

CCU Release Notes

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CTEK E-Mobility AB

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1 Notifications

- After upgrade to 4.4.x it will not be possible to downgrade to a lower version, this is a security improvement.
- Support for older EVSE types than Chargestorm Connected 2 has been removed and it will not be possible to upgrade to this version.
- CGC100: need to upgrade to 3.18.X before upgrading to 4.2.X or later.

2 Version: r4.5.1

Date of release 2024-03-27

What is fixed?

- The modem SSH access configuration parameter (interface/modem/firewall/ssh) is now applied correctly.

- Welded relay errors are now reported correctly in OCPP StatusNotifications.

3 Version: r4.5.0

Date of release 2024-03-14

What is new?

- NANOGRID™ license handling has been removed. All chargers will allow it by default.

What is changed?

- Improved modem handling and robustness
 - Dropped support for PPP-based modem connections.
 - Modem configuration parameters (wwan0/ppp0) have been simplified to a single set prefixed with 'modem'. The new parameters are called:
 - * interface/modem/pin
 - * interface/modem/apn
 - * interface/modem/apn/username
 - * interface/modem/apn/password
 - * interface/modem/apn/rat
 - * interface/modem/firewall/ssh

Legacy settings will be automatically migrated upon first boot, after that they are considered deprecated and shall not be used.

What is fixed?

- Ensure that the OCPP WebSocket reconnect attempt interval gets increased with each failed attempt (up to 10 minutes).
- Fixed an issue with "validFrom" in charging profile.
- Fixed monitoring of backend connection using websocket ping.
- Fixed a number of minor issues with the WebUI.
- Fixed issue with NANOGRID™ Equal2 scheduler where it did not assign all available capacity in certain situations.
- Improvement on integration with Ferroamp EnergyHub aimed at reducing on/off oscillation.

4 Version: r4.4.3

Date of release 2024-01-16

What is fixed?

- Restore the Local proxy functionality (broken since version r4.4.0).

5 Version: r4.4.2

Date of release 2023-12-01

What is fixed?

- Fixed issue with crashing application on misconfigured NANOGRID™.

6 Version: r4.4.1

Date of release 2023-11-24

What is fixed?

- OCCP: Fixed issue with charging profile not recurring.

7 Version: r4.4.0

Date of release 2023-11-09

What is new?

- Contactor cycle count can be read out through OCCP.
- The WebUI can now be accessed remotely.
- Firewall introduced to enhance software security.
 - SSH needs to be enabled per interface.
 - WebUI needs to be enabled per interface.
- WebUI
 - Now uses the HTTPS protocol.
 - Introduced a new UI version with support for mobile devices.
- New parameter: `outlet/X/contactor_cycle_count`

- New parameter: interface/config/firewall/ssh
- New parameter: interface/eth/firewall/ssh
- New parameter: interface/eth/firewall/webui
- New parameter: interface/ppp0/firewall/ssh
- New parameter: interface/wlan0/firewall/ssh
- New parameter: interface/wlan0/firewall/webui
- New parameter: interface/wwan0/firewall/ssh

What is changed?

- OCPP
 - Improved OCPP handling.
 - Contactor cycle count vendor error removed
- NANOGRID™ controller overwrites station fuse rating.
- Removed the possibility of erasing device configuration in the WebUI.

What is fixed?

- Fixed broken UPS function for CGC100.
- Security improvements to the WebUI.
- Fixed an issue where the CGC500 only generated empty diagnostic files
- OCPP
 - Fixed an issue where overcurrent/penalty showed the wrong charging state in logs and OCPP StatusNotification.
 - Fixed an issue where SecurityEventNotification did not comply with the OCPP1.6 specification.
 - Fixed an issue where a newly received TxDefaultProfile did not execute if the start time had already passed.
- NANOGRID™
 - Clients will now apply the correct fallback current at system startup if the controller is unavailable.

8 Version: r4.3.2

Date of release 2023-10-04

What is fixed?

- NANOGRID™
 - NANOGRID™ clients will now apply the correct fallback current at system startup, if the NANOGRID™ controller is not available.
- WebUI:
 - Fixed issue in WebUI where configuration fields got wrong edit rules (introduced in r4.3.1).

9 Version: r4.3.1

Date of release 2023-07-07

What is new?

- New parameter: TransmitSecurityEvents (replaces TransmitAllSecurityEvents)

What is changed?

- Changed upstream fuse to an editable field instead of selector to allow higher fuse values.
- NANOGRID™ controller overwrites station fuse rating.
- Parameter TransmitAllSecurityEvents is removed.

What is fixed?

- NANOGRID™
 - Looping between SuspendedEVSE and Charging in NANOGRID™ Home.
 - Equal2 with CGC100 / 500 will not start charging on chargers.
 - Fallback was not assigned directly after network loss.

10 Version: r4.3.0

Date of release 2023-06-22

What is new?

- Support for secure communication in NANOGRID™
- OCPP
 - Improved support for ChargingProfile

- New parameter: LogLevel. Default: info
- New parameter: NanoGridControllerSecurity
- New parameter: NanoGridClientPresharedKey

What is changed?

- EVSE does not discard cached sessions with invalid timestamp on system startup.

What is fixed?

- NANOGRID™
 - Fixed stability issues in SFB scheduler.
 - Fixed scheduling of complex sites in EQUAL2 scheduler.

11 Version: r4.2.1

Date of release 2023-06-07

What is fixed?

- Fix modem connection issue introduced in r4.2.0
- Fix viewing meter values in web gui.
- Fix issue with user interface LEDs being dark until reboot after configuration change.

12 Version: r4.2.0

Date of release 2023-05-22

What is new?

- Support for changeable password in WebUI
- Added security log functionality.
- Support for tampering detection.
- Brute force detection.
- Security log.
- OCPP
 - Support for SecurityEventNotification

- New parameter: TransmitAllSecurityEvents
- New parameter: tampering_enabled
- New parameter: platform/hwfeatures/tampering

What is changed?

