Advantech AE Technical Share Document

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Category	■FAQ □ SOP	Related OS	N/A	
Abstract	How to Send WISE-400	d WISE-4000 IO Data to WISE-PaaS 4.0 via iSensingMQTT		
Keyword	WISE, WISE-PaaS 4.0, iSensing MQTT, Push notification			
Related				
Product	WISE-40XX Series			

Problem Description:

This document shows how to connect with WISE-PaaS and upload data successfully.



Figure 1. Topology of updating data to WISE-PaaS.

Answer:

Requirement:

- ✓ WISE-4000 Wi-Fi Series with FW A2.01 BXX
- ✓ WISE-PaaS 4.0 Account

Part I, Configuration on WISE-PaaS 4.0

Step1. Log in WISE-PaaS 4.0 Webpage and click Console > Service Portal

Then find out the Instance Name which is rabbitmq and click Action->Secret Management

 https://	portal-catal	log-ensaas.sa.wise-	paas.com/login
	-		

WISE-PaaS/ EnSaas	54.0 Service Portal Subscription Name :	1-1VWJ99V WISE-Pa	aS-Internal-AG02 V		Console SA F
Service Instances Users can manage service insta	ances in subscriptions			Man User S erv	agement Portal · Center al: 5 ice Portal
RabbitMQ	 Q Type and press ENTER to search Instance Na 	ime.		Billin Ticko	ig Portal et Portal
Status 💠 Instance Nam	e ≑ Instance+Đ ↓	Service Name 🕀	Plan 🗘	Creation Time 💠	Action
Active	0099a81e-6291-11ea-b1de-d b084846	I20df RabbitMQ	standard	2020/3/10 13:35:51	÷

Figure 2. WISE-PaaS Service Portal Page.

Step2. In Secret Management Page, select Service Keys, click "+" to create a new service

key.

≡ WISE-PaaS/	EnSaaS4.0 Service Portal Subscription Nan	ne : 1-1VWJ99V WISE-PaaS-Internal-AG	D2 V	Console SA EN
	Back to service instance list			
Secrets	Secret Management Manage the secrets for connect to service			RabbitMQ Plan: standard
Service Keys	Q Type and press ENTER to search Service Key Nar	ne.		+ 🗲 🕁
	Status 💠 Service Key Name 🗘	Description 💠	Creation Time 💠	Action
	Enabled 1fb6710aa09b0603b7b6b43564d0	₂504	2020/10/13 14:08:03	
	Enabled 2e0f4be6a99d227bcd01063151bbc	d402 Demo	2020/10/8 14:55:12	
	Enabled df246b3e9ae2316235606679b1634	datahub_node_9e63b57f-c7a9-4c7 4ab1a8138186	4-84d2- 2020/9/22 10:02:25	

Figure 3. Create new service key.

Step3. Select the Role to Management, leave blank on Topic Path and click OK.

📉 WISE-4012E	🗙 📔 🔼 Management P	ortal × 🔺 Service Portal	× +		
\leftarrow \rightarrow C \triangleq port	tal-service-ensaas.sa.wise-paas	.com/create-secret		S 🖈	🛐 🛸 😸 無衰模式 :
📙 Life 📙 Advantech	📙 Advantech lloT Ac 🔏 Jso	n Parser Online	🧃 Google 翻譯 🛛 PLC Programming	🕙 From Text To Spee 🥘 We	oduino 不只是 »
:= WISE-PaaS	/EnSaaS4.0 Servi-	Dortol Subscription Name	1-1MVOAGD WISE-DaaS-Interna	LM	ionsole SA EN
		Create Service Key	X		
	Ξ < Back to service				
	Secret Mana	Description: Please input descriptio	n.	Service Name: RabbitMQ	Plan: standard
	Manage the secre	Darameters			
Secrets		Farameters	+		
Service Keys	Q. Type and pres	✓ Advanced			
		Role			
	Status 💠 S	Management	~	tion Time 👙	Action
		Topic Read Path			
	Enabled	Please input topic read path.)/8/25 11:30:00	÷
		Topic Write Path			
	Enabled	Please input topic write path.)/5/28 15:05:59	
	r and a second se				
				15/20 45 47 20	
	Enabled		Cancel ОК	0/5/28 15:17:28	:

Figure 4. Configure new service key parameter.

