

ME: Tags

MQTT Engine automatically creates a known set folders containing tags for Engine Control and Engine Info.

For each connected Edge Node, a Node Control and Node Info folder containing tags is created along with a Device Info folder for each connected device.

The tables below describe these tags.

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Node Control

The tags in each Node Control folder are created based on a supplied metric within the NBIRTH message from the Edge Node. These will only appear if the Edge Node implementation supports them. It is up to the Edge Node implementation (MQTT Transmission for example) to support any functionality it supplies via the NBIRTH. If the Edge Node does not support the specific control, it should not include it in the NBIRTH payload.

Name	Data Type	Description
Next Server	Boolean	Writeable tag to request the Edge Node to walk to the next MQTT server
Rebirth	Boolean	Writeable tag to request the Edge Node to resend its cached NBIRTH and DBIRTH messages without disconnecting or sending DEATH messages first

Node Info

The tags below are general information tags with respect to Sparkplug Edge Nodes. These are created, managed and updated by MQTT Engine based on messages arriving from each given Edge Node.

Name	Data Type	Description
bdSeq	Long	The last bdSeq number sent by the Edge Node in an NBIRTH message
Birth Count	Long	The number of NBIRTH messages since the last time the info metrics were reset via the Node Info/Reset Info tag
Current Server	String	The current MQTT Server the Edge Node is connected to
Data Latency (ms)	Long	The time in milliseconds between MQTT Engine receiving of the last message and the payload's reported time. Note: For this to be very accurate the edge node's clock and the system clock running MQTT Engine should be synced
Death Count	Long	The number of NDEATH messages since the last time the info metrics were reset via the Node Info/Reset Info tag
Message Schema	String	The schema associated with the Edge Node (e.g. Sparkplug B)
Offline DateTime	DateTime	The time at which the last NDEATH message was received by MQTT Engine
Online	Boolean	Whether or not the Edge Node is online. This is determined by whether the last lifecycle message was an NBIRTH or NDEATH
Online DateTime	DateTime	The time at which the last NBIRTH message was received by MQTT Engine
Reset Info	Boolean	Writable tag to 'reset' the Node Info metrics
seq	Long	The last Sparkplug seq number received from the Edge Node

Total Bytes Recvd (bytes)	Long	The number of bytes received from the Edge Node since the last time the info metrics were reset via the Node Info/Reset Info tag
Total Bytes Xmit (bytes)	Long	The number of bytes sent to the Edge Node since the last time the info metrics were reset via the Node Info/Reset Info tag
Transmission Version	String	The version of MQTT Transmission installed at the Edge Node

Device Control

The tags in each Device Control folder are created based on a supplied metric within the DBIRTH message from the Edge Node. These will only appear if the Edge Node implementation supports them. It is up to the Edge Node implementation (MQTT Transmission for example) to support any functionality it supplies via the DBIRTH. If the Edge Node does not support the specific control, it should not include it in the DBIRTH payload.

Name	Data Type	Description
Rebirth	Boolean	Writeable tag to request the Edge Node to resend its cached DBIRTH message for the specific Device without disconnecting or sending DEATH messages first

Device Info

The tags below are general information tags with respect to Sparkplug Devices. These are created, managed and updated by MQTT Engine based on messages arriving from each given Device.

Name	Data Type	Description
Birth Count	Long	The number of DBIRTH messages since the last time the info metrics were reset via the Device Info/Reset Info tag
Data Message Count	Long	The number of DDATA messages since the last time the info metrics were reset via the Device Info/Reset Info tag
Death Count	Long	The number of DDEATH messages since the last time the info metrics were reset via the Device Info/Reset Info tag
Last Command Size (bytes)	Long	The size in bytes of the last DCMD that was sent from MQTT Engine
Last Data Message Size (bytes)	Long	The size in bytes of the last DDATA that was received from the Device
Offline DateTime	DateTime	The time at which the last DDEATH message was received by MQTT Engine
Online	Boolean	Whether or not the Device is online. This is determined by whether the last lifecycle message was an DBIRTH or NBIRTH
Online DateTime	DateTime	The time at which the last DBIRTH message was received by MQTT Engine
Reset Info	Boolean	Writable tag to 'reset' the Device Info metrics

Engine Control

Primary Host

The tags below give control of the configuration of the Primary Host ID for MQTT Engine.

Name	Data Type	Description
Enabled	Boolean	Writable tag to control whether or not the Primary Host is enabled for MQTT Engine
ID	String	Writeable tag to set the Primary Host ID defined for MQTT Engine

Engine Info Tags

The tags below provide information regarding the MQTT Engine Devices, Edge Nodes, Latches, MQTT Client as well as information on MQTT Engine.