- Yocto uplift to latest patch release on Dunfell 2020-04.24-dunfell(3.1.24)
- Uplift to QT: 6.2
- Restructured CS-OS for improved security.
- Disable SSH access by default.

What is fixed?

- OCPP
 - GetDiagnostics now handles startTime and StopTime correctly.
 - Respond to TriggerMessage before taking action.
 - SendLocalList.conf fix.
 - GetCompositeSchedule: respond with not implemented

13 Version: r3.18.0

Date of release 2023-04-24

What is new?

- New parameter "UnavailableWhenTxnStartNotPossible"
- New parameter "FaultedWhenTxnStartNotPossible"
- New parameter "KeepGreenPlugLitWhenUnavailable"

What is changed?

- OCU:
 - Optimization on OCU selftest to handle noncompliant EVs
- Renaming of cgc100 to better identify model.
- OCPP 1.6:
 - Fallback to non empty string for idTag (sets idTag to:Unknown)

14 Version: r3.17.0

Date of release 2023-03-17

What is new?

- New parameter "UnavailableOnInvalidTime": EVSE sets itself as unavailable if system time is not in sync and charger is offline.
- EVSE discards cached sessions with invalid timestamp on system startup.
- Time synchronization of cached sessions with invalid date on receiving correct system time.

What is fixed?

- CBC loop detection added for CC2 chargers.

15 Version: r3.16.0

Date of release 2023-03-03

What is new?

- New OCU release (0.1.14)

What is fixed?

- OCU:
 - Improvement on OCL self test.
 - Improvements to support IT-net.

16 Version: r3.15.0

Date of release 2023-02-10

What is new?

- Added NANOGRID™ scheduler Equal2, with improvements for large sites.

What is fixed?

- Modbus TCP reconnect issue.
- Improvements of how NANOGRID™ detects EV phase draw.

17 Version: r3.14.1

Date of release 2023-01-05

What is fixed?

- NANOGRID™
 - Fixed problem where clients did not update EVs phase draw correctly.

18 Version: r3.14.0

Date of release 2022-12-21

What is new?

- NANOGRID™
 - External Control of NanoGrid limit using ModbusTCP.

What is fixed?

- OCPP 1.6: Respond "not implemented" on GetCompositeSchedule requests.

19 Version: r3.13.0

Date of release 2022-12-01

What is new?

- NANOGRID™
 - Added prioritization support for schedulers EqualShare, SimpleFeedback

What is changed?

- NANOGRID™
 - Improved resource allocation for Schuko variants in SimpleFeedback scheduler.
 - EqualShare optimization for resource allocation for fully charged EVs.

What is fixed?

- NANOGRID™
 - fix for incorrect fallback assignment for offline stations.
 - Fix for CGC500 client update mechanism, causing clients not to be updated automatically.

20 Version: r3.12.7

Date of release 2021-11-29

What is fixed?

- NanoGrid:
 - Correctly setup Modbus/TCP energy meters on a CGC100 and CGC500.
- OCPP 1.6j:
 - Don't accept a Charging Profile with a 0s duration. This will now result in a CALLERROR.
 - Refuse a Charging Profile of type ChargePointMaxProfile if it is of kind Relative, as that doesn't make any sense.
 - Correct an issue with a potential stopTime in GetDiagnostics.req.

21 Version: r3.12.6

Date of release 2021-11-17 Integrated all changes released between ccu_r3.11.12 and ccu_R3.11.19. As this is a large set of changes, please check those release notes.

What is new?

- OCPP 16J and NANOGRID™:
 - Added DataTransfer.req to send FW upgrade files for downstream charging stations to a CGC500.

What is fixed?

- NANOGRID™:
 - A NANOGRID™ controller will correctly take measured loads in a sub-panel into account.

22 Version: r3.12.5

Date of release 2020-12-04

What is new?

- OCPP 1.6:
 - Add DataTransfers.req to report the connectivity between an NANOGRID™ controller and the clients. There are DataTransfer.reqs for both the controller as well as for the clients.

- Send an alarm if there's error in `nanogrid.ini`.
- Send a status code explaining that the station is waiting for ongoing sessions to complete in order to reboot after a FW upgrade has been installed.
- If Heartbeat is part of the `TimeSource`, fall back to using a `http` request to get the time if `ntp` fails.

What is changed?

- A NANOGRID™ controller will send the clients `PhaseRotation` each time the clients connects after a reset, not only the first time after the start of the NANOGRID™ controller.
- WebUI: don't show the temperature anymore. The temperature shown wasn't any of the temperatures used for control.
- Use `GroundFailure` for an AC fault also in `Chargestorm Connected 2`.
- The EV overcurrent detection is now changed to allow the maximum of 1A or 5% of the assigned current. This is done to not cause too much issues with certain EVs.

What is fixed?

- OCPP 1.6:
 - Fix an issue with a relative `ChargingProfile`, that in some very specific situations wouldn't activate.
 - Fix a race issue with accepting a `TxProfile ChargingProfile` that was sent immediately after a `StartTransaction.conf`.
 - Reject `ChargingProfiles` whose first period doesn't have the start time 0.
 - `LocalAuthorizeOffline` had a default value of 1 instead of the correct `true`.
 - Accept a `DataTransfer.req` without a `messageId`.
- NANOGRID™:
 - Do not restart if there's no `nanogrid.ini` file installed on a CGC.
 - Improve the robustness for errors in `nanogrid.ini`.
- For dual 1-phase CSR100 and `Chargestorm Connected (1)`, the conversion to `*PhaseRotation` configuration keys had an error. Contact CTEK E-Mobility AB support for information on how to handle already upgraded stations.
- Fix the LED support for CCU HW r3.x.
- WebUI: Fix the CTEK NGHome configuration profile.
- Improved the robustness of the applications in case of a malfunctioning SIM card.
- Fix the demo-mode for `Chargestorm Connected 2`.