Step4. Find the Service Key you just create, click action to view.

Status 🌲	Service Key Name 🍦	Description 🜲	Creation Time 🗘	Action
Enabled	1fb6710aa09b0603b7b6b43564d0e504		2020/10/13 14:08:03	:
Enabled	2e0f4be6a99d227bcd01063151bbd402	Demo	2020/10/8 14:55:12	View Edit
Enabled	df246b3e9ae2316235606679b1634a2p	datahub_node_9e63b57f-c7a9-4c74-84d2- 4ab1a8138186	2020/9/22 10:02:25	Disable Delete

Figure 5. View new service key parameter.

Step5. First, copy the externalHosts for WISE-4000 MQTT Host Name setting. Second, scroll

down to find the corresponding protocol that used to upload the data to WISE-PaaS. Currently, there are three protocols that WISE-4000 supports to upload the data to WISE-PaaS including **MQTT(TCP without TLS), MQTT+SSL(TCP with TLS) and WS(WebSocket without TLS)**. Copy username, password and port number for WISE-4000 MQTT connection parameters setting.

View		×	
Credent	tials Parameters		
	AUO21 : AAAAA876-05A1-1169-0106-05A01D084840	•	
	/ "mqtt": {		
	"host" : "rabbitmq-001.sa.wise-paas.com"		
	<pre>"hosts" : [</pre>		
	0 : "rabbitmq-001.sa.wise-paas.com"		
	1		
	"password" : "qFj4LUIwGZUjs9ACe7Gs"		
	"port" : 1883		
	"ssl" : false		
	"uri":		
	"mqtt://0099a81e-6291-11ea-b1de-	•	
		ОК	

Figure 6. Service key parameter.

Part II, Configuration on WISE-4000

Step1. Install WISE Studio and enter the configuration page of WISE module.

Step2. Select iSensing MQTT service in Cloud tab.

Information Wireless Network App Time & Date Time Sync Modbus Control General Clou	ıd
Firmware Account	
Cloud Configuration	
Select Service Sensing MQTT •	
Current Status	
Connection Status Connected	
Error Code None	
⇔ Refresh	

Figure 7. WISE-4000 Select Cloud Service Page.

Step3. Paste the information into setting.

- ✓ MQTT Host Name: externalHosts
- ✓ Port Number: The port number of the selected protocol.
- ✓ SSL secure and WebSocket: The protocol which used to upload the data.

Protocol	SSL	WebSocket
MQTT(TCP without TLS)	Disable	Disable
MQTT+SSL(TCP with TLS)	Enable	Disable
WS(WebSocket without TLS)	Disable	Enable
WS+SSL(WebSocket with TLS)	Enable	Enable
Not support on WISE-PaaS		

Table.1 SSL Secure and WebSocket Setting on WISE-4000.

✓ Username and Password: The username and password of the selected protocol.

view	^			
Credentials Parameters	Setting			
"asvoc" + false				
"binding name": ""	MOTT Host		Port	80
<pre>"credentials" : {</pre>	Name		Number	
"dashboard_url":				
"http://rabbitmq-001-pub.sa.wise-paas.com:15672/#/login/0KyN60dp6Zya/KZRekMro4h3Em3	Buiew SSL secure	Disable Enable		
"externalHosts" : "rabbitmq-001-pub.sa.wise-paas.com"				
"hostname": "rabbitmq-001.sa.wise-paas.com"	WebSocket	Olisable () Enable	WebSocket	mqtt
"hostnames":[raui	
"rabbitmq-001.sa.wise-paas.com" "mqtt" :-{™	User Name		Password	
<pre>"host" : "rabbitmq-001.sa.wise-paas.com"</pre>	1			
<pre>"hosts" : [</pre>	Heartbeat	0		
0 : "rabbitmq-001.sa.wise-paas.com"	(sec)			
1	(000)			
"password" : "KZRekMro4h3Em3uieWHF"	Publish	0	Subscribe	0
"port": 1883	QoS		QoS	
"ssl" : false	Dublich		Will Detain	
"uri":	Retain		Will Retain	
mqtt://Jpe02239Boy8%3A0KyN60dp6Zya:KZRekMro4h3Em3uiewFF@rabbitmq-001.sa.wis	e-			
paas.com:1883"				
<pre>"uris":[</pre>				
mqtt://Jpe02239Boy8%3A0KyN60dp62ya:K2KeKmr04h3em3U1eWHjørad01tmq-001.sa.wise- paas.com:1883"				
1				
"username" : "Jpe02239Boy8:0KyN60dp6Zya"				
"vhost": "Jpe02239Boy8"				

