Understanding OCPP

What is OCPP?

OCPP is simply a syntax (language) used to communicate between a networked charging station and a network management system such as ChargePoint. Open Charge Point Protocol (OCPP) was defined by an informal group known as the OCPP Forum led by two companies from the Netherlands.

+ The OCPP Forum has over 50 members. ChargePoint has been an active member of the OCPP Forum for many years.

+ OCPP is not copyrighted and is freely available for use by anyone at no cost.

+ OCPP has evolved over the last 5 years from its initial release to Version 1.2, which was the first version to be deployed in production charging stations, and then to the current Version, 1.5.

+ OCPP Version 2.0, is a work in progress, that further expands functionality and is currently undergoing a review process prior to its expected release in 2014.

OCPP is not a standard.

+ OCPP is not currently recognized as a standard by any national or international standards body such as ANSI (USA) or ISO/IEC (world-wide).

+ There is currently no certification process in place to guarantee any level of interoperability between a charging station that "speaks" OCPP and a network management system that "speaks" OCPP.

+ OCPP does not address a number of the other standardization needs surrounding EV charging such as roaming between charging networks, identification methods (RFID), and station location/status information.

Does ChargePoint support OCPP?

+ Yes. In fact, a ChargePoint employee co-wrote the original version of OCPP and ChargePoint engineers have actively and regularly contributed to the evolution of OCPP over the last 4 years.

+ ChargePoint has managed OCPP Version 1.5 stations manufactured by Alfen in the EU for over 2 years.

+ ChargePoint intends to replace its current open protocol (OCNP, published for use by all hardware and software providers at no cost in 2011) with OCPP when OCPP becomes an international standard.

Why doesn't OCPP guarantee interoperability?

+ Without a standardized method to certify that an implementation of OCPP in a charging station or in a network management system will work with any other implementation*, it is not possible to guarantee functionality or interoperability.

+ Certification is typically accomplished with a very complex test suite ensuring that a software implementation works in a very precise, predefined manner. These test suites are developed as part of the true standardization process and are typically run as a service by an independent third party who, if the product passes the test suite, would certify the product as compliant with the standard.

+ Because a certification process does not yet exist any claim of interoperability is meaningless until a particular station is tested with a particular network management system. ChargePoint's real-world experience has shown that OCPP interoperability inevitably requires adjustments to both the station and network management software for each combination of charging station and network management software.

+ ChargePoint, along with its 50+ Forum members from all over the world are aggressively working to make OCPP a true standard with all that implies.

Will OCPP become an official standard?

+ A new international standards development organization, eMI3, has been formed to bring a standard station-to-network management system protocol (among other needed standards) to the IEC for ratification. OCPP is the leading candidate for that protocol.

+ ChargePoint is a founding board member of eMI3 and intends to devote significant resources to transitioning OCPP to a real standard.

What is eMI3?

+ eMI3 is a formal open standards organization that was created to drive standardization of all of the elements needed to make the EV driver and station owners experience seamless.

+ eMI3's initial membership includes 50 companies from around the world including ChargePoint and almost all of the OCPP Forum members

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* For the Geeks out there, the problem comes from the difference between syntax and semantics, or put another way, the difference between the word itself and the meaning of the word in a particular context. OCPP defines syntax but it does not define behavior except by implication, which is always subject to interpretation by the programmer. Thus without a test suit to assure all programmers have interpreted the implied behavior the same way, you never get interoperability.

- Unlike the OCPP Forum, eMI3 has a formal corporate structure with a board of directors, bylaws, formal membership requirements, and membership fees. 50 leading companies in the EV space have "signed on the dotted line" to create eMI3.
- eMI3 is chartered to solve all the interoperability issues surrounding the EV space including:
  - Station-to-network management protocol
  - Standard reference architecture and interfaces for interoperability certification
  - Roaming protocol between charging networks
  - Common driver identification methods
  - Common POI data formats (station location and information)

Do charging stations manufactured by ChargePoint "speak" OCPP?

- New charging stations manufactured by ChargePoint Inc. will "speak" the latest published version of OCPP beginning in early 2014 in addition to the current OCNP protocol they speak today.
- The station software release supporting OCPP in addition to OCNP will be downloaded over the air to all existing, on-line, certified ChargePoint station's including those manufactured by companies other than ChargePoint Inc. (e.g. Eaton, Schneider, Leviton, Fuji, etc.).

Does ChargePoint network management software support OCPP?

- ChargePoint network management software already supports OCPP Version 1.5 and has for over 2 years.
- Because no certification program for OCPP interoperability exists today there will be no guarantee of interoperability between ChargePoint network management and charging stations that claim to support OCPP unless those stations have already been certified on the ChargePoint network (like those from Eaton, Schneider, Leviton, Fuji, and Alfen).
- ChargePoint, as always, will work with any charging station manufacturer to certify their station(s) on the ChargePoint network with no fees whatsoever.

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