23 Version: r3.12.4

Date of release 2020-09-25

What is new?

- WebUI: add support for configuration profiles. An operator can get a number of pre-configured configuration profiles installed into the station, to make the installation / configuration easier and less error prone. Contact the CTEK E-Mobility support for more info if needed.
- WebUI: add support for setting and clearing the password, (`AuthorizationKey`), used for HTTP Authentication with `wss`.

What is changed?

- Increased the tolerance for an EV not obeying the charging station (PWM).

What is fixed?

- Improved reliability and performance of EM21 communications (Modbus).
- OCPP 1.6J:
 - Smart charging / Charging Profiles:
 - * Try to connect to the backend immediately when the modem gets a connection. This is now also implemented for ppp connections.
 - * Fix the starttime of a transaction that was started in offline mode, if only NTP is being used for time synchronization. Earlier, this behaviour relied on the Heartbeat time synchronization mechanism.
 - * Correctly validate a `transactionId` in a `SetChargingProfile.req`.
 - * Correct a bug that could cause a charging profile of the kind `Relative` to not be active when it should.
 - * Fix `ClearChargingProfile.req` to allow *all* stored charging profiles to be cleared when an empty payload of the request is sent.
 - * Reject a trigger message for a `BootNotification.req` if the station has been accepted.
- Ensure that a `EvOverCurrent` error is correctly cleared on the original `Chargestorm Connected`.
- Set the stop reason to `Other` if the cause was `EvOverCurrent`.
- Fix a rare issue where an unused EVSE (connector) could be authenticated together with the EVSE that was supposed to be started.

- Fix in issue with the recommended NANOGRID™ configuration for IT-net.
- Fix for an issue where the ordering of state changes and the EV ramping down the charging current could cause a NANOGRID™ client to be assigned 0A indefinitely.

24 Version: r3.12.3

Date of release 2020-07-02

What is new?

- OCPP16J:
 - Support added for HTTP Authentication for wss:// connections. Currently, only the CSMS can set the password for a station; this will come to the local webui in a later version.

What is changed?

- If the EV doesn't obey the PWM-signal at more than 10 occasions, the transaction will be stopped and a faulty state will be reported.

What is fixed?

- OCPP16J:
 - Try to connect to the backend immediately when the modem gets a connection.
 - Stay in SuspendenEVSE during the penalty time, if the EV has disobeyed the PWM-signal.
 - Fix a possible timestamp issue for the first MeterValues.req if the station goes online during a charging transaction.
 - Validate a RemoteStartTransaction.req against a possible reservation, no matter what the AuthorizeRemoteTxRequests are set to.
 - Handle the idTag in a RemoteStartTransaction.req in a case-insensitive way.
 - ChangeAvailability.req could change the availability of the whole station, even if only 1 connector was intended for the change.
 - Fix a possible race condition when going offline.
- Beep and blink red if the station is offline and a non-valid RFID-tag is shown.
- In offline mode, ensure that the opentag is used to report the start of a transaction.
- NANOGRID™ Home:
 - Pause immediately if the main fuse is more than 20% overloaded.

- Pause the session, don't stop if it if a maximum session energy is set and has been reached.

25 Version: r3.12.2

Date of release 2020-06-25

What is new?

- If ZE Ready isn't enabled, the charging station will be stricter when it comes to the EV behaviour and the EVs capabilities to follow the PWM control signal.
- A new, vendor specific error code has been added to signal that the EV consumes more power than assigned.

What is changed?

- Disable the RFID LEDs if all EVSEs are disabled.
- Improve the reliability of the automatic reboot after FW upgrades.

What is fixed?

- Retry the retrieval of IMSI and ICCID, etc, from the modem if the first attempt failed. This wasn't guaranteed to happen before.
- OCPP16J:
 - After a ChangeAvailability.req, immediately write down the new status, even if the station replies with Scheduled.
 - Reject a SetChargingProfile.req if it has an empty list of periods; this is an invalid profile.
- An ongoing session shouldn't have been stopped, only paused, if the EV draws too much (more than assigned).
- Improved the error handling for timed out OCPP messages.

26 Version: r3.12.1

Date of release 2020-06-05

What is new?

- NANOGRID™ Home support for Chargestorm Connected 2!

What is changed?

- WebUI: do not state that the fuse configuration key isn't being used in a NANOGRID™ setup.

What is fixed?

- OCPP 1.6J:
 - Try to avoid sending multiple `BootNotification.req`, unless it's required.
 - Ensure that `ChangeAvailability.req` on the EVSE's are reflected / inferred on the status for the whole Charging Station (`connectorId=0`).
 - Reject a `RemoteStart.req` if the EVSE already has received a `RemoteStart.req` that hasn't timed out.
 - Ensure that the stop reason is set to `PowerLoss`, if that's why the transaction was stopped.
 - Ensure that `TxDefaultProfiles` can be correctly replaced based on their purpose, stack level, and `connectorId`.
 - Change a few non-compliant OCPP required configuration keys to be mark as read/write, and fix the spelling of a couple of keys.
- NANOGRID™:
 - Ensure that both the `EqualShare` as well as the `SimpleFeedback` schedulers correctly handle offline stations.
- Improve the robustness of the diagnostics package generation.
- Increase the timeout before the station starts looking at the configuration key `AllowOfflineTxWithoutId` after a boot.
- Ensure that a `RemoteStart.req` can't cause the RFID LED to turn on, if all EVSE's are in open mode.

27 Version: r3.12

Date of release 2020-05-14

What is new?