Figure 8. WISE-4000 Cloud Setting Configuration Page.

Step4. Remember to submit to save the setting.

Step5. Configure the uploading period and decide which I/O information of channel to upload.

WISE-4051				
Information				
✗ Configuration	🖺 Data Logger			
<u>la∎</u> I/O Status	Data Configuration Logger Configuration Local D	ata Query		
🕫 Advanced 👻	1/0	Configuration		System Configuration
Access Control				
Data Logger 1	Log Conditions			
Diagnostician		By Period 100 0.1 sec		
Peer to Peer		By Communication WDT Log		
	IO Trigger Log Conditions			
	General			
		Clear Log when Power Up		
	Log Data			
		Channel Fields		IO Fields
		3)	
	Channel	Log Enabled		Change of State
	0	2		8

Figure 9. WISE-4000 Data Logger Configuration Page.

Step6. Remember to enable the push notification and upload the data.

Push Notification (JSON format)

	I/O Log		
	System Log	OFF	
		Push MAC Address	
		Push Timestamp	
		Timestamp Format	Local
X 7			

Figure 10. WISE-4000 Push Notification Configuration Page.

Part III, Data Display on Datahub.

Step1. In the main page of WISE-PaaS, select Router Management → Ingress

😑 WISE-PaaS/ EnS	aaS4	.0 Management Po	ortal Subscriptio	n Name : 1-1VWJ99V	WISE-PaaS-Interna	al-AG02 V		Console S	A EN	
Global		ted to version 4.0.11. To make heir apps more granularly. For	it easier for users to b more new features, p	better manage, configure, an lease refer to <u>Release Notes</u>	id use their apps, we prov	ide a three-tiered view of V	Workload, pod, and contai	ner based	Clos	3e
Platform management	~	~								
Infrastructure	*	Workspace Information								
User	Ý									
Router manegement	^	2	5	5	21	2	0.01 core	430.14	Mi	
Ingress		Namespaces	Pod	Service	Secret	ConfigMap	CPU	Memo	ry	

Figure 11. WISE-PaaS 4.0 Management Portal.

tep2. Click	the External I	Domain of Datahu	ıb.						-
WISE-PaaS/ En	BaaS4.0 Manageme	ent Portal Subscription Name :	1-1VWJ99V WISE-PaaS-Internal-AG02				Console S	A EN	4
adviiotse	Ingress Ingress exposes HTTP and HT Cluster	TPS routes from outside the cluster to serv Workspace Nai	rices within the cluster. mespace			Ing	ress : 3		
	ews001	v adv-iiot-se v a	External Domain	gress nan Path	svc	Port	Created At ≑	Opera	tion
	dashboard-adviiotse	dashboard.adviiotse.ews001.en.internal	dashboard-adviiotse-ews001.sa.wise-paas.com	/	dashboard-adviiotse	80	2020/3/11 16:46:23	:	
	datahub-adviiotse	portal- datahub.adviiotse.ews001.en.internal	portal-datahub-adviiotse-ews001.sa.wise- paas.com	/	datahub-adviiotse	http	2020/3/11 18:02:07	:	
	saas-composer-adviiotse	saas- composer.adviiotse.ews001.en.internal	saas-composer-adviiotse-ews001.sa.wise- paas.com	/	saas-composer- adviiotse	80	2020/3/12 09:08:20	:	
									Ø

Figure 12. Ingress Overview on WISE-PaaS Management Portal.

