UDMI Compliance Matrix

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	Description	Test name [1]	References
Core			
Software Defined Building			
Native UDMI			
Payloads	Native configuration of UDMI payloads - not dependant on manual creation of MQTT message structures		
Dynamic Point Mapping	Dynamic configuration of points via config		
Connection			
MQTT 3.1.1 support	Device supports MQTT 3.1.1	protocol.mqtt.baseline	
MQTT/TLS Support	Device supports connection to an MQTT broker with TLS encryption and at least TLS v1.2		
Server certificate validation	Device validates MQTT broker server certificates		
JWT Certificates	Device supports use of JWT for authentication with an MQTT broker		
GCP IoT Core support	Device is able to succesfuly connect to GCP IoT Core	iot.gcpiot.connection	
Maintains Connection	Device maintains connection to MQTT Broker/Bridger for > {X} minutes		
Network resumption reconnection	Device reconnects to MQTT broker when network connection is restored after a distruption		
Endpoint			
Configurable private keys	Possible to upload private keys onto the device for MQTT authentication		
Client certificate Rotation	Device can rotate between multiple private keys to use for MQTT broker connection		
Endpoint remote configuration	Device can be remotely reconfigured to a different GCP Project/MQTT Broker		
Config subscription	Device subscribes to config topic		
Pointset		iot.udmi.baseline	
Datapoints mapping			
Datapoint mapping	Map internal datapoints to UDMI datapoints		
Pointset Event		iot.udmi.baseline	
Event Publish	Publishes pointset event messages	iot.udmi.pointset.frequency	
sample_rate_sec	Valid event payload schema, with complete pointset sent within the sample_rate_min time period		
Frequency	Telemetry (complete update) sents at a frequency > {X}s		
Configurable sample rate	Implements sample_limit_sec and sample_rate_sec		
Partial Updates			
Partial updates	Supports partial updates (with partial_update flag set to *true)*		
CoV			
Supports CoV	Device supports CoV		
Configurable CoV Increment	Configurable CoV increment from cloud config		
State		iot.udmi.baseline	
State publish	Publishes state messages		
Schema	Valid state payload schema sent by device (individual, gateway and proxied devices) including complete pointset		
Frequency	State update sent at a frequency > {X}s		
Rate Limiting	Device publishes state no more than 1 state update per second		
State after configuration	Device publishes state update after recieving new configuration		
State last update	last_update field in state is timestamp of last configuration		
Monitoring			
System Status			
Publishes status	Device publishes status fields	iot.udmi.system.logging	
status schema	Status blocks are valid according to the schema	iot.udmi.system.logging	
min_loglevel	Configurable min log level for publishing status/logging information	iot.udmi.system.logging	
Log entries			
system/logentry	Device pubishes log entries to system/log entry		
logentry schema	Log entries are valid according to the schema		
Gateway			
IoT Gateway	Device capable of acting as a IoT gateway and can attach to atleast one proxy device	iot.udmi.gateway.attached_devices	
Device Errors	Reports device errors in gateway state message		
Writeback			
Basic Writeback	Device implements basic writeback functionality		
Succesful Writeback			
Value state applied	point state in state message set to applied	iot.udmi.writeback.set_value	
Point value updated	point value updated in telemetry	iot.udmi.writeback.set_value	
Unwriteable/over-ridden points			
Value not applied	points which are unwriteable or overridden are not updated and state is set to failure		
Status			
state.pointset.points.config.failure	point status for failure to apply		
Invalid writeback			
Value not applied	Invalid writeback (e.g. out of range) is reported		
Status			
state.pointset.points.config.invalid	point status for invalid writeback		
State etag			
State etags	Device implements state etags and rejects config updates with invalid etags		
Status			
state.pointset.points.config.invalid			
Config Expiry			
Config Expiry	Device implements configuration expiry		
Status			

1. Test name within the DAQ test suite