

# **Advantech SE Technical Share Document**

Date	2019 / 08 / 31				
Catagony	■ FAQ □ SOP	<b>Related Produ</b>	ct		
Category	Driver Tech Note				
Abstract	第三方軟體使用 We	ebAccess MQTT 格式	式建立上位機 Web	Access/SCADA 專案和傳值	
Keyword	WebAccess/SCADA, MQTT				
Related OS	Win7, Windows Server 2008 / 2012 / 2016, Win10				
		<b>Revision History</b>			
Date	Version	Author	Reviewer	Description	
2019/08/31	V1.0	Alger Tan			
2019/10/01	V1.0		Nick Liu		

## Problem Description & Architecture:

這份文件講解使用者如何按照 WebAccess MQTT 格式,從下位機第三方軟體 MQTTClientTest 經由上位機的 MQTT broker,發送建立上位機 WebAccess/SCADA 專案的指令,然後在專案執行時,從下位機發送 publish 指令,將測點值傳送到上位機.

## Brief Solution - Step by Step:

1. 架構:

下位機 MQTTClientTest (172.16.16.142) - LAN - 上位機 WebAccess/SCADA (172.16.12.121)



Figure 1: 架構圖

2. 首先, 上位機必須先手動建立工程節點(e.g. upper)和監控節點(e.g. scada)

Project/No	ode
upper	
scada scada	

Figure 2: 工程和監控節點



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3. 上位機啟用 MQTT broker

Project Home -> Project Management -> login -> MQTT Broker

<u>Seti</u>	up HTTPS Service	MQTT Broker
<u>_og</u>	LogData Maintena	nce

Figure 3: MQTT Broker

#### 啟動 MQTT Broker

預設的使用者名稱和密碼都是 admin

	MQTT B	roker Settings
Enable	● Yes ○ No	
UserName	admin	
Password	admin	✓ Show Password
TCP Port	1883	
TLS Port	8883	
Websocket Port	51328	
Websocket TLS Port	51329	
Project Node Public IP		

Figure 4: 啟用 MQTT Broker

- 4. 下位機執行第三方軟體 MQTTClientTest
  - IP Address: 172.16.12.121 (MQTT Broker 電腦 IP Address)
  - Port: 1883
  - User name: admin
  - Password: admin

Porm1	100 TAL 100 B	inglification a to-	
IP Address	Port	ProjName	NodeName
172.16.12.121	1883		
UserName	Password	Device Id	
admin	admin		Connect
			DisConnect
Subscribe Publish Messas	7e		
	-		
Topic #		Subsc	nibe

Figure 5: 輸入 MQTT Broker 資訊



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5. 下位機:點"Connect"按鈕確認 MQTTClientTest 有成功連到 MQTT Broker

🖳 Form1					
IP Address 172.16.12.121	Port 1883	ProjName	NodeName		
UserName admin	Password admin	Device Id	Connect DisConnect	₽	Connect Success!
Topic #	leosage	Sul	oscribe		確定

Figure 6: 成功連到 MQTT Broker

6. 下位機: 監看 MQTT message, 在 Subscribed 的 Topic 輸入 "#", 然後按 "Subscribe"

🖳 Form1			
IP Address 172.16.12.121	Port 1883	ProjName	NodeName
UserName H admin	<sup>&gt;</sup> assword admin	Device Id	Connect DisConnect
Subscribe Publish Message			
Topic #		Subscribe	e

Figure 7: 在 Subscribe 輸入#

7. 下位機: 根據 WebAccess MQTT Specification 手冊, 使用 wacfg 指令在上位機建立設備和測點. 在 MQTTClientTest 軟體選"Publish" tag, 然後輸入下列 topic 和 message 指令, 然後按"publish"按鈕.

Topic:

iot-2/evt/wacfg/fmt/upper\_scada

Message:

{"d":{"test\_scada":{"TID":1,"Hbt":60,"BID":" ","UTg":{"TMSEC":{"TID":1,"Dsc":"Current Second","Ary":0,"RO":0,"SH":60,"SL":0,"DSF":"2.0","Alm":0,"EU":"Second","TypeWA":"9","Log":0}}," DTg":null,"Dsc":""}},"ts":"2019-08-27T16:05:23.971Z"}

註記:

1. 會在上位機 WebAccess/SCADA 建立一個為"test\_scada"的設備和一個"TMSEC"的測點



🖳 Form1	11 64	~000	384-7	
IP Address		Port	ProjName	NodeName
172.16.12.1	121	1883		
UserName	Password		Device Id	
admin	admin			Connect
				DisConnect
Subscribe Publ	ish Message			
lopic	10t-2/evt/wacig/imt/up	per_scada		
Message	{"d":{"test_scada":{"1	'ID":1,"Hbt":60,	"BID":"	clear
Qos	0 🗸			
	_	1		
batch 📃	Frequency	1	second	Publish
🔲 HeartBe	at Frequency	5	second	Stop

