# **AD\ANTECH**

# Wzzard<sup>™</sup> Data to OSIsoft PI System

### via OSI Message Format (OMF)

# Setting Up Node-RED to Transmit Wzzard Data to the OSIsoft PI System using the OSI Message Format (OMF)

How to publish data from Wzzard into OSIsoft PI System using OSI Message Format (OMF)

NOTE: This assumes your Gateway is set up and claimed on WebAccess/DMP (formerly SmartWorx Hub).

# **OSI Message Format (OMF) Nodes**

 Locate the nodes on the GitHub webpage; read the documentation and sample flows. <u>https://github.com/osisoft/OMF-Node-RED</u>

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♀ osisoft / <b>OMF-Node-RED</b>	)		• Watch 1	2 ★ Star 4 ¥ Fork 1	
<> Code ① Issues 0 )	Pull requests 0	rojects 0 III Insights			
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Nodes to use in Node-RED to I	nelp generate an OSIso JØ 1 branch	ft Message Format (OMF) m <b>© 0</b> releases	essage	ಶ್ರೆ Apache-2.0	
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## SmartWorx Hub – Manage Device

• Log into SmartWorx Hub and open the management page for your device.

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Dashboard Devices - Users - Te	nants Configuration Profiles	Password - Contact								
	Dashboard > Devices > Manage Device									
•	Device ID 203-01-ACZ1100	0000266665								
	Name Ted Vibration D	emo		•	0	SMARTSWARM				
	Status Operational	¥		2 N N						
	Firmware 2.2.3	• Push								
	DeviceType SmartSwarm342									
	MAC Address 00:0A:14:87:A3:8	37								
	Custom 1			li di						
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	Online 👖									
	Settings Select	Y								
	Save Cancel History	Device Status Add/Upgrade	Apps Geo Location	Wzzard Mest	1					
	Manage Apps									
	Remove Selected									
	Name	Tag	Туре	Version	Help	Added				
	RSMessageBroker	RSMessageBroker	Application	1.0.5		13/12/2018 20:54:54				
	Wzzard Mesh	Wzzard Mesh	Application	1.1.0		13/12/2018 20:54:33				
	NodeRED	NodeRED	Application	1.0.12		13/12/2018 20:56:00				
	REF	NEF	Package	1.0.0		30/08/2018 18:14:53				
	Components-342	Components-342	Component	1.4.3		13/12/2018 20:55:36				

- Ensure RSMessageBroker, Node-RED and Wzzard Mesh are installed.
- Select Add/Upgrade Apps (and add any that are missing).
- Double-click on the **Node-RED App**, and select **Nodes**. Add the **Node**(s).

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Dashboard Devices - Users - Tenant	s Configuration Profiles Password -	Contact	
	Dashboard > Devices > Manage Device > Settings Nodes Firewall	Application Settings	
		Device ID         203-01-AC21100000266665           Application Name         NodeRED	
		Version         1.0.12           Tag         NodeRED	
		Back Apply Changes * Required Field Nodes	
		Add or Remove Nodes +	
		Node: node-red-contril-osisoft-omf	
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node-red-contrib-osisoft-omf





## Node-RED Set Up

- Log into the Gateway Node-RED flow editor in your browser by going to: <u>HTTP://192.168.1.1:1880</u>.
- Username is NodeRED. Password is the same as Gateway password (5mart5warm default).

Node-RED: 192168.1.1 × +	
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• Set up your Node-RED flow per the example on the GitHub site.



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### **Properties**

• Set up the **Properties** that you want to send to the OSIsoft PI System in the **Type ID** node.

						- Deploy -	2
	osisoft-omf-type >	Edit osisoft-omf-	type-bridg	ge node	info	debug	
	Delete			Cancel Upda	te		
	Name	vibrationdemo					
1	Type ID	vibrationdemoRe	d				
	Classification	dynamic					
	Version	1.0.0.0					
5	Friendly Name	localhost					
	Description	vibrationdemo					
	Tags	localhost					
	Netadata	localhost					
	Add _time						
-container	Properties	5	Set Num	ber of Properties			
	Property 1	vibration		Number •			
	Property 2	temperature		Number •			
	Property 3	tempint		Number •			
http request	Property 4	vbatt		Number •			
3	Property 5	time		Number •			
	0 3 nodes use this c	onfig	C	On all flows	•		



via OSI Message Format (OMF)

### **Producer Tokens**

• Configure your **Producer Token** in each node.

