QOCPP-CSMS - OCPP Stack

Accelerate and make charging station deployements more reliable

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Version : 3

Trialog is working on EV charge since more than 10 years and had several opportunities to develop a strong expertise on Electro-Mobility charge protocols like IEC 61851-1, DIN 70121, ISO 15118 and OCPP 1.6/2.0.
In this context, Trialog has developed several communication stacks and and validation tools.

QOCPP-CSMS, the OCPP Communication Stack for EVSE supervisor is one of these stacks. It provides a robust and reliable communication stack to monitor and control a charging station over **OCPP 1.6** or **OCPP 2.0.**

Supported Features

Supported versions

- OCPP 1.6 WS/JSON
- OCPP 2.0.1

OCPP 1.6 Supported Features

Functional Block	Current state	Details
HTTP/SOAP		Not supported. Not planned.
WebSocket/JSON	100%	
Core	100%	
Firmware Management	100%	
Local Auth List Management	100%	
Reservation	100%	
SmartCharging	100%	GetCompositeSchedule SetChargingProfile ClearChargingProfile
Remote Trigger	100%	
Cybersecurity extension	0%	Under investigation
PnC extension	0%	Under investigation

OCPP 2.0 Supported Messages

Functional Block	Current state	Details
WebSocket/JSON	100%	
A. Security	100%	
B. Provisionning	100%	
C. Authorization	100%	
D. Local Auth List Management	100%	
E. Transactions	100%	
F. RemoteControl	100%	
G. Availability	100%	
H. Reservation	100%	
I. TariffAndCost		Not planned yet.
J. MeterValues	100%	*J03 is not yet really usable as defined in OCPP*
K. SmartCharging	100%	GetCompositeSchedule SetChargingProfile GetChargingProfile ClearChargingProfile NotifyEvChargingSchedule NotifyEvChargingNeeds
L. FirmwareManagement	100%	*Message will be exchanged but no firmware update will be done.*
M. ISO 15118 CertificateManagement	100%	
N. Diagnostics	100%	*Message will be exchanged but no FTP exchange will be done.*
O. DisplayMessage	100%	
P. DataTransfer	100%	

OCPP 2.x support for bidirectional charge is currently under implementation in a prototype demonstrator. It will be available as a licence option in QOCPP-CSMS.

Technical Details

The QOCPP-CSMS stack is developed as a C/C++ programs using Qt libraries. Linux based OS, C++11 and Qt5.6 are minimal requirements.

Mutli-platform: It has been fully validated on Linux bases OS, but should also work on Windows platform.
Multi-architecture: It is compatible with at least Intel and ARM architectures.

The QOCPP-CSMS stack is proposing two functional modes, both usable in parallel:

- **Use Case mode**: control the stack based on use case, which provides the same API for OCPP 1.6 and 2.0.
- **Message mode**: control the stack message per message, for a complete control of the stack behaviour, the API is therefore different between OCPP 1.6 and 2.0.

Available modules:

Modules	1.6	2.0.1
BootNotification	Yes	Yes
Transaction	Yes	Yes
Authorization	Yes	Yes
SmartCharging	Under investigation	Under investigation
Configuration	Planned	Planned
PnC	Under investigation	Under investigation

Validation and Interopperability

The QOCPP-CSMS stack is ready to use, fully validated with *TRIALOG*'s expertise and currently deployed into several supervisors. The stack has also participated to 2 OCPP 2.0 plugfests since 2019 in order to provide interoperability confidence.
The interoperability with the following supervisors has for example been covered using a test environment:

- OCPP 1.6: Alfen, EVTronic, Legrand, QOCPP-CS, Schneider EV Link, Total EV Charge and more to come
- OCPP 2.0 : Alfen, BP Chargemaster, ChargeCloud, eDRV, Driivz, DemandQ, Meras Plugins, Vector, Sagasystem, Schneider, VW Elli, Zapinamo, … and more to come

Contact us

*For more information about **QOCPP-CSMS, the OCPP Communication Stack for EVSE supervisors**, please contact us:* contact@trialog.com.