- Support for the new NANOGRID™ controller, CGC500.
- Documentation for error codes has been added to the release package.
- OCPP 1.5 has been removed.
- The upgrade file will only install if the protocol is set to `NONE` or to `OCPP 1.6J`.

- OCPP 1.6:
 - Working reservation support. A reserved EVSE indicates this by a pulsating green LED.
 - BootNotification.req will include a “v2” in the model name for Chargestorm Connected 2.
 - Added limitations for max stack level and max periods in a charging profile. Violations will result in a CALLERROR.
 - Added limitations for the size of the local list, as well as the number of tokens that can be sent in a single SendLocalList.
 - Add the key to inform the CSMS of the supported file transfer protocols.
- The timeout that invalidated an EVSE if an EV was connected but never authorized has been removed. See comment under “Fixed” for info on how the stations handles two EV’s connected but not authorized.

What is changed?

- OCPP 1.6:
 - The Charging Station will only send Heartbeat.req’s if there’s been no other OCPP communication for a whole Heartbeat interval. However, there will be at least one Heartbeat.req every 24h.
 - Removed the measurand Power .Offered; this wasn’t actually supported before.
- Web-configuration interface:
 - The log page has been removed; it wasn’t working.
 - The status page will now list the model.

What is fixed?

- OCPP 1.6:
 - When using a modem, ensure that the ICCID and IMSI is read prior to sending a BootNotification.req. This might delay sending the boot notification by a short time.
 - Correctly handle ChangeAvailability.req again, including persting the state, handling an authorized EVSE becoming unavailable etc.
 - Correctly document NONE as the case for protocol for a non-connected station.
- Correctly report the supported extensions / customizations to OCPP.
- Improved the reliability of the data in the local database (i.e. local list and offline sessions).

- NANOGRID™: when not having contact with the NANOGRID™ controller., a Chargestorm Connected 2 could deliver power without any authentication.
- Correctly return the default value for a few read-only configuration keys.
- Ensure that NANOGRID™ Home stations are respecting an upstream limit in a charging profile with purpose ChargingStationMaxProfile.
- All Charging Stations will make sure that they're respecting the fuse configuration key, as that's intended to describe the fuse for the incoming cable. Thus, this is true for NANOGRID™ stations too.

28 Version: r3.11.23

Date of release 2022-10-25

What is changed?

- Update of configuration template

29 Version: r3.11.22

Date of release 2022-09-01

What is fixed?

- Modem: Fix for problem with reconnection handling for RC7620.

30 Version: r3.11.21

Date of release 2022-07-01

What is new?

- Modem: Added support for Sierra RC7620 modem.
- Modbus: Added support for Siemens PAC3220 meter.

What is fixed?

- OCPP1.6J:
 - Fix for unintentional transaction start after a rejection of an RemoteStartTransaction with chargingProfile.
 - Disregard AllowOfflineTxForUnknownId when protocol=None, affects permanent offline stations only

- Improved filter for fast CP state changes to reduce intermittent "State D".

31 Version: r3.11.20

Date of release 2022-02-01

What is fixed?

- WebUI:
 - Fix a race condition when using configuration profiles and reloading the profiles. This could in some circumstances lead to a loss of configured ChargeboxId.
- OCPP1.6J:
 - Do not accept profiles that has a duration of 0s.
 - Reject relative profiles for ChargePointMaxProfile.
 - The stop time in GetDiagnostics.req wasn't handled correctly.
- OCL:
 - Improve the self-test of one of the RC sensors.

32 Version: r3.11.19

Date of release 2021-11-08

What is new?

- WebUI: add handling of the parameter MaxEnergyOnInvalidId.
- OCPP 1.6J: basic support for sending a ChargingProfile in a RemoteStartTransaction.req.
- The update interval for the automation/MQTT interface can be configured.

What is changed?

- The custom error in the OCL for contactor switches, has been changed to a warning. Thus, an alarm will be sent, but charging can still continue.
- NanoGrid:
 - Use the stations fuse configuration key, to ensure a safe maximum for the whole station. This will apply to the sum of the two EVSEs for a dual EVSE station.
- OCL:
 - Report which type of RCD is being used.

- Contactor count error is removed (see above).
- Add support for a 2nd RCD sensor type.
- Improve startup reliability.
- Lowered the feedback threshold to 160V.

What is fixed?

- The fail-safe shutoff for high-currents when using a trafo meter has been restored. (Only affects a small amount of old stations and/or stations from other vendors).
- Fix metering on EVSE 2 for a dual, 1-phase Chargestorm Connected 2. This should make EVSE 2 work fine in a NANOGRID™ setup again.

33 Version: r3.11.18.2

Date of release 2021-09-17

What is changed?

- Increase the lower limit that an EV can take, before stopping charging due to the EV misbehaving. Certain EVs took a little bit too much when assigned 6A.

What is fixed?

- In certain circumstances, a dual-EVSE station could temporarily be unable to authenticate any of the EVSEs, if two connected, un-authenticated EVs were present.
- webui: ensure that the connectivity icons are displayed on the status page.

34 Version: r3.11.18.1

Date of release 2021-09-02

What is new?

- OCPP 1.6
 - Added support for the configuration key `MaxEnergyOnInvalidId`. As our earlier implementation allowed unlimited charging in this case, the default value of `MaxEnergyOnInvalidId` is set to 100 kWh, to get as small change as possible for stations in field.
- Support added for EM111-AV5 energy meter.

What is fixed?

- Automation/Mqtt didn't correctly work if the MQTT broker was configured with a DNS name instead of an IP address.
- Fix a collision between our Automation/Mqtt client connection and our NANOGRID™ client connection, if the station in question also is acting as a NANOGRID™ controller.
- Do not clear certain alarms by accident.
- OCPP 1.6
 - The wrong IdToken could sometimes start a session, even though the EVSE/connector was reserved for another IdToken.
 - Correctly set our configuration key Automation/MqttPassword as write-only.