Figure 8: Publish Tab

8. 下位機: 點選 Message tab 確認指令是否有發送到 MQTT Broker

Porm1	-		
IP Address 172.16.12.121	Port 1883	ProjName	NodeName
UserName admin	Password admin	Device Id	Connect DisConnect
Subscribe Publish M	lessage 1actd/fmt/upper_scada/test	scada] : {"d":{"Cfg":1},"ts":"2	<u>Clear</u> 019-08-30T03:38:08.309Z"}



9. 回到上位機, 重新整理 WebAccess/SCADA 畫面, comport, 設備和測點已經成功建立



Figure 10: WebAccess/SCADA

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**10**. 上位機: 下載和啟動 kernel, 到 View/ViewDAQ 點資訊看 TMSEC 測點值, 會顯示 \*[80a3], 表示 没收到測點值.

	1 <b>6.12.121</b> /broadWeb/bv 我的最愛(A) 工具(T)	vMain.asp?pos=projectπ 說明(H)	id=1&ProjName=upp	ber	🔎 👻 🔇 Node : sca	da × û☆☆☺
	Advantech WebAccess Project Manager Quick Start Help Home Logout					
Project/Node upper is scada (Renaning) i lest_scada ≔ TMSEC Device Driver Al01 ABMLGX ABPLC5 ABPLC5 ABPLC5 ACEFAM3 ADAM2K ADAM2K ADAM2K ADAM45560	upper	scada ● ● ● ● ● ● ● econd 詳描 : 0 scada d	graph=n d d g g g g	nain.bgr		age yet
ADAMISKASC ADAMISKE ADAMISKE ADAMISK AdvDAinfo AdvPAinfo AdvPAC AE6000 A-24077A	轉換	改變 確認		1/0 測點       累算       計算       常數	VievDAQ \$\vee 1 & 4 & \$ \$\vee 2 & 4 & 5 & \$ \$\vee 3 & 4 & 6 & \$	dvantech.com
Agio+972A AlienRFID			ma111.0g	1		11:40:37

Figure 11: \*[80a30]

下位機: 根據 WebAccess MQTT Specification 手冊, 使用 wadata 指令在上位機建立設備和測點.
 Topic: iot-2/evt/wadata/fmt/upper\_scada

Message: {"d":{"test\_scada":{"Val":{"TMSEC":22}}},"ts":"2019-08-30T11:40:17.572Z"}

🖳 Form1					
IP Address 172.16.12.121		Port 1883	ProjName	NodeNan	ne
UserName admin	Password admin		Device Id		Connect DisConnect
Subscribe Publish M	lessage				
Topic iot-2/e Message {"TM	vvt/wadata/fmt/up SEC'':22}}},"ts"	per_scada :"2019-08-30T1	11:40:17.572Z"}	clear	
Qos 0	¥				
🔲 batch	Frequency	1	second	Publish	
🔲 HeartBeat	Frequency	5	second	Stop	

Figure 12: wadata 是 publish 指令

Note: ts 表示 timestamp, 雖然 WebAccess/SCADA 只會拿測點值, 但一定要填寫.



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12. 上位機: TMSEC 成功顯示測點值 22

	12.121/broadWeb/bwMair 的最愛(A) 工具(T) 說明(I	n.asp?pos=project&pid=1 H)	&ProjName=up	oper	Q	- C 💔	Node : :
		Advantech WebAccess	Project Manag	er			
Project/Node Upper Scada (Running) Pot1 (topip) test_scada = TMSEC Device Driver A101	upper	scada <sup>3</sup> <sup>2</sup> <sup>2</sup> <sup>2</sup> <sup>2</sup> <sup>2</sup> <sup>2</sup>	graph=	main.bgr ↓ → ∞ 1 IMSEC TMSEC	2 2	1	
ABULGX ABPLC5 ABPLC5 ABSLC5 AceFAM3 ADAM2K ADAM4K ADAM4K ADAM5560 ADAM5560	位址: TMSEC 最高範圍: 60 最低範圍: 0 工程單位: Second 值: 22						5
ADAM5KE ADAM6K ADMIO AdvDAinfo AdvPAC AE6000 Agi34972A		變 確認	退出	I/O 測點 累算 計算 常數	ょ         1         よ         よ         2         よ	iewDAQ	

Figure 13: Point Info

■ <u>Pin Definition (in case of serial connection):</u>

#### Reference:

WebAccess MQTT Design Specification for Device