStatus	How Hate			1.e
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🙀 ~ Status				A Description have been availed
🔯 ~ Summary	Sample Cycles	0		Document has been modified
K All Channels	- 1 F	150		Save changes to the document: 'Instrument'?
• 🖾 СН1	Sample Time	155		
• 🖾 CH2	Hold Time	0		
• 🖾 СНЗ	Initial Delay	0		→ Save
• 🖾 CH4	Pottable Mode			Changes will be saved and the document closed.
 CH5 	T ditable Mode			
• 🖾 CH6	Stop Instrument When Disabled	Puts the device into portable mode		\rightarrow Discard
🖬 🔯 Icon	Control Alarm Light			Changes will be discarded and the document closed.
Ase				
💯 ~lcon Base	Instrument Fault Settings			\rightarrow Cancel
💯 Grid	inationent i dut Settings			The 'Close' operation will be cancelled.
Map Icon	Enable Stale Limit			
The Instrument		Severity		

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