35 Version: r3.11.17

Date of release 2021-07-08

What is new?

- Automation/integration interface:
 - Measured grid frequency has been added to the MQTT interface.
 - Added a configuration for the MQTT port.
 - Added mDNS announcement for the Modbus/TCP service.
- Add a configuration key to indicate the phase sequence, if the energy meter supports reporting this.

What is fixed?

- Fixed a bug, where an EVSE could start a new session after a remote stop, if the EVSE didn't require authentication and the EV changed state.
- OCPP 1.6J:
 - In response to a TriggerMessage.req, also send the StatusNotification.req for connectorId=0.
 - In response to a TriggerMessage.req for DiagnosticStatusNotification, do not falsely send Rejected.
- Automation/integration: fix a race condition while retrieving the MQTT password.
- WebUI:
 - Correctly handle the MqttPassword used for the automation/integration interface.

36 Version: r3.11.16

Date of release 2021-06-21

What is new?

- Automation: Add support for acting as a Modbus/TCP energy meter, relaying data from the internal energy meters. This is primarily intended for data gathering applications.
- OCPP1.6J:
 - Add a new vendor error code, `FrequentPPChanges`, that's send if the charging station reads a fluctuating PP value during charging.
- WebUI:
 - Add support for enabling and configuration of the automation / integration support. This allows a local 3rd party to read data from the station using either MQTT or Modbus/TCP.
 - Add support for changing the scaling factor of a pulse meter.

What is fixed?

- Re-add the parsing and use of the old configuration key for scaling of a pulse meter output.

37 Version: r3.11.15.3

Date of release 2021-05-21

What is changed?

- The counter for an EV going between State B and State C is reset more often. It seems that certain EVs could trip our protection a little bit too easily.

What is fixed?

- The fix to reduce the time difference needed to synchronize the time from a `Heartbeat.conf` introduced a bug, which could result in the time not being updated at all. This is fixed.

38 Version: r3.11.15.2

Date of release 2021-05-20

What is fixed?

- One of the configuration profiles for one CSO wasn't correctly applied.

39 Version: r3.11.15.1

Date of release 2021-05-07

What is new?

- Added working support for 2G fallback on our 4G/LTE modem. This is also added to the WebUI.
- OCPP 1.6:
 - Fix an issue in our data transfer `ExtendedStartTransaction`, where the station didn't react properly to the status if the `IdToken`.
 - Add new vendor error codes (`VentilationNotSupported`).
- Automation:
 - Add possibility to expose meter readings from both internal energy meter, as well as a NANOGRID™ Home energy meter.
- NANOGRID™:
 - Ensure that the error code `NGOfflineEMS` is sent if the NANOGRID™ controller never connects to the EMS.
 - Add support for Carlo Gavazzi EM24 series with Modbus/TCP.
 - Add a custom MQTT interface to integrate to a generic energy management system, EMS.

What is changed?

- NANOGRID™:
 - Ferroamp E-Hub integration: the data is exchanged using a new field name.
- Try to ensure that current assignments can't be done with a shorter interval than 5s.
- Synchronize the time more often from a `Heartbeat.conf`.
- Rewrite the LED states every 250ms.

What is fixed?

- OCPP 1.6:
 - In `SetChargingProfile`, require a `startSchedule` for a profile of type `Absolute`.
- Modem:
 - Fix the ping-host handling for a PPP-connection.
 - Fix an issue where the code could get stuck trying to reset the modem.

- Improve internal Modbus communication in case of timeout:s between the different controllers (Chargestorm Connected 2).
- If an OCL is offline at startup, make sure that the station indicates faulty. (Chargestorm Connected 2).
- Ensure that a connected EV doesn't have its charging session stopped after a FW update.
- ZE Ready could result in an issue when using Modbus energy meters.

40 Version: r3.11.14

Date of release 2021-03-18

What is new?

- NANOGRID™
 - The clients reports which NANOGRID™ controller they are connected to in a configuration key.
- NANOGRID™ Home
 - Add a configuration key to read the current readings from the NANOGRID™ Home energy meter.
 - In case of an overload situation, add phase information to the vender specific error code.
- Enable one more TLSv1.2 cipher for OCPP 1.6 JSON connections.

What is fixed?

- NANOGRID™ home
 - Fix an issue where the charging power wasn't being ramped down in an overload situation.
 - On Chargstorm Connected 2, the serialno of the NANOGRID™ Home energy meter wasn't being read correctly.
- NANOGRID™
 - Ensure that on offline client correctly gets the fallback current handled.

41 Version: r3.11.13

Date of release 2021-02-19

What is new?

- WebUI: add tests button for testing the RCD on CC2.

What is changed?

- OCPP:
 - Charging profiles: reject if the first period doesn't have 0 as the start time.
 - Make the randomized charge delay after a reset/reboot configurable.
 - Expose the stations license information through a configuration key.
 - Add new vendor error codes:
 - * NgHomeErrorOvercurrentShutdown
 - * NGOfflineEMS
 - Rename a couple of vendor error codes, to be more generic, using RCM for residual current monitor.
- Increased the general message timeout from 30s to 45s.
- NANOGRID™:
 - Less frequent re-calculations of available power when connected to a Ferroamp E-Hub.

What is fixed?

- If the station restarted during an active charging transaction, there was a (small) possibility that the station never assigned any charging current to the EV.
- Minor fix for `outlet/X/xxxPhaseRotation` for non-configured, new dual 1-phase EVSE charging stations. The built-in rotations are now hardcoded.
- NANOGRID™ Home: better handling of issues with reading the NANOGRID™ Home energy meter.
- WebUI:
 - Fix an issue with uploading a file with a list of RFID tags.
 - Do not show RFID tags stored in the local list twice on the tag admin page.
 - Fix a rare race issue with configuration profiles.
 - Improve a few help texts.
- Mode 3 controller improvements: increased hysteresis for CP state transitions.
- Add extra guards for the case the EV frequently toggles the contactors.