Step3. WISE-4000 support plug & play function. Device and channel tags will be built automatically

DataHub						🔺 💶	in a des	indus er
Device Management	Advantech / Advant	ech / 00D0C9F8C0E2						
🜲 Alarm 🗸 🗸	Tag List							
🕒 Account 🗸	Name ~ C	Ç Filter						
	Tag Name 🔺	Tag Type 🚊	Description 🔺	Valu	e	Update Time	Detail	Delete
😋 System Setting 🗠	di1	Analog		0	M	2020-10-13 14:42:00		Ô
WISE-PaaS Dashboard	di2	Analog		0	an a	2020-10-13 14:42:00	•••	â
Notification Service	di3	Analog		0	M	2020-10-13 14:42:00		Ê
🗐 User Guide	di4	Analog		0	M	2020-10-13 14:42:00		面
API Document	di5	Analog		0	M	2020-10-13 14:42:00	•••	Î
ersion: v-2.0.6	di6	Analog		0	1 and	2020-10-13 14:42:00		Ê
J 3001. **±.0.0	di7	Analog		0	M	2020-10-13 14:42:00		Ê
	di8	Analog		0	1 Ali	2020-10-13 14:42:00		Ē
	p1v01r0001x00	Analog		143	M	2020-10-13 14:42:00		Ê
	p1v01r0002x01	Analog		0	10 A	2020-10-13 14:42:00	•••	俞

Figure 13. WISE-4000 Support Plug & Play function.

Part IV, Troubleshooting Method

Step1. If the data is not shown on portal scada, you could subscribe the rabbitmq broker by 3rd party MQTT client application, e.g., MQTTBox. The setting is the same as the WISE-4000 MQTT setting.

MQTT Client Name	MQTT Client Id	Append timesta
AETEST	4474859c-0174-4fe2-89b9-ca	id?
		Yes
Protocol	Host	Clean Session?
mqtt / tcp 🔹	tasia.cloudapp.azure.com:1883/tcp	✓ Yes
Username	Password	Reschedule Pin
5d9cb2f2-28d5-4b78-b47b-da63eb		✓ Yes
Reconnect Period (milliseconds)	Connect Timeout (milliseconds)	KeepAlive (seco
1000	30000	10
Will - Topic	Will - QoS	Will - Retain
Will - Topic	0 - Almost Once	No

Figure 14. Configuration Page of 3rd Party MQTT Client Application.

Step2. Subscribe the topic # which means that it will receive all of information from the broker. If the data is not shown, there may be some problems on **rabbitmq**.