Name	Data Type	Description
Enable Tag Tracking	Boolean	Writable tag to control whether or not to update Tags Per Seconds (added 4.0.17)
Redundancy Role	String	The redundancy configuration of the Ignition system that MQTT engine is installed on. Options are Independent, Master and Backup
Redundancy State	String	The redundancy status of the Ignition system that MQTT engine is installed on. Options are Active or Cold
System-Wide Reset Info	Boolean	Writeable tag to 'reset' all Engine metrics
Tag Count	Long	The sum of tags included in the last NBIRTH and DBIRTH messages received from each Edge Node. When an LWT is received from the Edge Node, the tag count for that Edge Node is set to 0 and repopulated on connect when the next BIRTH messages are received (added 4.0.17)
Tags Per Second	Long	The number of tags changes received per second with the value updated every two seconds (added 4.0.17)
Total Bytes Recvd (bytes)	Integer	The number of bytes received by Engine since the last time the info metrics were reset via the System-Wide Reset Info tag
Total Bytes Xmit (bytes)	Integer	The number of bytes sent from Engine since the last time the info metrics were reset via the System-Wide Reset Info tag
Total Data Mesg Count	Integer	The number of messages received by Engine since the last time the info metrics were reset via the System-Wide Reset Info tag
Version	String	The version MQTT Engine currently installed

Devices

The Devices folder tags provide information on the connected devices.

Name	Data Type	Description
DeviceCount	Integer	The number of Sparkplug edge devices as determined by the received DBIRTH messages
DevicesOffline	Integer	The number of Sparkplug edge devices that are offline. This is determined by whether the last lifecycle message was an DBIRTH or DDEATH
DevicesOnline	Integer	The number of Sparkplug edge devices that are online. This is determined by whether the last lifecycle message was an DBIRTH or DDEATH

Edge Nodes

The Edge Nodes folder tags provide information on the connected Edge Nodes

Name	Data Type	Description
Last Node to Connect	String	The Sparkplug ID of the last node to connect
Last Node To Disconnect	String	The Sparkplug ID of the last node to disconnect
NodesOffline	Integer	The number of Sparkplug Edge Nodes offline. This is determined by whether the last lifecycle message was an NBIRTH or NDEATH
NodesOnline	Integer	The number of Sparkplug Edge Nodes online. This is determined by whether the last lifecycle message was an NBIRTH or NDEATH

NodeUnitCount	Integer	The total number of Sparkplug Edge Nodes as determined by the received NBIRTH messages
Offline Nodes	Dataset	A dataset containing the Sparkplug ID and timestamp for all offline Sparkplug edge nodes
Online Nodes	Dataset	A dataset containing the Sparkplug ID and timestamp for all online Sparkplug edge nodes

Latches

The Latches folder tags provide a tag path to any configured tag latches in the [MQTT Engine configuration](#)

Name	Data Type	Description
<i>TagName as defined in the MQTT Engine configuration</i>	Boolean	Writeable tag to 'reset' the tag latch

MQTT Clients

The MQTT Clients folder tags provide information on the connected MQTT Clients.

Name	Data Type	Description
Latency Check Period (ms)	Integer	Frequency in milliseconds that the message latency for each MQTT Client is checked if the Enable Latency Check is checked

For each identified MQTT Client, the following tags are available:

Name	Data Type	Description
Connected Nodes	Integer	Number of currently connected Sparkplug Edge Nodes to this MQTT Client
Enable Latency Check	Integer	Writable tag to enabled message latency checking for each MQTT Client
Message Processing Latency (ms)	Integer	The amount of time to process the last Sparkplug message
Messages Per Second	Integer	The number of MQTT messages received by Engine per second
MQTT Client ID	String	The Client ID for the MQTT Client
Offline DateTime	DateTime	The last time at which the MQTT Client successfully disconnected from the MQTT Server
Online	Boolean	A read-only tag showing the connection status of the MQTT Client
Online DateTime	DateTime	The last time at which the MQTT Client successfully connected to the MQTT Server
Server Latency (ms)	Integer	The amount of time that it takes for a test MQTT message to be sent and received back by MQTT Engine
Target Server URL	String	The URL of the target MQTT Server to connect to

For each identified MQTT Client, the following folders and tags are available:

Name	Name	Data Type	Description
Primary Host State/ <i>PrimaryHostName</i>		Folder	Folder named as the Primary Host ID configured in MQTT Engine
	Payload	String	Status of the Primary Host. Options are {"online":true,"timestamp":1681780081657} or {"online":true,"timestamp":1681780081657} where the timestamp is the time of the last status change
	Retain	Boolean	Retain status of the LWT message for the Primary Host
Legacy Primary Host State/ <i>PrimaryHostName</i>		Folder	Folder named as the Primary Host ID configured in MQTT Engine if Enable Legacy State messages is True under the Servers > Legacy State configuration
	Payload	String	Status of the Legacy Primary Host. Options are OFFLINE or ONLINE
	Retain	Boolean	Retain status of the LWT message for the Primary Host