42 Version: r3.11.12

Date of release 2020-12-17

What is changed?

- Temperature limitations for newer Chargestorm Connected 2 has been modified.

What is fixed?

- NANOGRID™: EVSE 2 didn't always get any power assigned, when the station had lost contact with the NANOGRID™ controller.
- OCPP 1.6: If the CSMS replied with a specific, faulty `BootNotification.conf`, the station could end up not retrying the `BootNotification.req` again until the websocket was closed and reopened.

43 Version: r3.11.11

Date of release 2020-12-04

What is changed?

- A NANOGRID™ controller will send the clients `PhaseRotation` each time the clients connects after a reset, not only the first time after the start of the NANOGRID™ controller.
- Improved the robustness againts typos in `nanogrid.ini`.

What is fixed?

- OCPP 1.6: `LocalAuthorizeOffline` had a default value of 1 instead of the correct `true`.
- For dual 1-phase CSR100 and Chargestorm Connected (1), the conversion to `*PhaseRotation` configuration keys had an error. Contact CTEK E-Mobility AB support for information on how to handle already upgraded stations.

44 Version: r3.11.10.1

Date of release 2020-11-11

What is fixed?

- An issue where a powerup in cold weather could cause the Chargestorm Connected 2 to end up in a faulty state.

45 Version: r3.11.10

Date of release 2020-11-06

What is new?

- OCPP16J:
 - Add `DataTransfers.req` to report the connectivity between an NANOGRID™ controller and the clients. There are `DataTransfer.req`s for both the controller as well as for the clients.
 - Send an alarm if there's error in `nanogrid.ini`.
 - Send a status code explaining that the station is waiting for ongoing sessions to complete in order to reboot after a FW upgrade has been installed.
 - If Heartbeat is part of the `TimeSource`, fall back to using a `http` request to get the time if `ntp` fails.

What is changed?

- WebUI: don't show the temperature anymore. The temperature shown wasn't any of the temperatures used for control.
- Use `GroundFailure` for an AC fault also in `Chargestorm Connected 2`.

What is fixed?

- Fix the LED support for CCU HW r3.x.
- WebUI: Fix the CTEK NGHome configuration profile.
- Improved the robustness of the applications in case of a malfunctioning SIM card.
- NANOGRID™:
 - Do not restart if there's no `nanogrid.ini` file installed on a CGC.
 - Improve the robustness for errors in `nanogrid.ini`.
 - Accept a `DataTransfer.req` without a `messageId`.
- OCPP16J:
 - Fix an issue with a relative `ChargingProfile`, that in some very specific situations wouldn't activate.
 - Fix a race issue with accepting a `TxProfile ChargingProfile` that was sent immediately after a `StartTransaction.conf`.
- Fix the demo-mode for `Chargestorm Connected 2`.

46 Version: r3.11.9

Date of release 2020-09-25

What is fixed?

- OCPP 1.6J:
 - Reject a trigger message for a BootNotification.req if the station has been accepted.
- Fix a rare issue where an unused EVSE (connector) could be authenticated together with the EVSE that was supposed to be started.
- Fix in issue with the recommended NANOGRID™ configuration for IT-net.
- Fix for an issue where the ordering of state changes and the EV ramping down the charging current could cause a NANOGRID™ client to be assigned 0A indefinitely.

47 Version: r3.11.8.2

Date of release 2020-09-08

What is new?

- WebUI: add support for configuration profiles. An operator can get a number of pre-configured configuration profiles installed into the station, to make the installation / configuration easier and less error prone. Contact the CTEK E-Mobility support for more info if needed.
- WebUI: add support for setting and clearing the password, (AuthorizationKey), used for HTTP Authentication with *wss*.

What is fixed?

- OCPP16J:
 - Try to connect to the backend immediately when the modem gets a connection. This is now also implemented for ppp connections.
 - Fix the starttime of a transaction that was started in offline mode, if only NTP is being used for time synchronization. Earlier, this behaviour relied on the Heartbeat time synchronization mechanism.

48 Version: r3.11.7

Date of release 2020-08-20

What is fixed?

- Improved reliability and performance of EM21 communications (Modbus).
- OCPP 1.6J:
 - Smart charging / Charging Profiles:
 - * Correctly validate a transactionId in a SetChargingProfile.req.
 - * Correct a bug that could cause a charging profile of the kind Relative to not be active when it should.
 - * Fix ClearChargingProfile.req to allow *all* stored charging profiles to be cleared when an empty payload of the request is sent.

49 Version: r3.11.6

Date of release 2020-07-02

What is new?

- OCPP16J:
 - Support added for HTTP Authentication for wss:// connections. Currently, only the CSMS can set the password for a station; this will come to the local webui in a later version.

What is changed?

- Improve the reliability of the automatic reboot after FW upgrades.

What is fixed?

- OCPP16J:
 - Try to connect to the backend immediately when the modem gets a connection.
 - Fix a possible timestamp issue for the first MeterValues.req if the station goes online during a charging transaction.
 - Validate a RemoteStartTransaction.req against a possible reservation, no matter what the AuthorizeRemoteTxRequests are set to.
 - Handle the idTag in a RemoteStartTransaction.req in a case-insensitive way.
 - ChangeAvailability.req could change the availability of the whole station, even if only 1 connector was intended for the change.
 - Fix a possible race condition when going offline.
 - Improved the error handling for timed out OCPP messages.
- Beep and blink red if the station is offline and a non-valid RFID-tag is shown.

- In offline mode, ensure that the opentag is used to report the start of a transaction.
- NANOGRID™ Home:
 - Pause immediately if the main fuse is more than 20% overloaded.
- Pause the session, don't stop if it if a maximum session energy is set and has been reached.