TEST - mqtt://wise-msghub.eastasia.cloudapp.azure.com:1883/tcp Topic to publish Topic to publish 2o S 0 - Almost Once • "di8":false, "di6":false, "di7":false, "di7":false, "di7":false, "di8":false} Payload Type Strings / JSON / XML / Characters • g: ('hello':'world') Payload Payload 0 - Almost Once • g: ('hello':'world') • g: ('hello':'world') • g: ('hello':'world') • Payload	E Menu 🔶 📶 Connected	Add publishe	r 😣 Add subscriber 🌣
Topic to publish X # Topic to publish ["s":9, "t":"2019-05-06T14:44:58Z", "q":19 2, "c":3, "di1":true, "di2":false, "di3":false, "di Qo S 0 - Almost Once v ("false, "di6":false, "di6":false, "di7":false, "di @ - Almost Once v ("s":9, "t":"2019-05-06T14:44:58Z", "q":19 2, "c":3, "di1":true, "di2":false, "di3":false, "di @ - Almost Once v ("false, "di6":false, "di6":false, "di7":false, "di7":false, "di8":false) ("gos: 0, retain : false, cmd : publish, dup : false, topic : Advantech/00D0C9FACFD1/data, messageld :, length: 172, Raw payload : 1 23341153458574434116345834504849574548453 1153458574434116345834504849574548453 12334115345852585252585356903444341133 454854844952585252585356903444341133 454854844952585252585356903444341133 454854844952585252585356903444341133 454854844952585252585356903444341133 454854844952585252585356903444341133 454854844952585252585356903444341133 454854844952585252585356903444341133 454854844952585252585356903443413410010559345811029710 8115114141710144341001055034581029710 81151144341001055034581029710 811510144341001055534581029710 811510144341001055534581 029710811510144341001055534581 029710811510144341001055534581 029710811510144341001055634581029710	ETEST - mqtt://wise-msghub.eastasia.cloudap	p.azure.com:1883/tcp	
Topic to publish Qo S 0 - Almost Once • Almost Once • Retain Payload Type Strings / JSON / XML / Characters • g: {'hello':'world'} Payload Payload 9	Topic to publish	×	X #
Qo S {"s".9, "t"."2019-05-06T14:44:58Z", "q".19 Qo S 2, "c".3, "di1".true, "di2".false, "di3".false, "di 0 - Almost Once • Retain • Payload Type • Strings / JSON / XML / Characters • e.g: {'hello':'world'} • Payload • Payload • 0 Almost Once • Retain • Payload Type • Strings / JSON / XML / Characters • e.g: {'hello':'world'} • Payload • (16) **:Torld'; • Payload • 0.1 • 0.2 • 0.3 • 0.4 • 0.5 • 0.6 • 0.7 • 0.8 • 0.9 • • • • • • • • • • • • •	Topic to publish		
QoS 2, "c": 3, "di1":true, "di2":false, "di3":false, "di 0 - Almost Once • Payload Type • Strings / JSON / XML / Characters • e.g: {'hello':'world'} • Payload • Payload • 0 - Almost Once • Payload Type • Strings / JSON / XML / Characters • e.g: {'hello':'world'} • Payload • (110) 1100000000000000000000000000000000			{"s":9."t":"2019-05-06T14:44:58Z","g":19
0 - Almost Once ▼ 4":false, "di5":false, "di6":false, "di7":fals Retain ■ Payload Type gos : 0, retain : false, cmd : publish, dup : fal se, topic : Advantech/00D0C9FACFD1/data, messageld :, length : 172, Raw payload : 1 23341153458574434116345834504849574548453 • e.g: {'hello':'world'} Payload Payload ■ 0 - Almost Once ▼ e.g: {'hello':'world'} ■ Payload ■ 0 - Bayload ■ 0 - State ■ 0 - Almost Once ▼ e.g: {'hello':'world'} ■ Payload ■ 0 - State ■ 0 - State ■ 0 - Almost Once ▼ 0 - Almost Once ■ 4 - State ■ 0 - Almost Once ■ 0 - Bayload ■ 0 - Almost Once ■ 0 - Almost Once ■ 0 - Almost Once	QoS		2."c":3."di1":true."di2":false."di3":false."di
0 - Almost Once • e, "di8":false} Retain Payload Type Strings / JSON / XML / Characters • e.g: {'hello':'world'} Payload Payload Image: A strings / JSON / XML / Characters • e.g: {'hello':'world'} Payload Payload 0 - Almost Once • gos: 0, retain : false, cmd : publish, dup : fal se, topic : Advantech/00D0C9FACFD1/data, messageld : , length : 172, Raw payload : 1 233415345857443416345834504849574548453 Payload Payload 0 = 0.5234581029710811510144341001055034581029710 811510144341001055034581029710811510144341 001055234581029710811510144341001055 43458102971081151014434100105534581 029710811510144341001055634581029710			4":false,"di5":false,"di6":false,"di7":fals
Retain qos: 0, retain: false, cmd: publish, dup: false, topic: Advantech/00D0C9FACFD1/data, messageld:, length: 172, Raw payload: 1 Strings / JSON / XML / Characters e.g: {'hello':'world'} Payload Payload is g: ('hello':'world') Payload ('hello':'world') Payload ('hello':'world') Payload ('hello':'world') Payload ('hello':'world') Payload ('hello':'world') ('hello':	0 - Almost Once	T	e."di8":false}