						Depk
	osisoft-omf-type >	Edit osisoft-omf-headers-brid	ge node		info	deb
	Delete		Cancel	date		
	Name	prod		]		
1	Producer Token	1/a867d2adc554432ea3ceec9	65489f54b/ea5aebf			
	☑ Message Format	json				
	OMF Version	1.0				
lata2	C Action	create				
	Compression	gzip				
sisoft-omf-container						
http request						



# **OSIsoft PI System Server URL**

• Insert the URL to your OSIsoft PI System server.

Simply Modbus - Dat Rev Node-RED Dashboart 📙 New folder	B SWH L	lser account   freedo 🔹 #103 ESP.	32 Tutorial 🖉 Common Acces	s Poin	
				-	Deploy
	osisoft-omf-type	e > Edit osisoft-omf-url node		info	debu
	Delete		Cancel Update		
	Name	URL			
4	<b>V</b> RL	https://localhost:5000/edge/	omf/tenants/default/na		
set msg.data2					
st o osisoft-omf-container					



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### Container IDs

• Set the **Container ID** for each node.

					Deploy 🔻
	osisoft-omf-contair	ner > Edit osisoft-omf-containe	er-bridge node	info	debug
	Delete		Cancel Update		
	Name	wunderground			
1	Container ID	0013430F1234			
	Type ID	type			
	Type Version	1.0.0.0			
set msg.data2	Friendly Name	name			
	Description	vibrationdemo			
	Tags	0			
	MetaData	0			
o sisoft-omf-container					

• If you are using multiple Wzzard nodes, create a **container** for each one. Split the streams from each node with a **switch node**.

Parse Nodes
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# Mapping

• In your data nodes, add data for mapping to the Wzzard.

	= Type to	туре		containe
pad E	Containes ID			typevers
	Container ID	Container		Type Cor
ature	Nersion	1.0.0		properti
	Value Array	П		can be ι
	,			
				Details
		[ ]		
	Properties	5	Set Number of Properties	Type IDo
		in a frame Trunc		Used as
	Load propert	les from Type		Configu
	Property 1	vibration	{{payload.ai3}}	Contain
				Containe
http request 9 m	Property 2	temperature	{{payload.ai2}}	Configu
				Versiono
	Property 3	tempint	{{payload.tempir	Used as
		· · · · · · · · · · · · · · · · · · ·		Configu
	Property 4	vbatt	{{payload ybatt}}	Contain
			(0-1)-1-1-1-1	Value Arı
	Property 5	time	[[t beolyce]]	Use this
	Contropolity 5	ume	((payload.())	needs to
				the arra
				Propertie



# Security

• Configure URL and security to your OSIsoft PI System server in the HTTP Request.

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	Edit http request node	info debug dash
Company Extraction of data Company Extraction of data Company Extraction of data Control of data	Determination     Cancel     Dom       Image: Method     POST     •       Image: Method     POST     •       Image: Method     POST     •       Image: Method     Image: Method Meth	Node Type http:request ID 62a281e10693 Provides a node for making http:requests The URL and HTTP method can be confident the node, if they are left blenk they should an in recompression image. I and the should an incompression image. I and the should instruction of the second of GPT. The transmission of GPT. Instruction of the second of GPT. Instruction of the second of GPT. Instruction of the second of GPT. Instruction of GPT. Inst

- Deploy your flow. Data should now publish to your OSIsoft PI System server.
- In your Node-RED flow, look for the **Edit http request node**(s) and, for each of them, double-click to see where you can select "**Enable secure (SSL/TLS) connection**".

Delete		Cancel
- node prope	rties	
I Method POST		
QURI	( Helps H	
Use basic i	a UTF-8 string	
← Return	a UTF-8 string	T S mount
	L'estimation auto-	

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• In the drop-down for **TLS Configuration**, make sure that you have selected **Add new tls-config**. TIP: you need only do this once, then re-use that config for each request node.

pe	🗷 Enable seci	~ Nod			
-	TLS Config	uration	Custom TLS configuration - allows : •	1	Sends H
: ar	Use basic authenics Add new tis-configuration - allows self-signed ce			igned cer	rtificates nputs
	← Return	a UT	F-8 string	*	urt

In your new **tls-config**, make sure that the "**Verify server certificate**" checkbox is <u>un</u>-checked.

		Cancel	Ad
Use key and cer	tificates from local files		
Certificate	🛓 Upload		×
Private Key	± Upload		×
Passphrase	private key passphras	se (optional)	
CA Certificate	초 Upload		×
Verify server cer	tificate		
Name	Name		7

• Your data should now flow be flowing into the OSIsoft PI System.

### ADVANTECH TECHNICAL SUPPORT

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