50 Version: r3.11.5

Date of release 2020-06-10

What is changed?

- OCCP 1.6:
 - Infer the status of the whole station from the status of all EVSEs (connectors).
 - Guard the assembling of diagnostics package. Let the station refuse a `GetDiagnostics.req` if it's already assembling a package.
 - Reject a `RemoteStart.req` for a specific EVSE (`connectorId`), if it's already been remote started / authorized.
- Disable the RFID LEDs if all EVSEs are disabled.
- Increase the timeout after bootup before the station looks at our configuration key `AllowOfflineTxWithoutId`.

What is fixed?

- Retry the retrieval of IMSI and ICCID, etc, from the modem if the first attempt failed. This wasn't guaranteed to happen before.
- OCCP 1.6:
 - Minimize the risk that the station sends multiple `BootNotification.req`. There was a race issue after a soft reset.
 - After a `ChangeAvailability.req`, immediately write down the new status, even if the station replies with `Scheduled`.
 - `ChangeAvailability.req` had issues with reenabling the whole station.
 - Reject a `SetChargingProfile.req` if it has an empty list of periods; this is an invalid profile.
 - `SetChargingProfile.req` didn't correctly replace a `TxDefaultProfile` based on purpose, stack level, and `connectorId`.
 - Fix the spelling and read/write capabilities of a few OCPP standard configuration keys.

- An ongoing session shouldn't have been stopped, only paused, if the EV draws too much (more than assigned).
- Ensure that the RFID LED doesn't light up if the RFID reader is disabled. This could happen after a `RemoteStart.req` depending on whether that request led to an `Authorize.req` or not.
- Correctly set the stop reason to `PowerLoss` after a power outage.

51 Version: r3.11.4

Date of release 2020-05-27

What is new?

- Chargestorm Connected 2 supports NANOGRID™ Home, with the external Modbus-meter connected to *the 2nd RS485 port* on the controller.

What is changed?

- WebUI: do not state that the fuse configuration key isn't being used in NANOGRID™. The fuse key is still being respected, and is assumed to mean the upstream cable rating.

What is fixed?

- NANOGRID™:
 - Correctly handle offline stations for the “EqualShare” and the “SFB” schedulers. “EqualShare” has never handled those.

52 Version: r3.11.3

Date of release 2020-05-15

What is new?

- OCPP 1.6J:
 - Working reservation support. A reserved EVSE indicates this by a pulsating green LED.
 - `BootNotification.req` will include a “v2” in the model name for Chargestorm Connected 2.
 - Added limitations for max stack level and max periods in a charging profile. Violations will result in a `CALLERROR`.

- Added limitations for the size of the local list, as well as the number of tokens that can be sent in a single `SendLocalList.req`.
- Add the key to inform the CSMS of the supported file transfer protocols.
- Documentation for error codes has been added to the release package.

What is changed?

- OCPP 1.6 J:
 - The Charging Station will only send `Heartbeat.req`'s if there's been no other OCPP communication for a whole Heartbeat interval. However, there will be at least one `Heartbeat.req` every 24h.
 - Removed the measurand `Power.Offered`; this wasn't actually supported before.
- Web-configuration interface:
 - The log page has been removed; it wasn't working.
 - The status page will now list the model.

What is fixed?

- OCPP 1.6 J:
 - Ensure that `BootNotification.req` gets sent correctly, after waiting for IMSI and ICCID on a modem connected station.
 - Correctly document NONE as the case for protocol for a non-connected station.
 - Correctly handle `ChangeAvailability.req` again, including persisting the state, handling an authorized EVSE becoming unavailable etc.
- Correctly report the supported extensions / customizations to OCPP.
- Improved the reliability of the data in the local database (i.e. local list and offline sessions).
- Ensure that NANOGRID™ Home stations are respecting an upstream limit in a charging profile with purpose `ChargingStationMaxProfile`.
- *All* Charging Stations will make sure that they're respecting the fuse configuration key, as that's intended to describe the fuse for the incoming cable. Thus, this is true for NANOGRID™ stations too.

53 Version: r3.11.2

Date of release 2020-04-20

What is changed?

- When using a modem, ensure that the ICCID and IMSI is read prior to sending a Boot-Notification.req. This might delay sending the boot notification by a short time.

What is fixed?

- NANOGRID™: when not having contact with the NANOGRID™ controller., a Chargestorm Connected 2 could deliver power without any authentication.
- Correctly return the default value for a few read-only configuration keys.

54 Version: r3.11.1

Date of release 2020-04-09

What is changed?

- The timeout that invalidated an EVSE if an EV was connected but never authorized has been removed. See comment under “Fixed” for info on how the stations handles two EV's connected but not authorized.

What is fixed?

- A crash if a 3-phase station had been configured with only 1 phase connected.
- In case both EVSE's were in a state Finished, i.e. both had been stopped, both could be authenticated and restarted with a single RFID-tag. This has been fixed and only the EVSE that last got into state Finished will be started.
 - The new behaviour will also apply if the two EVSE's both gets EV's connected, without starting / authorizing the first EV.
 - The first EVSE, that won't be authorized, will get it's LED dimmed.
 - A RemoteStartTransaction.req with for a specific EVSE will start the correct EVSE nevertheless.
 - Stations with one RFID reader per EVSE isn't affected.

55 Version: r3.11

Date of release 2020-04-03

What is new?

- All CTEK E-Mobility branded stations can be used for NANOGRID™ Home without an explicit license.
- All CTEK E-Mobility branded stations have an implicit LocalProxy license.
- Support for Chargestorm Connected 2.
- Add support for CTEK E-Mobility's LTE modem.
- New configuration keys, `xxPhaseRotation` and `CustomizationCtrl*`. These describes how the station is connected to the grid, how the phases are internally connected, and which OCPP extensions can be enabled.
- WebUI:
 - The web configuration interface has a simplified configuration view as the default view.
 - NANOGRID™ Home license is being shown.
 - Support uploading larger license.ini files in the web UI.
- Garo stations is once again supported.
- NANOGRID™ can now limit charging based on the sites power consumption in addition the current usage.
- Add more vendor specific error codes.
- Ensure that stations without the old `outlet/X/connections` configuration being set, can't be downgraded past r3.11. CGC100 is the exception.