Retain qos : 0, retain : false, cmd : publish, dup : fal Payload Type se, topic : Advantech/00D0C9FACFD1/data, Strings / JSON / XML / Characters assageld :, length : 172, Raw payload : 1 e.g: {hello':world'} assageld : 154585744341163458365093444957454853 Payload assageld : 1546854844952585252685525685693044957454853 Bayload assageld : 1611411710144341001055034581029710 Bayload assagel : 1611411710144341001055034581029710811510 Bayload assagel : 1611411710144341001055534581029710811510 Bayload assagel : 1611411710144341001055534581029710811510 Bayload assagel : 1611411710144341001055534581029710811510 Bayload assagel : 1611411710144341001055534581029710811510144341	Petrin -		
Payload Type se, topic : Advantech/00D0C9FACFD1/data, messageld : , length : 172, Raw payload : 1 233411534587443411634583450484957454853 454854844952585252585555285356903444341133 4548548449525857504434993454851443410010559345811431101649345 811611411710144341001055134581029710811510 144341001055534581029710811510144341 001055334581029710811510144341 Payload 01055334581029710811510 1443410010555345810297108115101 144341001055534581029710811510144341	Retain 🗆		gos : 0. retain : false, cmd : publish, dup : fal
Strings / JSON / XML / Characters messageld : , length : 172, Raw payload : 1 Strings / JSON / XML / Characters 2334115345857443411634583450484957454853 e.g: {'hello':'world'} 454854844952585252586356903444341133 Payload 4548548449575044349933485144341001055934581029710 8115 10144341001055034581029710 8115 10144341001055034581029710811510144341 00105533458102971081151014434100105534581029710811510144341 104341001055334581029710811510144341 029771081151014434100105534581029710 29771081151014434100105534581029710	Payload Type		se, topic : Advantech/00D0C9FACFD1/data,
Strings / JSON / XML / Characters 2334115345857443411634583450484957454853 e.g: {'hello':'world'} 454854844952585252585356903444341133 Payload 45849575044349934581443410010549345 8116 114 117 10144341001055034581029710 8115 10144341001055034581029710 010553345810297108115 10144341 0010553345810297108115 10144341 0297108115 10144341001055534581 0297108115 10144341001055634581029710			messageld : , length : 172, Raw payload : 1
e.g: {'hello':'world'} Payload 454854844952585252585356903444341133 458495750443499345851443410010549345 811611411710144341001055034581029710 811510144341001055234581029710811510144341 001055334581029710811510144341001055 434581029710811510144341001055534581 029710811510144341001055634581029710 917081151014434100155634581029710 917081151014434100155634581029710 9170811510144341001055634581029710 9170811510144341001055634581029710 9170811510144341001055634581029710 9170811510144341001055634581029710 9170811510144341001055634581029710 9170811510144341001055634581029710 9170811510144341001055634581029710 9170811510144545558555555555555555555555555	Strings / JSON / XML / Characters	T	2334115345857443411634583450484957454853
Payload 458495750443499345851443410010549345 Bayload 811611411710144341001055034581029710 Bayload 8115101443410010551345810297108115101 Bayload 8115101443410010550345810297108115101 Bayload 911510144341001055034581029710811510144341 Bayload 911510144341001055234581029710811510144341 Bayload 9110811510144341001055234581 Bayload 911081151014434100105534581 Bayload 911081151014434100105534581029710	e.g: {'hello':'world'}		454854844952585252585356903444341133
Payroad 811611411710144341001055034581029710 811510144341001055034581029710811510 811510144341001055034581029710811510144341 001055334581029710811510144341001055 34581029710811510144341001055 434581029710811510144341001055534581 029710811510144341001055534581 029710811510144341001055534581029710 10140341001055534581	Devileed		458495750443499345851443410010549345
811510144341001055134581029710811510 144341001055234581029710811510144341 001055334581029710811510144341001055 434581029710811510144341001055534581 029710811510144341001055634581029710	Payload		811611411710144341001055034581029710
144341001055234581029710811510144341 001055334581029710811510144341001055 434581029710811510144341001055534581 029710811510144341001055634581029710			811510144341001055134581029710811510
001055334581029710811510144341001055 434581029710811510144341001055534581 029710811510144341001055634581029710			144341001055234581029710811510144341
434581029710811510144341001055534581 029710811510144341001055634581029710			001055334581029710811510144341001055
Ø 029710811510144341001055634581029710			434581029710811510144341001055534581
			029710811510144341001055634581029710

Figure 15. Subscribe the Broker from a 3rd Party MQTT Client Application.