What is changed?

- NANOGRID™
 - Schedulers are EqualShare, FIFO, and SimpleFeedback.
 - PhaseRotations is used instead of connections. Old ini files are still supported.
 - After a NANOGRID™ auto-update of the charging station FW, the station should only reboot once all connected EV's has been disconnected.
- NANOGRID™ Home:
 - Better handling when one EV pauses charging.
- Local tag management has been disabled if the station has a configured backend protocol.
- Only use ZE Ready reset if ZE Ready has been enabled.

- Do not offer the EV any power, while the AC/DC fault sensor isn't ready.
- Allow a transaction to be started after another one has been stopped, without removing and re-inserting the cable.
- Increased the precision when reading the energy value from EM340 energy meters.
- Wait a short time when adjusting PWM before checking if the EV obeys or not.
- Return fail if the CSMS asks the station to unlock a cable locked with the configuration key "keep_cable_locked" set to true.
- Further improved the documentation of the configuration keys.

What is fixed?

- OCCP:
 - Fix potential issues with the start time for relative charging profiles, especially when set through the web interface.
 - Accept identical ChargingProfile purpose and stacklevel for different connectors.
 - Corrected an issue with the validation so measurands in meter values.
 - Fix the type and description for the "localcontroller" configuration key.
 - Report the whole FW version string in BootNotification.req.
 - Added DataTransfer.req to remove NanoGdrid configuration file.
 - Do not send keys that are marked as deprecated.
 - Add more missing configuration keys.
 - Detection and handling of backend connectivity issues has been improved.
 - Correctly add IMSI and CCID to the BootNotification.req.
 - Send unavailable for the whole station when acting upon a Reset.req.
 - Further validation of configuration keys.
- A PPP connection shall now correctly set the nameservers coming from the PPP server.
- Try to ensure that all charging sessions should start with a correct energy meter reading as the meter start.
- Improved session start time for trafo- and pulse meters.
- Correctly show enabled/disabled features in the web UI.
- Correctly clear a high temperature alarm.
- A RemoteStart.req should only affect the EVSE that is specified in the request. The other EVSE could be authorized in certain circumstances.

- The stop time for two ongoing sessions should be more closely related after a power outage.
- When the EV user wants to stop a charging session, do not rely on the cache, but check ongoing sessions first, before asking the CSMS.
- Do not automatically start charging after power up, if `resetresume=0` and `AllowOfflineTxForUnknownId`.
- Two EV's in state `SuspendedEV` will both get their full power allocation.
- NANOGRID™ Home should immediately pause if the house overloads the fuses with 20% or more.

56 Version: r3.10

Date of release 2019-12-10

What is new?

- CTEK branding in the web interface.
- Added CTEK E-Mobility as a vendor.
- NANOGRID™:
 - Identify 1-phase EV's on 3-phase EVSE's.
- Improve the generated parameter documentation. E.g. better type description and value ranges.
- Accept higher internal temperature before lowering the max allowed charging current.
- FW upgrades from OCPP (or NANOGRID™ auto-update) will reboot the station if needed. The reboot is delayed until the station is idle.
- The auto change of protocol and endpoint for Charging stations connected *.oamportal.com is now written to the config file.
- NANOGRID™ Home: accept overcurrent on the upstream meter for a short time. Should reduce the need to pause charging.
- Send alarm if no PP can be detected when charging.
- Added a setting for demo mode.

What is changed?

- Changed the limit to 200 offline sessions.
- Improved backend handling and connection handling.
- Migration from our old profile/default/* configuratino keys has been removed. Use ChargingProfiles to add current limits or time limits.
- Move from our custom OfflineAuthorizationBehavior to standard OCPP configuration keys for control of the (on/offline) authentication behaviour.

What is fixed?

- Reliability of Modbus meter communication has been increased.
- Rewrite start time for ongoing sessions when going online. This ensures a correct start time.
- Accept SAN's with wildcard sub-domains when validating certs.
- OCPP:
 - Fixed misspelling of MeterValueSampleInterval. This is handled upon FW upgrade.
 - Add support for AuthorizeRemoteTxRequests.
 - Correctly remove ChargingProfiles when requested.
 - Add working support for Current.Offered in measurands.
 - Fix for MeterValues.req sent without transactionId's.
 - Try to ensure valid meter reading in Start- and StopTransaction.req's.
 - Send chargePointSerialNumber as well as chargeBoxSerialNumber in BootNotification.req.
 - Validate measurands in meter values configuration.
 - Make more configuration keys accept changes without a reboot.
 - Don't update auth.cache if StopTransaction.conf lacks idTagInfo.
 - Websocket TCP timeout has been increased to 15s.
 - Fix bug with misspelled "recurrencyKind" in charging profiles.
 - Diagnostics packages now includes hours and minutes in the file name.
 - Use the 2nd tag in StopTransaction, when parentId is used to stop the transaction.
 - Make more configuration keys accept changes without a reboot.
 - Correctly send true/false instead of 1/0 for boolean configuration keys. Both values are accepted when receiving a ChangeConfiguration.req.

- Correctly handle reject and pending in BootNotification.conf.
 - Ensure ordering of Authorize.req after a RemoteStartTransaction.req.
- NANOGRID™:
 - Don't count EV's not charging towards the limit (for certain schedulers).
 - Fix autoupdate of the clients, if their FW version differs from the controller.
- CCU HW r3.x should work with NANOGRID™ again.